

# PowerLogic™

## Electrical network management

Energy management, revenue metering  
and power quality monitoring



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Electric

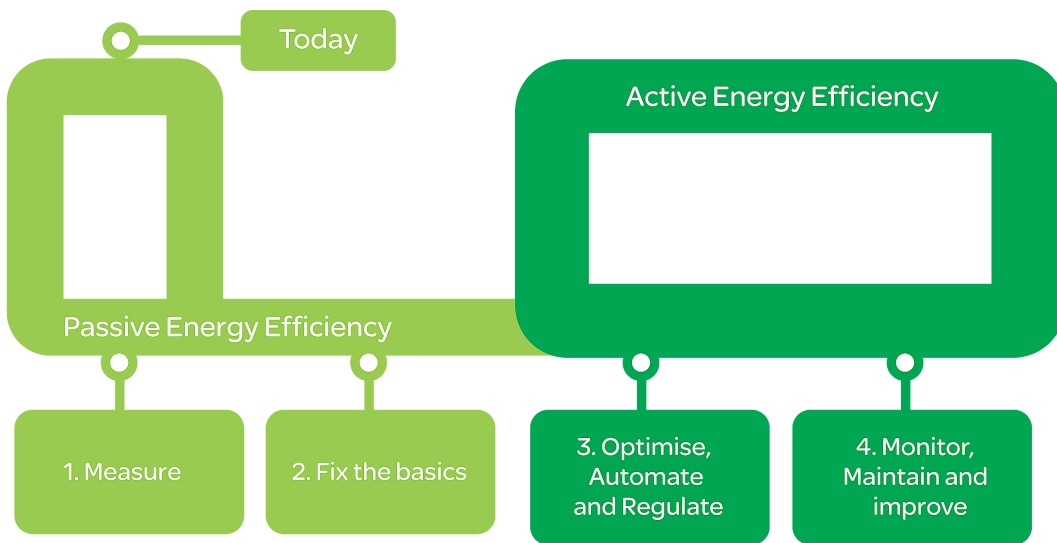
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Clicking on a  
**Commercial Reference  
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or scanning the product's  
**QR Code**  
links you to further product  
information on  
**www.se.com**

# PowerLogic™ System is...

Schneider Electric believes every business can increase productivity while consuming less and achieving energy savings of 10% to 30%.



PowerLogic technology forms one part of your total energy management solution from Schneider Electric. As the global energy management specialist, we offer end-to-end power, building and process management solutions that help you optimize energy use and costs, improve performance, enhance comfort and safety, and deliver uninterrupted service while taking responsible care of our planet.

Saving energy reduces costs and pollution, but you need the tools to uncover all opportunities, avoid risks, track progress against goals, and verify success. Schneider Electric provides these tools via the world's most advanced energy intelligence technology: PowerLogic.

A PowerLogic system of meters, software and power quality solutions help manage all energy assets, every second of the day. A PowerLogic system enables all stakeholders, from CEO to facility and engineering managers, to respond quickly to potential problems and manage energy in financial and environmental terms.

PowerLogic technology delivers the key performance indicators and analytics that you need to strategically balance emissions, efficiency, reliability and cost.

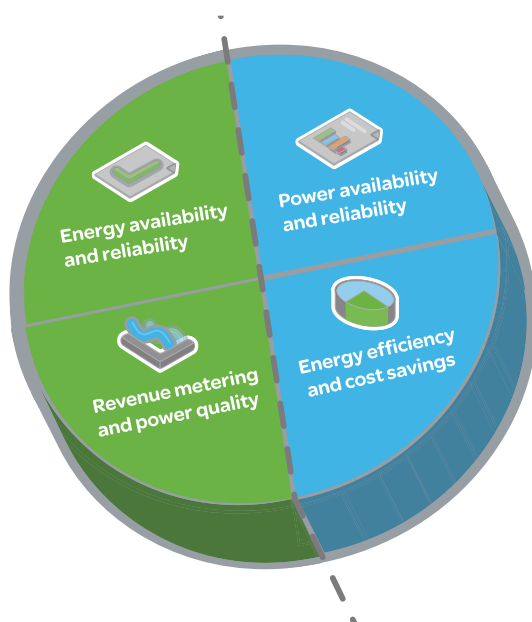
Our expert services can help you audit your energy use and build your energy action plan. From power factor correction systems, harmonic filtering and variable speed drives to HVAC and lighting controls, we offer a complete range of energy efficient technologies.

# Gain energy insight and control with PowerLogic™ systems

## Cutting-edge technology to increase profitability

PowerLogic technology converts the complex dynamics governing the relationship between power generation and distribution on the utility side, and energy consumption, cost and reliability on the consumer side, into timely, easily understood information. Businesses can use this powerful to improve tactical actions and strategic decision making.

From a single facility to an entire enterprise, PowerLogic meters monitor key distribution points 24 hours a day. Whether from generators, substations, service entrances, mains, feeders, loads or 3rd party equipment and systems, PowerLogic technology tracks, records and reports all real-time conditions and historical performance data. Intuitive web-based interfaces give stakeholders access to this data as well as advanced analytics, alarm annunciation and control capabilities. It supports comprehensive energy management programs by tracking performance and empowering you to make effective decisions.



### Supply

#### Energy availability and reliability

- Improve T&D network reliability
- Enhance substation automation
- Maximize the use of your existing infrastructure

#### Revenue metering and power quality

- Maximize metering accuracy at all interchange points
- Verify compliance with new power quality standards
- Analyse and isolate the source of power quality problems

### Demand

#### Power availability and reliability

- Validate that power quality complies with the energy contract
- Identify power quality issues and fix them quickly with reliable mitigation solutions
- Improve response to power-related problems
- Leverage existing infrastructure capacity and avoid over-building
- Support proactive maintenance to prolong asset life

#### Energy efficiency and cost savings

- Measure efficiency, reveal opportunities and verify savings
- Manage greenhouse gas emissions
- Allocate energy costs to departments or processes
- Reduce peak demand and power factor penalties
- Enable participation in loadcurtailment programs (e.g. demand response)
- Strengthen rate negotiation with energy suppliers
- Identify billing discrepancies
- Sub-bill tenants for energy costs

# Market segments



## Industry

From finance to engineering, PowerLogic technology gives industry professionals the energy intelligence and control they need to support strategic decisions and establish best energy practices. It will help you reduce operational costs and meet new emissions standards without compromising production schedules or product quality.

Key points are monitored throughout your power distribution, building and backup systems. Enterprise-level software helps you maximize the use of your existing energy assets, increase energy efficiency and avoid demand or power factor penalties. Use it to uncover and solve hidden power problems that can shorten equipment life or cause costly downtime.

- Cost allocation
- Procurement optimization
- Power factor correction
- Continuity of service even in case of an earth fault

## Buildings

Building managers through operations staff can cut energy and maintenance costs without effecting the comfort or productivity of their tenants, employees, students, patients or customers. A PowerLogic system will track all utilities and equipment conditions, and enterprise-level software will help you analyse and improve electrical reliability.

You can forecast energy requirements, optimize multi-site contracts and accurately allocate or sub-bill costs. Key performance indicators help you find and sustain energy savings, reduce emissions and meet “green” building standards in order to increase asset value and attract or retain tenants..

- Tenant sub-billing
- Cost allocation
- Energy efficiency & benchmarking
- Procurement optimization
- Power availability
- Demand response / load curtailment



## Utilities

Today's energy market is more complex than ever before. Whether you generate, transmit or distribute electricity, more stakeholders need shared access to timely, accurate energy data from more exchange points and you need to maintain power availability and reduce price volatility in the face of rising demand and transmission congestion. A PowerLogic energy information system helps you meet all of these challenges by:

- Metering all key interchange points with the highest possible accuracy
- Improving the quality of power delivered to your customers
- Ensuring the reliability and efficiency of your network and equipment

From advanced energy and power quality metering systems to enterprise-level analytic software and power quality mitigation solutions, PowerLogic systems deliver business-critical information that conventional metering, SCADA and billing systems cannot. It gives you the energy intelligence and control needed to track performance, stay informed of critical conditions and empower you to make strategic decisions. It will help you increase reliability, maximize the use of resources and improve service.

- Revenue metering
- Power quality monitoring
- Power availability and reliability
- Insulation monitoring

## Critical infrastructure

PowerLogic technology helps keep your systems operating continuously and securely with an economical supply of energy. Whether you manage data, communication, transportation or environmental services, minimising the risk of power-related downtime and keeping costs under control is a priority.

A PowerLogic system monitors all power and cooling systems, accurately tracks their energy consumption, and allows you to identify and fix power quality issues as soon as they arise. Enterprise-level software delivers insightful diagnostics and metrics to help verify the reliability of your backup systems and maximize the use of existing capacity to defer new capital investments. You can also reveal energy inefficiencies and strengthen energy procurement across multiple sites.

- Infrastructure optimization
- Power quality analysis compliance
- Alarming and event notification
- Energy efficiency
- Cost allocation
- Procurement optimization

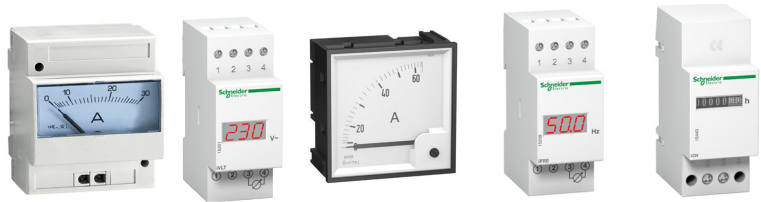
# Panorama of the PowerLogic range

Use this panorama to select the most efficient products for your application needs

## Current transformers



## Panel instruments



| CTs<br>Ip / 5 A   |
|---|
| current transformer   |
| <b>Installation</b>   |
| i. Solid Core CTs <ul style="list-style-type: none"> <li>■ Insulated Cable, diameter 21 to 35 mm</li> <li>■ busbar through transformer</li> <li>■ cable connections</li> </ul>              |
| ii. Split Core CTs <ul style="list-style-type: none"> <li>■ CT installation without the need to uninstall and reinstall power conductors</li> <li>■ Cable and Busbar connections</li> </ul> |

| Name            | iAMP               | iVLT               | AMP/VLT            | iFRE            | iCH/iCI                    |
|-----------------|--------------------|--------------------|--------------------|-----------------|----------------------------|
| <b>Function</b> | ammeter, voltmeter | ammeter, voltmeter | ammeter, voltmeter | frequency meter | hour counter pulse counter |

### Applications

#### Panel instrumentation

|                       |       |       |       |   |              |
|-----------------------|-------|-------|-------|---|--------------|
| Panel instrumentation | I / U | I / U | I / U | F | hours/pulses |
|-----------------------|-------|-------|-------|---|--------------|

#### Energy efficiency & cost

|                               |  |
|-------------------------------|--|
| Sub-billing & cost allocation |  |
| Demand & load management      |  |
| Billing analysis              |  |

#### Power availability & reliability

|                       |  |
|-----------------------|--|
| Compliance monitoring |  |
| Sag/swell, transient  |  |
| Harmonics             |  |

#### Revenue metering

|               |  |
|---------------|--|
| Revenue meter |  |
|---------------|--|

### Characteristics

|  |
|--|
| i. Solid Core CTs <ul style="list-style-type: none"> <li>■ transformation ratio : 40/5 A to 6000/5 A</li> <li>■ accuracy : class 0.5 to 3</li> <li>■ maximum rated operational voltage : 720 V AC</li> <li>■ tropicalised range 25 °C to +60 °C <sup>(1)</sup></li> </ul> relative humidity > 95 %<br><sup>(1)</sup> Warning: some products are limited to +50 °C.           |
| ii. Split Core CTs <ul style="list-style-type: none"> <li>■ transformation ratio : 100/5A to 4000/5A</li> <li>■ accuracy : class 0.5 to 3</li> <li>■ maximum rated operational voltage : 720 V AC</li> <li>■ Cable connection : -5°C to +50°C</li> <li>■ relative humidity 5–85 %</li> <li>■ Busbar connection : 5°C to +40°C</li> <li>■ relative humidity 5–85 %</li> </ul> |


### Characteristics

|                      |                                  |                                      |  |                            |  |
|----------------------|----------------------------------|--------------------------------------|--|----------------------------|--|
| Measurement accuracy | Class 1.5                        | ± 0.5 % ± 1 digit                    | Class 1.5  | ± 0.5 % ± 1 digit          |  |
| Installation         | DIN rail 4 x 18 mm modules       | DIN rail 2 x 18 mm modules           | flush mounted 72 x 72 mm 96 x 96 mm                  | DIN rail 2 x 18 mm modules | iCI, iCH: DIN rail 2 x 18 mm modules CH: flush mount |
| Measurement          | iAMP: 30 A direct or external CT | iVLT: 600 V AC direct or external VT | VLT: 500 V AC direct or external VT AMP: external CT | 400 V AC direct            |  |
| Communication ports  |                                  |                                      |  |                            |  |
| Inputs / Outputs     |                                  |                                      |  |                            |  |
| Memory capacity      |                                  |                                      |  |                            |  |

# Panorama of the PowerLogic range (cont'd)

## Basic energy metering



| Name     | iEM2000/iEM2010/<br>iEM2000T/iEM2100 | iEM3000 Series       | PM3000 Series  | PowerTag<br>Energy Series  |
|----------|--------------------------------------|----------------------|--|---|
| Function | kilowatt-hour meter                  | kilowatt-hour meters | metering & sub-metering<br>Class 0.5S IEC 62053-22<br>Class 1 IEC 62053-21<br>Class 2 IEC 62053-23 | wireless power & energy meter   |

### Applications

#### Panel instrumentation

|                       |   |  |  |  |
|-----------------------|---|--|--|--|
| Panel instrumentation | E | I, U, F, P, Q, S, PF, E<br>(Power demand and current demand) | I, U, F, P, Q, S, PF, E<br>(Power demand and current demand) | I, U, F, P, Q, S, PF, E<br>(Depending on reference; Power demand depending on gateway) |
|-----------------------|---|--|--|--|

#### Energy efficiency and cost

|                               |  |  |  |                 |
|-------------------------------|--|--|--|-----------------|
| Sub-billing & cost allocation |  |  |  | cost allocation |
| Demand & load management      |  |  |  |                 |
| Billing analysis              |  |  |  |                 |

#### Power availability & reliability

|                       |  |  |  |  |
|-----------------------|--|--|--|--|
| Compliance monitoring |  |  |  |  |
| Dip/swell, transient  |  |  |  |  |
| Harmonics             |  |  |  |  |

#### Revenue metering

|               |  |  |  |  |
|---------------|--|--|--|--|
| Revenue meter |  |  |  |  |
|---------------|--|--|--|--|

### Characteristics

|                      |  |   |   |   |
|----------------------|--|---|---|---|
| Measurement accuracy | Class 0.5S / Class 1                         | Class 0.5S / Class 1  | Class 0.5   | IEC 61557-12 PMD/DD Class 1 (active energy)                         |
| Installation         | DIN rail<br>1, 2, 5,<br>or 7 x 18 mm modules | DIN rail  | DIN rail  | on product or on cables depending on the reference                  |
| Voltage measurement  | 400 V AC direct                              | 50 V to 330 V (Ph-N)<br>80 V to 570 V (Ph-Ph) up to 1MV AC (ext VT) | 50 V to 330 V AC (Ph-N)<br>80 V to 570 V AC (Ph-Ph) up to 1MV AC (ext VT) | up to 277 V AC (Ph-N) / 480 V AC (Ph-Ph) depending on the reference |
| Current measurement  | 40 to 125 A direct or external CT            | external CT   | external CT   | 63 to 2000 A  |
| Communication ports  |  | 1   | 1   | Wireless  |
| Inputs / Outputs     |  | 2 I/O   | 2 I/O   |   |
| Memory capacity      |  |   |   |   |

|  |         |         |         |         |
|--|---------|---------|---------|---------|
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|--|---------|---------|---------|---------|

# Panorama of the PowerLogic range (cont'd)

## Wireless products



## Basic multi-function metering



| Name            | PowerTag Control   | HeatTag Smart Sensor  | PM5000 Series  | PM5350 Series   |
|-----------------|--|---|--|---|
| <b>Function</b> | Circuit monitoring & control<br>IEC 60364-8-1<br>EN 17267<br>ISO 50010 | Early detection of overheating wire connections or overheating cables | metering & sub-metering<br>Class 0.5S IEC 62053-22<br>Class 1 IEC 62053-21<br>Class 2 IEC 62053-23 | Class 0.5S IEC 62053-22<br>Class 2 IEC 62053-23<br>Class 1 IEC 61557-12 |

## Applications

### Panel instrumentation

|                       |  |   |   |
|-----------------------|--|---|---|
| Panel instrumentation | Analysis of gas and micro-particles, Temperature, Humidity | I, U, F, P, Q, S, PF, E (Power demand and current demand) | I, U, F, P, Q, S, PF, E (Power demand and current demand) |
|-----------------------|--|---|---|

### Energy efficiency and cost

|                               |  |  |  |
|-------------------------------|--|--|--|
| Sub-billing & cost allocation |  |  |  |
| Demand & load management      |  |  |  |
| Billing analysis              |  |  |  |

### Power availability & reliability

|                       |  |  |  |
|-----------------------|--|--|--|
| Compliance monitoring |  |  |  |
| Dip/swell, transient  |  |  |  |
| Harmonics             |  |  |  |

### Revenue metering

|               |  |  |  |
|---------------|--|--|--|
| Revenue meter |  |  |  |
|---------------|--|--|--|

## Characteristics

|                      |          |   |   |                                  |
|----------------------|----------|---|---|----------------------------------|
| Measurement accuracy |          | Temperature ±1.1 °C<br>Humidity ± 9 RH% | Class 0.5S                                    | Class 0.5                        |
| Installation         | DIN rail | DIN rail<br>6 x 18 mm modules           | Flush mount or DIN rail                       | Flush mount<br>96 mm x 96 mm     |
| Voltage measurement  |          |   | 60 V to 400 V AC L-N<br>103.5 to 690 V AC L-L | PM53xx 20-400 V L-N 20-690 V L-L |
| Current measurement  |          |   | external CT                                   | external CT                      |
| Communication ports  | Wireless |   | 1   | 1                                |
| Inputs / Outputs     | 2 I/O    |   | 2 I/O   | 2 I/O                            |
| Memory capacity      |          |   |   |                                  |

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# Panorama of the PowerLogic range (cont'd)

## Advanced metering



| Name     | PM8000 Series  | ION9000  |
|----------|--|--|
| Function | energy & basic power quality meter<br>IEC 62053-22 Class 0.2S<br>ANSI C12.20 Class 0.2<br>IEC 61000-4-30 Class S<br>IEC 62586-2<br>IEC 61557-12 PMD/Sx/K70/0.2<br>IEC / UL 61010-1 | energy & advanced power quality meter<br>IEC 62053-22 Class 0.1S<br>ANSI C12.20 Class 0.1<br>IEC 61000-4-30 Class A<br>IEC 62586-1 / -2<br>IEC 61557-12 PMD/Sx/K70/0.2<br>IEC / UL 61010-1 |

### Applications

#### Panel instrumentation

|                       |  |   |
|-----------------------|--|---|
| Panel instrumentation | I, U, F, P, Q, S, PF, E, THD, Min/Max, harm, alarm, I/O (I, U unbalance, demand, clock/cal, dip/swell) | I, U, F, P, Q, S, PF, E, THD, Min/Max, harm, alarm, I/O (I, U unbalance, demand, clock/cal, dip/swell, transients, flicker, RVC, mains signalling, 1/2 cycle RMS) |
|-----------------------|--|---|

### Energy efficiency and cost

|                                 |  |  |
|---------------------------------|--|--|
| Sub-billing and cost allocation |  |  |
| Demand and load management      |  |  |
| Billing analysis                |  |  |

### Power availability & reliability

|                       |           |  |
|-----------------------|-----------|--|
| Harmonics             |           |  |
| Dip/swell, transient  | dip/swell |  |
| Compliance monitoring |           |  |

### Revenue metering

|                  |  |  |
|------------------|--|--|
| Revenue metering |  |  |
|------------------|--|--|

### Characteristics

|                                      |  |   |
|--------------------------------------|--|---|
| Measurement accuracy (active energy) | IEC 62053-22 Class 0.2S<br>ANSI C12.20 Class 0.2 | IEC 62053-22 Class 0.1S<br>ANSI C12.20 Class 0.1                |
| Installation                         | Flush & DIN 96 mm x 96 mm                        | Flush & DIN 160 mm x 160 mm<br>Display 96 mm or 197 mm x 175 mm |
| Voltage measurement                  | 57-400 V AC L-N 3P<br>(100-690 V AC L-L)         | 57-400 V L-N AC or<br>100-690 V L-L AC                          |
| Current measurement                  | external CT                                      | external CT   |
| Communication ports                  | 3  | 4   |
| Inputs / Outputs                     | up to 27 DI, 9 DO<br>up to 16 AI, 8 AO           | up to 32 DI, 4 DO, 10 RO (relay)<br>up to 16 AI, 8 AO           |
| Memory capacity                      | 512 MB   | 2 GB  |

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# Panorama of the PowerLogic range (cont'd)

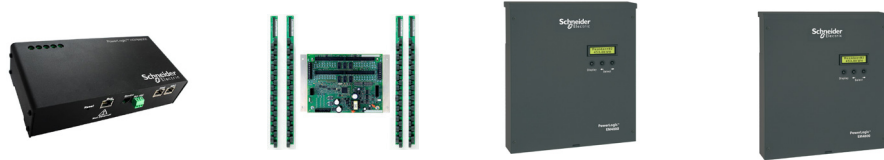
## Advanced utility metering



| Name  | ION7400  |   |   | ION8650   |      |      | ION8800   |   |   |
|---|--|---|---|---|------|------|---|---|---|
|   | A  | B | C | A   | B    | C    | A   | B | C |
| <b>Function</b>                             | energy & basic power quality meter<br>IEC 61557-12<br>IEC 62053-22<br>IEC 61000-4-30 Class S<br>IEC 62586<br>ANSI C12.20 Class 0.2<br>PMD/Sx/K70/0.2 |   |   | energy & power quality meter<br>IEC 62052-11<br>IEC 62053-22/23<br>Class 0.2S<br>IEC 61000-4-30 Class A |      |      | energy & power quality meter<br>IEC 62052-11<br>IEC 62053-22/23<br>Class 0.2S<br>IEC 61000-4-30 |   |   |
| <b>Applications</b>                         |  |   |   |   |      |      |   |   |   |
| <b>Panel instrumentation</b>                |  |   |   |   |      |      |   |   |   |
| Panel instrumentation                       | I, U, F, P, Q, S, PF, E, THD, Min/Max, harm, alarm, I/O (I, U unbalance, demand, clock/cal)  |   |   | I, U, F, P, Q, S, PF, E (demand, minimum and maximum values)  |      |      | I, U, F, P, Q, S, PF, E (demand, minimum and maximum values)                                    |   |   |
| <b>Energy efficiency &amp; cost</b>         |  |   |   |   |      |      |   |   |   |
| Sub-billing and cost allocation             |  |   |   |   |      |      |   |   |   |
| Demand and load management                  |  |   |   |   |      |      |   |   |   |
| Billing analysis                            |  |   |   |   |      |      |   |   |   |
| <b>Power availability &amp; reliability</b> |  |   |   |   |      |      |   |   |   |
| Harmonics                                   |  |   |   |   |      |      |   |   |   |
| Dip/swell, transient                        | dip/swell  |   |   |   |      |      |   |   |   |
| Compliance monitoring                       |  |   |   |   |      |      |   |   |   |
| <b>Revenue metering</b>                     |  |   |   |   |      |      |   |   |   |
| Revenue metering                            |  |   |   |   |      |      |   |   |   |
| <b>Characteristics</b>                      |  |   |   |   |      |      |   |   |   |
| Measurement accuracy (active energy)        | IEC 61053-22 Class 0.2S<br>ANSI 12.20 Class 0.2S   |   |   | Class 0.2S  |      |      | Class 0.2S  |   |   |
| Installation                                | Flush & DIN rail mount<br>96 mm x 96 mm  |   |   | ANSI socket mount 9S, 35S, 36S, 39S and 76S; FT21 switchboard case                                      |      |      | DIN 43862 rack  |   |   |
| Voltage measurement                         | 57-400 V AC L-N 3P<br>(100-690 V AC L-L)   |   |   | 57-277 V L-N AC<br>(9S, 36S); 120-480 V L-L AC (35S)  |      |      | 57-288 V L-N AC or<br>99-500 V L-L AC   |   |   |
| Current measurement                         | external CT  |   |   | external CT   |      |      | external CT   |   |   |
| Communication ports                         | 2  |   |   | 5   |      |      | 5   |   |   |
| Inputs / Outputs                            | up to 27 DI, 9 DO<br>up to 16 AI, 8 AO   |   |   | up to 22 I/O  |      |      | up to 16 I/O  |   |   |
| Memory capacity                             | 512 MB   |   |   | 10 MB   | 4 MB | 2 MB | up to 10 MB   |   |   |
|   | page 156   |   |   | page 166  |      |      | page 176  |   |   |

# Panorama of the PowerLogic range (cont'd)

## Multi-circuit metering



| Name     | HDPM6000   | BCPM   | EM4000   | EM4800   |
|----------|--|--|--|--|
| Function | 3-phase power quality meter; branch-circuit accessory module hub | branch circuit monitor<br>IEC 61036<br>Class 1 | multi-circuit energy meter<br>Class 0.5 ANSI<br>C12.1, C12.20<br>Class 0.5S IEC 62053-22 | multi-circuit energy meter<br>Class 0.5 ANSI<br>C12.1, C12.20<br>Class 0.5S IEC 62053-22 |

### Applications

#### Panel instrumentation

|                       |  |   |   |   |
|-----------------------|--|---|---|---|
| Panel instrumentation |  | I, U, F, P, Q, S,<br>PF, E<br>(Power demand and current demand) | I, U, F, P, Q, S,<br>PF, E<br>(Power demand and current demand) | I, U, F, P, Q, S,<br>PF, E<br>(Power demand and current demand) |
|-----------------------|--|---|---|---|

#### Energy efficiency and cost

|                                 |  |  |  |  |
|---------------------------------|--|--|--|--|
| Sub-billing and cost allocation |  |  |  |  |
| Demand and load management      |  |  |  |  |
| Billing analysis                |  |  |  |  |

#### Power availability and reliability

|                       |  |  |  |  |
|-----------------------|--|--|--|--|
| Compliance monitoring |  |  |  |  |
| Sag/swell, transient  |  |  |  |  |
| Harmonics             |  |  |  |  |

#### Revenue metering

|               |  |  |  |  |
|---------------|--|--|--|--|
| Revenue meter |  |  |  |  |
|---------------|--|--|--|--|

### Characteristics

|                      |  |  |   |   |
|----------------------|--|--|---|---|
| Measurement accuracy |  | Class 1 (mains active energy)                            | Class 0.5S  | Class 0.5S  |
| Installation         |  | Panel or enclosure                                       | Panel or enclosure  | Panel or enclosure  |
| Voltage measurement  |  | 90 – 277 V L-N voltage Inputs                            | 80 - 480 V AC L-L without PTs, Up to 999 kV with external PTs | 80 - 480 V AC L-L without PTs, Up to 999 kV with external PTs |
| Current measurement  |  | CT strips for branch circuits and external CTs for mains | Split- or solid-core CTs                                      | Split- or solid-core CTs                                      |
| Communication ports  |  | 1 for main   | 2   | 2   |
| Inputs / Outputs     |  |  | 2   | 2   |
| Memory capacity      |  |  |   |   |

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# Panorama of the PowerLogic range (cont'd)

Multi-circuit metering

Retrofit products



| Name     | EM4900   | EM3500  | EM4200   |
|----------|--|---|--|
| Function | multi-circuit energy meter<br>Class 0.5 ANSI<br>C12.1, C12.20<br>Class 0.5S IEC 62 | DIN rail power & energy meter<br>ANSI 12.20 0.2% accuracy, IEC 62053-22 Class 0.2S for EM35xx models, ANSI C12.20 0.5% accuracy, IEC 62053-22 Class 0.2S for EM35xxA models | power & energy meter<br>ANSI C12.20 0.2% IEC 62053-22 Class 0.2S |

**Applications**

**Panel instrumentation**

|                       |  |  |  |
|-----------------------|--|--|--|
| Panel instrumentation | I, U, F, P, Q, S, PF, E<br>(Power demand and current demand) | I, U, F, P, Q, S, PF, E<br>(Power demand and current demand) | I, U, F, P, Q, S, PF, E<br>(Power demand and current demand) |
|-----------------------|--|--|--|

**Energy efficiency and cost**

|                                 |  |  |  |
|---------------------------------|--|--|--|
| Sub-billing and cost allocation |  |  |  |
| Demand and load management      |  |  |  |
| Billing analysis                |  |  |  |

**Power availability and reliability**

|                       |  |  |  |
|-----------------------|--|--|--|
| Compliance monitoring |  |  |  |
| Sag/swell, transient  |  |  |  |
| Harmonics             |  |  |  |

**Revenue metering**

|               |  |  |  |
|---------------|--|--|--|
| Revenue meter |  |  |  |
|---------------|--|--|--|

**Characteristics**

|                      |  |   |   |
|----------------------|--|---|---|
| Measurement accuracy | Class 0.5S   | Class 1 (mains active energy)                           | ANSI C12.20 Class 0.2S<br>IEC 62053-22 Class 0.2S |
| Installation         | Panel or enclosure   | Panel or enclosure                                      | DIN or screw, clip-on or hook                     |
| Voltage measurement  | 150 – 480 V AC L-L without PTs<br>Up to 999 kV with external PTs | UL: 90 V L-N to 600 V L-L;<br>CE: 90 V L-N to 300 V L   | 890 - 480 V AC L-L                                |
| Current measurement  | Split- or solid-core CTs   | EM35xxA models work exclusively with Rogowski coil CTs. | 5 A to 5000 A                                     |
| Communication ports  | 2  | 1 for main  | 2   |
| Inputs/Outputs       | 2  | (see Datasheet)   |   |
| Memory capacity      |  |   |   |

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# Panorama of the PowerLogic range (cont'd)

## Insulation monitoring Devices



|                 |  |
|-----------------|--|
| <b>Name</b>     | <b>Vigilohm™<br/>Insulation monitoring devices</b> |
| <b>Function</b> | Insulation monitoring for IT / Ungrounded networks |

|                                     |  |
|-------------------------------------|--|
| <b>Features</b>                     |  |
| RS-485 / Ethernet gateway           | RS-485   |
| Devices supported                   | Insulation Monitors:<br>IM9, IM9-OL, IM10, IM20<br>IM10-H, IM20-H, IM400 series<br>IM400THR<br>Insulation Fault Locators:<br>IFL 12, IFL 12C, IFL 12MC, IFL 12H<br>Accessories:<br>Including voltage adaptors,<br>cardews, toroids |
| Web server with standard HTML pages | Available on product supervision<br>e.g.PME, Com'X 510   |
| Web server with custom HTML pages   | Available on product supervision<br>e.g.PME, Com'X 510   |
| Real time data                      | Available in supervision PME   |
| Historical data                     | Available in supervision PME   |
| Automatic notification              |  |
| Alarm and event logs                |  |
| Waveform display                    |  |
| Custom animated graphics            |  |
| Manual/automatic reports            |  |

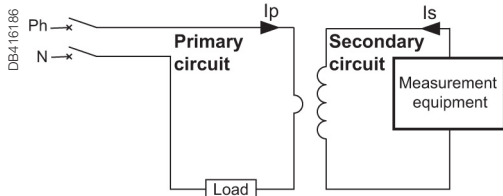
|   |   |
|---|---|
| <b>Characteristics</b>                          |   |
| Ethernet ports<br>Modbus TCP/IP protocol        | An IT earthing system -also called ungrounded system- allows the network to operate even in the presence of an insulation fault, without endangering people or property. Required as part of the IT network, an Insulation Monitoring Device (IMD) detects the insulation fault and locates it so it can be repaired. |
| RS-485 (2-wire / 4-wire) ports, Modbus protocol |   |
| Number of devices connected directly            |   |
| RS-232 configuration ports                      |   |
| Miscellaneous                                   |   |
| Installation                                    |   |

# Current transformers

Schneider Electric is the global specialist in energy management with the most complete power monitoring product line. Current Transformers are essential components designed to be used with Schneider Electric's extensive power monitoring product portfolio. From simple energy meters to world class power quality meters, these proven products satisfy any requirement.



## Ip/5 A ratio



Application diagram of a CT.

The Ip/5 A ratio current transformer delivers at the secondary a current ( $I_s$ ) of 0 to 5 A that is proportional to the current measured at the primary ( $I_p$ ). This allows them to be used in combination with measurement equipment:

- Ammeters.
- Kilowatt-hour meters.
- Measurement units.
- Control relays.
- etc.

When the primary is energized, the measurement equipment nearly acts as a short circuit which keeps the secondary voltage very low. This voltage will increase significantly if the short circuit is removed.

### CT selection - conductor rating aspects

The choice depends on the conductor profile and the maximum intensity of the primary circuit.

### CT with let-through primary

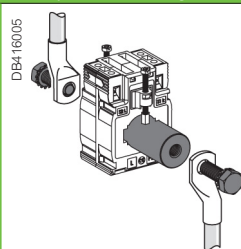
| Conductor type                             | Cable     | Mixed, bars or cables | Vertical or horizontal bars | Vertical bars |
|--|-----------|-----------------------|-----------------------------|---------------|
| Suggested Current Transformer and mounting | DB415986  | DB415920              | DB415988                    | DB415989      |
| Ratings (A)                                | 40 to 250 | 150 to 800            | 200 to 4000                 | 5000 to 6000  |
| CT internal                                | Type C    | Type M                | Type D <sup>(1)</sup>       | Type V        |
|  | FF C      | FF MA<br>FF MD        | FF D                        | FF V2<br>VV   |

**(1)** Two secondary connectors (parallel internal wiring - only one secondary winding) for easier cable access. 1 lateral + 1 on one extremity. Warning: only one must be used at a time.

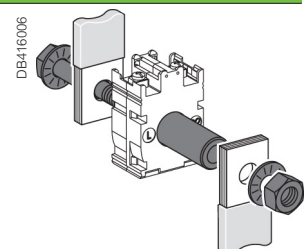
### Specific mounting: use of cylinder

A cylindrical metallic spacer ensures a proper CT positioning when the conductor or the CT cannot be positioned perpendicular. Secured by bolt + nut.

### CT with primary connection by screw and nut (example: use of cylinder with bar or cable)



METSECT5CYL1 (aluminium)



16550 (brass)

NOTE: This document is not intended to be used as an installation guide.

### CT selection - Electrical aspect Ip/5 A

- We recommend that you choose the ratio immediately higher than the maximum measured current (In).  
Example: In = 1103 A; ratio chosen = 1250/5.
- For small ratings: From 40/5 to 75/5 and for an application with digital devices, we recommend that you choose a higher rating, for example 100/5. This is because small ratings are less accurate and the 40 A measurement, for example, will be more accurate with a 100/5 CT than with a 40/5 CT.
- Specific case of the motor starter: to measure motor starter current, you must choose a CT with primary current  $I_p = I_d/2$  ( $I_d$  = motor starting current).

### Validation of measurement solution according to accuracy class

It consists in controlling the right adaptation of the CT on the accuracy class aspect. The accuracy class is specified in the project. The total dissipated power of the measurement circuit (meter + cables) should not be superior to the specified limit of the CT. This limit is for different standard classes. If necessary, the choice of the cable section, the CT or meter should be modified to fit the requirement.

| Copper cable cross-section (mm <sup>2</sup> ) | Power per doubled meter at 20 °C (VA) | Schneider Electric device    | Consumption of the current input (VA) |
|---|---------------------------------------|------------------------------|---------------------------------------|
| 1   | 1                                     | Ammeter<br>72 x 72 / 96 x 96 | 1.1                                   |
| 1.5   | 0.685                                 | Analog ammeter               | 1.1                                   |
| 2.5   | 0.41                                  | Digital ammeter              | 0.3                                   |
| 4   | 0.254                                 | PM8000                       | 0.15                                  |
| 6   | 0.169                                 | PM3000                       | 0.3                                   |
| 10  | 0.0975                                | PM5000                       |                                       |
| 16  | 0.062                                 | iEM3000                      |                                       |

For each temperature variation per 10 °C bracket, the power drawn up by the cables increases by 4 %.

### Application example

Project specification: **200 A**, in **Ø27** mm cable, accuracy class 1.  
Our choice is **METSECT5MA020**.

For this CT selected on the chart (next page), the max acceptable power is **7 VA** (for "Accuracy class 1" which is specified in the project).

| Internal profile type | Cables (mm) | Bars (mm)          | Rating Ip/5 A (A) | Commercial reference number | Accuracy class  |          |   |
|-----------------------|-------------|--------------------|-------------------|-----------------------------|-----------------|----------|---|
|                       |             |                    |                   |                             | 0.5             | 1        | 3 |
|                       |             |                    |                   |                             | Max. power (VA) |          |   |
|                       | Ø27         | 10 x 32<br>15 x 25 | 150               | METSECT5MA015               | 3               | 4        | - |
|                       |             |                    | 200               | <b>METSECT5MA020</b>        | 4               | <b>7</b> | - |
|                       |             |                    | 250               | METSECT5MA025               | 6               | 8        | - |
|                       |             |                    | 300               | METSECT5MA030               | 8               | 10       | - |
|                       |             |                    | 400               | METSECT5MA040               | 10              | 12       | - |

- Control of the conformity of the measurement chain:
- PM3000 multi-meter: 0.3 VA.
  - 4 meters of 2.5 mm<sup>2</sup>, doubled wires: 0.41 x 4 = 1.64 VA.
- Total: 0.3 + 1.64 = 1.94 VA (< 7 VA)**

**Conclusion: this CT is well adapted as the accuracy class will be even better than 1.**

**⚠ DANGER**

**HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E in the USA, CSA Z462 or applicable local standards.
- Turn off all power supplying this device and the equipment in which it is installed before working on the device or equipment.
- Always use a properly rated voltage sensing device to confirm that all power is off.
- Treat I/O wiring connected to multiple devices as hazardous live until determined otherwise.
- Do not exceed the device's ratings for maximum limits.
- Do not use this device for critical control or protection applications where human or equipment safety relies on the operation of the control circuit.
- Disconnect all the device's input and output wires before performing dielectric (hi-pot) or Megger testing.

**CT DAMAGE**

- Never open circuit a current transformer (CT)
- Do not open the CT case.
- Do not attempt to repair any components of the CT.

**Failure to follow these instructions will result in death or serious injury.**

PB118085

### Presentation of commercial reference numbers

MET SE CT **X** **XX** **XXX**

1 = 1 Amp  
5 = 5 Amp  
R = Rogowski

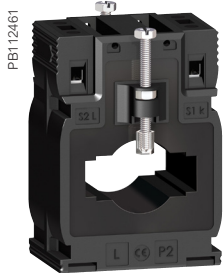
Last 3 digits = primary rating/10  
2 letters = Form Factor

**Examples:**

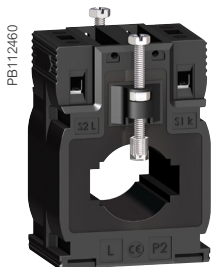
METSECT5CC008 = 5 A secondary, Cables only, 75 A primary  
METSECT5MC080 = 5 A secondary, mixed for cables and bars, 800 A primary  
METSECTR30500 = Rogowski CT, 300 mm length, 96 mm diameter 50 A to 5000 A



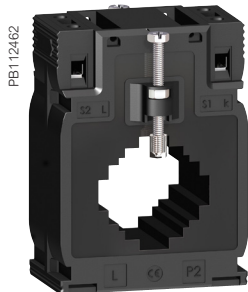
METSECT5CC●●●



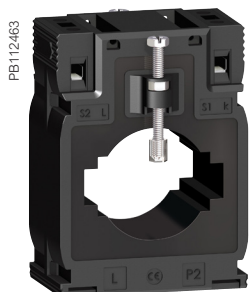
METSECT5MB●●●



METSECT5MA●●●



METSECT5MC●●●

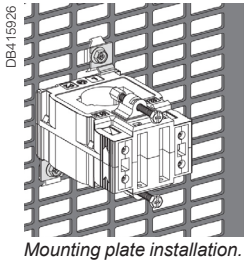


METSECT5MD●●●

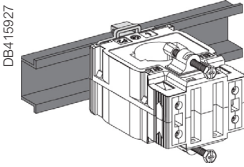
| Type C - solid core current transformer (cable profile) |             |               |                   |                       |               |
|---|-------------|---------------|-------------------|-----------------------|---------------|
| Internal profile type                                   | Cables (mm) | Bars (mm)     | Rating Ip/5 A (A) | Commercial ref number |               |
| <b>CC</b>   |             |               |                   |                       |               |
| FF CC   |             | Ø21           | -                 | 40                    | METSECT5CC004 |
|   |             |               |                   | 50                    | METSECT5CC005 |
|   |             |               |                   | 60                    | METSECT5CC006 |
|   |             |               |                   | 75                    | METSECT5CC008 |
|   |             |               |                   | 100                   | METSECT5CC010 |
|   |             |               |                   | 125                   | METSECT5CC013 |
|   |             |               |                   | 150                   | METSECT5CC015 |
|   |             |               |                   | 200                   | METSECT5CC020 |
|   | 250         | METSECT5CC025 |                   |                       |               |

| Type M - current transformers (mixed: cable/bar profile) |  |     |         |     |               |
|--|--|-----|---------|-----|---------------|
| <b>MB</b>  |  |     |         |     |               |
| FF MB  |  | Ø26 | 12 x 40 | 250 | METSECT5MB025 |
|  |  |     | 15 x 32 | 300 | METSECT5MB030 |
|  |  |     |         | 400 | METSECT5MB040 |
| <b>MA</b>  |  |     |         |     |               |
| FF MA  |  | Ø27 | 10 x 32 | 150 | METSECT5MA015 |
|  |  |     | 15 x 25 | 200 | METSECT5MA020 |
|  |  |     |         | 250 | METSECT5MA025 |
|  |  |     |         | 300 | METSECT5MA030 |
|  |  |     |         | 400 | METSECT5MA040 |
| <b>MC</b>  |  |     |         |     |               |
| FF MC  |  | Ø32 | 10 x 40 | 250 | METSECT5MC025 |
|  |  |     | 20 x 32 | 300 | METSECT5MC030 |
|  |  |     | 25 x 25 | 400 | METSECT5MC040 |
|  |  |     |         | 500 | METSECT5MC050 |
|  |  |     |         | 600 | METSECT5MC060 |
|  |  |     |         | 800 | METSECT5MC080 |
| <b>MD</b>  |  |     |         |     |               |
| FF MD  |  | Ø40 | 12 x 50 | 500 | METSECT5MD050 |
|  |  |     | 20 x 40 | 600 | METSECT5MD060 |
|  |  |     |         | 800 | METSECT5MD080 |

See your Schneider Electric representative for complete ordering information.



Mounting plate installation.

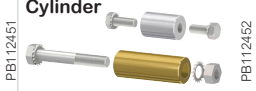




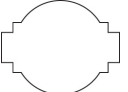


DIN rail mounting.

| Common characteristics              |   |
|-------------------------------------|---|
| Secondary current Is (A)            | 5 A   |
| Maximum voltage rating Ue (V)       | 720 V   |
| Frequency (Hz)                      | 50/60 Hz  |
| Safety factor (sf)                  | 40 to 4000 A: sf ≤ 5<br>5000 to 6000 A: sf ≤ 10                                 |
| Degree of protection                | IP20  |
| Operating temperature               | tropicalised range<br>-25°C to +60°C <sup>(1)</sup><br>relative humidity > 95 % |
| Storage temperature                 | -40°C to +85°C  |
| Compliance with standards           | IEC 61869-2<br>VDE 0414   |
| Secondary connection (as per model) | by terminals for lug<br>by tunnel terminals<br>by screws                        |

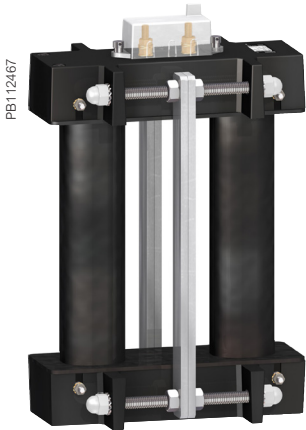
(1) Warning: some products are limited to +50°C.

Type C - solid core current transformer (cable profile)

| Internal profile type  | Accuracy class |      |     | Overall dimensions (refer to drawing pages for details)<br>W x H x D (mm) | Fastening mode  | Accessories<br>Cylinder<br> |                 |
|--|----------------|------|-----|---|---|---|-----------------|
|  | 0.5            | 1    | 3   |   |   |   | Max. power (VA) |
| <b>CC</b>  |                |      |     |   |   |   |                 |
| FF CC<br>   | Dimension (mm) |      |     | 44 x 66 x 37  | <ul style="list-style-type: none"> <li>■ Adapter for DIN rails.</li> <li>■ Mounting plate.</li> </ul> | <b>16550</b><br><b>METSECT5CYL1</b>   | Included        |
|  | -              | -    | 1   |   |   |   |                 |
|  | -              | 1.25 | 1.5 |   |   |   |                 |
|  | -              | 1.25 | 2   |   |   |   |                 |
|  | -              | 1.5  | 2.5 |   |   |   |                 |
|  | 2              | 2.5  | 3.5 |   |   |   |                 |
|  | 2.5            | 3.5  | 4   |   |   |   |                 |
|  | 3              | 4    | 5   |   |   |   |                 |
| 4  | 5.5            | 6    |     |   |   |   |                 |
| 5  | 6              | 7    |     |   |   |   |                 |
| <b>MB</b>  |                |      |     |   |   |   |                 |
| FF MB<br> | 3              | 5    | -   | 60 x 85 x 63  | <ul style="list-style-type: none"> <li>■ Adapter for DIN rails.</li> <li>■ Mounting plate.</li> </ul> | -   | METSECT5COVER   |
|  | 4              | 6    | -   |   |   |   |                 |
|  | 6              | 8    | -   |   |   |   |                 |
| <b>MA</b>  |                |      |     |   |   |   |                 |
| FF MA<br> | 3              | 4    | -   | 56 x 80 x 63  | <ul style="list-style-type: none"> <li>■ Adapter for DIN rails.</li> <li>■ Mounting plate.</li> </ul> | METSECT5CYL2  | METSECT5COVER   |
|  | 4              | 7    | -   |   |   |   |                 |
|  | 6              | 8    | -   |   |   |   |                 |
|  | 8              | 10   | -   |   |   |   |                 |
|  | 10             | 12   | -   |   |   |   |                 |
| <b>MC</b>  |                |      |     |   |   |   |                 |
| FF MC<br> | 3              | 5    | -   | 70 x 95 x 65  | <ul style="list-style-type: none"> <li>■ Adapter for DIN rails.</li> <li>■ Mounting plate.</li> </ul> | -   | METSECT5COVER   |
|  | 5              | 8    | -   |   |   |   |                 |
|  | 8              | 10   | -   |   |   |   |                 |
|  | 10             | 12   | -   |   |   |   |                 |
|  | 12             | 15   | -   |   |   |   |                 |
|  | 10             | 12   | -   |   |   |   |                 |
| <b>MD</b>  |                |      |     |   |   |   |                 |
| FF MD<br> | 4              | 6    | -   | 70 x 95 x 65  | <ul style="list-style-type: none"> <li>■ Adapter for DIN rails.</li> <li>■ Mounting plate.</li> </ul> | -   | METSECT5COVER   |
|  | 6              | 8    | -   |   |   |   |                 |
|  | 8              | 12   | -   |   |   |   |                 |

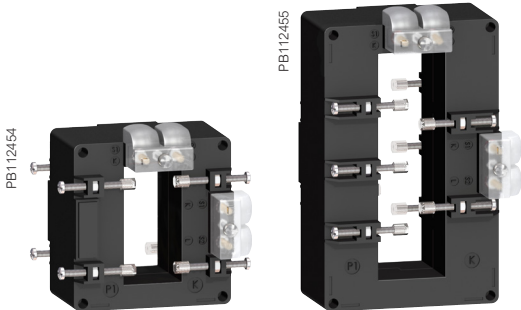
See your Schneider Electric representative for complete ordering information.

NOTE: This document is not intended to be used as an installation guide.



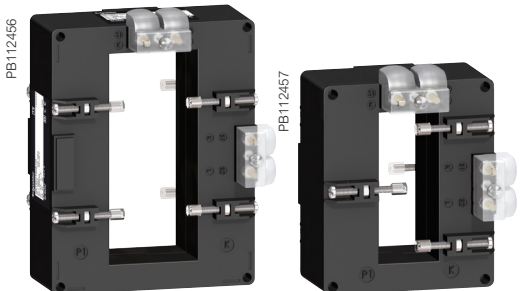
METSECT5VV●●●

| Type V - current transformers (vertical bar profile) |             |           |                   |                             |
|--|-------------|-----------|-------------------|-----------------------------|
| Internal profile type                                | Cables (mm) | Bars (mm) | Rating Ip/5 A (A) | Commercial reference number |
| <b>VV</b>  |             |           |                   |                             |
| FF V2  | -           | 55 x 165  | 5000              | METSECT5VV500 ★             |
|  |             |           | 6000              | METSECT5VV600 ★             |



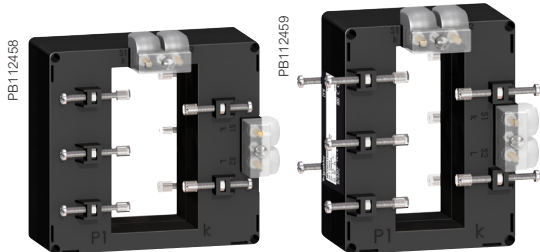
METSECT5DA●●●

METSECT5DB●●●



METSECT5DC●●●

METSECT5DD●●●



METSECT5DE●●●


METSECT5DH●●●

| Type D - current transformers (vertical or horizontal bar - dual secondary terminals) |   |          |                 |                 |
|---|---|----------|-----------------|-----------------|
| <b>DA</b>   |   |          |                 |                 |
|   |   | 32 x 65  | 400             | METSECT5DA040   |
|   |   |          | 500             | METSECT5DA050   |
|   |   |          | 600             | METSECT5DA060   |
|   |   |          | 800             | METSECT5DA080   |
|   |   |          | 1000            | METSECT5DA100   |
|   |   |          | 1250            | METSECT5DA125 ★ |
|   |   | 1500     | METSECT5DA150 ★ |                 |
| <b>DB</b>   |   |          |                 |                 |
|   | - | 38 x 127 | 1000            | METSECT5DB100   |
|   |   |          | 1250            | METSECT5DB125 ★ |
|   |   |          | 1500            | METSECT5DB150 ★ |
|   |   |          | 2000            | METSECT5DB200 ★ |
|   |   |          | 2500            | METSECT5DB250 ★ |
|   |   | 3000     | METSECT5DB300 ★ |                 |
| <b>DC</b>   |   |          |                 |                 |
|   | - | 52 x 127 | 2000            | METSECT5DC200 ★ |
|   |   |          | 2500            | METSECT5DC250 ★ |
|   |   |          | 3000            | METSECT5DC300 ★ |
|   |   |          | 4000            | METSECT5DC400 ★ |
| <b>DD</b>   |   |          |                 |                 |
|   | - | 34 x 84  | 1000            | METSECT5DD100   |
|   |   |          | 1250            | METSECT5DD125 ★ |
|   |   |          | 1500            | METSECT5DD150 ★ |
| <b>DE</b>   |   |          |                 |                 |
|   | - | 54 x 102 | 1000            | METSECT5DE100   |
|   |   |          | 1250            | METSECT5DE125 ★ |
|   |   |          | 1500            | METSECT5DE150 ★ |
|   |   |          | 2000            | METSECT5DE200 ★ |
| <b>DH</b>   |   |          |                 |                 |
|   | - | 38 x 102 | 1250            | METSECT5DH125 ★ |
|   |   |          | 1500            | METSECT5DH150 ★ |
|   |   |          | 2000            | METSECT5DH200 ★ |

★ Operating temperature: -25 °C to 50 °C

See your Schneider Electric representative for complete ordering information.

Type V - solid core current transformers (vertical bar profile)

| Internal profile type   | Accuracy class  |   |   | Overall dimensions (refer to drawing pages for details)<br>W x H x D (mm) | Fastening mode             | Accessories |                 |
|---|-----------------|---|---|---|----------------------------|-------------|-----------------|
|   | 0.5             | 1 | 3 |   |                            | Cylinder    | Sealable cover  |
|   | Max. power (VA) |   |   |   |                            |             |                 |
| <b>VV</b>   | Dimension (mm)  |   |   |   |                            |             |                 |
| FF VZ  | 60              | - | - | <b>175 x 273.5 x 110</b>  | ■ Insulated locking screw. | -           | <b>Included</b> |
|   | 70              | - | - |   |                            |             |                 |

Type D - solid core current transformers (vertical or horizontal bar - dual secondary terminals)

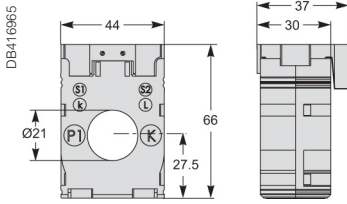
| DA | Dimension (mm) |    |   |                       |                            |   |                 |
|----|----------------|----|---|-----------------------|----------------------------|---|-----------------|
|    | 4              | 8  | - | <b>90 x 94 x 90</b>   | ■ Insulated locking screw. | - | <b>Included</b> |
|    | 8              | 10 | - |                       |                            |   |                 |
|    | 8              | 12 | - |                       |                            |   |                 |
|    | 12             | 15 | - |                       |                            |   |                 |
|    | 15             | 20 | - |                       |                            |   |                 |
|    | 15             | 20 | - |                       |                            |   |                 |
|    | 20             | 25 | - | <b>99 x 160 x 87</b>  | ■ Insulated locking screw. | - | <b>Included</b> |
|    | 6              | 10 | - |                       |                            |   |                 |
|    | 8              | 12 | - |                       |                            |   |                 |
|    | 10             | 15 | - |                       |                            |   |                 |
|    | 15             | 20 | - |                       |                            |   |                 |
|    | 20             | 25 | - | <b>125 x 160 x 87</b> | ■ Insulated locking screw. | - | <b>Included</b> |
|    | 25             | 30 | - |                       |                            |   |                 |
|    | 30             | 50 | - |                       |                            |   |                 |
|    | 30             | 50 | - |                       |                            |   |                 |
|    | 10             | 15 | - | <b>96 x 116 x 87</b>  | ■ Insulated locking screw. | - | <b>Included</b> |
|    | 12             | 15 | - |                       |                            |   |                 |
|    | 15             | 20 | - |                       |                            |   |                 |
|    | 12             | 15 | - | <b>135 x 129 x 85</b> | ■ Insulated locking screw. | - | <b>Included</b> |
|    | 15             | 20 | - |                       |                            |   |                 |
|    | 20             | 25 | - |                       |                            |   |                 |
|    | 20             | 25 | - |                       |                            |   |                 |
|    | 12             | 15 | - | <b>98 x 129 x 75</b>  | ■ Insulated locking screw. | - | <b>Included</b> |
|    | 12             | 15 | - |                       |                            |   |                 |
|    | 20             | 25 | - |                       |                            |   |                 |

★ Operating temperature: -25 °C to 50 °C

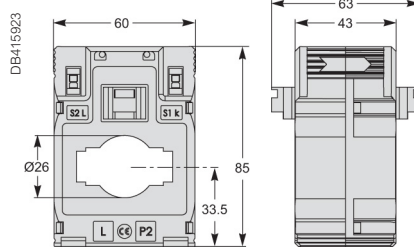
See your Schneider Electric representative for complete ordering information.

# Solid core CT dimensions

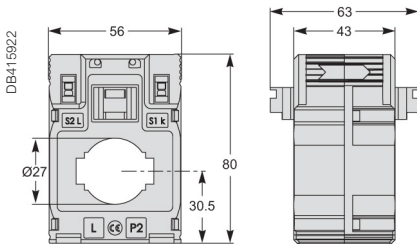
CC internal profile type



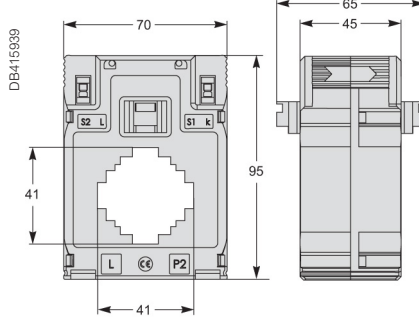
MB internal profile type



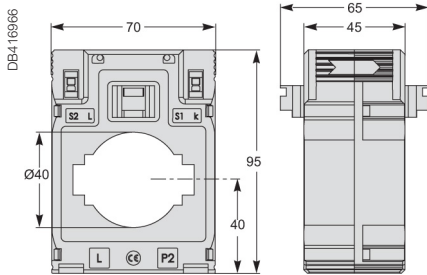
MA internal profile type



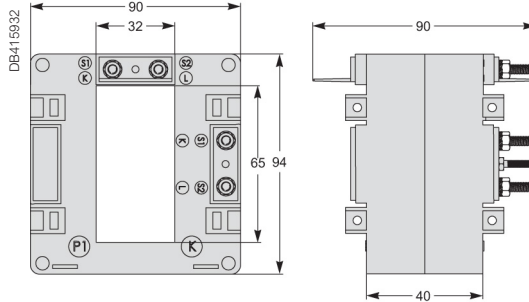
MC internal profile type



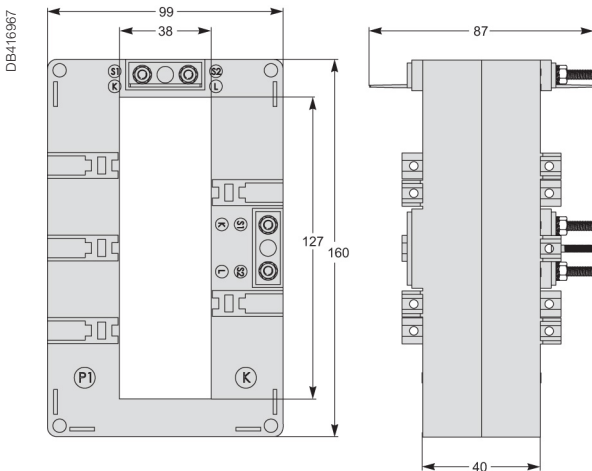
MD internal profile type



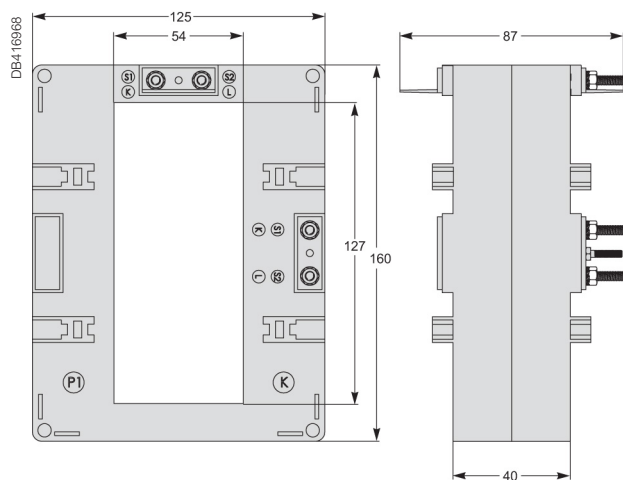
DA internal profile type



DB internal profile type

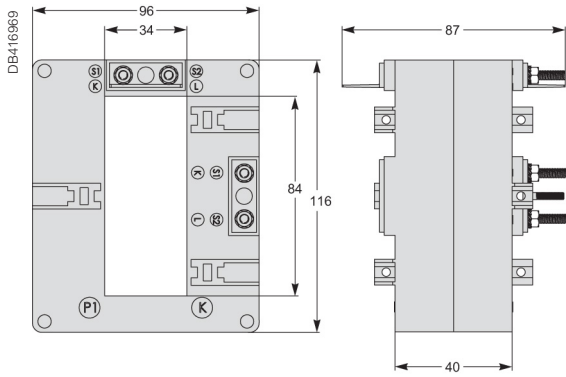


DC internal profile type

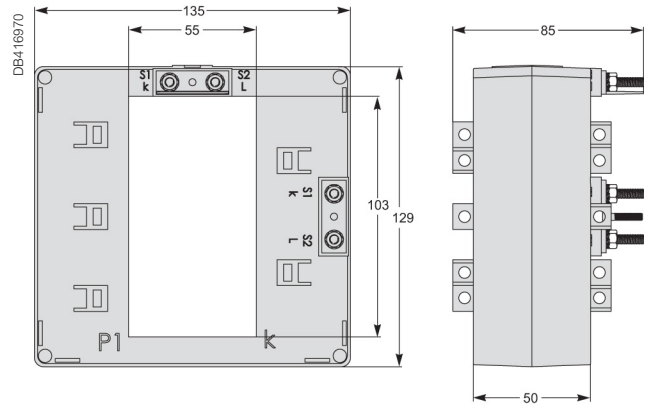


# Solid core CT dimensions contd.

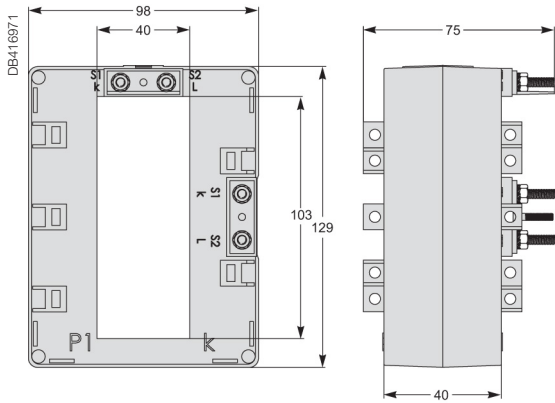
DD internal profile type



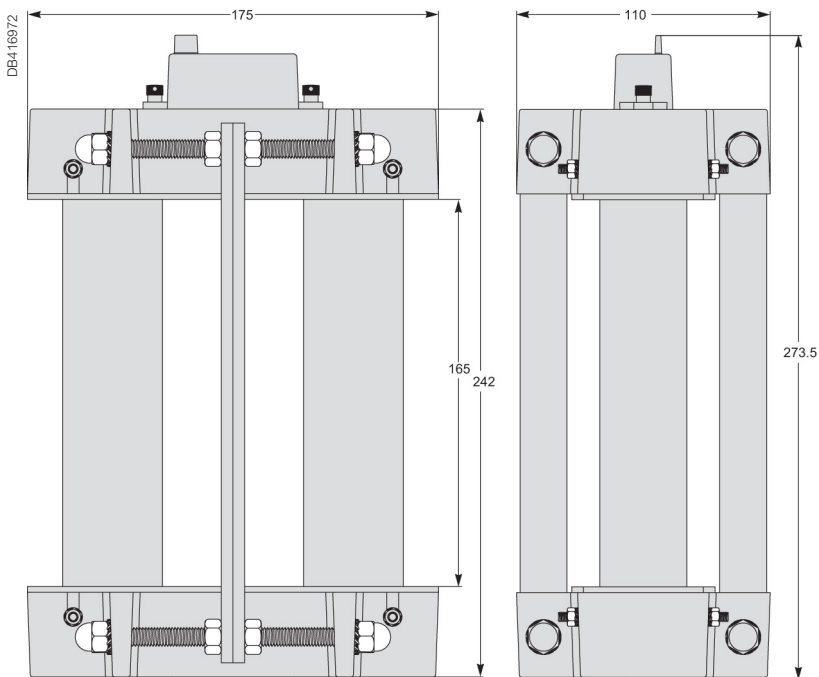
DE internal profile type



DH internal profile type



VV internal profile type

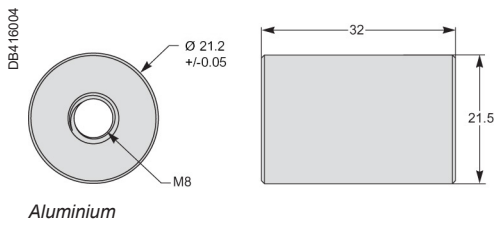


NOTE: This document is not intended to be used as an installation guide.

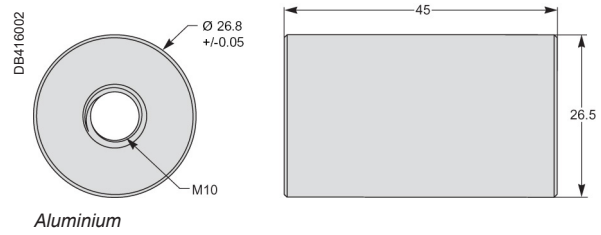
# Solid core cylinders dimensions

## Cylinders

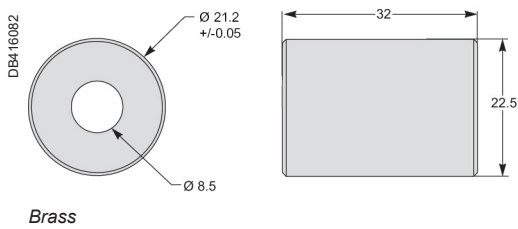
### METSECT5CYL1



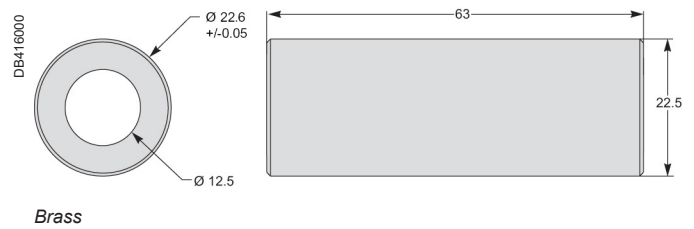
### METSECT5CYL2



### 16550

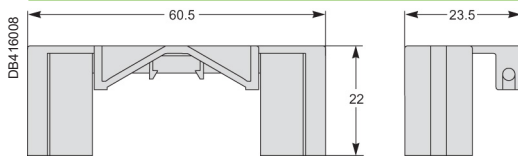


### 16551



## Covers

### METSECT5COVER



# Split core CTs

Hazard Label

**⚠ DANGER**

**HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E in the USA, CSA Z462 or applicable local standards.
- Turn off all power supplying this device and the equipment in which it is installed before working on the device or equipment.
- Always use a properly rated voltage sensing device to confirm that all power is off.
- Treat I/O wiring connected to multiple devices as hazardous live until determined otherwise.
- Do not exceed the device's ratings for maximum limits.
- Do not use this device for critical control or protection applications where human or equipment safety relies on the operation of the control circuit.
- Disconnect all the device's input and output wires before performing dielectric (hi-pot) or Megger testing.

**CT DAMAGE**

- Never open circuit a current transformer (CT)
- Do not open the CT case.
- Do not attempt to repair any components of the CT.

**Failure to follow these instructions will result in death or serious injury.**

| Common characteristics              | Cable CT   | Bus Bar CT   |
|-------------------------------------|--|--|
| Secondary current Is (A)            | 5 A  | 5 A  |
| Maximum voltage rating Ue (V)       | 720 V  | 720 V  |
| Frequency (Hz)                      | 50/60 Hz   | 50/60 Hz   |
| Safety factor (sf)                  | up to 1000 A: sf ≤ 5<br>greater than 1000 A:<br>sf ≤ 10  | up to 1500 A: sf ≤ 5<br>greater than 1500 A:<br>sf ≤ 10  |
| Degree of protection                | IP20   | IP20   |
| Operating temperature               | -5°C to +50°C<br>relative humidity 5-85 %                | -5°C to +40°C<br>relative humidity 5-85 %                |
| Storage temperature                 | -25°C to +70°C   | -25°C to +70°C   |
| Compliance with standards           | IEC 61869-1<br>IEC 61869-2                               | IEC 61869-1<br>IEC 61869-2                               |
| Secondary connection (as per model) | by terminals for lug<br>by tunnel terminals<br>by screws | by terminals for lug<br>by tunnel terminals<br>by screws |

| Split core CT |  |  |
|---------------|--|--|
| CT internal   | Type H   | Type G   |
|               | <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px; margin-right: 5px;">FFC</div> <div> <p><b>HA HD HG</b></p> <p><b>HJ HP</b></p> </div> </div> | <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px; margin-right: 5px;">FFV2</div> <div> <p><b>GA GD</b></p> <p><b>GG GJ</b></p> </div> </div> |
|               | <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px; margin-right: 5px;">FFHM</div> <div> <p><b>HM</b></p> </div> </div>                          |  |

# Split core CTs



PB119862

METSECT5GA●●●



PB119864

METSECT5GD●●●



PB119866

METSECT5GG●●●



PB119868

METSECT5GJ●●●

## Type G - split core current transformers (bus bar)

|           | Accuracy class |      |      | CT window<br>dimension (mm) | Rating<br>Ip/5A (A) | Commercial<br>Reference no. |
|-----------|----------------|------|------|-----------------------------|---------------------|-----------------------------|
|           | 0.5            | 1    | 3    |                             |                     |                             |
| <b>GA</b> |                |      |      |                             |                     |                             |
|           | -              | -    | 1.25 | 23 x 33                     | 100                 | METSECT5GA010               |
|           | -              | -    | 1.5  |                             | 150                 | METSECT5GA015               |
|           | -              | -    | 2.5  |                             | 200                 | METSECT5GA020               |
|           | -              | 1.5  | -    |                             | 250                 | METSECT5GA025               |
|           | -              | 3.75 | -    |                             | 300                 | METSECT5GA030               |
|           | 1              | -    | -    |                             | 400                 | METSECT5GA040               |
| <b>GD</b> |                |      |      |                             |                     |                             |
|           | -              | 1.5  | -    | 55 x 85                     | 250                 | METSECT5GD025               |
|           | -              | 2.5  | -    |                             | 300                 | METSECT5GD030               |
|           | 1              | -    | -    |                             | 400                 | METSECT5GD040               |
|           | 2.5            | -    | -    |                             | 500                 | METSECT5GD050               |
|           | 2.5            | -    | -    |                             | 600                 | METSECT5GD060               |
|           | 2.5            | -    | -    |                             | 750                 | METSECT5GD075               |
|           | 2.5            | -    | -    |                             | 800                 | METSECT5GD080               |
|           | 5              | -    | -    |                             | 1000                | METSECT5GD100               |
| <b>GG</b> |                |      |      |                             |                     |                             |
|           | -              | 1.5  | -    | 85 x 125                    | 250                 | METSECT5GG025               |
|           | -              | 2.5  | -    |                             | 300                 | METSECT5GG030               |
|           | -              | 2.5  | -    |                             | 400                 | METSECT5GG040               |
|           | 2.5            | -    | -    |                             | 500                 | METSECT5GG050               |
|           | 2.5            | -    | -    |                             | 600                 | METSECT5GG060               |
|           | 2.5            | -    | -    |                             | 750                 | METSECT5GG075               |
|           | 2.5            | -    | -    |                             | 800                 | METSECT5GG080               |
|           | 5              | -    | -    |                             | 1000                | METSECT5GG100               |
|           | 5              | -    | -    |                             | 1200                | METSECT5GG120               |
|           | 7.5            | -    | -    |                             | 1250                | METSECT5GG125               |
|           | 7.5            | -    | -    |                             | 1500                | METSECT5GG150               |
| <b>GJ</b> |                |      |      |                             |                     |                             |
|           | 10             | -    | -    | 85 x 165                    | 1000                | METSECT5GJ100               |
|           | 10             | -    | -    |                             | 1200                | METSECT5GJ120               |
|           | 10             | -    | -    |                             | 1500                | METSECT5GJ150               |
|           | 10             | -    | -    |                             | 1600                | METSECT5GJ160               |
|           | 10             | -    | -    |                             | 2000                | METSECT5GJ200               |
|           | 10             | -    | -    |                             | 2500                | METSECT5GJ250               |
|           | 15             | -    | -    |                             | 3000                | METSECT5GJ300               |
|           | 15             | -    | -    |                             | 4000                | METSECT5GJ400               |

See your Schneider Electric representative for complete ordering information.

# Split core CTs contd.



PB119870

METSECT5HA●●●



PB119872

METSECT5HD●●●



PB119874

METSECT5HG●●●



PB119876

METSECT5HJ●●●



PB119878

METSECT5HM●●●



PB119880

METSECT5HP●●●

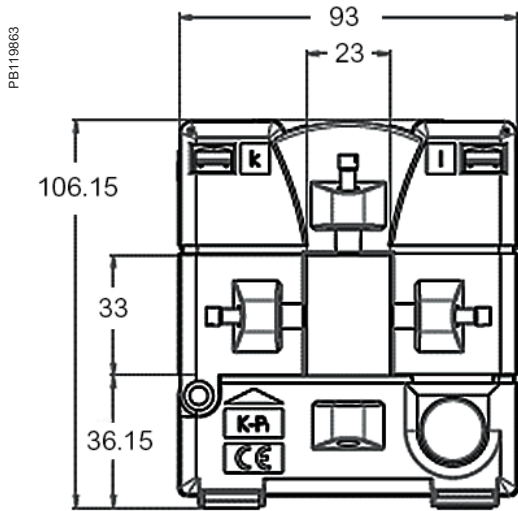
| Type H - split core current transformers (cable) |                |     |     |                          |                  |                          |
|--|----------------|-----|-----|--------------------------|------------------|--------------------------|
|  | Accuracy class |     |     | CT window dimension (mm) | Rating Ip/5A (A) | Commercial Reference no. |
|  | Max power (VA) |     |     |                          |                  |                          |
|  | 0.5            | 1   | 3   |                          |                  |                          |
| <b>HA</b>  |                |     |     |                          |                  |                          |
|  | -              | 1   | -   | 18.4 x 19                | 150              | METSECT5HA015            |
|  | -              | 1.5 | -   |                          | 150              | METSECT5HA020            |
|  | 1              | -   | -   |                          | 250              | METSECT5HA025            |
| <b>HD</b>  |                |     |     |                          |                  |                          |
|  | -              | 1   | -   | 27.9 x 27                | 250              | METSECT5HD025            |
|  | -              | 1.5 | -   |                          | 300              | METSECT5HD030            |
|  | -              | 2.5 | -   |                          | 400              | METSECT5HD040            |
|  | 1              | -   | -   |                          | 500              | METSECT5HD050            |
| <b>HG</b>  |                |     |     |                          |                  |                          |
|  | -              | -   | 1.5 | Ø32.5                    | 100              | METSECT5HG010            |
|  | -              | -   | 2.5 |                          | 125              | METSECT5HG013            |
|  | -              | -   | 3   |                          | 150              | METSECT5HG015            |
|  | -              | -   | 3   |                          | 200              | METSECT5HG020            |
|  | -              | -   | 3   |                          | 250              | METSECT5HG025            |
|  | -              | 2.5 | -   |                          | 300              | METSECT5HG030            |
|  | -              | 5   | -   |                          | 400              | METSECT5HG040            |
|  | -              | 5   | -   |                          | 500              | METSECT5HG050            |
|  | -              | 5   | -   |                          | 600              | METSECT5HG060            |
| <b>HJ</b>  |                |     |     |                          |                  |                          |
|  | -              | 2.5 | -   | 42.4 x 43                | 300              | METSECT5HJ030            |
|  | -              | 5   | -   |                          | 400              | METSECT5HJ040            |
|  | -              | 5   | -   |                          | 500              | METSECT5HJ050            |
|  | 2.5            | -   | -   |                          | 600              | METSECT5HJ060            |
|  | 2.5            | -   | -   |                          | 750              | METSECT5HJ075            |
|  | 2.5            | -   | -   |                          | 800              | METSECT5HJ080            |
| <b>HM</b>  |                |     |     |                          |                  |                          |
|  | -              | 2.5 | -   | 42.4 x 85                | 300              | METSECT5HM030            |
|  | -              | 5   | -   |                          | 400              | METSECT5HM040            |
|  | -              | 5   | -   |                          | 500              | METSECT5HM050            |
|  | 2.5            | -   | -   |                          | 600              | METSECT5HM060            |
|  | 2.5            | -   | -   |                          | 750              | METSECT5HM075            |
|  | 2.5            | -   | -   |                          | 800              | METSECT5HM080            |
| <b>HP</b>  |                |     |     |                          |                  |                          |
|  | -              | 1.5 | -   | Ø44                      | 250              | METSECT5HP025            |
|  | -              | 2.5 | -   |                          | 300              | METSECT5HP030            |
|  | -              | 5   | -   |                          | 400              | METSECT5HP040            |
|  | -              | 5   | -   |                          | 500              | METSECT5HP050            |
|  | -              | 5   | -   |                          | 600              | METSECT5HP060            |
|  | -              | 5   | -   |                          | 750              | METSECT5HP075            |
|  | -              | 5   | -   |                          | 800              | METSECT5HP080            |
|  | -              | 5   | -   |                          | 1000             | METSECT5HP100            |

See your Schneider Electric representative for complete ordering information.

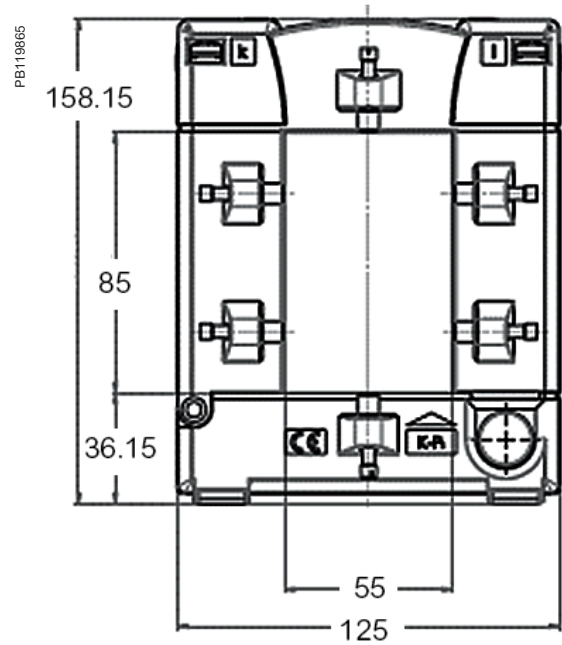
# Split core CT dimensions

## Gx products

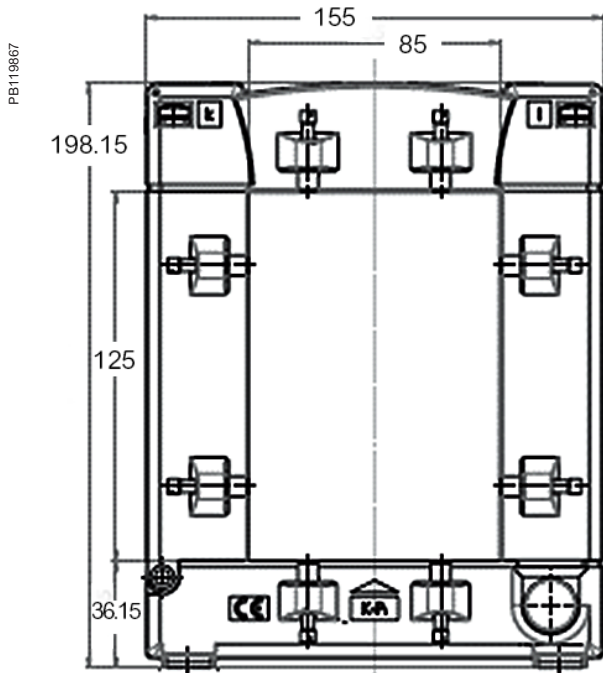
GA Dimensions



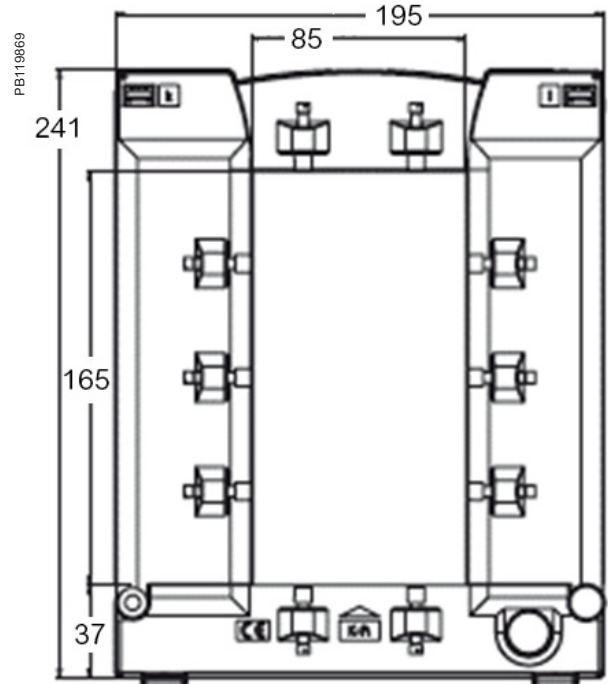
GD Dimensions



GG Dimensions



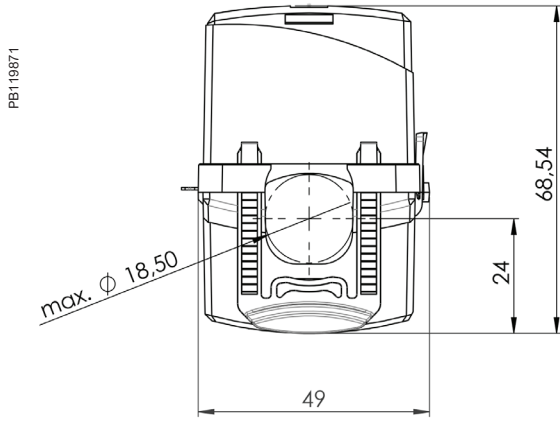
GJ Dimensions



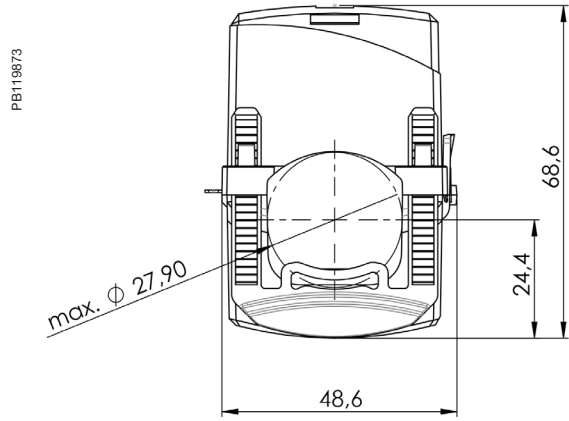
# Split core CT dimensions contd.

Hx products

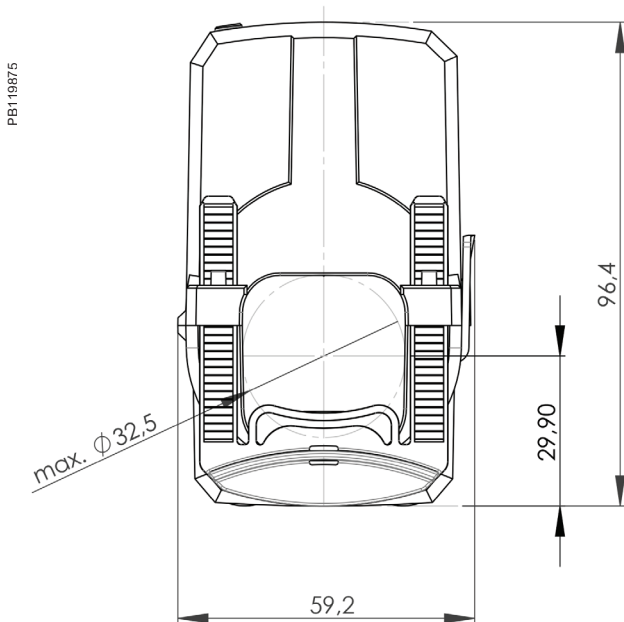
HA Dimensions



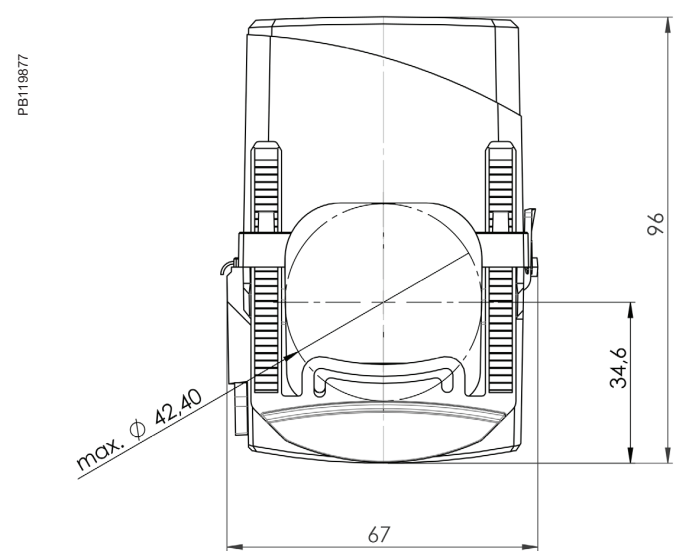
HD Dimensions



HG Dimensions

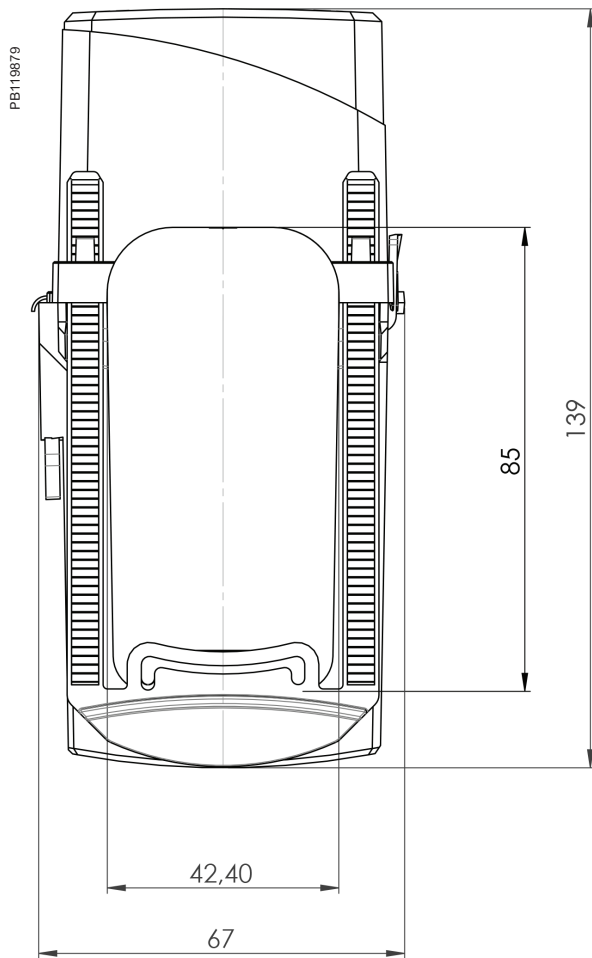


HJ Dimensions

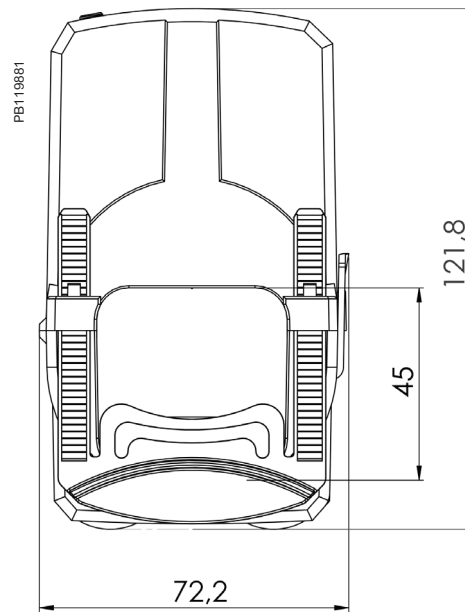


# Split core CT dimensions contd.

## HM Dimensions



## HP Dimensions



# Rogowski CTs

PB118060



METSECTR30500

| PowerLogic Rogowski Current Transformer |   |               |               |               |
|---|---|---------------|---------------|---------------|
| Main                                    | METSECTR30500   | METSECTR46500 | METSECTR60500 | METSECTR90500 |
| Range                                   | PowerLogic  |               |               |               |
| Product or component type               | Current transducer  |               |               |               |
| Accessory / part category               | Measurement accessory   |               |               |               |
| Range compatibility                     | PowerLogic EM3500 - EM3555A EM3502A EM3560 EM3550A EM3560 EM3561A<br>PowerLogic EM4200 - EM4236 EM4235<br>Acti9 iEM3000 - iEM3555 iEM3565 |               |               |               |
| Current transformer type                | Flexible core   |               |               |               |
| Complementary                           |   |               |               |               |
| Electrical connection                   | Flying lead 2.4 m 600 V AC max. voltage L-N sensed conductor  |               |               |               |
| Cable                                   | 1000 V AC UL style 21223 cable with 22 AWG leads  |               |               |               |
| Current range                           | 50 A to 5000 A  |               |               |               |
| Network frequency                       | 50/60 Hz  |               |               |               |
| Measurement accuracy                    | ±1 % from 50 A to 5000 A  |               |               |               |
| Installation category                   | 600 V AC Cat IV   |               |               |               |
| Pollution degree                        | 2   |               |               |               |
| Dimensions                              | METSECTR30500   | METSECTR46500 | METSECTR60500 | METSECTR90500 |
| CT core thickness                       | 8 mm diameter   | 8 mm diameter | 8 mm diameter | 8 mm diameter |
| CT core length (open)                   | 300 mm  | 460 mm        | 600 mm        | 900 mm        |
| Diameter (closed)                       | 96 mm   | 146 mm        | 191 mm        | 287 mm        |
| Environment                             |   |               |               |               |
| Standards                               | EN 61010-1, UL 61010-1, EN 61010-2-032, UL 61010-2-032  |               |               |               |
| Product certifications                  | CURus<br>UL recognized  |               |               |               |
| Ambient air temperature for operation   | -15 °C to 60 °C   |               |               |               |
| Ambient air temperature for storage     | -40 °C to 70 °C   |               |               |               |
| Humidity range                          | 0 to 95 % non-condensing  |               |               |               |
| Altitude                                | 2000 m max  |               |               |               |
| Protection degree                       | IP67  |               |               |               |
| Commercial Reference Numbers            |   |               |               |               |
| <b>METSECTR25500</b>                    | Powerlogic - Rogowski current transformer, 250 mm CT core length, 80 mm dia. CT, rope, 600 V AC, 5 kA                                     |               |               |               |
| <b>METSECTR30500</b>                    | Powerlogic - Rogowski current transformer, 300 mm CT core length, 96 mm dia. CT, rope, 600 V AC, 5 kA                                     |               |               |               |
| <b>METSECTR46500</b>                    | Powerlogic - Rogowski current transformer, 460 mm CT core length, 146 mm dia. CT, rope, 600 V AC, 5 kA                                    |               |               |               |
| <b>METSECTR60500</b>                    | Powerlogic - Rogowski current transformer, 600 mm CT core length, 191 mm dia. CT, rope, 600 V AC, 5 kA                                    |               |               |               |
| <b>METSECTR90500</b>                    | Powerlogic - Rogowski current transformer, 900 mm CT core length, 287 mm dia. CT, rope, 600 V AC, 5 kA                                    |               |               |               |

# Panel instruments

Schneider Electric panel instruments reliably comply with the most stringent standards, including IEC, MID, UL, etc., and we thoroughly test all products with recognized, third-party laboratories.

Our products are simple to install, configure, and use. This saves our partners time and money and lets them deliver the best solutions in a timely and cost-effective manner.

Whatever the size or type of application, the PowerLogic™ product line is an integral part of smart panels.

DB119006  
PB112024  
PB101118



16029



15202



16003



iAMP.



16029



iVLT.



16061

### Function

#### iAMP

Ammeters measure the current flowing through an electric circuit in amps.

#### iVLT

Voltmeters measure the potential (voltage) difference of an electric circuit in volts.

### Common technical data

- Accuracy: Class 1.5
- Complies with standards IEC 60051-1, IEC 61010-1 and IEC 61000-4
- Ferromagnetic device
- Pseudo-linear scale over 90°
- Ammeters (except catalog number 16029):
  - connection on CT, ratio  $I_n/5$ , to be ordered separately interchangeable dials
- Temperature:
  - operating temperature: -25 °C to 55 °C
  - reference temperature: 23 °C
- Influence of temperature on accuracy:  $\pm 0.03 \text{ \%}/^\circ\text{C}$
- Utilisation frequency: 50 Hz to 60 Hz
- Consumption:
  - AMP: 1.1 VA
  - VLT catalog number 15060: 2.5 VA
  - VLT catalog number 16061: 3.5 VA
- Permanent overload:
  - AMP: 1.2  $I_n$
  - VLT: 1.2  $U_n$
- Maximum overload for 5 s:
  - AMP: 10  $I_n$
  - VLT: 2  $U_n$
- Connection: tunnel terminals for 1.5 to 6 mm<sup>2</sup> rigid cables

### Commercial reference numbers

| Type                                  | Scale    | Connection with CT | Width in mod. of 9 mm | Comm. ref. no. |
|---------------------------------------|----------|--------------------|-----------------------|----------------|
| iAMP with direct connection           |          |                    |                       |                |
|                                       | 0-30 A   | no                 | 8                     | 16029          |
| iAMP with connection on CT            |          |                    |                       |                |
| Basic device (delivered without dial) |          | X/5                | 8                     | 16030          |
| Dial                                  | 0-5 A    |                    |                       |                |
|                                       | 0-50 A   | 50/5               |                       | 16032          |
|                                       | 0-75 A   | 75/5               |                       | 16033          |
|                                       | 0-100 A  | 100/5              |                       | 16034          |
|                                       | 0-150 A  | 150/5              |                       | 16035          |
|                                       | 0-200 A  | 200/5              |                       | 16036          |
|                                       | 0-250 A  | 250/5              |                       | 16037          |
|                                       | 0-300 A  | 300/5              |                       | 16038          |
|                                       | 0-400 A  | 400/5              |                       | 16039          |
|                                       | 0-500 A  | 500/5              |                       | 16040          |
|                                       | 0-600 A  | 600/5              |                       | 16041          |
|                                       | 0-800 A  | 800/5              |                       | 16042          |
|                                       | 0-1000 A | 1000/5             |                       | 16043          |
|                                       | 0-1500 A | 1500/5             |                       | 16044          |
|                                       | 0-2000 A | 2000/5             |                       | 16045          |
| iVLT                                  |          |                    |                       |                |
|                                       | 0-300 V  |                    | 8                     | 16060          |
|                                       | 0-500 V  |                    | 8                     | 16061          |

See your Schneider Electric representative for complete ordering information.



iAMP.



iVLT.



iFRE.

### Function

#### iAMP

Ammeters measure in amps the current flowing through an electric circuit.

#### iVLT

Voltmeters measure in volts the potential (voltage) difference of an electric circuit.

#### iFRE

Frequency meters measure in hertz the frequency of an electric circuit from 20 to 600 V AC.

### Common technical data

- Supply voltage: 230 V AC
- Operating frequency: 50 Hz to 60 Hz
- Display by red LED: 3 digits, h = 8 mm (0.31 in)
- Accuracy at full-scale : 0.5 % ±1 digit.
- Consumption: max. 5 VA or rated 2.5 VA
- Degree of protection:
  - IP40 on front face
  - IP20 at terminal level
- Connection: tunnel terminals for 2.5 mm<sup>2</sup> cables

### Specific data

#### 10 A direct reading ammeter

- Minimum value measured: 4 % of rating
- Measurement input consumption: 1 VA

#### Multi-rating ammeter

- Ratings:
  - in direct reading: 5 A
  - by CT (not supplied) configurable on the front face of the ammeter: 10, 15, 20, 25, 40, 50, 60, 100, 150, 200, 250, 400, 500, 600, 800, 1000, 1500, 2000, 2500, 4000, 5000 A
- Minimum value measured: 4 % of rating
- Measurement input consumption: 0.55 VA

#### Voltmeter

- Direct measurement: 0...600 V AC
- Input impedance: 2 MW
- Minimum value measured: 4 % of rating

#### Frequency meter

- Minimum value measured: 20 Hz
- Maximum value measured: 100 Hz
- Full-scale display: 99.9 Hz

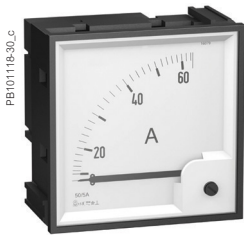
#### Compliance with standards

- Safety: IEC/EN 61010-1
- EMC electromagnetic compatibility: IEC/EN 65081-1 and IEC/EN 65082-2

### Commercial reference numbers

| Type                | Scale     | Connection with CT | Width in mod. of 9 mm | Comm. ref. no. |
|---------------------|-----------|--------------------|-----------------------|----------------|
| Direct reading iAMP | 0-10 A    | No                 | 4                     | 15202          |
| Multi-rating iAMP   | 0-5000 A  | As per rating      | 4                     | 15209          |
| iVLT                | 0-600 V   |                    | 4                     | 15201          |
| iFRE                | 20-100 Hz |                    | 4                     | 15208          |

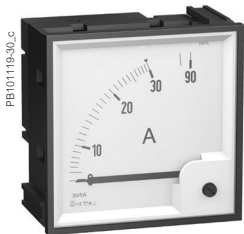
See your Schneider Electric representative for complete ordering information.



AMP for standard feeder



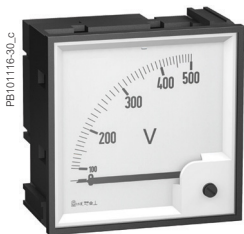
16009



AMP for motor feeder



16006



VLT



16005

### Function

The 72 x 72 measurement devices are designed for flush-mounted installation on doors, wicket doors and front plates of enclosures and cubicles.

#### AMP

The ammeters measure in amps the current flowing through an electrical circuit.

#### VLT

The voltmeter measure in volts the potential difference (voltage) of an electrical circuit.

### Common technical data

- Accuracy: Class 1.5
- Compliance with standard IEC 60051-1, IEC 61010-1 and IEC 61000-4
- Ferromagnetic device
- Scale length: 62 mm over 90°
- Mounting in enclosure or in cubicle
- Degree of protection: IP52
- Maximum operating position: 30° / vertical
- Temperature:
  - operation: -25 °C to 50 °C
  - reference: 23 °C
- Influence of temperature on accuracy: ±0.003 %/ °C
- Utilisation frequency: 50 Hz to 60 Hz

### AMP specific technical data

- Needs a In/5 CT to be ordered separately
- Interchangeable dials to be ordered separately
- Consumption: 1.1 VA
- Permanent overload: 1.2 In
- Maximum overload for 5 s: 10 In

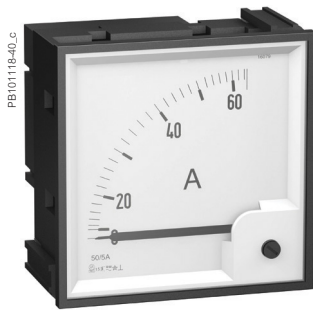
### VLT specific technical data

- Consumption: 3 VA
- Permanent overload: 1.2 Un
- Maximum overload for 5 s: 2 Un

### Commercial reference numbers

| Type                                  | Scale       | Connection on CT | Comm. ref. no. |
|---------------------------------------|-------------|------------------|----------------|
| <b>AMP for standard feeder</b>        |             |                  |                |
| Basic device (delivered without dial) |             | X/5              | 16004          |
| 1.3 In dial                           | 0-50 A      | 50/5             | 16009          |
|                                       | 0-100 A     | 100/5            | 16010          |
|                                       | 0-200 A     | 200/5            | 16011          |
|                                       | 0-400 A     | 400/5            | 16012          |
|                                       | 0-600 A     | 600/5            | 16013          |
|                                       | 0-1000 A    | 1000/5           | 16014          |
|                                       | 0-1250 A    | 1250/5           | 16015          |
|                                       | 0-1500 A    | 1500/5           | 16016          |
|                                       | 0-2000 A    | 2000/5           | 16019          |
| <b>AMP for motor feeder</b>           |             |                  |                |
| Basic device (delivered without dial) |             | X/5              | 16003          |
| 3 In dial                             | 0-30-90 A   | 30/5             | 16006          |
|                                       | 0-75-225 A  | 75/5             | 16007          |
|                                       | 0-200-600 A | 200/5            | 16008          |
| <b>VLT</b>                            |             |                  |                |
|                                       | 0-500 V     |                  | 16005          |

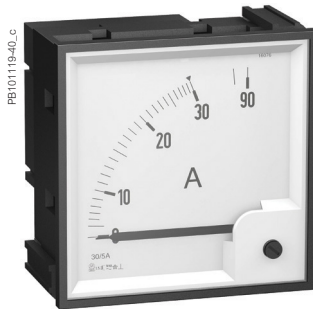
See your Schneider Electric representative for complete ordering information.



AMP for standard feeder



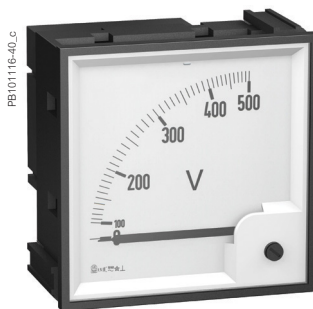
16079



AMP for motor feeder



16076



VLT



16075

### Function

The 96 x 96 measurement devices are designed for flush-mounted installation on doors, wicket doors and front plates of enclosures and cubicles.

#### AMP

The ammeters measure in amps the current flowing through an electrical circuit.

#### VLT

The voltmeter measure in volts the potential difference (voltage) of an electrical circuit.

### Common technical data

- Accuracy: class 1.5
- Compliance with standard IEC 60051-1, IEC 61010-1 and IEC 61000-4
- Ferromagnetic device
- Scale length: 80 mm over 90°
- Mounting in enclosure or in cubicle
- Degree of protection: IP52
- Maximum operating position: 30° / vertical
- Temperature:
  - operation: -25 °C to 50 °C
  - reference: 23 °C
- Influence of temperature on accuracy: ±0.003 % / °C
- Utilisation frequency: 50 Hz to 60 Hz

### AMP specific technical data

- Needs a In/5 CT to be ordered separately
- Interchangeable dials to be ordered separately
- Consumption: 1.1 VA
- Permanent overload: 1.2 In
- Maximum overload for 5S: 10 In

### VLT specific technical data

- Consumption: 3 VA
- Permanent overload: 1.2 Un
- Maximum overload for 5S: 2 Un

### Commercial reference numbers

| Type                                  | Scale       | Connection on CT | Comm. ref. no. |
|---------------------------------------|-------------|------------------|----------------|
| <b>AMP for standard feeder</b>        |             |                  |                |
| Basic device (delivered without dial) |             | X/5              | 16074          |
| 1.3 In dial                           | 0-50 A      | 50/5             | 16079          |
|                                       | 0-100 A     | 100/5            | 16080          |
|                                       | 0-200 A     | 200/5            | 16081          |
|                                       | 0-400 A     | 400/5            | 16082          |
|                                       | 0-600 A     | 600/5            | 16083          |
|                                       | 0-1000 A    | 1000/5           | 16084          |
|                                       | 0-1250 A    | 1250/5           | 16085          |
|                                       | 0-1500 A    | 1500/5           | 16086          |
|                                       | 0-2000 A    | 2000/5           | 16087          |
|                                       | 0-2500 A    | 2500/5           | 16088          |
|                                       | 0-3000 A    | 3000/5           | 16089          |
|                                       | 0-4000 A    | 4000/5           | 16090          |
|                                       | 0-5000 A    | 5000/5           | 16091          |
|                                       | 0-6000 A    | 6000/5           | 16092          |
| <b>AMP for motor feeder</b>           |             |                  |                |
| Basic device (delivered without dial) |             | X/5              | 16073          |
| 3 In dial                             | 0-30-90 A   | 30/5             | 16076          |
|                                       | 0-75-225 A  | 75/5             | 16077          |
|                                       | 0-200-600 A | 200/5            | 16078          |
| <b>VLT</b>                            |             |                  |                |
|                                       | 0-500 V     |                  | 16075          |

See your Schneider Electric representative for complete ordering information.

### Function

The 48 x 48 selector switches are designed for flush-mounted installation on doors, wicket doors and front plates of enclosures and cubicles.

#### CMA

The ammeter selector switch uses a single ammeter (by means of current transformers) for successive measurement of the currents of a three-phase circuit.

#### CMV

The voltmeter selector switch uses a single voltmeter for successive measurement of the voltages (phase-to-phase and phase-to-neutral) of a three-phase circuit.

### Common technical data

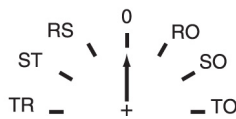
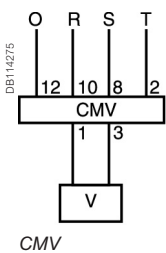
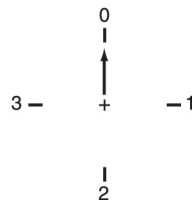
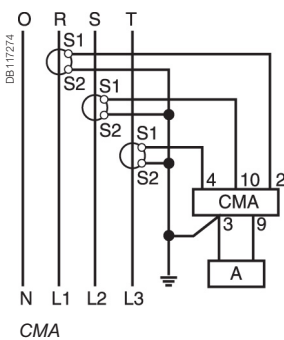
- Durability:
  - electrical: 100,000 operations
  - mechanical: 2,000,000 operations
- AgNi contact
- Operating temperature: -25 °C to 50 °C
- Compliance with standards IEC/EN 60947-3
- Degree of protection:
  - IP65 on front face
  - IP20 at terminal level

### Commercial reference numbers

| Type | Rating (A) | Voltage (V) | Number of positions | Comm. ref. no. |
|------|------------|-------------|---------------------|----------------|
| CMA  | 20         |             | 4                   | 16017          |
| CMV  |            | 500         | 7                   | 16018          |

See your Schneider Electric representative for complete ordering information.

### Connection



Reading 3 phase-to-earth voltages + 3 phase-to-phase voltages.

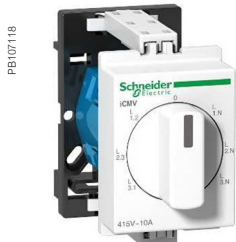
Note: when connecting do not remove the pre-cabling.

See appropriate Installation Guide for this product.



15126

iCMA



15125

iCMV

### Function

#### iCMA

This 4-position ammeter selector switch uses a single ammeter (using current transformers) for successive measurement of the currents of a three-phase circuit.

#### iCMV

This 7-position voltmeter selector switch uses a single voltmeter for successive measurement of voltages (phase-to-phase and phase-to-neutral) of a three-phase circuit.

### Common technical data

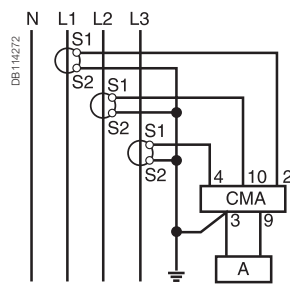
- Rotary handle
- Maximum operating voltage: 440 V, 50/60 Hz
- Nominal thermal current: 10 A
- Operating temperature: -20 °C to 55 °C
- Storage temperature: -25°C to 80°C
- Mechanical durability (AC21A-3 x 440 V): 2,000,000 operations
- Degree of protection:
  - IP66 on front face
  - IP20 at terminal level
- Electrical durability: 1,000,000 operations
- Connection: jumper terminals with captive screws, for cables up to 1.5 mm<sup>2</sup>
- Complies with standards: IEC/EN 60947-3

### Commercial reference numbers

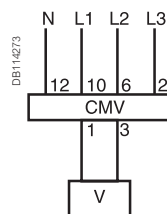
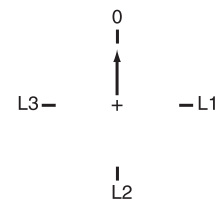
| Type | Rating (A) | Voltage (V AC) | Width in mod. of 9 mm | Comm. ref. no. |
|------|------------|----------------|-----------------------|----------------|
| iCMA | 10         | 415            | 4                     | 15126          |
| iCMV | 10         | 415            | 4                     | 15125          |

See your Schneider Electric representative for complete ordering information.

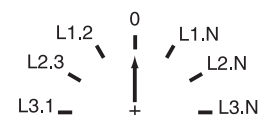
### Connection



iCMA



iCMV



See appropriate Installation Guide for this product.



15440

iCH "DIN"



15607

CH "48 x 48"

### Function

Electromechanical counter that counts the operating hours of a machine or piece of electrical equipment. Giving a precise indication of operating time, the counter is used to decide when to carry out preventive maintenance.

### Common technical data

- Electromechanical display.
- Maximum display: 99999.99 hours.
- Display accuracy: 0.01 %.
- Without reset.
- Storage temperature: -25 °C to 85 °C.
- Connection: tunnel terminals for 2.5 mm<sup>2</sup> cable.

### Specific technical data

#### iCH "DIN"

- Consumption: 0.15 VA.
- Operating temperature: -10 °C to 70 °C.
- Mounting on DIN rail.

#### CH "48 x 48"

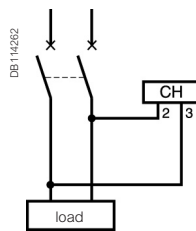
- Consumption:
  - 15607: 0.25 VA
  - 15608: 0.15 VA
  - 15609: 0.02 VA to 12 V and 0.3 VA to 36 V.
- Operating temperature: -20 °C to 70 °C.
- Degree of protection: IP65 on front face.
- Mounting on front face of monitoring switchboards.

### Commercial reference numbers

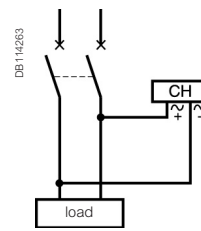
| Type         | Voltage (V)           | Width in mod. of 9 mm | Comm. ref. no. |
|--------------|-----------------------|-----------------------|----------------|
| iCH "DIN"    | 230 V AC ± 10 %/50 Hz | 4                     | 15440          |
| CH "48 x 48" | 24 V AC ± 10 %/50 Hz  |                       | 15607          |
|              | 230 V AC ± 10 %/50 Hz |                       | 15608          |
|              | 12 to 36 V DC         |                       | 15609          |

See your Schneider Electric representative for complete ordering information.

### Connection



iCH "DIN".



CH "48 x 48".

See appropriate Installation Guide for this product.



15443

iCI impulse counter

### Function

Electromechanical counter designed to count impulses emitted by: kilowatt-hour meters, temperature overrun detectors, people meters, speed meters, etc.

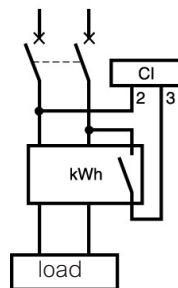
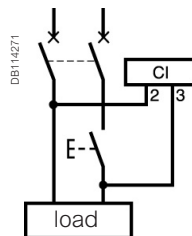
### Common technical data

- Supply and metering voltage: 230 V AC ± 10 %, 50/60 Hz
- Consumption: 0.15 VA
- Maximum display: 9 999 999 impulses
- Without reset
- Metering data:
  - minimum impulse time: 50 ms
  - minimum time between 2 impulses: 50 ms
- Storage temperature: -25 °C to 85 °C
- Operating temperature: -10 °C to 70 °C
- Connection: tunnel terminals for 2.5 mm<sup>2</sup> cable

### Commercial reference numbers

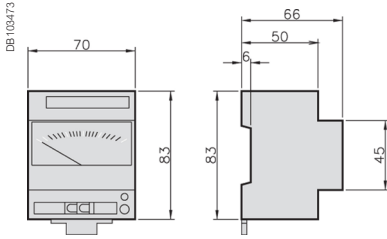
| Type | Width in mod. of 9 mm | Comm. ref. no. |
|------|-----------------------|----------------|
| iCI  | 4                     | 15443          |

### Connection

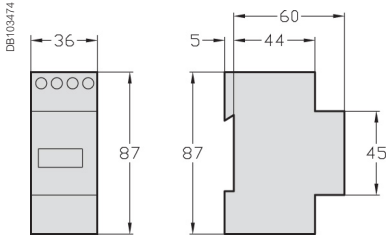


See appropriate Installation Guide for this product.

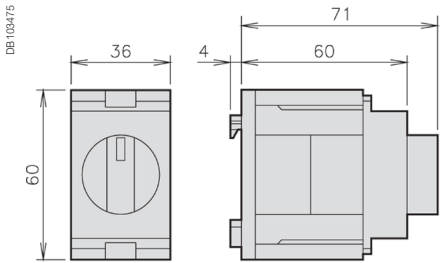
Analog ammeters and voltmeters iAMP, iVLT



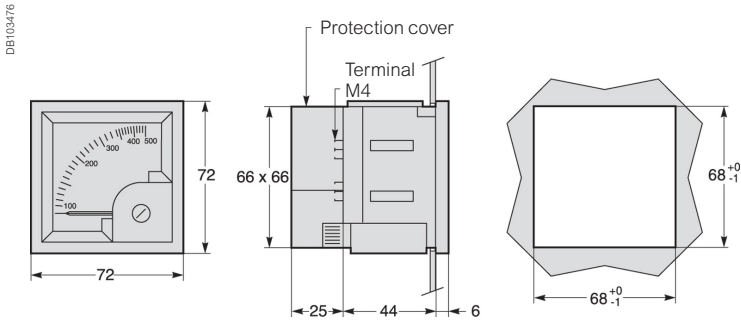
Digital ammeters, voltmeter and frequency meter iAMP, iVLT



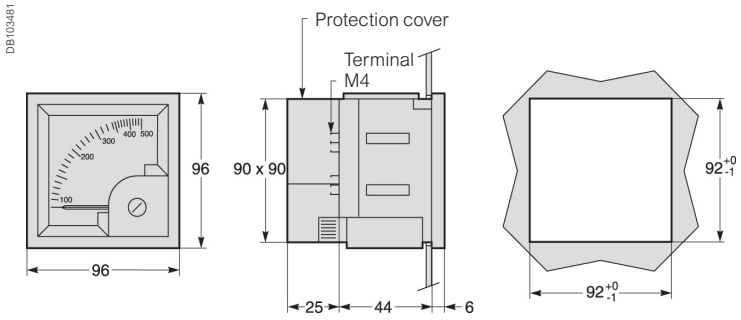
iCMA and iCMV selector switches



72 x 72 analog ammeters and voltmeter

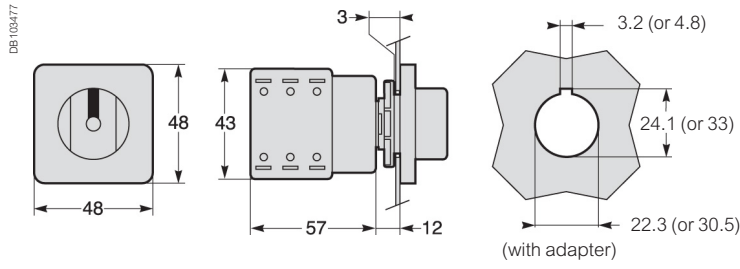


96 x 96 analog ammeters and voltmeter

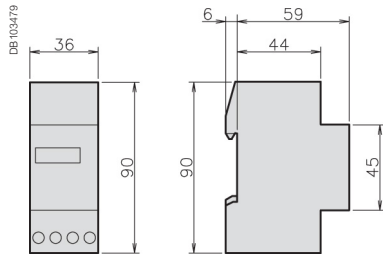


See the appropriate Installation Guide for this product.

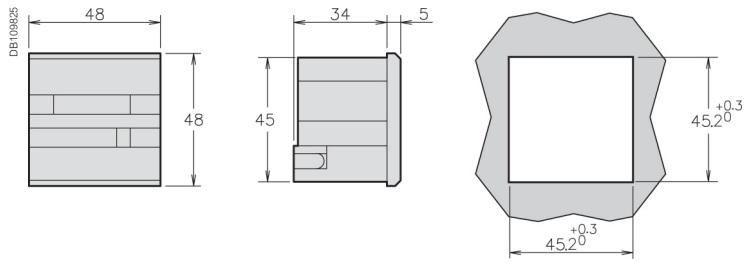
48 x 48 CMA and CMV selector switches



iCI impulse counter and iCH hour counter



48 x 48 CH hour counters



See the appropriate Installation Guide for this product.

# Basic energy metering

Basic energy meters comply with a variety of applications: single-phase or three-phase circuits, basic kWh meters for elementary applications, to full-featured, dual tariff energy meters and power metering for network monitoring applications. Data is visible locally or accessible remotely. Wireless communication energy sensors with compact design allow to optimize panel size.

- PowerLogic iEM2000 series
- PowerLogic iEM2100 series
- PowerLogic iEM3000 series
- PowerLogic PM3000 series
- PowerLogic PowerTag Energy series



A9MEM2000



A9MEM2100



A9MEM3100



A9MEM2000



A9MEM1521

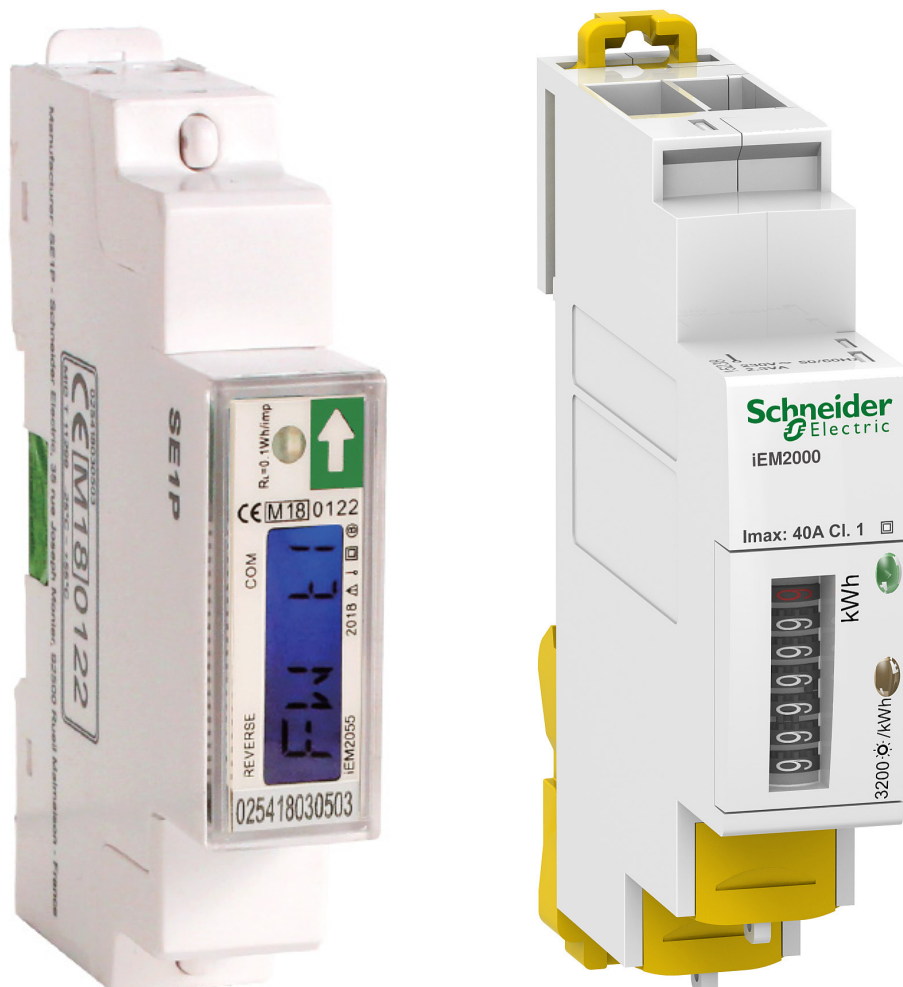
# Acti9 iEM2000 Series

The Acti9 iEM2000 series energy meters offer a cost-attractive, competitive range of single-phase DIN rail-mounted energy meters ideal for sub-billing and cost allocation applications.

## Applications

- Monitor power consumption for each floor, office sector, or unit
- Allocate energy cost to lower cost of operations, optimise your building's power efficiency
- Connect to power management software to take full advantage of the IoT digital power installation

PB105289


[A9MEM2000](#)

The solution for:

All markets that can benefit from a solution that includes PowerLogic iEM2000 series meters:

- Buildings
- Industry
- Data Centre & networks
- Infrastructures (airport, road tunnels, telecom).

Benefits

The Acti9 iEM2000 series meters are economical and easy to install in panelboards and switchboards:

- DIN rail mounted, compact size
- Accurate data measurement with Class 1 accuracy

Advantages

- Active energy Class 1 accuracy, with LCD display
- Modbus RS-485 and pulse output
- Direct connect, self-powered
- MID approved
- Two tariffs

Energy management system:

To get the most effective use from your Schneider Electric measurement and metering devices, we offer a range of dedicated data loggers and gateways for your building energy management.

Conformity of standards

- IEC 62053-21
- EN 50470-3

iEM2000 feature selection

|                             | iEM2000T                | iEM2000  | iEM2010  | iEM2050                 | iEM2055  |
|-----------------------------|-------------------------|--|--|-------------------------|--|
| Self-powered                | ■                       | ■  | ■  | ■                       | ■  |
| Display                     |                         | ■  | ■  | ■<br>(6 digit LCD)      | ■<br>(6 digit LCD)                               |
| Width (mm)                  | 18                      | 18   | 18   | 17.5                    | 17.5   |
| Current input               | 40 A                    | 40 A   | 40 A   | 45 A                    | 45 A   |
| Multi-tariff                |                         |  |  | 2 tariffs               | 2 tariffs  |
| Communication               |                         |  |  | Modbus                  | Modbus   |
| Active Energy accuracy      | Class 1<br>IEC 62053-21 | Class 1<br>IEC 62053-21<br>Class B<br>EN 50470-3 | Class 1<br>IEC 62053-21<br>Class B<br>EN 50470-3 | Class 1<br>IEC 62053-21 | Class 1<br>IEC 62053-21<br>Class B<br>EN 50470-3 |
| Digital outputs             | 1 P/O                   |  | 1 P/O  | 1 P/O                   | 1 P/O  |
| MID for billing application |                         | ■  | ■  |                         | ■  |
| Commercial reference number | A9MEM2000T              | A9MEM2000  | A9MEM2010  | A9MEM2050               | A9MEM2055  |

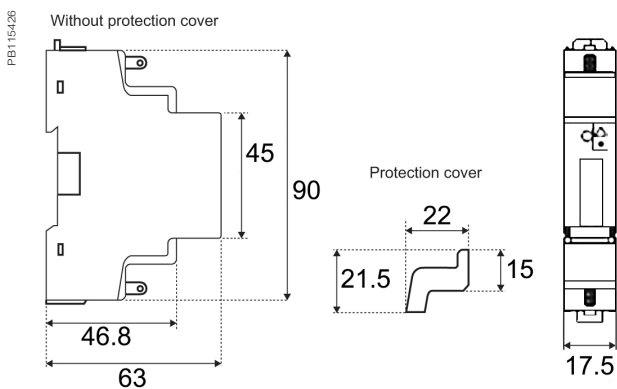
See your Schneider Electric representative for complete ordering information.

# iEM2000 series technical specifications

## Technical specifications

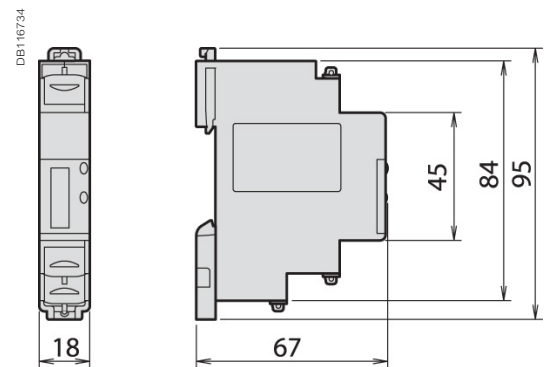
|                                  | iEM2000T                         | iEM2000          | iEM2010          | iEM2050  | iEM2055          |
|----------------------------------|----------------------------------|------------------|------------------|--|------------------|
| COMM reference number            | <b>A9MEM2000T</b>                | <b>A9MEM2000</b> | <b>A9MEM2010</b> | <b>A9MEM2050</b>   | <b>A9MEM2055</b> |
| Direct connection                | Up to 40 A                       | Up to 40 A       | Up to 40 A       | Up to 45 A   | Up to 45 A       |
| Pulse output operation           | 100 pulses/kwh (120ms long)      |                  |                  | 10000, 2000, 1000, 100, 10, 1, 0.1, 0.01 pulses/kWh        |                  |
| Display capacity                 | 999999.9 kWh                     |                  |                  | 9999.99 kWh<br>(switching to 99999.9 when over this value) |                  |
| Voltage range (L-N)              | 184 to 276 V AC                  |                  |                  | 195 to 253 V AC  |                  |
| Operating frequency              | 50/60 Hz                         |                  |                  | 50 Hz  |                  |
| Meter constant LED               | 3200 flashes per kWh             |                  |                  | 10000 flashes per kWh                                      |                  |
| Wiring capacity (Power)          | 4 mm <sup>2</sup>                |                  |                  | 2.5 mm <sup>2</sup>  |                  |
| Wiring capacity (Communications) | 10 mm <sup>2</sup>               |                  |                  | 8-10 mm <sup>2</sup>                                       |                  |
| Consumption                      | <10 VA                           |                  |                  |  |                  |
| IP protection                    | IP40 front panel and IP20 casing |                  |                  | IP51 front panel   |                  |
| Temperature                      | -10°C to 55°C                    |                  |                  | -25°C to 55°C  |                  |
| Active energy                    | ■                                | ■                | ■                | ■  | ■                |
| Reactive energy                  |                                  |                  |                  | ■  | ■                |
| Active power                     |                                  |                  |                  | ■  | ■                |
| Reactive power                   |                                  |                  |                  | ■  | ■                |
| Power Factor                     |                                  |                  |                  | ■  | ■                |
| Current and voltage              |                                  |                  |                  | ■  | ■                |
| Frequency                        |                                  |                  |                  | ■  | ■                |

### iEM2050/iEM2055 dimensions



Maximum diameter power connection clamps 8 mm<sup>2</sup> (solid copper). See the appropriate product Installation Guide for complete instructions.

### iEM2000 dimensions



Maximum diameter power connection clamps 8 mm<sup>2</sup> (solid copper). See the appropriate product Installation Guide for complete instructions.

# Acti9 iEM2100 Series

The Acti9 iEM2100 series energy meters are ideal for basic kWh metering and billing applications and support two protocols (Modbus and M-bus) that allow them to integrate seamlessly into your customers' existing networks.

## Applications

- Monitor the power consumption of each sector, unit, workshop...
- Manage an electrical installation and optimise your building's power efficiency
- Various business, industrial and residential applications

PE119059



A9MEM2100

### The solution for

All markets that can benefit from a solution that includes PowerLogic iEM2100 series meters:

- Buildings
- Industry
- Data Centre & networks
- Infrastructures (airport, road tunnels, telecom).

### Benefits

The Acti9 iME kilowatt-hour meters are specially economic and easy to install in all switchboards.

### Competitive advantages

- Compact size
- MID compliant (selected models) providing certified accuracy and data security
- Four quadrant measurement
- Electrical parameter measurement eg. V, I, P, PF
- Onboard Modbus or M-bus communication
- A complete range of energy meters
- Compatible with Acti9 range

### Energy management system:

To get the most effective use from your Schneider Electric measurement and metering devices, we offer a range of dedicated data loggers and gateways for your building energy management.

### Conformity of standards

- IEC 62052-11
- IEC 62053-21
- IEC 62053-23
- EN 50470-1
- EN 50470-3

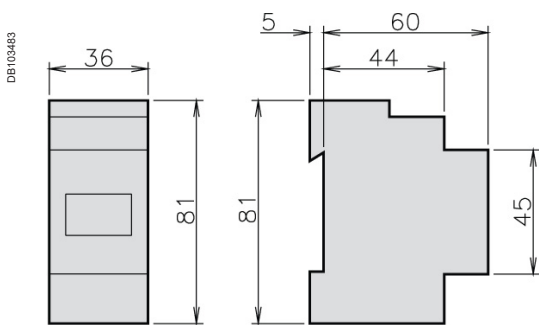
### iEM2100 feature selection

|                                  | iEM2100          | iEM2105          | iEM2110              | iEM2135              | iEM2150          | iEM2155              |
|----------------------------------|------------------|------------------|----------------------|----------------------|------------------|----------------------|
| Self-powered                     | ■                | ■                | ■                    | ■                    | ■                | ■                    |
| Display                          | ■                | ■                | ■                    | ■                    | ■                | ■                    |
| Width (mm)                       | 36               | 36               | 36                   | 36                   | 36               | 36                   |
| Current input                    | 63 A             | 63 A             | 63 A                 | 63 A                 | 63 A             | 63 A                 |
| Active Energy accuracy           | Class 1          | Class 1          | Class 1              | Class 1              | Class 1          | Class 1              |
| Reactive Energy accuracy         | Class 2          | Class 2          | Class 2              | Class 2              | Class 2          | Class 2              |
| Four quadrant Energy measurement |                  |                  | ■                    | ■                    | ■                | ■                    |
| Multi-tariff                     |                  |                  | 2                    | 2                    |                  | 2                    |
| Digital inputs                   |                  |                  | 1 (tariff switching) | 1 (tariff switching) |                  | 1 (tariff switching) |
| Digital outputs                  |                  | 1 P/O            | 2 P/O's              |                      |                  |                      |
| Communication protocol           |                  |                  |                      | M-bus                | Modbus RS-485    | Modbus RS-485        |
| MID for billing application      |                  |                  | ■                    | ■                    |                  | ■                    |
| Commercial reference number      | <b>A9MEM2100</b> | <b>A9MEM2105</b> | <b>A9MEM2110</b>     | <b>A9MEM2135</b>     | <b>A9MEM2150</b> | <b>A9MEM2155</b>     |

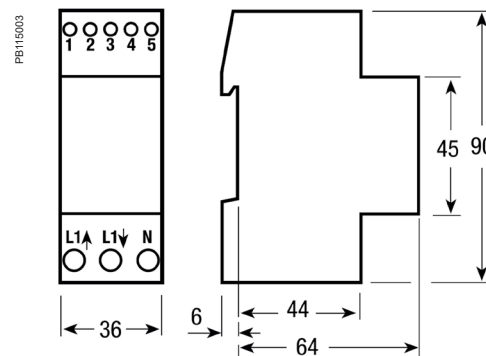
# Acti9 iEM2100 series technical specifications

| Technical specifications |   |                          |  |         |         |         |
|--------------------------|---|--------------------------|--|---------|---------|---------|
|                          | iEM2100   | iEM2105                  | iEM2110  | iEM2135 | iEM2150 | iEM2155 |
| Direct connection        | 63 A  | 63 A                     | 63 A   | 63 A    | 63 A    | 63 A    |
| Pulse output operation   |   | 1 pulse/kwh (200ms long) | 1 to 1000 pulses / kwh or kvarh (30 to 100ms long) |         |         |         |
| Display capacity         | 99999 KWh or 999.99 MWh                                 |                          | 999999.99KWh                                       |         |         |         |
| Voltage range (L-N)      | 184 to 276 V AC   |                          | 92 to 276 V AC                                     |         |         |         |
| Operating frequency      | 50/60 Hz  |                          |  |         |         |         |
| Meter constant LED       | 1000 flashes per KWh                                    |                          |  |         |         |         |
| Wiring capacity (Top)    | 6 mm <sup>2</sup>                                       |                          | 4 mm <sup>2</sup>                                  |         |         |         |
| Wiring capacity (Bottom) | 32 mm <sup>2</sup> (16 mm <sup>2</sup> iEM2100/iEM2105) |                          |  |         |         |         |
| Consumption              | 2.5 VA  |                          | 3 VA   |         |         |         |
| IP protection            | IP40 front panel and IP20 casing                        |                          |  |         |         |         |
| Temperature              | -25°C to 55°C   |                          |  |         |         |         |
| Active energy            | ■   | ■                        | ■  | ■       | ■       | ■       |
| Reactive energy          |   |                          | ■  | ■       | ■       | ■       |
| Active power             |   |                          | ■  | ■       | ■       | ■       |
| Reactive power           |   |                          | ■  | ■       | ■       | ■       |
| Power Factor             |   |                          | ■  | ■       | ■       | ■       |
| Current and voltage      |   |                          | ■  | ■       | ■       | ■       |
| Frequency                |   |                          | ■  | ■       | ■       | ■       |

iEM2100/iEM2105 dimensions



iEM2110/iEM2135/iEM2150/iEM2155 dimensions



See the appropriate product Installation Guide for complete instructions.

## iEM2000 and iEM2100 series commercial reference numbers

| Comm. reference number | Product   |
|------------------------|---|
| <b>A9MEM2000T</b>      | iEM2000T basic energy meter, no display   |
| <b>A9MEM2000</b>       | iEM2000 basic energy meter  |
| <b>A9MEM2010</b>       | iEM2010 energy meter, kWh pulse output  |
| <b>A9MEM2100</b>       | iEM2100 basic energy meter  |
| <b>A9MEM2050</b>       | iEM2050 modular single phase power meter 230 V - 45 A with Modbus   |
| <b>A9MEM2055</b>       | iEM2055 modular single phase power meter 230 V - 45 A with Modbus, MID  |
| <b>A9MEM2105</b>       | iEM2105 energy meter, kWh pulse output with partial meter   |
| <b>A9MEM2110</b>       | iEM2110 energy meter, kWh and kvarh pulse outputs with two tariffs, four quadrant energy measurement, MID certified |
| <b>A9MEM2135</b>       | iEM2135 energy meter, M-Bus communication, four quadrant energy measurement, two tariffs, MID certified             |
| <b>A9MEM2150</b>       | iEM2150 energy meter, Modbus communication, four quadrant energy measurement  |
| <b>A9MEM2155</b>       | iEM2155 energy meter, Modbus communication, four quadrant energy measurement, two tariffs, MID certified            |

See your Schneider Electric representative for complete ordering information.

# Acti9 iEM3000 Series

The Acti9 iEM3000 series energy meters is a cost-attractive, feature-rich energy metering offer for DIN rail, modular enclosures. With Modbus, BACnet, M-bus and LON protocol support, you can easily integrate these meters into commercial and non-critical buildings to add simple energy management applications to any BMS, AMR or EMS system.

## Applications

### Cost management applications

- Bill checking to verify that you are only charged for the energy you use
- Sub-billing individual tenants for their energy consumption, including WAGES
- Aggregation of energy consumption, including WAGES, and allocating costs per area, per usage, per shift, or per time within the same facility

### Network management applications

- Basic metering of electrical parameters to better understand the behaviour of your electrical distribution system

PB108418



A9MEM3100

More than just kWh meters, the Acti9 iEM3000 series meters provide a full view of both energy consumption and on-site generation with full four-quadrant measurement of active and reactive energy delivered and received. Additionally, extensive real-time measurements (V, I, P, PF) give customers greater detail on their energy usage, and multiple tariffs give customers the flexibility to match the billing structure of their utility.

### The solution for

All markets that can benefit from a solution that includes PowerLogic iEM3000 series meters:

- Buildings & industry
- Data centres and networks
- Infrastructure (airports, road tunnels, telecom)

### Benefits

Optimise your energy consumption & enable energy efficiency practices

- Collect and analyse energy consumption data from each area for each type of load or circuit
- Gain an accurate understanding of business expenses by allocating the energy-related costs
- Use information to implement actions designed to reduce energy consumption

Monitor the energy consumption of your tenants or customers and establish accurate invoices

- Drive energy-efficient behaviour
- Allow building owners to bill tenants for individual measured utility usage
- Give accurate and achievable objectives for energy savings

### Competitive advantages

- Compact size
- MID compliant (selected models) providing certified accuracy and data security
- Programmable digital inputs/outputs
- Multi-tariff capability
- Onboard Modbus, LON, M-bus or BACnet communication
- A complete range of energy meters
- Compatible with Acti9 range

### Energy management system:

To get the most effective use from your Schneider Electric measurement and metering devices, we offer a range of dedicated data loggers and gateways for your building energy management.

### Conformity of standards

- |                   |              |
|-------------------|--------------|
| • IEC 61557-12    | • EN 50470-3 |
| • IEC 62053-21/22 | • EN 50470-1 |
| • IEC 62053-23    | • IEC 61036  |
|                   | • IEC 61010  |

# Acti9 iEM3000 Series

| iEM3000 feature selection                       |   | iEM3100<br>iEM3200<br>iEM3300 | iEM3110<br>iEM3210<br>iEM3310 | iEM3115<br>iEM3215 | iEM3150<br>iEM3250<br>iEM3350 | iEM3135<br>iEM3235<br>iEM3335 | iEM3155<br>iEM3255<br>iEM3355 | iEM3165<br>iEM3265<br>iEM3365 | iEM3175<br>iEM3275<br>iEM3375 |
|---|---|-------------------------------|-------------------------------|--------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Self-powered                                    |   | ■                             | ■                             | ■                  | ■                             | ■                             | ■                             | ■                             | ■                             |
| Width (18mm module)                             |   | 5/5/7                         | 5/5/7                         | 5/5                | 5/5/7                         | 5/5/7                         | 5/5/7                         | 5/5/7                         | 5/5/7                         |
| Direct measurement (up to)                      |   | 63 A/-/125 A                  | 63 A/-/125 A                  | 63 A/-             | 63 A/-/125 A                  | 63 A/-/125 A                  | 63 A/-/125 A                  | 63 A/-/125 A                  | 63 A/-/125 A                  |
| Measurement input through CTs (1A, 5A)          |   | - / ■ / -                     | - / ■ / -                     | - / ■              | - / ■ / -                     | - / ■ / -                     | - / ■ / -                     | - / ■ / -                     | - / ■ / -                     |
| Measurement input through VTs                   |   |                               |                               |                    | - / ■ / -                     | - / ■ / -                     | - / ■ / -                     | - / ■ / -                     | - / ■ / -                     |
| Active Energy measurements class                |   | 1/0.5S/1                      | 1/0.5S/1                      | 1/0.5S             | 1/0.5S/1                      | 1/0.5S/1                      | 1/0.5S/1                      | 1/0.5S/1                      | 1/0.5S/1                      |
| Four Quadrant Energy measurement                |   |                               |                               |                    |                               | ■                             | ■                             | ■                             | ■                             |
| Electrical parameter measurements (I, V, P,...) |   |                               |                               |                    | ■                             | ■                             | ■                             | ■                             | ■                             |
| Multi-tariff (internal clock)                   |   |                               |                               | 4                  |                               | 4                             | 4                             | 4                             | 4                             |
| Multi-tariff (external control)                 |   |                               |                               | 4                  |                               | 2                             | 2                             | 2                             | 2                             |
| Measurement display (no. of line)               |   | 3                             | 3                             | 3                  | 3                             | 3                             | 3                             | 3                             | 3                             |
| Digital inputs                                  | Programmable (Tariff control or WAGES input)  |                               |                               |                    |                               | 1                             | 1                             | 1                             | 1                             |
|   | Tariff control only                           |                               |                               | 2                  |                               |                               |                               |                               |                               |
| Digital outputs                                 | Programmable (Kwh pulse or KW overload alarm) |                               |                               |                    |                               | 1                             | 1                             | 1                             |                               |
|   | Kwh pulse only                                |                               | 1                             |                    |                               |                               |                               |                               |                               |
| Communication protocols                         | M-bus   |                               |                               |                    |                               | ■                             |                               |                               |                               |
|   | Modbus  |                               |                               |                    | ■                             |                               | ■                             |                               |                               |
|   | BACnet  |                               |                               |                    |                               |                               |                               | ■                             |                               |
|   | Lon   |                               |                               |                    |                               |                               |                               |                               | ■                             |
| MID (legal metrology certification)             |   |                               | ■                             | ■                  |                               | ■                             | ■                             | ■                             | ■                             |
| Commercial reference numbers                    | A9MEM3100                                     | A9MEM3110                     | A9MEM3115                     | A9MEM3150          | A9MEM3135                     | A9MEM3155                     | A9MEM3165                     | A9MEM3175                     |                               |
|   | A9MEM3200                                     | A9MEM3210                     | A9MEM3215                     | A9MEM3250          | A9MEM3235                     | A9MEM3255                     | A9MEM3265                     | A9MEM3275                     |                               |
|   | A9MEM3300                                     | A9MEM3310                     |                               | A9MEM3350          | A9MEM3335                     | A9MEM3355                     | A9MEM3365                     | A9MEM3375                     |                               |

See your Schneider Electric representative for complete ordering information.

How to read table: If a cell contains a single value, that value applies to all meter models identified in the header cell(s). For cells with multiple values, the values correspond from left to right with the meter models listed from top to bottom for each associated header cell. For example, a cell with "A / B / C" means A for iEM31xx models, B for iEM32xx models, and C for iEM33xx models

## Acti9 iEM3000 Series

### EM3400/iEM3500 technical specifications

|                           | iEM3455   | iEM3465           | iEM33555       | iEM3565        |
|---------------------------|---|-------------------|----------------|----------------|
| Max current               | 0.333V-1.0V LVCTs   | 0.333V-1.0V LVCTs | Rogowski coils | Rogowski coils |
| Meter constant LED        | 5000/kWh  |                   |                |                |
| Pulse output frequency    | Up to 500p/kWh  |                   |                |                |
| Multi-tariff              | 4 tariffs   |                   |                |                |
| Communication             | Modbus  | BACnet            | Modbus         | BACnet         |
| DI/DO                     | 1/1   |                   |                |                |
| Network                   | 1P+N, 3P, 3P+N<br>support LVCTs, Rogowski coils, and VTs          |                   |                |                |
| Wiring capacity           | 6 mm <sup>2</sup> for currents and 4 mm <sup>2</sup> for voltages |                   |                |                |
| Display max               | LCD 99999999.9kWh or 99999999.9MWh                                |                   |                |                |
| Voltage (L-L)             | 3 x 100/173 V AC to 3 x 277/480 V AC (50/60 Hz)                   |                   |                |                |
| IP protection             | IP40 front panel and IP20 casing                                  |                   |                |                |
| Temperature               | -25°C to 70°C (K55)   |                   |                |                |
| Product size              | 5 steps of 18 mm  |                   |                |                |
| Overvoltage & measurement | Category III, Degree of pollution 2                               |                   |                |                |
| kWh                       | ■   |                   |                |                |
| kVARh                     | ■   |                   |                |                |
| Active power              | ■   |                   |                |                |
| Reactive power            | ■   |                   |                |                |
| Currents & voltages       | ■   |                   |                |                |
| Overload alarm            | ■   |                   |                |                |
| Hour counter              | ■   |                   |                |                |

See your Schneider Electric representative for complete ordering information.

# Acti9 iEM3100/iEM3300 series technical specifications

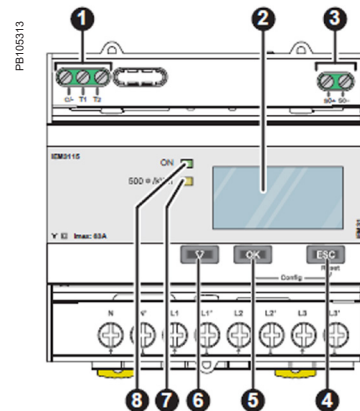
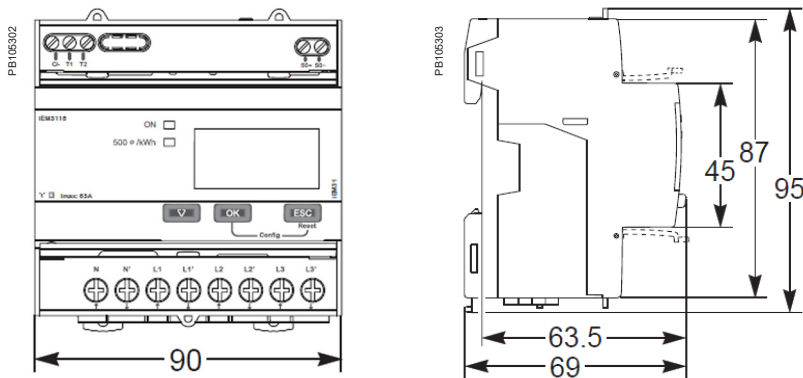
| Technical specifications        |  |                    |         |                    |                    |                    |                    |                    |
|---------------------------------|--|--------------------|---------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                                 | iEM3100<br>iEM3300   | iEM3110<br>iEM3310 | iEM3115 | iEM3150<br>iEM3350 | iEM3135<br>iEM3335 | iEM3155<br>iEM3355 | iEM3165<br>iEM3365 | iEM3175<br>iEM3375 |
| Max current (direct connection) | 63 A for iEM3100 models, 125 A for iEM3300 models                            |                    |         |                    |                    |                    |                    |                    |
| Meter constant LED              | 500/kWh  |                    |         |                    |                    |                    |                    |                    |
| Pulse output                    | Up to 1000 p/kWh   |                    |         |                    | Up to 1000 p/kWh   |                    | Up to 1000 p/kWh   |                    |
| Multi-tariff                    | 4 tariffs  |                    |         | 4 tariffs          |                    | 4 tariffs          |                    |                    |
| Communication                   |  |                    |         | Modbus             | Modbus             | Modbus             | BACnet             | LON                |
| DI/DO                           |  | 0/1                | 2/0     |                    | 1/1                | 1/1                | 1/1                | 1/0                |
| MID (EN50470-3)                 |  | ■                  |         |                    | ■                  | ■                  | ■                  | ■                  |
| Network                         | 1P+N, 3P, 3P+N   |                    |         |                    |                    |                    |                    |                    |
| Accuracy class                  | Class 1 (IEC 62053-21 and IEC 61557-12) Class B (EN 50470-3)                 |                    |         |                    |                    |                    |                    |                    |
| Wiring capacity                 | 16 mm <sup>2</sup> for iEM3100 models, 50 mm <sup>2</sup> for iEM3300 models |                    |         |                    |                    |                    |                    |                    |
| Display max.                    | LCD 99999999.9kWh  |                    |         |                    |                    |                    |                    |                    |
| Voltage (L-L)                   | 3 x 100/173 V AC to 3 x 277/480 V AC (50/60 Hz)                              |                    |         |                    |                    |                    |                    |                    |
| IP protection                   | IP40 front panel and IP20 casing   |                    |         |                    |                    |                    |                    |                    |
| Temperature                     | -25°C to 55°C (K55)  |                    |         |                    |                    |                    |                    |                    |
| Product size                    | 5 x 18 mm for iEM3100 models, 7 x 18 mm for iEM3300 models                   |                    |         |                    |                    |                    |                    |                    |
| Overvoltage and measurement     | Category III, Degree of pollution 2  |                    |         |                    |                    |                    |                    |                    |
| kWh                             | ■  | ■                  | ■       | ■                  | ■                  | ■                  | ■                  | ■                  |
| kVARh                           |  |                    |         |                    | ■                  | ■                  | ■                  | ■                  |
| Active power                    |  |                    |         | ■                  | ■                  | ■                  | ■                  | ■                  |
| Reactive power                  |  |                    |         |                    | ■                  | ■                  | ■                  | ■                  |
| Currents and voltages           |  |                    |         | ■                  | ■                  | ■                  | ■                  | ■                  |
| Overload alarm                  |  |                    |         |                    | ■                  | ■                  | ■                  | ■                  |
| Hour counter                    |  |                    |         |                    | ■                  | ■                  | ■                  | ■                  |

# Acti9 IEM3200 series technical specifications

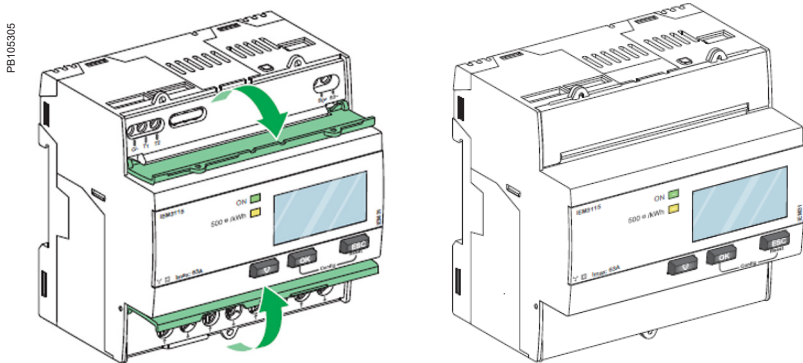
| Technical specifications         |  |                |          |                                  |                |         |                |         |
|----------------------------------|--|----------------|----------|----------------------------------|----------------|---------|----------------|---------|
|                                  | iEM3200  | iEM3210        | iEM3215  | iEM3250                          | iEM3235        | iEM3255 | iEM3265        | iEM3275 |
| Max current (1A/5A CT connected) | 6 A  |                |          |                                  |                |         |                |         |
| Meter constant LED               | 5000/kWh   |                |          |                                  |                |         |                |         |
| Pulse output frequency           |  | Up to 500p/kWh |          |                                  | Up to 500p/kWh |         | Up to 500p/kWh |         |
| Multi-tariff                     |  |                | 4 tariff |                                  | 4 tariffs      |         | 4 tariffs      |         |
| Communication                    |  |                |          | Modbus                           | Modbus         | Modbus  | BACnet         | LON     |
| DI/DO                            |  | 0/1            | 2/0      |                                  | 1/1            | 1/1     | 1/1            | 1/0     |
| MID (EN50470-3) <sup>(1)</sup>   |  | ■              | ■        |                                  | ■              | ■       | ■              | ■       |
| Network                          | 1P+N, 3P, 3P+N support CTs   |                |          | 1P+N, 3P, 3P+N support CTs & VTs |                |         |                |         |
| Accuracy class                   | Class 0.5S (IEC 62053-22 and IEC61557-12) Class C (EN50470-3) <sup>(1)</sup> |                |          |                                  |                |         |                |         |
| Wiring capacity                  | 6 mm <sup>2</sup> for currents and 4 mm <sup>2</sup> for voltages            |                |          |                                  |                |         |                |         |
| Display max.                     | LCD 99999999.9kWh or 99999999.9MWh   |                |          |                                  |                |         |                |         |
| Voltage (L-L)                    | 3 x 100/173 V AC to 3 x 277/480 V AC (50/60 Hz)                              |                |          |                                  |                |         |                |         |
| IP protection                    | IP40 front panel and IP20 casing   |                |          |                                  |                |         |                |         |
| Temperature                      | -25°C to 55°C (K55)  |                |          |                                  |                |         |                |         |
| Product size                     | 5 steps of 18 mm   |                |          |                                  |                |         |                |         |
| Overvoltage & measurement        | Category III, Degree of pollution 2  |                |          |                                  |                |         |                |         |
| kWh                              | ■  | ■              | ■        | ■                                | ■              | ■       | ■              | ■       |
| kVARh                            |  |                |          |                                  | ■              | ■       | ■              | ■       |
| Active power                     |  |                |          | ■                                | ■              | ■       | ■              | ■       |
| Reactive power                   |  |                |          |                                  | ■              | ■       | ■              | ■       |
| Currents and voltages            |  |                |          | ■                                | ■              | ■       | ■              | ■       |
| Overload alarm                   |  |                |          |                                  | ■              | ■       | ■              | ■       |
| Hour counter                     |  |                |          |                                  | ■              | ■       | ■              | ■       |

<sup>(1)</sup> If used for MID purposes, iEM32xx must use CT secondary set to 5 A.

iEM3000/iEM3200 series dimensions



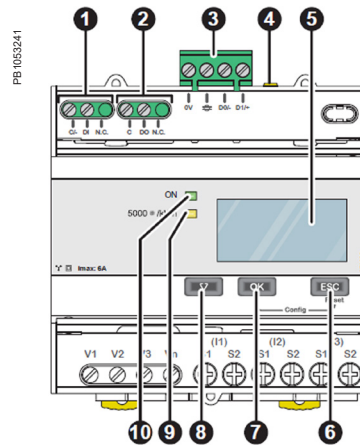
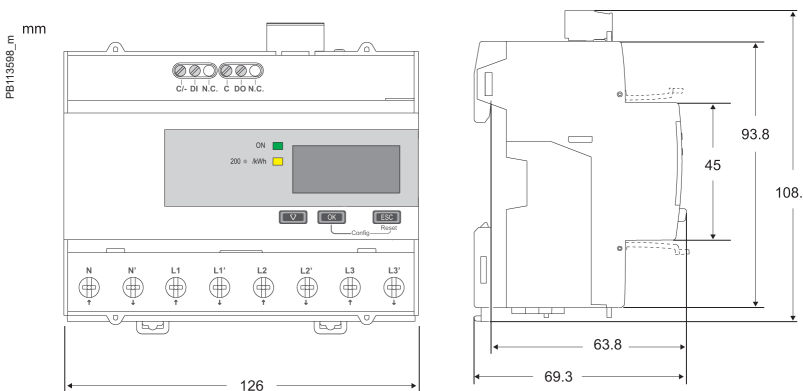
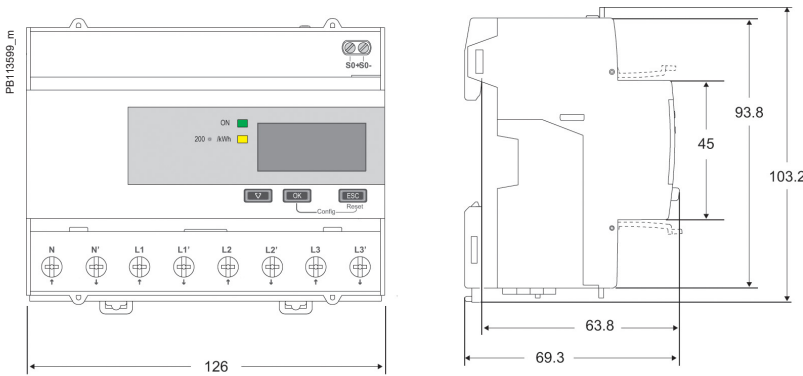
Acti9 iEM3100/iEM3200 Series front flaps open and closed



Acti9 iEM3000 Series parts

1. Digital inputs for tariff control (iEM3115 / iEM3215)
2. Display for measurement and configuration
3. Pulse out for remote transfer (iEM3110 / iEM3210)
4. ESC Cancellation
5. OK Confirmation
6. Selection
7. Flashing yellow meter indicator to check accuracy
8. Green indicator: on/off, error

iEM3300 series dimensions



Acti9 iEM3000 Series parts

1. Digital inputs for tariff control (iEM3115 / iEM3215)
2. Display for measurement and configuration
3. Pulse out for remote transfer (iEM3110 / iEM3210)
4. ESC Cancellation
5. OK Confirmation
6. Selection
7. Flashing yellow meter indicator to check accuracy
8. Green indicator: on/off, error

Please see the appropriate **Installation Guide** for accurate and complete information on the installation of this product.

# PM3000 series

The PowerLogic PM3000 series power meters are a cost-attractive, feature-rich range of DIN rail-mounted power meters that offers all the measurement capabilities required to monitor an electrical installation.

Ideal for power metering and network monitoring applications that seek to improve the availability and reliability of your electrical distribution system, the meters are also fully capable of supporting sub-metering and cost allocation applications.

## Applications

### Cost management applications

- Bill checking to verify that you are only charged for the energy you use
- Aggregation of energy consumption, including WAGES, and cost allocation per area, per usage, per shift or per time within the same facility
- Energy cost and usage analysis per zone, per usage or per time period to optimise energy usage

### Network management applications

- Metering of electrical parameters to better understand the behaviour of your electrical distribution system

PE108447



METSEPM3250

### The solution for

All markets that can benefit from a solution that includes PowerLogic PM3000 series meters:

- Buildings
- Industry
- Data centres and networks
- Infrastructure (e.g. airports, road tunnels, telecom)

### Benefits

Optimise your energy consumption & enable energy efficiency practices

- Collect and analyse energy consumption data from each area for each type of load or circuit
- Gain an accurate understanding of business expenses by allocating the energy-related costs
- Identify savings opportunities
- Use information to implement actions designed to reduce energy consumption

### Competitive advantages

Connectivity advantages

- Programmable digital input
    - External tariff control signal (4 tariff)
    - Remote reset partial counter
    - External status like breaker status
    - Collect WAGES pulses
  - Programmable digital output
    - Alarm (PM3255)
    - KWh pulses
  - Graphic LCD display
  - Modbus RS-485 with screw terminals
- Multi-tariff capability  
The PM3000 series allows users to arrange KWh consumption in four different registers. This can be controlled by:
- Digital inputs. Signal can be provided by PLC or utilities
  - Internal clock programmable by HMI
  - Through communication

This function allows users to:

- Make tenant metering for dual source applications to differentiate backup source or utility source
- Understand well the consumption during peak time and off-peak time, weekdays and weekends, holiday and working days etc.
- Follow up feeders consumption in line with utility tariff rates

### Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

### Conformity of standards

- |                |                |
|----------------|----------------|
| • IEC 61557-12 | • IEC 62053-23 |
| • IEC 61326-1  | • EN 50470-1   |
| • IEC 62052-11 | • EN 50470-3   |
| • IEC 62053-21 | • IEC 61010-1  |
| • IEC 62053-22 | • EN 55022     |

## PM3000 series

| PM3000 series feature selection                             | PM3200             | PM3210             | PM3250             | PM3255             |
|---|--------------------|--------------------|--------------------|--------------------|
| <b>Performance standard</b>                                 |                    |                    |                    |                    |
| IEC61557-12 PMD/Sx/K55/0.5                                  | ■                  | ■                  | ■                  | ■                  |
| <b>General</b>  |                    |                    |                    |                    |
| Use on LV and HV systems                                    | ■                  | ■                  | ■                  | ■                  |
| Number of samples per cycle                                 | 32                 | 32                 | 32                 | 32                 |
| CT input 1A/5A  | ■                  | ■                  | ■                  | ■                  |
| VT input  | ■                  | ■                  | ■                  | ■                  |
| Multi-tariff  | 4                  | 4                  | 4                  | 4                  |
| Multi-lingual backlit display                               | ■                  | ■                  | ■                  | ■                  |
| <b>Instantaneous rms values</b>                             |                    |                    |                    |                    |
| Current, voltage Per phase and average                      | ■                  | ■                  | ■                  | ■                  |
| Active, reactive, apparent power Total and per phase        | ■                  | ■                  | ■                  | ■                  |
| Power factor Total and per phase                            | ■                  | ■                  | ■                  | ■                  |
| <b>Energy values</b>  |                    |                    |                    |                    |
| Active, reactive and apparent energy; import and export     | ■                  | ■                  | ■                  | ■                  |
| <b>Demand value</b>   |                    |                    |                    |                    |
| Current, power (active, reactive, apparent) demand; present | ■                  | ■                  | ■                  | ■                  |
| Current, power (active, reactive, apparent) demand; peak    |                    | ■                  | ■                  | ■                  |
| <b>Power quality measurements</b>                           |                    |                    |                    |                    |
| THD - Current and voltage                                   |                    | ■                  | ■                  | ■                  |
| <b>Data recording</b>                                       |                    |                    |                    |                    |
| Min/max of the instantaneous values                         | ■                  | ■                  | ■                  | ■                  |
| Power demand logs   |                    |                    |                    | ■                  |
| Energy consumption log (day, week, month)                   |                    |                    |                    | ■                  |
| Alarms with timestamping                                    |                    | 5                  | 5                  | 15                 |
| Digital inputs/digital outputs                              |                    | 0/1                |                    | 2/2                |
| <b>Communication</b>  |                    |                    |                    |                    |
| RS-485 port   |                    |                    | ■                  | ■                  |
| Modbus protocol   |                    |                    | ■                  | ■                  |
| Commercial reference number                                 | <b>METSEPM3200</b> | <b>METSEPM3210</b> | <b>METSEPM3250</b> | <b>METSEPM3255</b> |

See your Schneider Electric representative for complete ordering information.

# PM3000 series

## PM3000 technical specifications

|                                       |   |
|---------------------------------------|---|
| Type of measurement                   | True rms up to the 15th harmonic on three-phase (3P,3P+N) and single-phase AC systems.<br>32 samples per cycle                      |
| <b>Measurement accuracy</b>           |   |
| Current with x/5A CTs                 | 0.3 % from 0.5 A to 6 A   |
| Current with x/1A CTs                 | 0.5 % from 0.1 A to 1.2 A   |
| Voltage                               | 0.3 % from 50 V to 330 V (Ph-N), from 80 V to 570 V (Ph-Ph)   |
| Power factor                          | ±0.005 from 0.5 A to 6 A with x/5 A CTs; from 0.1A to 1.2 A with x/1 A CTs and from 0.5 L to 0.8 C                                  |
| Active/Apparent Power with x/5A CTs   | Class 0.5   |
| Active/Apparent Power with x/1A CTs   | Class 1   |
| Reactive power                        | Class 2   |
| Frequency                             | 0.05 % from 45 to 65 Hz   |
| Active energy with x/5A CTs           | IEC 62053-22 Class 0.5s   |
| Active energy with x/1A CTs           | IEC 62053-21 Class 1  |
| Reactive energy                       | IEC 62053-23 Class 2  |
| <b>Data update rate</b>               |   |
| Update rate                           | 1s  |
| <b>Input-voltage characteristics</b>  |   |
| Measured voltage                      | 50 V to 330 V AC (direct / VT secondary Ph-N)<br>80 V to 570 V AC (direct / VT secondary Ph-Ph)<br>up to 1 MV AC (with external VT) |
| Frequency range                       | 45 Hz to 65 Hz  |
| <b>Input-current characteristics</b>  |   |
| CT primary                            | Adjustable from 1 A to 32767 A  |
| CT secondary                          | 1 A or 5 A  |
| Measurement input range with x/5A CTs | 0.05 A to 6 A   |
| Measurement input range with x/1A CTs | 0.02 A to 1.2 A   |
| Permissible overload                  | 10 A continuous, 20 A for 10s/hour  |
| <b>Control Power</b>                  |   |
| AC                                    | 100/173 to 277/480 V AC (+/-20%), 3 W/5 VA; 45 Hz to 65 Hz  |
| DC                                    | 100 to 300 V DC, 3 W  |
| <b>Input</b>                          |   |
| Digital inputs (PM3255)               | 11 to 40 V DC, 24 V DC nominal, <=4mA maximum burden, 3.5kVrms insulation   |
| <b>Output</b>                         |   |
| Digital output (PM3210)               | Optocoupler, polarity sensitive, 5 to 30 V, 15 mA max, 3.5kVrms insulation  |
| Digital outputs (PM3255)              | Solid state relay, polarity insensitive, 5 to 40 V, 50 mA max, 50 Ω max, 3.5kVrms insulation  |

## PM3000 series

### PM3000 technical specifications

#### Mechanical characteristics

|                                     |                                   |
|-------------------------------------|-----------------------------------|
| Weight                              | 0.26 kg                           |
| IP degree of protection (IEC 60529) | IP40 front panel, IP20 meter body |
| Dimension                           | 90 x 95 x 70 mm                   |

#### Environmental conditions

|                       |  |
|-----------------------|--|
| Operating temperature | -25 °C to 55 °C  |
| Storage temperature   | -40 °C to 85 °C  |
| Humidity rating       | 5 to 95% RH at 50 °C (non-condensing)                    |
| Pollution degree      | 2  |
| Metering category     | III, for distribution systems up to 277/480 V AC         |
| Dielectric withstand  | As per IEC61010-1, Doubled insulated front panel display |
| Altitude              | 3000 m max   |

#### Electromagnetic compatibility

|   |                           |
|---|---------------------------|
| Electrostatic discharge                     | Level IV (IEC 61000-4-2)  |
| Immunity to radiated fields                 | Level III (IEC 61000-4-3) |
| Immunity to fast transients                 | Level IV (IEC 61000-4-4)  |
| Immunity to surge                           | Level IV (IEC 61000-4-5)  |
| Conducted immunity                          | Level III (IEC 61000-4-6) |
| Immunity to power frequency magnetic fields | 0.5mT (IEC 61000-4-8)     |
| Conducted and radiated emissions            | Class B (EN 55022)        |

#### Safety

CE as per IEC 61010-1★

#### Communication

|             |   |
|-------------|---|
| RS-485 port | Half duplex, from 9600 up to 38400 baud, Modbus RTU (double insulation) |
|-------------|---|

#### Display characteristics

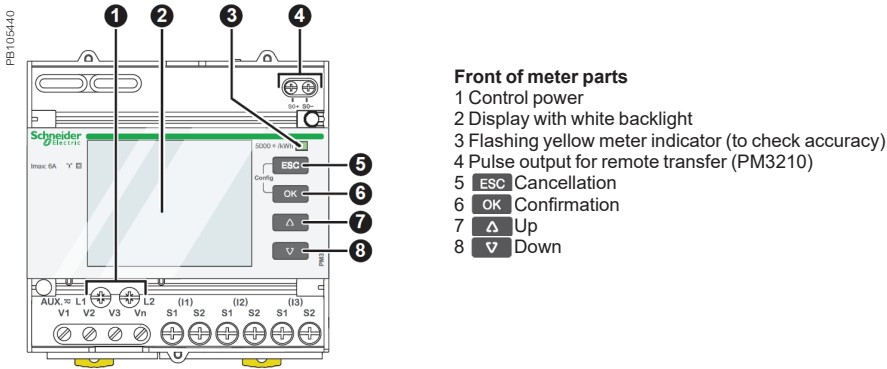
|                    |                 |
|--------------------|-----------------|
| Dimensions (VA)    | 43 mm x 34.6 mm |
| Display resolution | 128 x 96 dots   |

#### Standard compliance

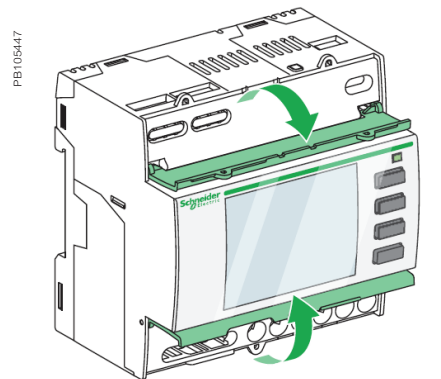
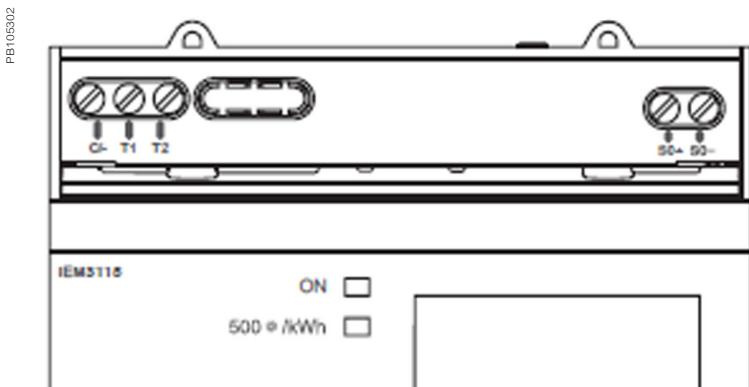
IEC 61557-12, EN 61557-12  
 IEC 61010-1, UL 61010-1  
 IEC 62052-11, IEC 62053-21, IEC 62053-22, IEC 62053-23  
 EN 50470-1, EN 50470-3

★ Protected throughout by double insulation

PM3200 series front of meter

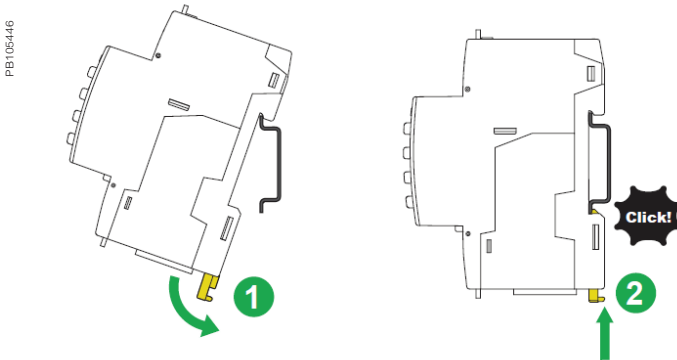


PM3200 series dimensions



PM3200 top and lower flaps

PM3200 series easy installation



Please see the appropriate **Installation Guide** for accurate and complete information on the installation of this product.



# PowerLogic™ PowerTag Energy series

## PowerTag Energy is a wireless-communication energy sensor

PowerTag Energy is designed specifically for Energy Management, Load Monitoring and Power Availability applications. Associated to a concentrator or a gateway, PowerTag Energy provides a full wireless class 1 solution to monitor energy at any level of a distribution panel.

### Applications:

- Monitors your electrical installation from main incomer down to load level
- Suitable for various businesses, buildings, industrial and residential applications with easy integration in upper systems
- Supports and enables Energy Efficiency programs and standards such as:
  - European Energy Efficiency Directive (EED)
  - Energy Performance of Buildings Directive (EPBD)
  - IEC 60364-8-1 “Low Voltage Electrical installations - Energy Efficiency”
  - EN 17267 “Energy Measurement and Monitoring plan”
  - ISO 50001 “Energy Management System”



PowerTag Energy Flex 63 A (F63)



PowerTag Energy PhaseNeutral 63 A (P63)



PowerTag Energy Flex 160 A (F160)



PowerTag Energy Monoconnect 63 A (M63)



PowerTag Energy Monoconnect 250 A (M250)



PowerTag Energy Rope 2000 A (R2000)



PowerTag Energy

## The solution for

Markets that benefit from a solution that includes PowerLogic PowerTag Energy series:

- Residential
- Small business
- Medium & large buildings
- Industrial sites

## Benefits

PowerTag Energy sensor incorporates all features required to perform accurate real-time measurements (U, V, I, P, PF) and energy values up to 2000 A.

Different designs of PowerTag Energy are available to ensure it fits the protective device on which it is mounted.

- PowerTag Energy Monoconnect (M): can be mounted directly on the device, no additional wiring is required
- PowerTag Energy PhaseNeutral (P): for DIN offers with 9 mm pitch between phase and neutral
- PowerTag Energy Flex (F): can be mounted on a wide range of protective devices thanks to its design
- PowerTag Energy Rope (R) thanks to its openable current sensors can be easily installed on busbars or wires in new installations and in retrofit applications

PowerTag Energy sensor is acting as an autonomous meter. Energy counters are stored inside PowerTag Energy sensor.

## Energy management system

To get the most effective use from your Schneider Electric measurement and metering devices, we offer a range of dedicated gateways / concentrators depending on your application.

## Advantages

- Wireless-communication
- Range up to 2000 A
- Voltage loss alarming
- Class 1 accuracy
- Compact design
- Easy installation and commissioning
- Scalable solution
- Perfect for retrofit or new panels

## Conformity of standards

- IEC 61557-12
- IEC 61010-1
- IEC 61010-2-030
- IEC 61326-1
- ETSI EN 300 328



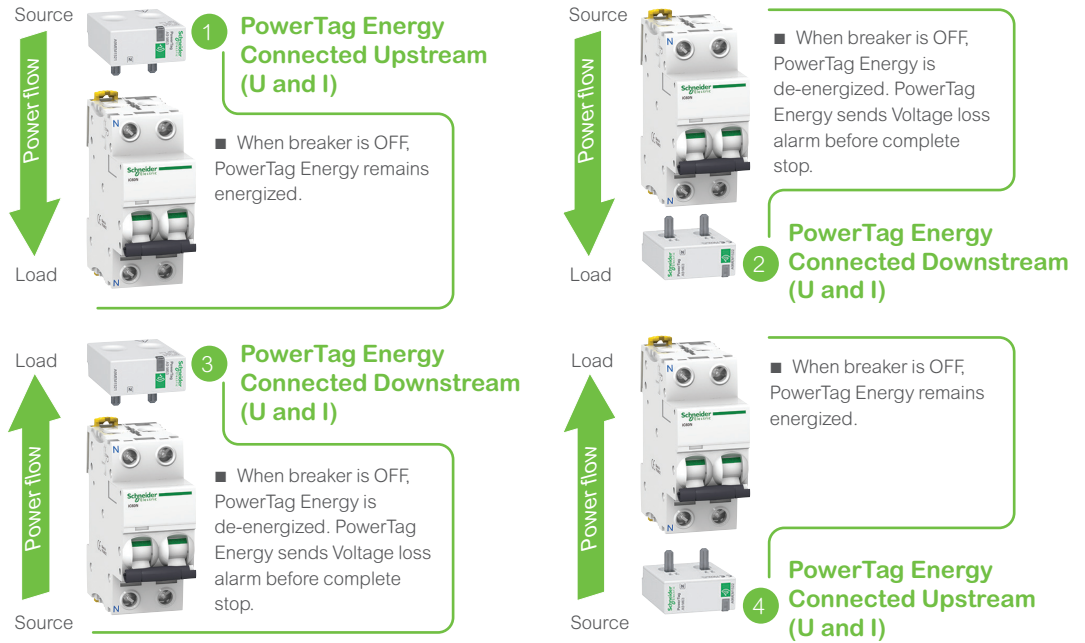
## Feature selection

|   |                                     |                                     |                                     |                                     |                                     |
|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
|   |                                     |                                     |                                     |                                     |                                     |
|   | <b>A9MEM15**</b>                    | <b>A9MEM15**</b>                    | <b>A9MEM15**</b>                    | <b>A9MEM1580</b>                    | <b>LV434020/LV434021</b>            |
| Product name  | M63                                 | P63                                 | F63                                 | F160                                | M250                                |
| Max current (I Max) A                                       | 63                                  | 63                                  | 63                                  | 160                                 | 250                                 |
| Starting current (Ist)                                      | 40 mA                               | 40 mA                               | 40 mA                               | 100 mA                              | 160 mA                              |
| Design  | Monoconnect                         | PhaseNeutral                        | Flex                                | Flex                                | Monoconnect                         |
| Mounting type   | On device                           | On device                           | On wires                            | On wires                            | On device                           |
| Current sensors type  | Solid core                          | Solid core                          | Solid core                          | Solid core                          | Solid core                          |
| Poles   | 1P + W / 1P+N / 3P / 3P+N           | 1P+N / 3P+N                         | 1P+N / 3P / 3P+N                    | 3P / 3P+N                           | 3P / 3P+N                           |
| Self-powered  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Voltage (L-N)   | Depends on ref                      | 200 - 240 V AC                      | Depends on ref                      | 100 - 277 V AC                      | 230 V AC                            |
| <b>Measurements*</b>  |                                     |                                     |                                     |                                     |                                     |
| Nb quadrant   | 2                                   | 2                                   | 2                                   | 4                                   | 4                                   |
| Active Energy   | Class 1                             | Class 1                             | Class 1                             | Class 1                             | Class 1                             |
| Reactive Energy   |                                     |                                     |                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Apparent Energy   |                                     |                                     |                                     | <input checked="" type="checkbox"/> |                                     |
| Active Power  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Reactive Power  |                                     |                                     |                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Apparent Power  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Power Factor  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Frequency   |                                     |                                     |                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Current and Voltage   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| * Data availability depending on the concentrator / gateway |                                     |                                     |                                     |                                     |                                     |

|   |                                     |                                     |                                     |                                     |                                     |
|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
|   |                                     |                                     |                                     |                                     |                                     |
|   | <b>LV434022/LV434023</b>            | <b>A9MEM1590</b>                    | <b>A9MEM1591</b>                    | <b>A9MEM1592</b>                    | <b>A9MEM1593</b>                    |
| Product name  | M630                                | R200                                | R600                                | R1000                               | R2000                               |
| Max current (I Max) A                                       | 630                                 | 200                                 | 600                                 | 1000                                | 2000                                |
| Starting current (Ist)                                      | 400 mA                              | 120 mA                              | 400 mA                              | 600 mA                              | 1.2 A                               |
| Design  | Monoconnect                         | Rope                                | Rope                                | Rope                                | Rope                                |
| Mounting type   | On device                           | On wires                            | On wires                            | On wires                            | On wires                            |
| Current sensors type  | Solid core                          | Split core                          | Split core                          | Split core                          | Split core                          |
| Poles   | 3P / 3P+N                           | 3P / 3P+N                           | 3P / 3P+N                           | 3P / 3P+N                           | 3P / 3P+N                           |
| Self-powered  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Voltage (L-N)   | 230 V AC                            | 100 - 277 V AC                      | 100 - 277 V AC                      | 100 - 277 V AC                      | 100 - 277 V AC                      |
| <b>Measurements*</b>  |                                     |                                     |                                     |                                     |                                     |
| Nb quadrant   | 4                                   | 4                                   | 4                                   | 4                                   | 4                                   |
| Active Energy   | Class 1                             | Class 1                             | Class 1                             | Class 1                             | Class 1                             |
| Reactive Energy   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Apparent Energy   |                                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Active Power  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Reactive Power  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Apparent Power  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Power Factor  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Frequency   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Current and Voltage   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| * Data availability depending on the concentrator / gateway |                                     |                                     |                                     |                                     |                                     |



## Connection possibilities



**Note:**

- In association with a contactor, a Variable Speed Drive or a motor starter: PowerTag Energy can ONLY be installed UPSTREAM these devices.
- Some PowerTag Energy can be installed either on the TOP or on the BOTTOM of the protective devices.
- Check the possible mounting position as indicated in the “Catalog numbers” chapter.

| Connection (Voltage and Current)   | Features  |
|--|---|
| <b>Upstream</b><br>1<br>4  | <ul style="list-style-type: none"> <li>• Energy management: consumption in kWh</li> <li>• Load monitoring: real-time measurements</li> </ul>  |
| <b>Downstream</b><br>Preferred installation to take full benefit of voltage loss alarming in diagnosing the load<br>2<br>3 | <ul style="list-style-type: none"> <li>• Energy management: consumption in kWh</li> <li>• Load monitoring: real-time measurements</li> <li>• Power availability: voltage loss alarming</li> </ul> |

## Main associated concentrators / gateways (\*)

| For Commercial & Building applications                             |  |   |
|--|--|---|
| PE119868<br>A9XMWD20<br><b>A9XMWD20 (1)</b>                        | A9XMWD100<br><b>A9XMWD100</b>                                      | PB113286<br>Smartlink SI B<br><b>A9XMZA08</b>       |
| (1) Replace Smartlink SI D (A9XMWA20)                              |  |   |
| For Small Business applications                                    | For Residential applications                                       | For Industrial applications                         |
| A9XELC10<br>PowerTag Link C<br>PowerTag Link C+<br><b>A9XELC10</b> | EER31800<br>Wiser IP Module<br>Wiser IP Module+<br><b>EER31800</b> | ZBRN1<br>Harmony Hub<br><b>ZBRN1, ZBRN2, ZBRN32</b> |

(\*) Refer to Selection Guide for complete compatibility pages 95 to 102. Refer to the concentrator catalogs for more information (CA907030, CA907032, CA907035).



# PowerLogic™ PowerTag Energy 63 A

IEC 61557-12 PMD-I/DD/K55/1

As per the above standard:

With its compact design and innovative concept, PowerTag Energy 63 A fits directly on the protective device and as a result has no impact on DIN rail occupancy and switchboard size.

It is therefore well adapted to be mounted from head of group down to final circuits.

Since voltage and current are measured directly at the same point on the circuit to be monitored, it provides accurate measurement and relevant information such as voltage loss.

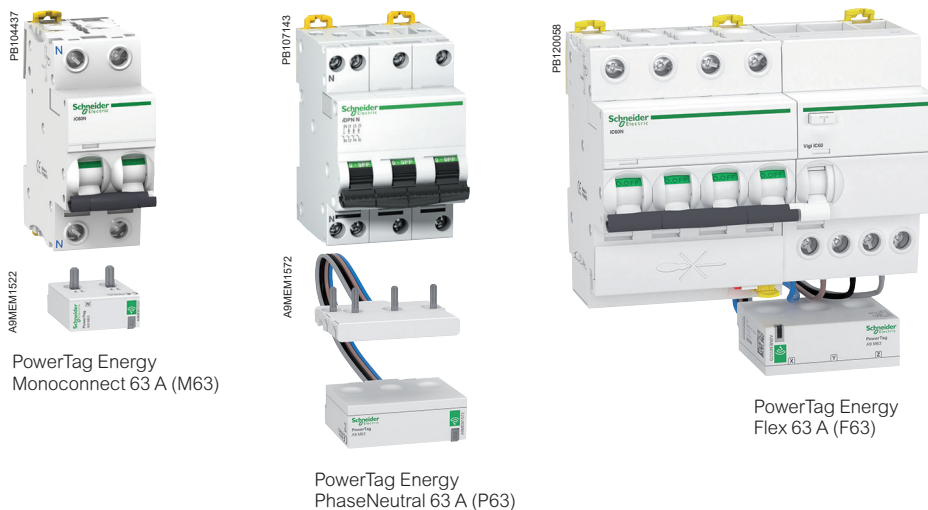
PowerTag Energy is compatible with SE product ranges as per the selection guide CA908058.

## Main characteristics

PowerTag Energy measures the following values in accordance with the IEC 61557-12 standard PMD-I/DD/K55/1:

- Energy:
  - Active energy (kWh): total and partial, delivered and received.
- Real-time measurement values:
  - Voltages (V): phase-to-phase and phase-to-neutral.
  - Currents (A): per phase.
  - Power:
    - Active power (W): total and per phase.
    - Apparent power (VA): total.
  - Power factor.
- Voltage loss alarms:
  - PowerTag Energy sends a “voltage loss” alarm and the current-per-phase value before being de-energized.
  - At “voltage loss”, PowerTag Energy adds an overload alarm if the current is higher than the rated current of the associated protective device.

Note: Functions listed above depends on Concentrator/Gateway.



PowerTag Energy  
Monoconnect 63 A (M63)

PowerTag Energy  
PhaseNeutral 63 A (P63)

PowerTag Energy  
Flex 63 A (F63)



## Product selection

### Neutral position

Some references of PowerTag Energy 63 A (Monoconnect and PhaseNeutral) exist in Top or Bottom version.

This is linked to the position of the neutral of the PowerTag Energy.



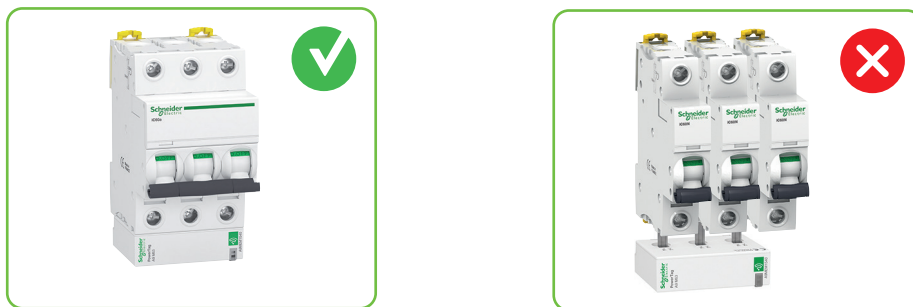
#### Note:

- Some PowerTag Energy can be installed either on the TOP or on the BOTTOM of the protective devices.
- Check the possible mounting position as indicated in the “Catalog numbers” chapter.
- In association with a contactor, a Variable Speed Drive or a motor starter: PowerTag Energy can ONLY be installed UPSTREAM these devices.

### Number of poles

Choose the PowerTag Energy according to the number of poles of the protective device: one PowerTag Energy per protective device.

Ex.: 3 Pole PowerTag Energy 63 A for a 3 pole CB.





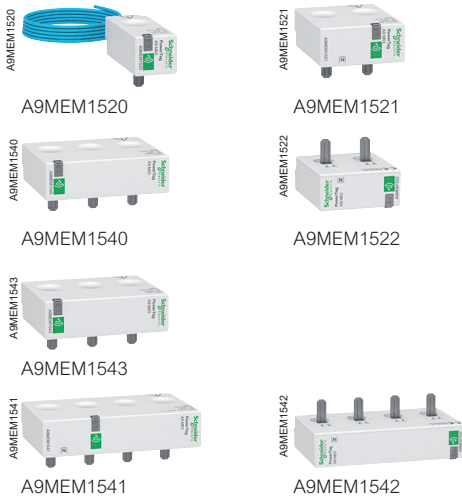
# PowerLogic™ PowerTag Energy 63 A

## Technical specifications

| Main characteristics                   |                |   |                        |                                       |
|--|----------------|---|------------------------|---------------------------------------|
| Rated voltage                          | 1P+N / 1P+W    | Un  | Phase-to-neutral       | 200... 240 V AC ± 20 %                |
|  | 3P             | Un  | Phase-to-phase         | 380... 415 V AC ± 20 %                |
|  | 3P+N           | Un  | Phase-to-neutral       | 220... 240 V AC ± 20 %                |
|  |                |   | Phase-to-phase         | 380... 415 V AC ± 20 %                |
|  | A9MEM1543      | Un  | Phase-to-phase         | 200... 240 V AC ± 20 %                |
|  | A9MEM1564      | Un  | Phase-to-neutral       | 100... 127 V AC ± 20 %                |
|  | A9MEM1574      | Un  | Phase-to-neutral       | 120... 137 V AC ± 20 %                |
|  |                |   | Phase-to-phase         | 208... 240 V AC ± 20 %                |
| Frequency                              |                |   |                        | 50/60 Hz                              |
| Maximum current                        |                | I <sub>max</sub>  |                        | 63 A                                  |
| Basic current                          |                | I <sub>b</sub>  |                        | 10 A                                  |
| Saturation current                     |                |   |                        | 130 A                                 |
| Maximum consumption                    |                |   | 1P+N                   | ≤ 1 VA                                |
|  |                |   | 3P/3P+N                | ≤ 2 VA                                |
| Starting current                       |                | I <sub>st</sub>   |                        | 40 mA                                 |
| Additional characteristics             |                |   |                        |                                       |
| Operating temperature                  |                |   |                        | -25°C to +60°C                        |
| Storage temperature                    |                |   |                        | -40°C to +85°C                        |
| Overvoltage category                   |                |   | As per IEC 61010-1     | Cat. III                              |
| Measuring category                     |                |   | As per IEC 61010-2-030 | Cat. III                              |
| Pollution degree                       |                |   |                        | 3                                     |
| Altitude                               |                |   |                        | ≤ 2000 m                              |
| Degree of protection                   |                |   | Device only            | IP20                                  |
|  |                |   | IK                     | 05                                    |
| Radio-frequency communication          |                |   |                        |                                       |
| ISM band 2.4 GHz                       |                |   |                        | 2.4 GHz to 2.4835 GHz                 |
| Channels                               |                |   | As per IEEE 802.15.4   | 11 to 26                              |
| Isotropic Radiated Power               |                |   | Equivalent (EIRP)      | 0 dBm                                 |
| Maximum transmission time              |                |   |                        | < 5 ms                                |
| Channel occupancy                      |                |   | Messages sent every    | 5 seconds minimum                     |
| Characteristics of measuring functions |                |   |                        |                                       |
| Function                               | Symbol         | Performance category as per IEC 61557-12 (PMD-I/DD/K55/1) |                        | Measuring range                       |
|  |                | Class   |                        |                                       |
| Active power                           | P              | 1   |                        | 9 W to 63 kW                          |
| Active energy                          | E <sub>a</sub> | 1   |                        | Total and partial 0 to 99999999.9 kWh |
| Current                                | I              | 1   |                        | 40 mA to 63 A                         |
| Voltage                                | U              | 0.5   |                        | Un ± 20 %                             |
| Power factor                           | PFA            | 1   |                        | 0 to 1                                |



# PowerLogic™ PowerTag Energy 63 A



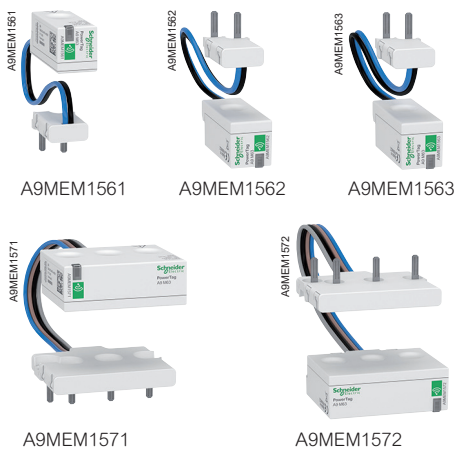
## PowerTag Energy Monoconnect 63 A Commercial reference numbers

PowerTag Energy for Acti9 and Multi9 **Monoconnect** offers: «Single-terminal» circuit breakers, RCDs and switches with **18 mm pitch between phase and neutral**, rating less than or equal to 63 A.

| Commercial reference number | Type    | Mounting      | Description                    |
|-----------------------------|---------|---------------|--------------------------------|
| <b>A9MEM1520</b>            | 1P+wire | Top or bottom | PowerTag Energy M63 1PW        |
| <b>A9MEM1521</b>            | 1P+N    | Top           | PowerTag Energy M63 1PN T      |
| <b>A9MEM1522</b>            |         | Bottom        | PowerTag Energy M63 1PN B      |
| <b>A9MEM1540</b>            | 3P      | Top or bottom | PowerTag Energy M63 3P         |
| <b>A9MEM1543 (1)</b>        |         |               | PowerTag Energy M63 3P 230V LL |
| <b>A9MEM1541</b>            | 3P+N    | Top           | PowerTag Energy M63 3PN T      |
| <b>A9MEM1542</b>            |         | Bottom        | PowerTag Energy M63 3PN B      |

Designed to fit the following devices: iC60, Reflex iC60, DT60, iID.  
For additional information and the list of Schneider Electric compatible devices and Concentrators/Gateways, refer to the Selection Guide pages 95 to 102.

(1) Not compatible with Acti9 Smartlink SI D (A9XMWA20) and Acti9 Smartlink SI B (A9XMZA08)

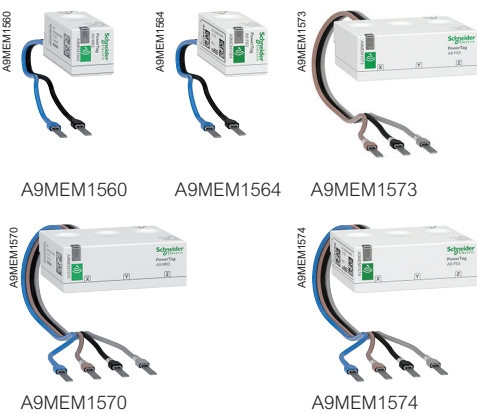


## PowerTag Energy PhaseNeutral 63 A Commercial reference numbers

PowerTag Energy for Acti9 and Multi9 **PhaseNeutral** offers: «Single-terminal» circuit breakers, RCDs and switches at **pitch of 9 mm between phase and neutral**, rating less than or equal to 63 A.

| Commercial reference number | Type      | Mounting | Description                         |
|-----------------------------|-----------|----------|-------------------------------------|
| <b>A9MEM1561</b>            | 1P+N      | Top      | PowerTag Energy P63 1PN T           |
| <b>A9MEM1562</b>            | 1P+N      | Bottom   | PowerTag Energy P63 1PN B           |
| <b>A9MEM1563</b>            | 1P+N RCBO | Bottom   | PowerTag Energy P63 1PN B RCBO 18mm |
| <b>A9MEM1571</b>            | 3P+N      | Top      | PowerTag Energy P63 3PN T           |
| <b>A9MEM1572</b>            | 3P+N      | Bottom   | PowerTag Energy P63 3PN B           |

Designed to fit the following devices: DT40, iDPN, C40, i DPN Vigi.  
For additional information and the list of Schneider Electric compatible devices and Concentrators/Gateways, refer to the Selection Guide pages 95 to 102.



## PowerTag Energy Flex 63 A Commercial reference numbers

PowerTag Energy **Flex** for other devices and specific installations, rating less than or equal to 63 A.

| Commercial reference number | Type | Mounting      | Description                      |
|-----------------------------|------|---------------|----------------------------------|
| <b>A9MEM1560</b>            | 1P+N | Top or bottom | PowerTag Energy F63 1PN          |
| <b>A9MEM1564 (2)</b>        | 1P+N | Top or bottom | PowerTag Energy F63 1PN 110V     |
| <b>A9MEM1573 (2)</b>        | 3P   | Top or bottom | PowerTag Energy F63 3P           |
| <b>A9MEM1570</b>            | 3P+N | Top or bottom | PowerTag Energy F63 3PN          |
| <b>A9MEM1574 (2)</b>        | 3P+N | Top or bottom | PowerTag Energy F63 3PN 127/220V |

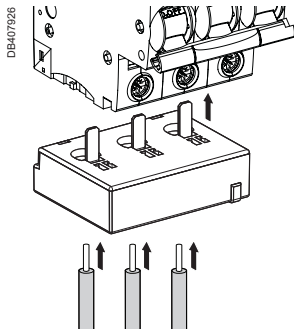
Designed to fit the following devices: Vigi iDT40, Vigi iC40, Vigi iC60, iC60 double terminal, iID double terminal.  
For additional information and the list of Schneider Electric compatible devices and concentrators/gateways, refer to the Selection Guide pages 95 to 102.

(2) Not compatible with Acti9 PowerTag Link C (A9XELC10), Smartlink SI D (A9XMWA20) and Smartlink SI B (A9XMZA08)

Contact your Schneider Electric representative for complete ordering information.



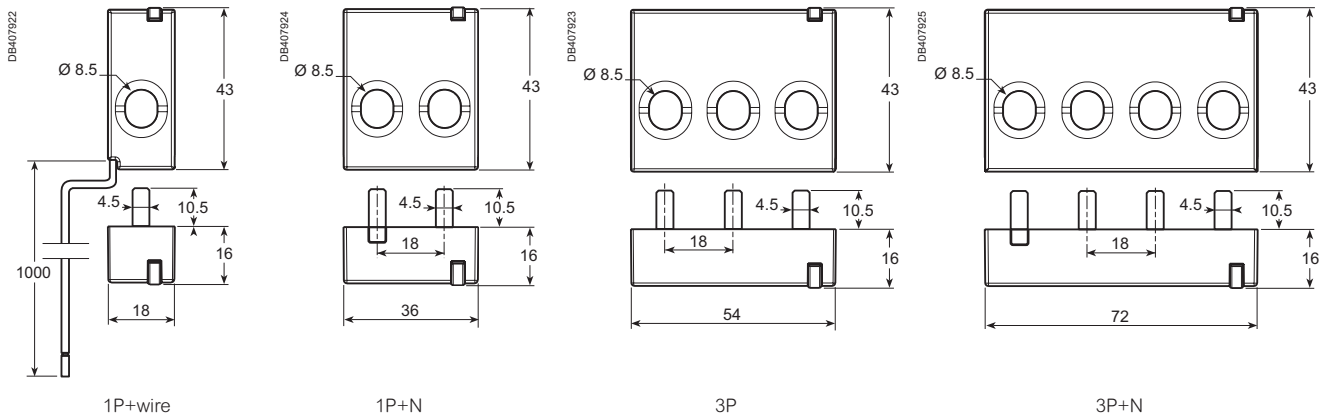
### PowerTag Energy Monoconnect 63 A connection



| Stripping length | Copper cables                            |  |  |  |  |  |
|------------------|--|--|--|--|--|--|
|                  | Rigid                                    |  | Flexible                                 |  | Flexible with ferrule                    |  |
| <b>18 mm</b>     |  |  |  |  |  |  |
|                  | 1.5 to 16 mm <sup>2</sup><br>AWG: 16...6 | 2 x 1.5 to 2.5 mm <sup>2</sup><br>AWG: 16...14 | 1.5 to 16 mm <sup>2</sup><br>AWG: 16...6 | 2 x 1.5 to 2.5 mm <sup>2</sup><br>AWG: 16...14 | 1.5 to 16 mm <sup>2</sup><br>AWG: 16...6 | 2 x 1.5 to 2.5 mm <sup>2</sup><br>AWG: 16...14 |

Mounting with 18 mm ferrule recommended.

### PowerTag Energy Monoconnect 63 A dimensions (mm)



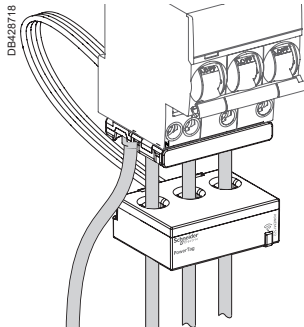
### PowerTag Energy Monoconnect 63 A weight

| Type    | Weight (g) |
|---------|------------|
| 1P+wire | 16.4       |
| 1P+N    | 17.5       |
| 3P      | 28         |
| 3P+N    | 35         |

Please refer to PowerTag Energy 63 A Installation Sheet for accurate and complete information on the installation of this product.



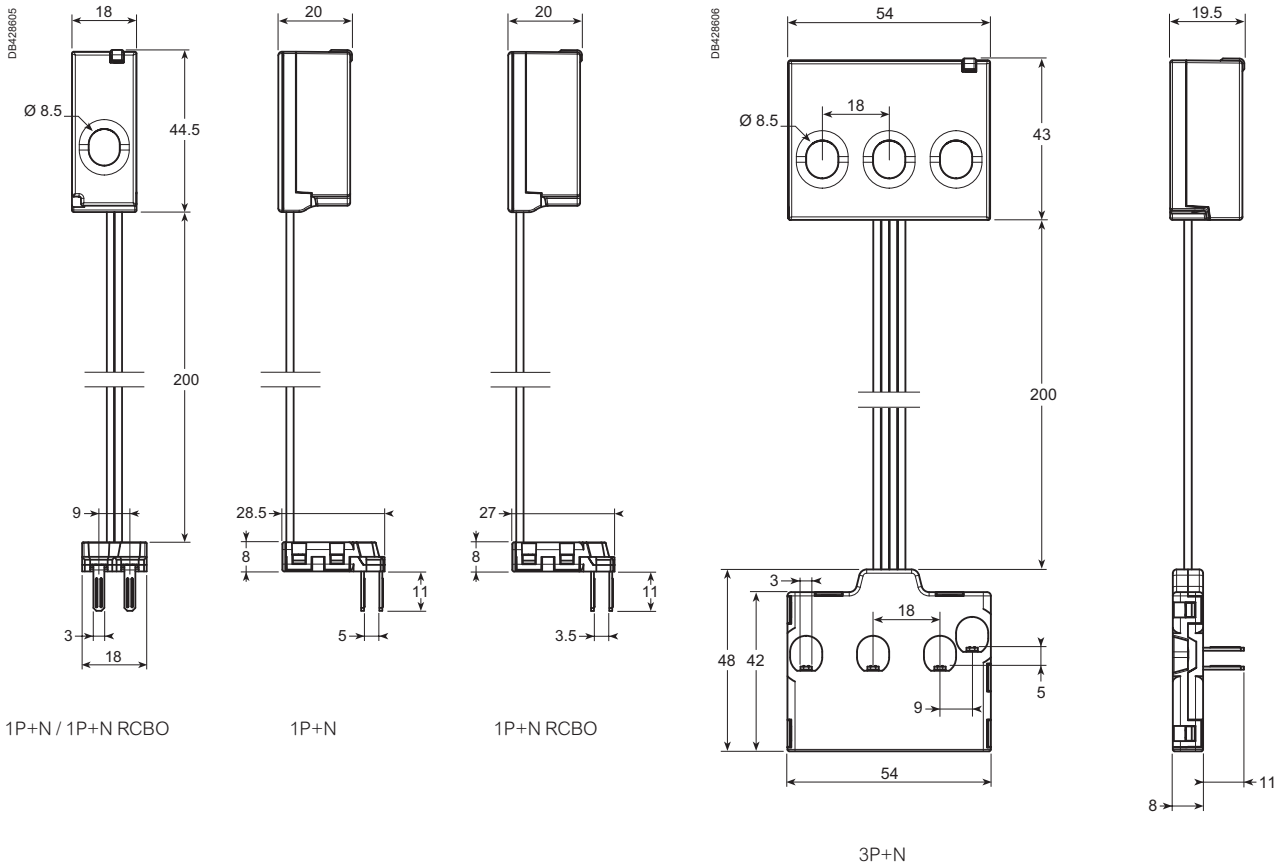
PowerTag Energy PhaseNeutral 63 A connection



| Copper cables                            |  |  |  |  |  |
|--|--|--|--|--|--|
| Rigid                                    |  | Flexible                                 |  | Flexible with ferrule                    |  |
|  |  |  |  |  |  |
| 1.5 to 16 mm <sup>2</sup><br>AWG: 16...6 | 2 x 1.5 to 2.5 mm <sup>2</sup><br>AWG: 16...14 | 1.5 to 16 mm <sup>2</sup><br>AWG: 16...6 | 2 x 1.5 to 2.5 mm <sup>2</sup><br>AWG: 16...14 | 1.5 to 16 mm <sup>2</sup><br>AWG: 16...6 | 2 x 1.5 to 2.5 mm <sup>2</sup><br>AWG: 16...14 |

Stripping length: respect the stripping length stated on the device the PowerTag Energy is associated with.

PowerTag Energy PhaseNeutral 63 A dimensions (mm)



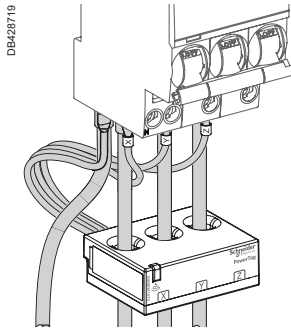
PowerTag Energy PhaseNeutral 63 A weight

| Type | Weight (g) |
|------|------------|
| 1P+N | 18         |
| 3P+N | 48         |

Please refer to PowerTag Energy 63 A Installation Sheet for accurate and complete information on the installation of this product.



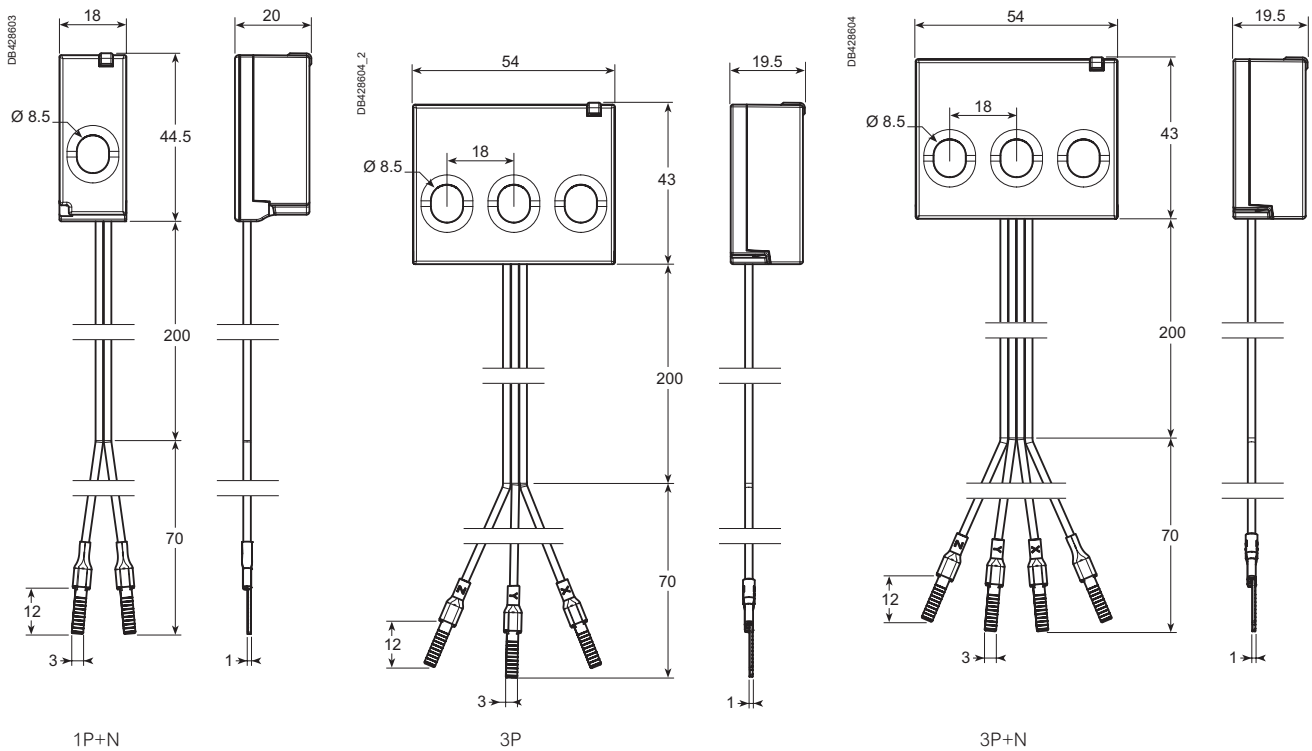
### PowerTag Energy Flex 63 A connection



| Copper cables                            |  |  |  |  |  |
|--|--|--|--|--|--|
| Rigid                                    |  | Flexible                                 |  | Flexible with ferrule                    |  |
|  |  |  |  |  |  |
| 1.5 to 16 mm <sup>2</sup><br>AWG: 16...6 | 2 x 1.5 to 2.5 mm <sup>2</sup><br>AWG: 16...14 | 1.5 to 16 mm <sup>2</sup><br>AWG: 16...6 | 2 x 1.5 to 2.5 mm <sup>2</sup><br>AWG: 16...14 | 1.5 to 16 mm <sup>2</sup><br>AWG: 16...6 | 2 x 1.5 to 2.5 mm <sup>2</sup><br>AWG: 16...14 |

Stripping length: respect the stripping length stated on the device the PowerTag Energy is associated with.

### PowerTag Energy Flex 63 A dimensions (mm)



### PowerTag Energy Flex 63 A weight

| Type | Weight (g) |
|------|------------|
| 1P+N | 16         |
| 3P   | 38         |
| 3P+N | 40         |

Please refer to PowerTag Energy Flex 63 A Installation Sheet for accurate and complete information on the installation of this product.



# PowerLogic™ PowerTag Energy 63 A Resi9

IEC 61557-12 PMD-I/DD/K55/1

As per the above standard:

With its compact design and innovative concept, PowerTag Energy 63 A Resi9 fits directly on the Resi9 protective device and as a result has no impact on DIN rail occupancy and switchboard size.

It is therefore well adapted to be mounted from head of group down to final circuits.

Since voltage and current are measured directly at the same point on the circuit to be monitored, it provides accurate measurement and relevant information such as voltage loss.

PowerTag Energy 63 A Resi9 is dedicated to the Resi9 range of devices and compatible with the concentrator/gateway Wiser IP Module.

## Main characteristics

PowerTag Energy measures the following values in accordance with the IEC 61557-12 standard PMD-I/DD/K55/1:

- Energy:
  - Active energy (kWh): total and partial, delivered and received.
- Voltage loss alarms:
  - PowerTag Energy sends a “voltage loss” alarm before being de-energized.
  - At “voltage loss”, PowerTag Energy adds an overload alarm if the current is higher than the rated current of the associated protective device.

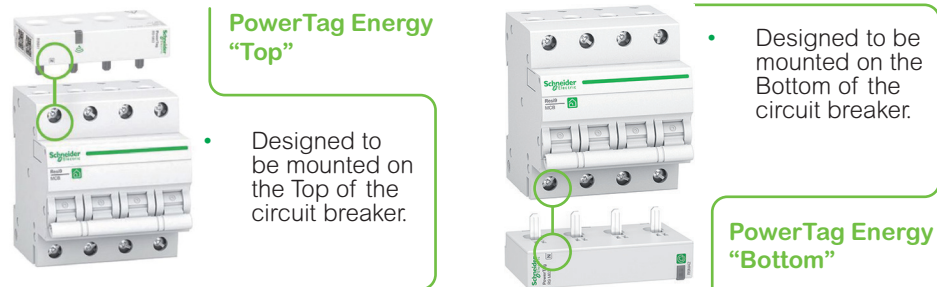




# PowerLogic™ PowerTag Energy 63 A Resi9

## Installation

Some references of PowerTag Energy 63 A Resi9 (Monoconnect) exist in Top or Bottom version. This is linked to the position of the neutral of the PowerTag Energy.



### Note:

- Some PowerTag Energy 63 A Resi9 can be installed either on the TOP or on the BOTTOM of the protective devices.
- Check the possible mounting position as indicated in the "Catalog numbers" chapter.
- In association with a contactor, a Variable Speed Drive or a motor starter: PowerTag Energy can ONLY be installed UPSTREAM these devices.

## Number of poles

Choose the PowerTag Energy according to the number of poles of the protective device: one PowerTag Energy per protective device.

Ex.: 3 pole PowerTag Energy 63 A Resi9 for a 3 pole CB.





# PowerLogic™ PowerTag Energy 63 A Resi9

## Technical specifications

| Main characteristics                   |                        |   |                        |                                       |
|--|------------------------|---|------------------------|---------------------------------------|
| Rated voltage                          | 1P+N / 1P+W            | Un  | Phase-to-neutral       | 200... 240 V AC ± 20 %                |
|  | 3P                     | Un  | Phase-to-phase         | 380... 415 V AC ± 20 %                |
|  | 3P+N                   | Un  | Phase-to-neutral       | 220... 240 V AC ± 20 %                |
|  |                        |   | Phase-to-phase         | 380... 415 V AC ± 20 %                |
| R9M43                                  | Un                     | Phase-to-phase  | 200... 240 V AC ± 20 % |                                       |
| Frequency                              |                        |   |                        | 50/60 Hz                              |
| Maximum current                        | Imax                   |   | 63 A                   |                                       |
| Basic current                          | Ib                     |   | 10 A                   |                                       |
| Saturation current                     |                        |   |                        | 130 A                                 |
| Maximum consumption                    | 1P+N                   |   | ≤ 1 VA                 |                                       |
|  | 3P/3P+N                |   | ≤ 2 VA                 |                                       |
| Starting current                       | Ist                    |   | 40 mA                  |                                       |
| Additional characteristics             |                        |   |                        |                                       |
| Operating temperature                  |                        |   |                        | -25°C to +60°C                        |
| Storage temperature                    |                        |   |                        | -40°C to +85°C                        |
| Overvoltage category                   | As per IEC 61010-1     |   | Cat. III               |                                       |
| Measuring category                     | As per IEC 61010-2-030 |   | Cat. III               |                                       |
| Pollution degree                       |                        |   |                        | 3                                     |
| Altitude                               |                        |   |                        | ≤ 2000 m                              |
| Degree of protection                   | Device only            |   | IP20                   |                                       |
|  | IK                     |   | 05                     |                                       |
| Radio-frequency communication          |                        |   |                        |                                       |
| ISM band 2.4 GHz                       |                        |   |                        | 2.4 GHz to 2.4835 GHz                 |
| Channels                               | As per IEEE 802.15.4   |   | 11 to 26               |                                       |
| Isotropic Radiated Power               | Equivalent (EIRP)      |   | 0 dBm                  |                                       |
| Maximum transmission time              |                        |   |                        | < 5 ms                                |
| Channel occupancy                      | Messages sent every    |   | 5 seconds minimum      |                                       |
| Characteristics of measuring functions |                        |   |                        |                                       |
| Function                               | Symbol                 | Performance category as per IEC 61557-12 (PMD-I/DD/K55/1) |                        | Measuring range                       |
|  |                        | Class   |                        |                                       |
| Active energy (delivered and received) | Ea                     | 1   |                        | Total and partial 0 to 99999999.9 kWh |
| Current                                | I                      | 1   |                        | 40 mA to 63 A                         |
| Voltage                                | U                      | 0.5   |                        | Un ± 20 %                             |



# PowerLogic™ PowerTag Energy 63 A Resi9



R9M20



R9M21



R9M40



R9M22



R9M43



R9M42



R9M41

## PowerTag Energy Monoconnect 63 A Resi9 Commercial reference numbers

PowerTag Energy for Resi9 **Monoconnect** offers: «Single-terminal» circuit breakers, RCDs and switches with **18 mm pitch between phase and neutral**, rating less than or equal to 63 A.

| Commercial reference number | Type    | Mounting      | Description                       |
|-----------------------------|---------|---------------|-----------------------------------|
| <b>R9M20</b>                | 1P+wire | Top or bottom | PowerTag Energy R9 M63 1PW        |
| <b>R9M21</b>                | 1P+N    | Top           | PowerTag Energy R9 M63 1PN T      |
| <b>R9M22</b>                |         | Bottom        | PowerTag Energy R9 M63 1PN B      |
| <b>R9M40</b>                | 3P      | Top or bottom | PowerTag Energy R9 M63 3P         |
| <b>R9M43</b>                |         |               | PowerTag Energy R9 M63 3P 230V LL |
| <b>R9M41</b>                | 3P+N    | Top           | PowerTag Energy R9 M63 3PN T      |
| <b>R9M42</b>                |         | Bottom        | PowerTag Energy R9 M63 3PN B      |

Refer to the Resi9 catalog in your country to select the right PowerTag Energy model to fit on the Resi9 protective device you want equipped.



R9M60



R9M70

## PowerTag Energy Flex 63 A Resi9 Commercial reference numbers

PowerTag Energy **Flex** for other Resi9 devices and specific installations, rating less than or equal to 63 A.

| Commercial reference number | Type | Mounting      | Description                |
|-----------------------------|------|---------------|----------------------------|
| <b>R9M60</b>                | 1P+N | Top or bottom | PowerTag Energy R9 F63 1PN |
| <b>R9M70</b>                | 3P+N | Top or bottom | PowerTag Energy R9 F63 3PN |

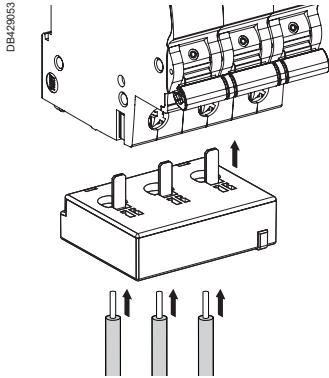
Refer to the Resi9 catalog in your country to select the right PowerTag Energy model to fit on the Resi9 protective device you want equipped.

To allow PowerTag Energy Resi9 F63 to adapt to different types of terminals, the voltage tap lugs can be replaced with other end-pieces or lugs for AWG22/0.33 mm<sup>2</sup> wires.



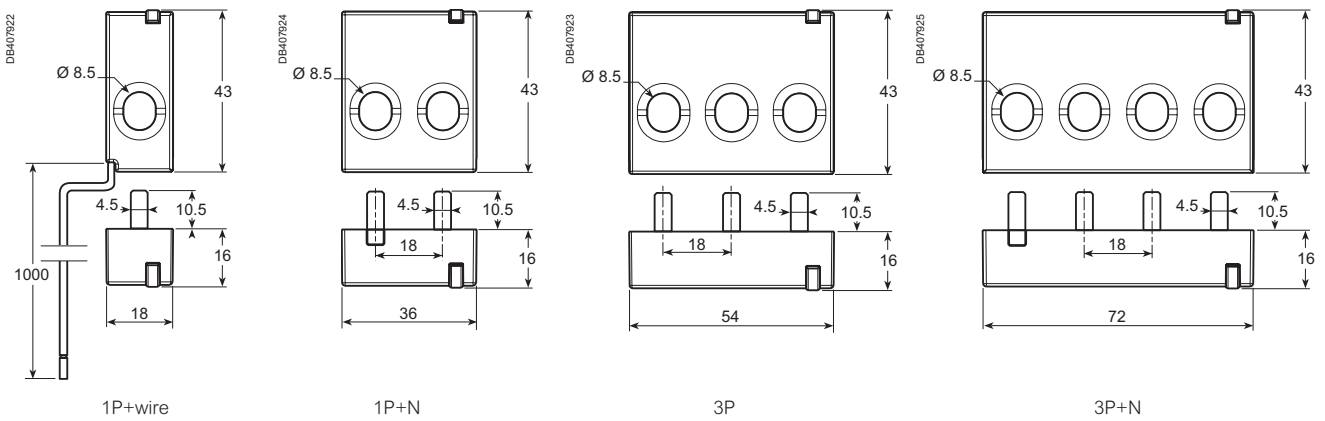
# PowerLogic™ PowerTag Energy 63 A Resi9

## PowerTag Energy R9 M63 connection



Stripping length : 18 mm

## PowerTag Energy R9 M63 dimensions (mm)



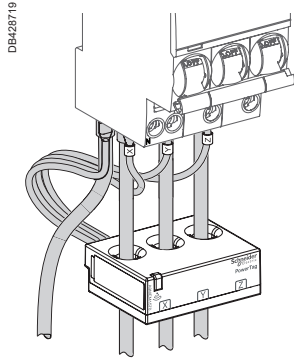
## PowerTag Energy R9 M63 weight

| Type    | Weight (g) |
|---------|------------|
| 1P+wire | 16.4       |
| 1P+N    | 17.5       |
| 3P      | 28         |
| 3P+N    | 35         |



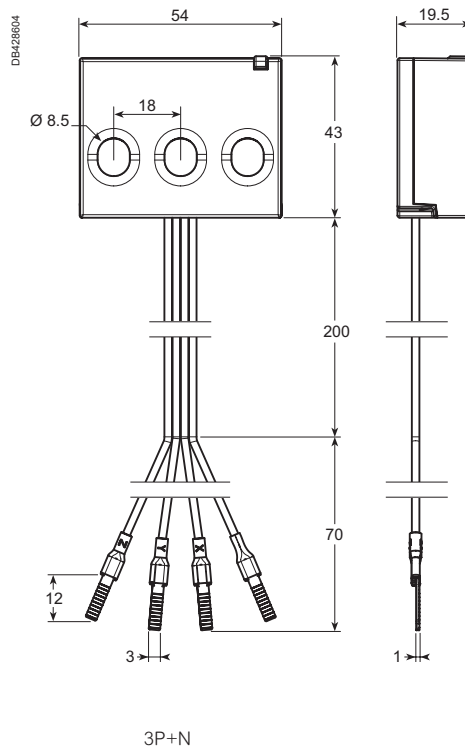
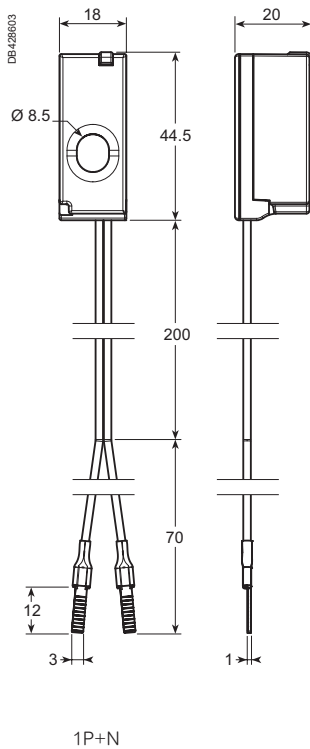
# PowerLogic™ PowerTag Energy 63 A Resi9

## PowerTag Energy R9 F63 connection



Stripping length: respect the stripping length stated on the device the PowerTag Energy is associated with.

## PowerTag Energy R9 F63 dimensions (mm)



## PowerTag Energy R9 F63 weight

| Type | Weight (g) |
|------|------------|
| 1P+N | 16         |
| 3P   | 40         |

Please refer to PowerTag Energy 63 A Resi9 Installation Sheet for accurate and complete information on the installation of this product.



# PowerLogic™ PowerTag Energy Flex 160 A

IEC 61557-12 PMD-II/DD/K70/1

As per the above standard:

With its flex design this PowerTag Energy can be used on many products or group of loads up to 160 A on 3P or 3P+N networks. Its removable spring connector for voltage picking facilitates its installation, and shapes for brackets allows to mount and maintain it where needed in a panel.

## Main characteristics

PowerTag Energy Flex 160 A measures the following values in accordance with the IEC 61557-12 standard PMD-II/DD/K70/1:

- Energy (4 quadrants):
  - Active energy (kWh): total and partial, delivered and received.
  - Active energy per phase (kWh): total and partial, delivered and received.
  - Reactive energy (kVARh): total and partial, delivered and received.
  - Reactive energy per phase (kVARh): total and partial, delivered and received.
  - Apparent energy (kVAh): total and partial.
  - Apparent energy per phase (kVAh): total and partial.
- Real-time measurement values:
  - Voltages (V): phase-to-phase (U12, U23, U31) and phase-to-neutral (V1N, V2N, V3N).
  - Currents (A): per phase (I1, I2, I3), calculated neutral current when connected (IN) .
  - Power:
    - Active power (W): total and per phase.
    - Reactive power (VAR): total and per phase.
    - Apparent power (VA): total and per phase.
  - Frequency (Hz).
  - Power factor: total and per phase.
- Voltage loss alarms:
  - PowerTag Energy Flex sensor sends a “voltage loss” alarm and the current-per-phase value before being de-energized.
  - At “voltage loss”, PowerTag Energy Flex adds an overload alarm if the current is higher than the rated current of the associated protective device

Note: Functions listed above depends on Concentrator/Gateway.



PowerTag Energy Flex 160 A



# PowerLogic™ PowerTag Energy Flex 160 A

## Installation

PowerTag Energy Flex 160 A can be installed in a panel directly on cables or busbars, associated to a product or not. Voltage pickings removable spring terminal has to be wired by 1 copper wire per phase with following characteristics:

### Wire range

| Solid                     | Stranded                  | Stranded with terminal ends |
|---------------------------|---------------------------|-----------------------------|
| 0.2...1.5 mm <sup>2</sup> | 0.2...2.5 mm <sup>2</sup> | 0.25...1.5 mm <sup>2</sup>  |
| 24...16 AWG               | 24...14 AWG               | 24...16 AWG                 |

Neutral picking shall be connected to have phase-to-neutral voltages, energy per phase and power per phase provided.

PowerTag Energy Flex 160 A is mainly advised for ComPact NSXm, ComPact INS160, Acti9 NG125, Acti9 C120, PowerPact B, TeSys GV4, and all other devices with a rating between 63 A and 160 A.





# PowerLogic™ PowerTag Energy Flex 160 A

## Technical specifications

| Main characteristics (as per IEC 61557-12)                         |                  |  |  |                                |
|--|------------------|--|--|--------------------------------|
| Rated voltage  | Un               | Phase-to-neutral   | 100...277 V AC ± 20 %                        |                                |
|  |                  | Phase-to-phase   | 173...480 V AC ± 20 %                        |                                |
| Frequency  |                  |  | 50/60 Hz                                     |                                |
| Maximum current  | I <sub>max</sub> |  | 160 A  |                                |
| Maximum operating current  |                  |  | 1.2 x I <sub>max</sub>                       |                                |
| Saturation current   |                  |  | 2 x I <sub>max</sub>                         |                                |
| Maximum consumption  |                  |  | 3 VA   |                                |
| Starting current   | I <sub>st</sub>  |  | 100 mA                                       |                                |
| Basic current  | I <sub>b</sub>   |  | 25 A   |                                |
| Additional characteristic  |                  |  |  |                                |
| Operating temperature  |                  |  | -25 °C to +70 °C                             |                                |
| Storage temperature  |                  |  | -40 °C to +85 °C                             |                                |
| Overvoltage category   |                  | As per IEC 61010-1   | Cat. IV                                      |                                |
| Measuring category   |                  | As per IEC 61010-2-030                                     | Cat. IV                                      |                                |
| Pollution degree   |                  |  | 3  |                                |
| Altitude   |                  |  | Up to 2000 m without derating <sup>(1)</sup> |                                |
| Degree of protection device  |                  |  | IP20<br>IK05                                 |                                |
| Radio-frequency communication                                      |                  |  |  |                                |
| ISM band 2.4 GHz   |                  |  | 2.4 GHz to 2.4835 GHz                        |                                |
| Channels   |                  | As per IEEE 802.15.4                                       | 11 to 26                                     |                                |
| Isotropic Radiated Power   |                  | Equivalent (EIRP)  | 0 dBm  |                                |
| Maximum transmission time  |                  |  | < 5 ms                                       |                                |
| Channel occupancy  |                  | For 1 device   | messages sent every 5 seconds                |                                |
| Characteristics of measuring functions                             |                  |  |  |                                |
| Function   | Symbol           | Performance category as per IEC 61557-12 (PMD-II/DD/K70/1) |  | Measuring range                |
|  |                  | Class  | Measuring range                              |                                |
| Total active power (Active power per phase)                        | P                | 1  | 2.5 to 160 A                                 | 24 W (8 W) to 192 kW           |
| Total reactive power (Reactive power per phase)                    | Q <sub>A</sub>   | 2  |  | 30 VAR (10 VAR) to 192 kVAR    |
| Total apparent power (Apparent power per phase)                    | S <sub>A</sub>   | 2  |  | 38 VA (13 VA) to 192 kVA       |
| Active Energy: per phase, total, partial, delivered and received   | E <sub>a</sub>   | 1  |  | 0 to 281.10 <sup>9</sup> kWh   |
| Reactive energy: per phase, total, partial, delivered and received | E <sub>rA</sub>  | 2  |  | 0 to 281.10 <sup>9</sup> kVARh |
| Apparent energy: per phase, total, partial                         | E <sub>apA</sub> | 2  |  | 0 to 281.10 <sup>9</sup> kVAh  |
| Frequency  | f                | 0.5  | 50 / 60 Hz ± 2 %                             | 45 to 65 Hz                    |
| Phase current  | I                | 1  | 5 to 160 A                                   | 100 mA to 320 A                |
| Neutral current  | I <sub>NC</sub>  | 2  |  |                                |
| Voltages (Line to Line)  | U                | 0.5  | Un ± 20 %                                    | 138 to 576 V AC                |
| Power factor (per phase, total)                                    | PF <sub>A</sub>  | 1  | From 0.5 inductive to 0.8 capacitive         | -1 to 1                        |

(1) Above 2000 m, please consult Schneider Electric.



# PowerLogic™ PowerTag Energy Flex 160 A



A9MEM1580

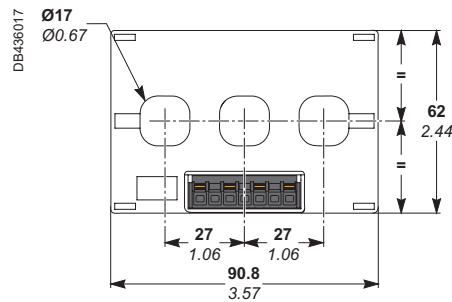
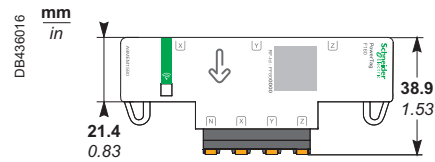
## PowerTag Energy Flex 160 A Commercial reference numbers

| Commercial reference number | Type         | Description                          |
|-----------------------------|--------------|--------------------------------------|
| <b>A9MEM1580</b>            | F160 3P/3P+N | PowerTag Energy Flex 160 A 3P / 3P+N |

For the list of Schneider Electric compatible devices and concentrators, refer to the Selection Guide pages 95 to 102.

Contact your Schneider Electric representative for complete ordering information.

## PowerTag Energy Flex 160 A dimensions



## PowerTag Energy Flex 160 A weight

| Type         | Weight (g) |
|--------------|------------|
| F160 3P/3P+N | 100        |

Please refer to PowerTag Energy Flex 160 A Installation Sheet for accurate and complete information on the installation of this product.



# PowerLogic™ PowerTag Energy Monoconnect 250 A & 630 A

IEC 61557-12 PMD-II/DD/K70/1

As per the above standard:

PowerTag Energy M250/M630 is designed for Molded Case Circuit Breakers and Switches (ComPact and TeSys) for 3P and 3P+N electrical networks. This PowerTag Energy is mounted directly on the bottom side of the circuit breaker or the Vigi add-on if any. Thanks to its integrated design, it does not require any specific wiring, and is compatible with the same connection accessories than the device it is mounted on.

## Main characteristics

PowerTag Energy M250/M630 measures the following values in accordance with the IEC 61557-12 standard PMD-II/DD/K70/1:

- Energy (4 quadrants):
  - Active energy (kWh): total and partial, delivered and received.
  - Active energy per phase (kWh): total.
  - Reactive energy (kVARh): partial, delivered and received.
- Real-time measurement values:
  - Voltages (V): phase-to-phase (U12, U23, U31) and phase-to-neutral (V1N, V2N, V3N).
  - Currents (A): per phase (I1, I2, I3).
  - Power:
    - Active power (W): total and per phase.
    - Reactive power (VAR): total.
    - Apparent power (VA): total.
  - Frequency (Hz).
  - Power factor.
- Voltage loss alarms:
  - PowerTag Energy sends a “voltage loss” alarm and the current-per-phase value before being de-energized.
  - At “voltage loss”, PowerTag Energy adds an overload alarm if the current is higher than the rated current of the associated protective device.

Note: Functions listed above depends on Concentrator/Gateway.



PowerTag Energy Monoconnect 250 A



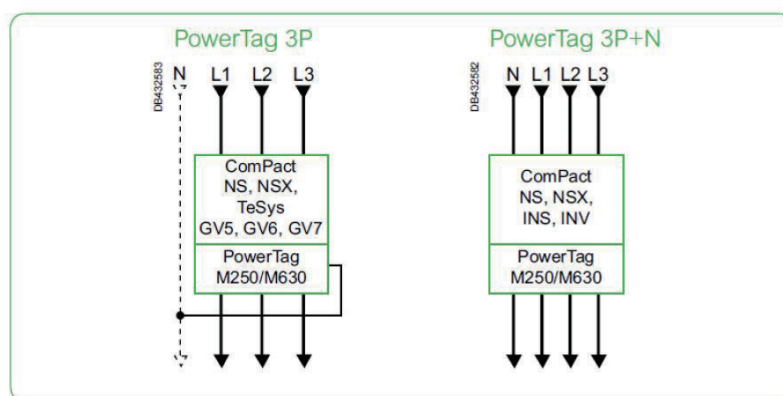
# PowerLogic™ PowerTag Energy Monoconnect 250 A & 630 A

## Installation

The module is self-powered and is installed for fixed devices directly on the bottom side of the circuit breaker or Vigi add-on terminals. For plug-in devices, it has to be installed on the base itself, top or bottom.

PowerTag Energy M250/M630 3P has to be used with 3P devices, and an external neutral voltage tap is provided in case of the installation has a neutral to provide phase-to-neutral voltages, active energy per phase and power per phase.

PowerTag Energy M250/M630 3P+N has to be used with 4P devices and with ComPact INS/INV switches.



PowerTag M250/M630 modules are compatible with ComPact NSX100/160/250, ComPact NSX400/630, ComPact INS250-100A to 250A, ComPact INS320/400/500/630, ComPact INV100/160/200/250, ComPact INV320/400/500/630, ComPact NS100/160/250, ComPact NS400/630, TeSys GV5, TeSys GV6 and TeSys GV7.

In case of retrofit, following points have to be checked:

- Clearance to be able to add PowerTag Energy module and to respect bending radius of cables.
- Condition of power connectors: to be replaced if damaged.
- Tightening torques depending of the connector used.





# PowerLogic™ PowerTag Energy Monoconnect 250 A & 630 A

## Technical specifications

| Main characteristics                        |                  |  |  |   |
|---|------------------|--|--|---|
| Rated voltage                               | Un               | Phase-to-neutral   | 230 VAC ± 20 %                               |   |
|   |                  | Phase-to-phase   | 400 VAC ± 20 %                               |   |
| Frequency                                   |                  |  | 50/60 Hz                                     |   |
| Maximum current                             | I <sub>max</sub> |  | 250 A / 630 A                                |   |
| Maximum operating current                   |                  |  | 1.2 × I <sub>max</sub>                       |   |
| Saturation current                          |                  |  | 2 × I <sub>max</sub>                         |   |
| Maximum consumption                         |                  |  | 3.7 VA                                       |   |
| Starting current                            | I <sub>st</sub>  |  | 160 mA / 400 mA                              |   |
| Basic current                               | I <sub>b</sub>   |  | 40 A / 100 A                                 |   |
| Additional characteristic                   |                  |  |  |   |
| Operating temperature                       |                  |  | -25 °C to +70 °C                             |   |
| Storage temperature                         |                  |  | -50 °C to +85 °C                             |   |
| Overvoltage category                        |                  | As per IEC 61010-1   | Cat. IV                                      |   |
| Measuring category                          |                  | As per IEC 61010-2-030                                     | Cat. III                                     |   |
| Pollution degree                            |                  |  | 3  |   |
| Altitude                                    |                  |  | Up to 2000 m without derating <sup>(1)</sup> |   |
| Degree of protection device                 |                  |  | IP20   |   |
|   |                  |  | IK07   |   |
| Radio-frequency communication               |                  |  |  |   |
| ISM band 2.4 GHz                            |                  |  | 2.4 GHz to 2.4835 GHz                        |   |
| Channels                                    |                  | As per IEEE 802.15.4                                       | 11 to 26                                     |   |
| Isotropic Radiated Power                    |                  | Equivalent (EIRP)  | 0 dBm  |   |
| Maximum transmission time                   |                  |  | < 5 ms                                       |   |
| Channel occupancy                           |                  | For 1 device   | messages sent every 5 seconds                |   |
| Characteristics of measuring functions      |                  |  |  |   |
| Function                                    | Symbol           | Performance category as per IEC 61557-12 (PMD-II/DD/K70/1) |  | Measuring range (250 A / 630 A)                 |
|   |                  | Class  | Measuring range (250 A / 630 A)              |   |
| Total active power (Active power per phase) | P                | 1  | 4 to 250 A / 10 to 630 A                     | 88 W (29 W) to 416 kW / 222 W (74 W) to 1048 kW |
| Total reactive power                        | Q <sub>A</sub>   | 2  |  | 88 VAR to 416 kVAR / 221 VAR to 1048 kVAR       |
| Total apparent power                        | S <sub>A</sub>   | 2  |  | 88 VA to 416 kVA / 221 VA to 1048 kVA           |
| Active Energy: per phase, total, partial    | E <sub>a</sub>   | 1  |  | 0 to 281.10 <sup>9</sup> kWh                    |
| Partial Reactive Energy                     | E <sub>rA</sub>  | 2  |  | 0 to 281.10 <sup>9</sup> kVARh                  |
| Frequency                                   | f                | 1  | 45 to 55 Hz                                  | 45 to 65 Hz                                     |
| Phase current                               | I                | 1  | 8 to 250 A / 20 to 630 A                     | 160 mA to 500 A / 400 mA to 1260 A              |
| Voltages (Line to Line)                     | U                | 0.5  | Un ± 20 %                                    | 320 to 480 VAC                                  |
| Power factor                                | PF <sub>A</sub>  | 1  | From 0.5 inductive to 0.8 capacitive         | -1 to 1   |

(1) Above 2000 m, please consult us.



# PowerLogic™ PowerTag Energy Monoconnect 250 A & 630 A



LV434020



LV434021



LV434022



LV434023



## PowerTag Energy Monoconnect 250 A & 630 A Commercial reference numbers

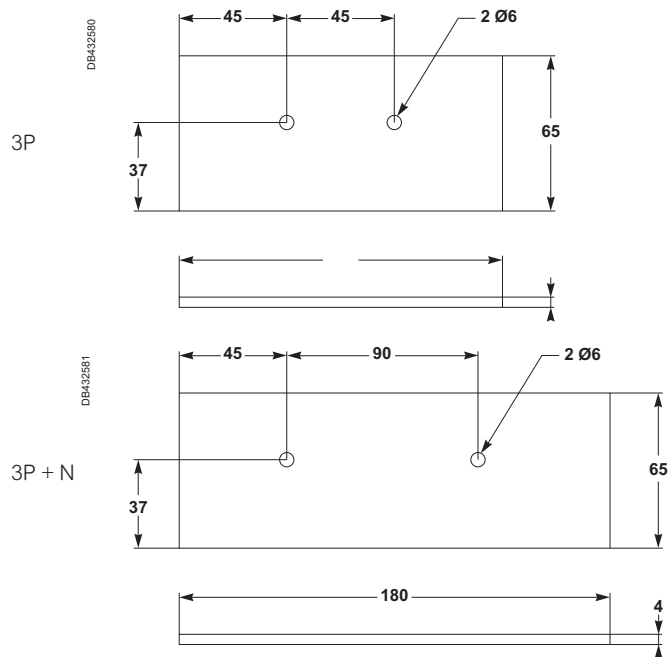


| Commercial reference number    | Type      | Description                | Connection adapter for mounting on plug-in base only |
|--------------------------------|-----------|----------------------------|--|
| <b>LV434020</b>                | M250 3P   | PowerTag Energy 250 A 3P   | <b>LV429306</b>                                      |
| <b>LV434021</b>                | M250 3P+N | PowerTag Energy 250 A 3P+N | <b>LV429307</b>                                      |
| <b>LV434022 <sup>(1)</sup></b> | M630 3P   | PowerTag Energy 630 A 3P   | <b>LV432584</b>                                      |
| <b>LV434023 <sup>(1)</sup></b> | M630 3P+N | PowerTag Energy 630 A 3P+N | <b>LV432585</b>                                      |

For the list of Schneider Electric compatible devices and concentrators, refer to the Selection Guide pages 95 to 102.

Contact your Schneider Electric representative for complete ordering information.

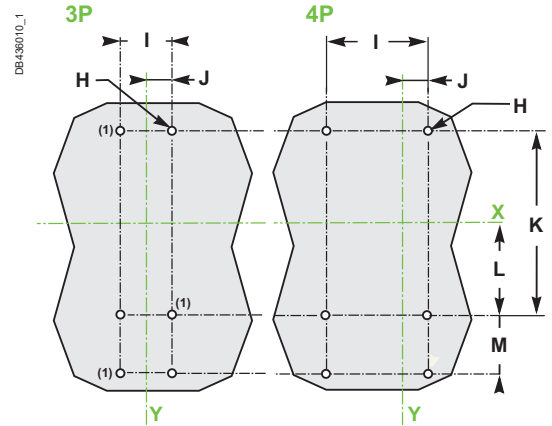
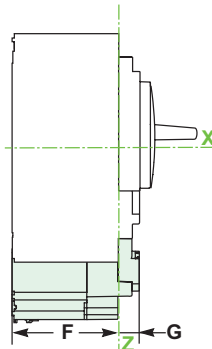
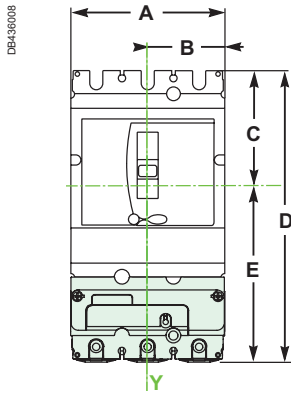
(1) For plug-in devices only: when plate mounted, need to add an intercalary wedging plate under the PowerTag Energy module with following dimensions:



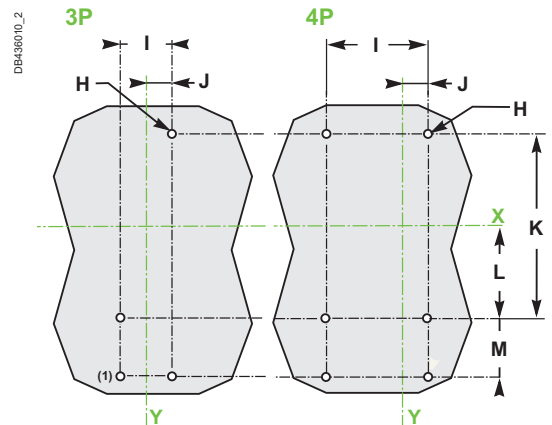
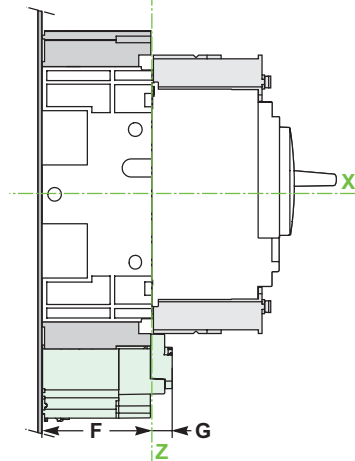
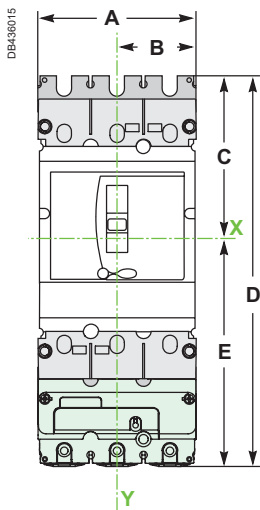


# PowerLogic™ PowerTag Energy Monoconnect 250 A & 630 A

NSX100-250 / NSX400-630



(1) Only for PowerTag M630



(1) Only for PowerTag M630

| mm<br>in                                | A           |             | B            | C             | D            | E             | F           | G          | H                |                 | J          |            | K            | L            | M           |              |            |
|---|-------------|-------------|--------------|---------------|--------------|---------------|-------------|------------|------------------|-----------------|------------|------------|--------------|--------------|-------------|--------------|------------|
|   | 3P          | 4P          |              |               |              |               |             |            | 3P               | 4P              | 3P         | 4P         |              |              |             |              |            |
| <b>NSX100-250</b>                       | 105<br>4.13 | 140<br>5.51 | 52.5<br>2.06 | 80.5<br>3.17  | 201<br>7.91  | 120.5<br>4.74 | 72<br>2.83  | 14<br>0.55 | 3 Ø6<br>3 Ø0.23  | 6 Ø6<br>6 Ø0.23 | 35<br>1.34 | 70<br>2.75 | 17.5<br>0.68 | 17.5<br>0.68 | 125<br>4.92 | 62.5<br>2.46 | 40<br>1.57 |
| <b>NSX400-630</b>                       | 140<br>5.51 | 185<br>7.28 | 70<br>2.75   | 127.5<br>5.02 | 320<br>12.59 | 192.5<br>7.57 | 96<br>3.78  | 14<br>0.55 | 6 Ø6<br>6 Ø0.23  | 6 Ø6<br>6 Ø0.23 | 45<br>1.77 | 90<br>3.5  | 22.5<br>0.88 | 22.5<br>0.88 | 200<br>7.87 | 100<br>3.93  | 65<br>2.56 |
| <b>NSX100-250<br/>with plug-in base</b> | 105<br>4.13 | 140<br>5.51 | 52.5<br>2.06 | 109<br>4.29   | 260<br>10.23 | 151<br>5.94   | 72<br>2.83  | 14<br>0.55 | 3 Ø6<br>3 Ø0.23  | 6 Ø6<br>6 Ø0.23 | 35<br>1.34 | 70<br>2.75 | 17.5<br>0.68 | 17.5<br>0.68 | 155<br>6.10 | 77.5<br>3.05 | 55<br>2.16 |
| <b>NSX400-630<br/>with plug-in base</b> | 140<br>5.51 | 185<br>7.28 | 70<br>2.75   | 153<br>6.02   | 406<br>15.98 | 253<br>9.96   | 100<br>3.93 | 14<br>0.55 | 4 Ø06<br>4 Ø0.23 | 6 Ø6<br>6 Ø0.23 | 45<br>1.77 | 90<br>3.5  | 22.5<br>0.88 | 22.5<br>0.88 | 250<br>9.84 | 125<br>4.92  | 83<br>3.26 |

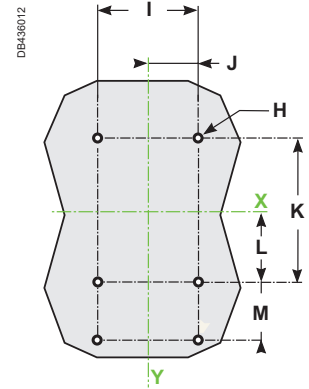
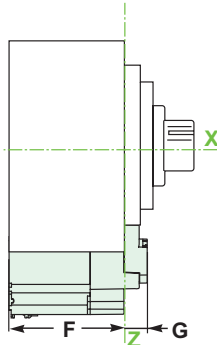
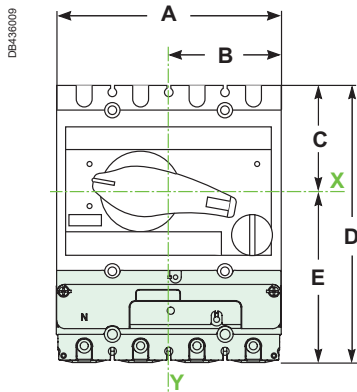
Please refer to PowerTag Energy 250 A & 630 A Installation Sheet for accurate and complete information on the installation of this product.



# PowerLogic™ PowerTag Energy Monoconnect 250 A & 630 A

INS250 / INV100-250

INS320-630 / INV320-630



| mm<br>in                               | A           | B            | C             | D            | E             | F          | G          | H               | I          | J          | K           | L          | M          |
|--|-------------|--------------|---------------|--------------|---------------|------------|------------|-----------------|------------|------------|-------------|------------|------------|
| <b>INS250</b><br><b>INV100-250</b>     | 140<br>5.51 | 70<br>2.75   | 68<br>2.67    | 176<br>6.93  | 108<br>4.25   | 72<br>2.83 | 14<br>0.55 | 6 Ø6<br>6 Ø0.23 | 70<br>2.75 | 35<br>1.37 | 100<br>3.93 | 50<br>1.96 | 40<br>1.57 |
| <b>INS320-630</b><br><b>INV320-630</b> | 185<br>7.28 | 92.5<br>3.64 | 102.5<br>4.03 | 270<br>10.62 | 167.5<br>6.59 | 96<br>3.78 | 14<br>0.55 | 6 Ø6<br>6 Ø0.23 | 90<br>3.5  | 45<br>1.77 | 150<br>5.9  | 75<br>2.95 | 65<br>2.56 |

## PowerTag Energy Monoconnect 250 A & 630 A weight

| Type      | Weight (g) |
|-----------|------------|
| M250 3P   | 250        |
| M250 3P+N | 300        |
| M630 3P   | 800        |
| M630 3P+N | 1000       |

Please refer to PowerTag Energy 250 A & 630 A Installation Sheet for accurate and complete information on the installation of this product.



# PowerLogic™ PowerTag Energy Rope 200 A to 2000 A

IEC 61557-12 PMD-II/DD/K70/1

As per the above standard:

With its flexible and openable current sensors, this PowerTag Energy Rope can be installed easily on busbars and cables without having to disconnect the conductors, and is suitable for 3P or 3P+N networks. Its removable spring connector for voltage picking facilitates its installation, and the module can be mounted on a DIN rail or maintained with brackets where needed in a panel.

## Main characteristics

PowerTag Energy Rope measures the following values in accordance with the IEC 61557-12 standard PMD-II/DD/K70/1:

- Energy (4 quadrants):
  - Active energy (kWh): total and partial, delivered and received.
  - Active energy per phase (kWh): total and partial, delivered and received.
  - Reactive energy (kVARh): total and partial, delivered and received.
  - Reactive energy per phase (kVARh): total and partial, delivered and received.
  - Apparent energy (kVAh): total and partial.
  - Apparent energy per phase (kVAh): total and partial.
- Real-time measurement values:
  - Voltages (V): phase-to-phase (U12, U23, U31) and phase-to-neutral (V1N, V2N, V3N).
  - Currents (A): per phase (I1, I2, I3), calculated neutral current when connected (IN).
  - Power:
    - Active power (W): total and per phase.
    - Reactive power (VAR): total and per phase.
    - Apparent power (VA): total and per phase.
  - Frequency (Hz).
  - Power factor: total and per phase.
- Voltage loss alarms:
  - PowerTag Energy Rope sensor sends a “voltage loss” alarm and the current-per-phase value before being de-energized.
  - At “voltage loss”, PowerTag Energy Rope adds an overload alarm if the current is higher than the rated current of the associated protective device.

Note: Functions listed above depends on Concentrator/Gateway.



PowerTag Energy Rope



# PowerLogic™ PowerTag Energy Rope

## Installation

PowerTag Energy Rope 18 mm module can be mounted on DIN rail or fastened with brackets anywhere in a panel. Then its openable current sensors have to be installed around conductors, cables or busbars, whatever they are insulated or not. Voltage pickings removable spring terminal has to be wired by 1 copper wire per phase with following characteristics:

### Wire range

| Solid                     | Stranded                  | Stranded with terminal ends |
|---------------------------|---------------------------|-----------------------------|
| 0.2...1.5 mm <sup>2</sup> | 0.2...2.5 mm <sup>2</sup> | 0.25...1.5 mm <sup>2</sup>  |
| 24...16 AWG               | 24...14 AWG               | 24...16 AWG                 |

Neutral picking shall be connected to have phase-to-neutral voltages, energy per phase and power per phase provided.

PowerTag Energy Rope is mainly advised for ComPact NS, MasterPact NT and NW, MasterPact MTZ NA and HA, for retrofit, for group of loads, and for all other devices with a rating up to 2000 A.





# PowerLogic™ PowerTag Energy Rope 200 A to 2000 A

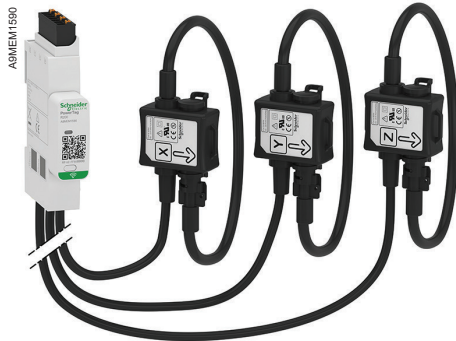
## Technical specifications

| Main characteristics (as per IEC 61557-12)                         |                  |  |  |   |
|--|------------------|--|--|---|
| Rated voltage  | Un               | Phase-to-neutral   | 100...277 VAC ± 20 %                                   |   |
|  |                  | Phase-to-phase   | 173...480 VAC ± 20 %                                   |   |
| Frequency  |                  |  | 50/60 Hz   |   |
| Maximum current  | I <sub>max</sub> |  | 200 A / 600 A / 1000 A / 2000 A                        |   |
| Maximum operating current  |                  |  | 1.2 × I <sub>max</sub>                                 |   |
| Saturation current   |                  |  | 2 × I <sub>max</sub>                                   |   |
| Maximum consumption  |                  |  | 3 VA   |   |
| Starting current   | I <sub>st</sub>  |  | 120 mA / 400 mA / 600 mA / 1.2 A                       |   |
| Basic current  | I <sub>b</sub>   |  | 30 A / 100 A / 150 A / 300 A                           |   |
| Additional characteristic  |                  |  |  |   |
| Operating temperature  |                  |  | -25 °C to +70 °C                                       |   |
| Maximum primary conductor temperature                              |                  |  | 100 °C   |   |
| Storage temperature  |                  |  | -40 °C to +85 °C                                       |   |
| Overvoltage category   |                  | As per IEC 61010-1   | Cat. IV  |   |
| Measuring category   |                  | As per IEC 61010-2-030                                     | Cat. IV  |   |
| Pollution degree   |                  |  | 3  |   |
| Altitude   |                  |  | Up to 2000 m without derating <sup>(1)</sup>           |   |
| Degree of protection device  |                  |  | IP20 (IP40 front face)<br>IK05                         |   |
| Radio-frequency communication                                      |                  |  |  |   |
| ISM band 2.4 GHz   |                  |  | 2.4 GHz to 2.4835 GHz                                  |   |
| Channels   |                  | As per IEEE 802.15.4                                       | 11 to 26   |   |
| Isotropic Radiated Power   |                  | Equivalent (EIRP)  | 0 dBm  |   |
| Maximum transmission time  |                  |  | < 5 ms   |   |
| Channel occupancy  |                  | For 1 device   | messages sent every 5 seconds                          |   |
| Characteristics of measuring functions                             |                  |  |  |   |
| Function   | Symbol           | Performance category as per IEC 61557-12 (PMD-II/DD/K70/1) |  | Measuring range (200 A / 600 A / 1000 A / 2000 A)   |
|  |                  | Class  | Measuring range (200 A / 600 A / 1000 A / 2000 A)      |   |
| Total active power (Active power per phase)                        | P                | 1  | 3 to 200 A / 10 to 600 A / 15 to 1000 A / 30 to 2000 A | 29 W (10 W) to 240 kW / 96 W (32 W) to 720 kW / 144 W (48 W) to 1200 kW / 288 W (96 W) to 2400 kW                           |
| Total reactive power (Reactive power per phase)                    | Q <sub>A</sub>   | 2  |  | 36 VAR (12 VAR) to 240 kVAR / 120 VAR (40 VAR) to 720 kVAR / 180 VAR (60 VAR) to 1200 kVAR / 360 VAR (120 VAR) to 2400 kVAR |
| Total apparent power (Apparent power per phase)                    | S <sub>A</sub>   | 2  |  | 46 VA (15 VA) to 240 kVA / 154 VA (51 VA) to 720 kVA / 231 VA (77 VA) to 1200 kVA / 461 VA (154 VA) to 2400 kVA             |
| Active Energy: per phase, total, partial, delivered and received   | E <sub>a</sub>   | 1  |  | 0 to 281.10 <sup>9</sup> kWh  |
| Reactive energy: per phase, total, partial, delivered and received | E <sub>rA</sub>  | 2  |  | 0 to 281.10 <sup>9</sup> kVARh  |
| Apparent energy: per phase, total, partial                         | E <sub>apA</sub> | 2  |  | 0 to 281.10 <sup>9</sup> kVAh   |
| Frequency  | f                | 0.5  | 50 / 60 Hz ± 2 %                                       | 45 to 65 Hz   |
| Phase current  | I                | 1  | 6 to 200 A / 20 to 600 A / 30 to 1000 A / 60 to 2000 A | 120 mA to 400 A / 400 mA to 1200 A / 600 mA to 2000 A / 1.2 A to 4000 A   |
| Neutral current  | I <sub>NC</sub>  | 2  |  |   |
| Voltages (Line to Line)  | U                | 0.5  | Un ± 20 %  | 138 to 576 VAC  |
| Power factor (per phase, total)                                    | PF <sub>A</sub>  | 1  | From 0.5 inductive to 0.8 capacitive                   | -1 to 1   |

(1) Above 2000 m, please consult us.



# PowerLogic™ PowerTag Energy Rope 200 A to 2000 A



A9MEM1590●

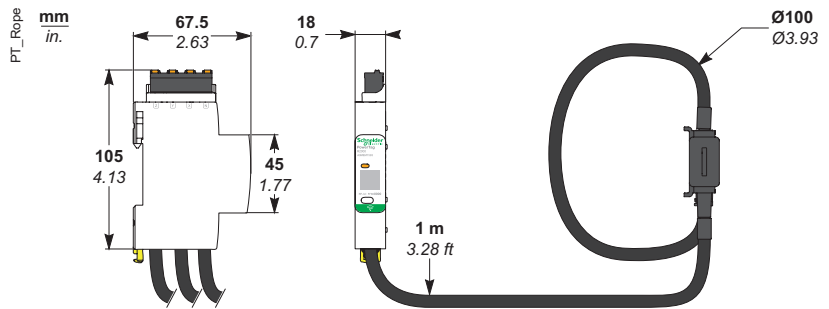
## PowerTag Energy Rope 200 A to 2000 A Commercial reference numbers

| Commercial reference number | Type          | Description                           |
|-----------------------------|---------------|---------------------------------------|
| <b>A9MEM1590</b>            | R200 3P/3P+N  | PowerTag Energy Rope 200 A 3P / 3P+N  |
| <b>A9MEM1591</b>            | R600 3P/3P+N  | PowerTag Energy Rope 600 A 3P / 3P+N  |
| <b>A9MEM1592</b>            | R1000 3P/3P+N | PowerTag Energy Rope 1000 A 3P / 3P+N |
| <b>A9MEM1593</b>            | R2000 3P/3P+N | PowerTag Energy Rope 2000 A 3P / 3P+N |

For the list of Schneider Electric compatible devices and concentrators, refer to the Selection Guide pages 95 to 102.

Contact your Schneider Electric representative for complete ordering information.

## PowerTag Energy Rope 200 A to 2000 A dimensions



## PowerTag Energy Rope 200 A to 2000 A weight

| Type          | Weight (g) |
|---------------|------------|
| R200 3P/3P+N  | 360        |
| R600 3P/3P+N  |            |
| R1000 3P/3P+N |            |
| R2000 3P/3P+N |            |

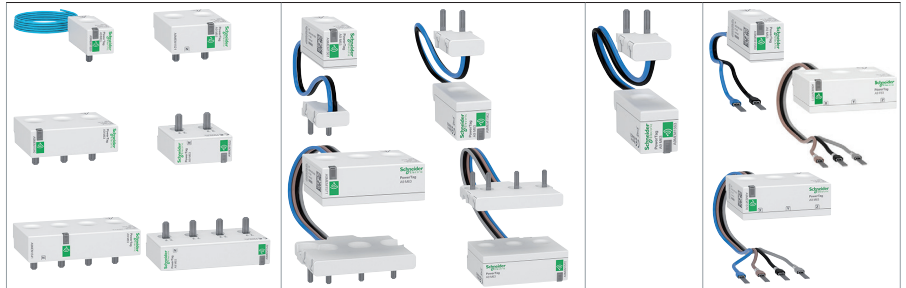
Please refer to PowerTag Energy Rope 200 A to 2000 A Installation Sheet for accurate and complete information on the installation of this product.

# PowerLogic™ PowerTag Energy

## Selection guide for product compatibility\*

(Compatibility for terminal not equipped with comb busbar)

### PowerTag Energy 63 A



| Products (AC network)                             | Mounting position | A9 M63                | A9 P63            | A9 P63 RCBO | A9 F63        |
|---|-------------------|-----------------------|-------------------|-------------|---------------|
| <b>Acti9/Multi9</b>                               |                   |                       |                   |             |               |
| <b>Circuit breakers</b>                           |                   |                       |                   |             |               |
| iC60/iK60/DT60                                    | Top               | ✓                     | -                 | -           | -             |
|   | Bottom            | ✓                     | -                 | -           | -             |
| iC60 (double terminal)                            | Top               | -                     | -                 | -           | ✓             |
|   | Bottom            | -                     | -                 | -           | ✓             |
| iC40  | Top               | -                     | ✓                 | -           | -             |
|   | Bottom            | -                     | ✓                 | -           | -             |
| DT40/iDPN/C40                                     | Top               | -                     | ✓                 | -           | -             |
|   | Bottom            | -                     | ✓                 | -           | -             |
| C120 ≤ 63 A<br>NG125 ≤ 63 A                       | Top               | -                     | -                 | -           | ✓ (1)         |
|   | Bottom            | -                     | -                 | -           | ✓ (1)         |
| iC65N-K (China)<br>iC65 (China)                   | Top               | ✓                     | -                 | -           | -             |
|   | Bottom            | ✓                     | -                 | -           | -             |
| iDPN (China)                                      | Top               | -                     | ✓                 | -           | -             |
|   | Bottom            | -                     | ✓                 | -           | -             |
| iKQ<br>(1P+W PowerTag on each pole)               | Top               | NA                    | -                 | -           | -             |
|   | Bottom            | ✓ (1P+W only)         | -                 | -           | -             |
| N40   | Top               | -                     | ✓                 | -           | -             |
|   | Bottom            | -                     | ✓                 | -           | -             |
| Reflex iC60                                       | Top               | ✓                     | -                 | -           | -             |
|   | Bottom            | ✓                     | -                 | -           | -             |
| Reflex XC40                                       | Top               | ✓                     | -                 | -           | -             |
|   | Bottom            | -                     | -                 | -           | ✓ (1)         |
| C32/C45/C60/C65/K60/T60/<br>Multi9 OEM (C60N/H/L) | Top               | ✓                     | -                 | -           | -             |
|   | Bottom            | ✓                     | -                 | -           | -             |
| <b>Circuit breakers equipped with Vigi module</b> |                   |                       |                   |             |               |
| iC60/iC65/iC60/iC65N-K<br>with Vigi module        | Top               | ✓ (CB)                | -                 | -           | -             |
|   | Bottom            | -                     | -                 | -           | ✓ (1) (Vigi)  |
| iC40<br>with Vigi iCG40                           | Top CB            | -                     | ✓ (CB)            | -           | -             |
|   | Top (Vigi)        | -                     | ✓ (2) (Vigi 1P+N) | -           | -             |
|   | Bottom (Vigi)     | -                     | -                 | -           | ✓ (Vigi 3P+N) |
| iC40<br>with "outgoer" Vigi module                | Top               | -                     | ✓ (CB)            | -           | -             |
|   | Bottom            | -                     | -                 | -           | ✓ (Vigi)      |
| DT40/DPN/C40<br>with "group feeder" Vigi module   | Top CB            | -                     | ✓ (CB)            | -           | -             |
|   | Top Vigi          | -                     | ✓ (Vigi 1P+N)     | -           | ✓ (Vigi 3P+N) |
| DT40/DPN/C40<br>with "outgoer" Vigi module        | Top               | -                     | ✓ (CB)            | -           | -             |
|   | Bottom            | -                     | -                 | -           | ✓ (Vigi)      |
| DT60<br>with Vigi TG60                            | Top CB            | ✓ (CB) only A9MEM1541 | -                 | -           | -             |
|   | Top Vigi          | -                     | -                 | -           | ✓ (1) (Vigi)  |

(1) You may need to change the voltage measurement cable terminals of the PowerTag Energy F63 by other cable ends (wire AWG22/0.33 mm<sup>2</sup>) for a more suitable connection to this product.

(2) Product usually associated with a comb busbar

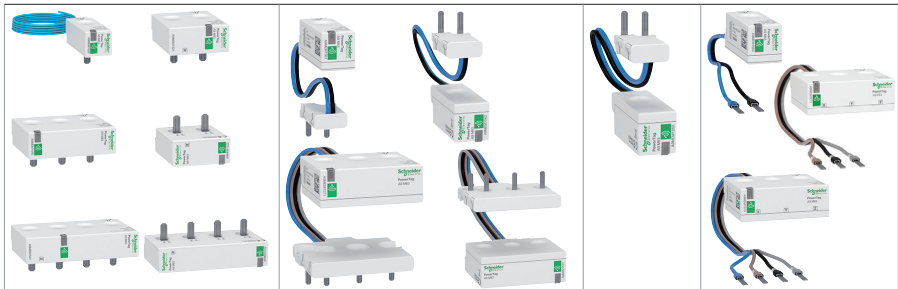
(\*) Refer to the product catalog for technical characteristics

# PowerLogic™ PowerTag Energy

## Selection guide for product compatibility\*

(Compatibility for terminal not equipped with comb busbar)

### PowerTag Energy 63 A



| Products (AC network)                                     | Mounting position | A9 M63        | A9 P63       | A9 P63 RCBO | A9 F63       |
|---|-------------------|---------------|--------------|-------------|--------------|
| <b>Acti9/Multi9</b>                                       |                   |               |              |             |              |
| <b>Circuit breakers equipped with Vigi module (cont')</b> |                   |               |              |             |              |
| C120 ≤ 63 A<br>NG125 ≤ 63 A<br>with Vigi module           | Top               | -             | -            | -           | ✓ (1) (CB)   |
|   | Bottom            | -             | -            | -           | ✓ (1) (Vigi) |
| <b>Residual current devices</b>                           |                   |               |              |             |              |
| iID/iID K   | Top               | ✓             | -            | -           | -            |
|   | Bottom            | ✓             | -            | -           | -            |
| iID (double terminal)                                     | Top               | -             | -            | -           | ✓            |
|   | Bottom            | -             | -            | -           | ✓            |
| iID40   | Top               | -             | ✓ (2) (1P+N) | -           | ✓ (2) (3P+N) |
|   | Bottom            | ✓             | -            | -           | -            |
| iDPN Vigi<br>"outgoer" 1P+N                               | Top               | -             | ✓            | -           | -            |
|   | Bottom            | -             | ✓            | -           | -            |
| iC60H RCBO/iC60H2 RCBO/<br>IKQE RCBO                      | Top               | NA (fishbone) | -            | -           | -            |
|   | Bottom            | -             | -            | ✓           | -            |
| iC60 RCBO   | Top               | ✓             | -            | -           | -            |
|   | Bottom            | ✓             | -            | -           | -            |
| iCV40 "outgoer" 1P+N                                      | Top               | -             | ✓            | -           | -            |
|   | Bottom            | -             | ✓            | -           | -            |
| iCV40 "outgoer" 3P+N                                      | Top               | -             | ✓            | -           | -            |
|   | Bottom            | -             | -            | -           | ✓            |
| DPN Vigi/DT40 Vigi/C40 Vigi<br>"outgoer" 1P+N             | Top               | -             | ✓            | -           | -            |
|   | Bottom            | -             | ✓            | -           | -            |
| DPN Vigi/DT40 Vigi/C40 Vigi/<br>iDPN Vigi "outgoer" 3P+N  | Top               | -             | ✓            | -           | -            |
|   | Bottom            | -             | -            | -           | ✓            |
| DPN Vigi K  | Top               | -             | -            | -           | ✓ (1)        |
|   | Bottom            | -             | -            | -           | ✓ (1)        |
| N40 Vigi<br>"outgoer"                                     | Top               | -             | ✓            | -           | -            |
|   | Bottom            | -             | ✓            | -           | -            |
| iDc/ITG40/C40   | Top Left          | -             | ✓            | -           | -            |
|   | Top Right         | -             | ✓            | -           | -            |
| DCP Vigi  | Top               | ✓             | -            | -           | -            |
|   | Bottom            | ✓             | -            | -           | -            |
| C60H RCBO (Multi9)  | Top               | NA (fishbone) | -            | -           | -            |
|   | Bottom            | -             | -            | ✓           | -            |
| ID ≤ 63 A/iID K biconnect/<br>ID Type B ≤ 63 A            | Top               | ✓             | -            | -           | -            |
|   | Bottom            | ✓             | -            | -           | -            |
| RED/REDS/REDTest  | Top               | -             | -            | -           | ✓ (1)        |
|   | Bottom            | -             | -            | -           | ✓ (1)        |

(1) You may need to change the voltage measurement cable terminals of the PowerTag Energy F63 by other cable ends (wire AWG22/0.33 mm<sup>2</sup>) for a more suitable connection to this product.  
 (2) Product usually associated with a comb busbar

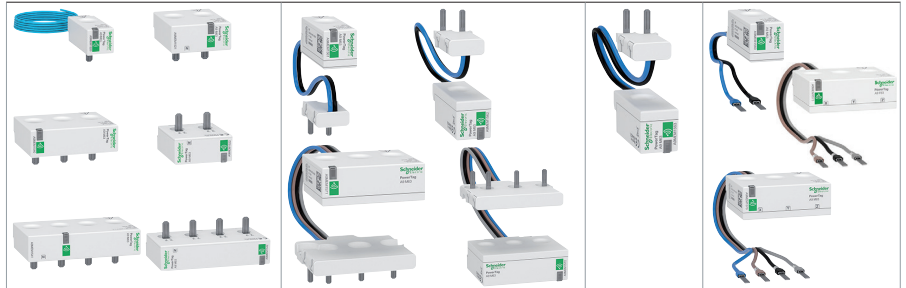
(\*) Refer to the product catalog for technical characteristics

# PowerLogic™ PowerTag Energy

## Selection guide for product compatibility\*

(Compatibility for terminal not equipped with comb busbar)

### PowerTag Energy 63 A



| Products (AC network)         | Mounting position | A9 M63 | A9 P63 | A9 P63 RCBO | A9 F63              |
|-------------------------------|-------------------|--------|--------|-------------|---------------------|
| <b>Acti9/Multi9</b>           |                   |        |        |             |                     |
| <b>Switches</b>               |                   |        |        |             |                     |
| iSW ≤ 63 A                    | Top               | ✓      | -      | -           | -                   |
|                               | Bottom            | ✓      | -      | -           | -                   |
| iSW-NA ≤ 63 A                 | Top               | ✓      | -      | -           | -                   |
|                               | Bottom            | ✓      | -      | -           | -                   |
| iSW 20/32 A                   | Top               | -      | -      | -           | ✓                   |
|                               | Bottom            | -      | -      | -           | ✓                   |
| i-NA ≤ 63 A                   | Top               | ✓      | -      | -           | -                   |
|                               | Bottom            | ✓      | -      | -           | -                   |
| NG125 NA ≤ 63 A               | Top               | -      | -      | -           | ✓ (1)               |
|                               | Bottom            | -      | -      | -           | ✓ (1)               |
| <b>Fuse disconnectors</b>     |                   |        |        |             |                     |
| STI                           | Top               | -      | ✓      | -           | -                   |
|                               | Bottom            | -      | ✓      | -           | -                   |
| SBI 14x51/SBI 22x58 ≤ 63 A    | Top               | -      | -      | -           | ✓ (1)               |
|                               | Bottom            | -      | -      | -           | ✓ (1)               |
| D01/D02                       | Top               | -      | -      | -           | ✓ (1)               |
|                               | Bottom            | -      | -      | -           | ✓ (1)               |
| <b>TeSys</b>                  |                   |        |        |             |                     |
| <b>Motor circuit breakers</b> |                   |        |        |             |                     |
| GV2                           | Top               | -      | -      | -           | ✓ (1) (2)           |
|                               | Bottom            | -      | -      | -           | ✓ (1) (2)           |
| GV3 ≤ 63 A                    | Top               | -      | -      | -           | ✓ (1) (2)           |
|                               | Bottom            | -      | -      | -           | ✓ (1) (2)           |
| <b>Contactors</b>             |                   |        |        |             |                     |
| TeSys D ≤ 63 A                | Top               | -      | -      | -           | ✓ Upstream only (1) |
|                               | Bottom            | -      | -      | -           | -                   |
| TeSys K                       | Top               | -      | -      | -           | ✓ Upstream only (1) |
|                               | Bottom            | -      | -      | -           | -                   |
| <b>Motor starter</b>          |                   |        |        |             |                     |
| TeSys U                       | Top               | -      | -      | -           | ✓ Upstream only (1) |
|                               | Bottom            | -      | -      | -           | -                   |

(1) You may need to change the voltage measurement cable terminals of the PowerTag Energy F63 by other cable ends (wire AWG22/0.33 mm<sup>2</sup>) for a more suitable connection to this product.  
 (2) PowerTag Energy sensors withstand motor starting in-rush currents. Environmental mission profile : Buildings as per 60721-3-3.

(\*) Refer to the product catalog for technical characteristics

# PowerLogic™ PowerTag Energy

## Selection guide for product compatibility\*

(Compatibility for terminal not equipped with comb busbar)

### PowerTag Energy 160 A



| Products (AC network)               |           | Mounting position | F160 3P / 3P+N                                    |
|-------------------------------------|-----------|-------------------|---|
| <b>Acti9</b>                        |           |                   |   |
| <b>Circuit breakers</b>             |           |                   |   |
| C120 (with or without Vigi module)  | 3P / 3P+N | Top / Bottom      | <input checked="" type="checkbox"/>               |
| NG125 (with or without Vigi module) | 3P / 3P+N | Top / Bottom      | <input checked="" type="checkbox"/>               |
| <b>Residual current devices</b>     |           |                   |   |
| iID > 63 A                          | 3P+N      | Top / Bottom      | <input checked="" type="checkbox"/>               |
| RCCB-ID 125 A                       | 3P+N      | Top / Bottom      | <input checked="" type="checkbox"/>               |
| <b>Fuse disconnectors</b>           |           |                   |   |
| SBI > 63 A                          | 3P / 3P+N | Top / Bottom      | <input checked="" type="checkbox"/>               |
| <b>Switches</b>                     |           |                   |   |
| NG125 NA                            | 3P / 3P+N | Top / Bottom      | <input checked="" type="checkbox"/>               |
| iSW > 63 A                          | 3P / 3P+N | Top / Bottom      | <input checked="" type="checkbox"/>               |
| iSW NA > 63 A                       | 3P+N      | Top / Bottom      | <input checked="" type="checkbox"/>               |
| <b>ComPact</b>                      |           |                   |   |
| <b>Circuit breakers</b>             |           |                   |   |
| NSXm                                | 3P / 3P+N | Top / Bottom      | <input checked="" type="checkbox"/> (5)           |
| <b>Switches</b>                     |           |                   |   |
| NSXm NA                             | 3P / 3P+N | Top / Bottom      | <input checked="" type="checkbox"/> (5)           |
| INS 80/100/125/160                  | 3P / 3P+N | Top / Bottom      | <input checked="" type="checkbox"/>               |
| <b>PowerPact</b>                    |           |                   |   |
| <b>Circuit breakers</b>             |           |                   |   |
| B                                   | 3P / 3P+N | Top / Bottom      | <input checked="" type="checkbox"/> (6)           |
| <b>TeSys</b>                        |           |                   |   |
| <b>Motor circuit breakers</b>       |           |                   |   |
| GV3 > 65 A                          | 3P        | Top / Bottom      | <input checked="" type="checkbox"/>               |
| GV4                                 | 3P        | Top / Bottom      | <input checked="" type="checkbox"/>               |
| <b>Contactors</b>                   |           |                   |   |
| 63 A < TeSys D ≤ 160 A              | 3P / 3P+N | Top               | <input checked="" type="checkbox"/> Upstream only |
| TeSys F ≤ 160 A                     | 3P / 3P+N | Top               | <input checked="" type="checkbox"/> Upstream only |

(5) It is advised to use EverLink connectors with control wire terminal (LV426970 for 3P / LV426971 for 4P)

(6) It is advised to use EverLink connectors with control wire terminal (LV426974 for 3P / LV426975 for 4P)

(\*) Refer to the product catalog for technical characteristics

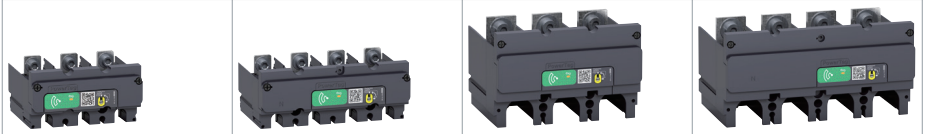
# PowerLogic™ PowerTag Energy

## Selection guide for product compatibility\*

(Compatibility for terminal not equipped with comb busbar)

**PowerTag Energy 250 A**

**PowerTag Energy 630 A**



| Products<br>(AC network)  | Mounting<br>position | M250 3P      | M250 3P+N | M630 3P | M630 3P+N |
|---|----------------------|--------------|-----------|---------|-----------|
| <b>ComPact</b>  |                      |              |           |         |           |
| <b>Circuit breakers</b>   |                      |              |           |         |           |
| NSX100/160/250<br>B/F/N/H/S/L/R/NA Fixed                            | 3P                   | Bottom       | ☑         | -       | -         |
|   | 4P                   | Bottom       | -         | ☑       | -         |
| NSX400/630<br>F/N/H/S/L/R/NA Fixed                                  | 3P                   | Bottom       | -         | ☑       | -         |
|   | 4P                   | Bottom       | -         | -       | ☑         |
| NSX100/160/250<br>B/F/N/H/S/L/R/NA Plug-In<br>(mounted on the base) | 3P                   | Top / Bottom | ☑         | -       | -         |
|   | 4P                   | Top / Bottom | -         | ☑ (3)   | -         |
| NSX400/630<br>F/N/H/S/L/R/NA Plug-In<br>(mounted on the base)       | 3P                   | Top / Bottom | -         | ☑ (4)   | -         |
|   | 4P                   | Top / Bottom | -         | -       | ☑ (3) (4) |
| NS100/160/250<br>N/SX/H/L/NA Fixed                                  | 3P                   | Bottom       | ☑         | -       | -         |
|   | 4P                   | Bottom       | -         | ☑       | -         |
| NS400/630<br>N/H/L/NA Fixed   | 3P                   | Bottom       | -         | ☑       | -         |
|   | 4P                   | Bottom       | -         | -       | ☑         |
| NS100/160/250<br>N/SX/H/L/NA Plug-In<br>(mounted on the base)       | 3P                   | Top / Bottom | ☑         | -       | -         |
|   | 4P                   | Top / Bottom | -         | ☑ (3)   | -         |
| NS400/630<br>N/H/L/NA Plug-In<br>(mounted on the base)              | 3P                   | Top / Bottom | -         | ☑ (4)   | -         |
|   | 4P                   | Top / Bottom | -         | -       | ☑ (3) (4) |
| <b>Circuit breakers equipped with Vigi block</b>                    |                      |              |           |         |           |
| NSX100/160/250<br>B/F/N/H/S/L/R/NA Fixed                            | 3P                   | Bottom       | ☑         | -       | -         |
|   | 4P                   | Bottom       | -         | ☑       | -         |
| NSX400/630<br>F/N/H/S/L/R/NA Fixed                                  | 3P                   | Bottom       | -         | ☑       | -         |
|   | 4P                   | Bottom       | -         | -       | ☑         |
| NSX100/160/250<br>B/F/N/H/S/L/R/NA Plug-In<br>(mounted on the base) | 3P                   | Top          | ☑         | -       | -         |
| NSX400/630<br>F/N/H/S/L/R/NA Plug-In<br>(mounted on the base)       | 3P                   | Top          | -         | ☑ (4)   | -         |
| <b>Switches</b>   |                      |              |           |         |           |
| INS250/INV -<br>100/160/200/250                                     | 3P                   | Bottom       | -         | ☑       | -         |
|   | 4P                   | Top / Bottom | -         | ☑ (3)   | -         |
| INS/INV -<br>320/400/500/630  | 3P                   | Bottom       | -         | -       | ☑         |
|   | 4P                   | Top / Bottom | -         | -       | ☑ (3)     |
| <b>TeSys</b>  |                      |              |           |         |           |
| <b>Motor circuit breakers</b>                                       |                      |              |           |         |           |
| GV5, GV7  | 3P                   | Bottom       | ☑         | -       | -         |
| GV6   | 3P                   | Bottom       | -         | ☑       | -         |

(3) neutral on the right when mounted on top side

(4) when plate mounted, need to add a 4 mm intercalary under the PowerTag module (see ComPact NSX catalog)

(\*) Refer to the product catalog for technical characteristics

# PowerLogic™ PowerTag Energy

## Selection guide for product compatibility\*

(Compatibility for terminal not equipped with comb busbar)

### PowerTag Energy Rope



| Products<br>(AC network)                                    | Mounting<br>position | R200 3P / 3P+N | R600 3P / 3P+N                                    | R1000 3P / 3P+N                                   | R2000 3P / 3P+N                                   |
|---|----------------------|----------------|---|---|---|
| <b>Compact</b>  |                      |                |   |   |   |
| <b>Circuit breakers</b>                                     |                      |                |   |   |   |
| NS 630b   | 3P / 3P+N            | Top / Bottom   | -   | <input checked="" type="checkbox"/>               | -   |
| NS 800/1000   | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| NS 1250/1600/1600b/2000                                     | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| <b>Switches</b>   |                      |                |   |   |   |
| INS/INV 630b  | 3P / 3P+N            | Top / Bottom   | -   | <input checked="" type="checkbox"/>               | -   |
| INS/INV 800/1000  | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| INS/INV 1250/1600/2000                                      | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| NS 630b NA  | 3P / 3P+N            | Top / Bottom   | -   | <input checked="" type="checkbox"/>               | -   |
| NS 800/1000 NA  | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| NS 1250/1600/1600b/2000 NA                                  | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| <b>MasterPact</b>   |                      |                |   |   |   |
| <b>Circuit breakers</b>                                     |                      |                |   |   |   |
| NT 06   | 3P / 3P+N            | Top / Bottom   | -   | <input checked="" type="checkbox"/>               | -   |
| NT 08/10  | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| NT 12/16  | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| NW 08/10  | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| NW 12/16/20   | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| <b>Switches</b>   |                      |                |   |   |   |
| NT 06 HA  | 3P / 3P+N            | Top / Bottom   | -   | <input checked="" type="checkbox"/>               | -   |
| NT 08/10 HA   | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| NT 12/16 HA   | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| NW 08/10 NA/HA/HF   | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| NW 12/16/20 NA/HA/HF  | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| MTZ1 06 HA  | 3P / 3P+N            | Top / Bottom   | -   | <input checked="" type="checkbox"/>               | -   |
| MTZ1 08/10 HA   | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| MTZ1 12/16 HA   | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| MTZ2 08/10 NA/HA/HA10                                       | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| MTZ2 12/16/20 NA/HA/HA10                                    | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| <b>TeSys</b>  |                      |                |   |   |   |
| <b>Contactors</b>   |                      |                |   |   |   |
| TeSys D > 160 A   | 3P / 3P+N            | Top            | <input checked="" type="checkbox"/> Upstream only | -   | -   |
| 160 A < TeSys F ≤ 2000 A                                    | 3P / 3P+N            | Top            | <input checked="" type="checkbox"/> Upstream only | <input checked="" type="checkbox"/> Upstream only | <input checked="" type="checkbox"/> Upstream only |
| <b>Others</b>   |                      |                |   |   |   |
| <b>Circuit breakers / Switches / Motor circuit breakers</b> |                      |                |   |   |   |
| All products below 200 A                                    | 3P / 3P+N            | Top / Bottom   | <input checked="" type="checkbox"/>               | -   | -   |
| All products between 200 A and 600 A                        | 3P / 3P+N            | Top / Bottom   | -   | <input checked="" type="checkbox"/>               | -   |
| All products between 600 A and 1000 A                       | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |
| All products between 1000 A and 2000 A                      | 3P / 3P+N            | Top / Bottom   | -   | -   | <input checked="" type="checkbox"/>               |

(\*) Refer to the product catalog for technical characteristics

# PowerLogic™ PowerTag Energy

## Selection guide for concentrators / gateways compatibility\*

### Concentrators / gateways



|                                  | Wiser IP module<br>Wiser IP module+<br>EER31800 | PowerTag Link C<br>PowerTag Link C+<br>A9XELC10 | Smartlink SI B<br>A9XMZA08<br>Smartlink SI D<br>A9XMWA20 | PowerTag Link<br>A9XMWD20 | PowerTag Link HD<br>A9XMWD100 | Harmony Hub<br>ZBRN1<br>ZBRN2<br>ZBRN32 |
|----------------------------------|---|---|--|---------------------------|-------------------------------|---|
| <b>PowerTag Energy M63</b>       |   |   |  |                           |                               |   |
|                                  | A9MEM1520                                       | ✓   | ✓  | ✓                         | ✓                             | -                                       |
|                                  | A9MEM1521                                       | ✓   | ✓  | ✓                         | ✓                             | -                                       |
|                                  | A9MEM1522                                       | ✓   | ✓  | ✓                         | ✓                             | -                                       |
|                                  | A9MEM1540                                       | ✓   | ✓  | ✓                         | ✓                             | -                                       |
|                                  | A9MEM1541                                       | ✓   | ✓  | ✓                         | ✓                             | -                                       |
|                                  | A9MEM1542                                       | ✓   | ✓  | ✓                         | ✓                             | -                                       |
|                                  | A9MEM1543                                       | ✓   | ✓  | -                         | ✓                             | ✓                                       |
| <b>PowerTag Energy M63 Resi9</b> |   |   |  |                           |                               |   |
|                                  | R9M20   | ✓   | -  | -                         | -                             | -                                       |
|                                  | R9M21   | ✓   | -  | -                         | -                             | -                                       |
|                                  | R9M22   | ✓   | -  | -                         | -                             | -                                       |
|                                  | R9M40   | ✓   | -  | -                         | -                             | -                                       |
|                                  | R9M41   | ✓   | -  | -                         | -                             | -                                       |
|                                  | R9M42   | ✓   | -  | -                         | -                             | -                                       |
|                                  | R9M43   | ✓   | -  | -                         | -                             | -                                       |
| <b>PowerTag Energy P63</b>       |   |   |  |                           |                               |   |
|                                  | A9MEM1561                                       | ✓   | ✓  | ✓                         | ✓                             | -                                       |
|                                  | A9MEM1562                                       | ✓   | ✓  | ✓                         | ✓                             | -                                       |
|                                  | A9MEM1563                                       | ✓   | ✓  | ✓                         | ✓                             | -                                       |
|                                  | A9MEM1571                                       | ✓   | ✓  | ✓                         | ✓                             | -                                       |
|                                  | A9MEM1572                                       | ✓   | ✓  | ✓                         | ✓                             | -                                       |
| <b>PowerTag Energy F63</b>       |   |   |  |                           |                               |   |
|                                  | A9MEM1560                                       | ✓   | ✓  | ✓                         | ✓                             | ✓                                       |
|                                  | A9MEM1564                                       | -   | -  | -                         | ✓                             | ✓                                       |
|                                  | A9MEM1570                                       | ✓   | ✓  | ✓                         | ✓                             | ✓                                       |
|                                  | A9MEM1573                                       | -   | -  | -                         | ✓                             | ✓                                       |
|                                  | A9MEM1574                                       | -   | -  | -                         | ✓                             | ✓                                       |
| <b>PowerTag Energy F63 Resi9</b> |   |   |  |                           |                               |   |
|                                  | R9M60   | ✓   | -  | -                         | -                             | -                                       |
|                                  | R9M70   | ✓   | -  | -                         | -                             | -                                       |




(\*) Refer to the product catalog for technical characteristics

# PowerLogic™ PowerTag Energy

## Selection guide for concentrators / gateways compatibility\*

### Concentrators / gateways



|   | Wiser IP module<br>Wiser IP module+<br>EER31800 | PowerTag Link C<br>PowerTag Link C+<br>A9XELC10 | Smartlink SI B<br>A9XMZA08<br>Smartlink SI D<br>A9XMWA20 | PowerTag Link<br>A9XMWD20 | PowerTag Link HD<br>A9XMWD100 | Harmony Hub<br>ZBRN1<br>ZBRN2<br>ZBRN32 |
|---|---|---|--|---------------------------|-------------------------------|---|
| <b>PowerTag Energy F160</b>   |   |   |  |                           |                               |   |
|    | A9MEM1580                                       | -   | ☑<br>(PowerTag Link C+ only)                             | -                         | ☑                             | ☑                                       |
| <b>PowerTag Energy M250-M630</b>  |   |   |  |                           |                               |   |
|   | LV434020  | ☑   | ☑  | ☑                         | ☑                             | ☑                                       |
|   | LV434021  | ☑   | ☑  | ☑                         | ☑                             | ☑                                       |
|   | LV434022  | ☑   | ☑  | ☑                         | ☑                             | ☑                                       |
|   | LV434023  | ☑   | ☑  | ☑                         | ☑                             | ☑                                       |
| <b>PowerTag Energy R200-R600-R1000-R2000</b>  |   |   |  |                           |                               |   |
|  | A9MEM1590                                       | -   | ☑<br>(PowerTag Link C+ only)                             | -                         | ☑                             | ☑                                       |
|   | A9MEM1591                                       | -   | ☑<br>(PowerTag Link C+ only)                             | -                         | ☑                             | ☑                                       |
|   | A9MEM1592                                       | -   | ☑<br>(PowerTag Link C+ only)                             | -                         | ☑                             | ☑                                       |
|   | A9MEM1593                                       | -   | ☑<br>(PowerTag Link C+ only)                             | -                         | ☑                             | ☑                                       |

(\*). Refer to the product catalog for technical characteristics

# Wireless products

Schneider Electric offers a range of wireless products designed for new builds or retrofit installations. These are reliable, low-cost and easy to use wireless solutions with long battery life that does not compromise performance

- PowerTag Control
- HeatTag

A9XMC2D3 Image2

PB120568





# PowerLogic™ PowerTag Control

PowerTag Control monitors circuits wirelessly, collecting status of daisy-chained circuit breakers and notifying the data concentrator of information status, such as OF, SD, Contractor or Impulse Relay position indication. These wireless input/output modules allow circuit control and status monitoring. Designed for use in commercial and building applications, they quickly and easily turn your distribution board into a connected panel.

PowerTag Control also connects to pulse relays or contactors for remote control within a building management system for non-critical loads, such as lighting.

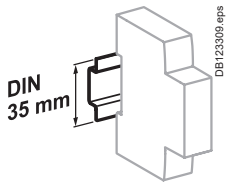
## Applications:

- Monitors your electrical installation from main incomer down to load level
- Suitable for various business, buildings, industrial and residential applications with easy integration in upper systems
- Supports and enables Energy efficiency programs and standards such as:
  - European Energy Efficiency Directive (EED)
  - Energy Performance of Buildings Directive (EPBD)
  - IEC 60364-8-1 “Low Voltage Electrical installations - Energy Efficiency”
  - EN 17267 “Energy Measurement and Monitoring plan”
  - ISO 50001 “Energy Management System”

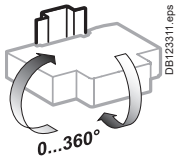
A9XMC2D3 Image2



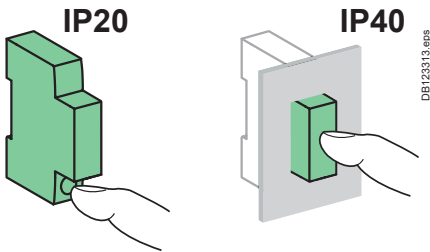
# PowerTag Control



Clip on DIN rail 35 mm.



Indifferent position of installation.



## Technical characteristics

### Main characteristics

|   |                    |          |
|---|--------------------|----------|
| Power supply                                | 230 V AC ± 20%     |          |
| Frequency                                   | 50/60 Hz           |          |
| Maximum consumption                         | IO                 | ≤ 2 VA   |
|   | 2DI                | ≤ 3 VA   |
| Operating temperature                       | -25°C to +60°C     |          |
| Storage temperature                         | -40°C to +85°C     |          |
| Relative humidity (60068-2-78)              | 93 % at 40°C       |          |
| Overvoltage category                        | As per IEC 61010-1 | Cat. III |
| Altitude                                    | ≤ 2000 m           |          |
| Pollution degree                            | 3                  |          |
| Degree of protection according to IEC 60529 | Front face         | IP40     |
|   | Casing             | IP20     |
|   | IK                 | 05       |

### Characteristics of inputs and outputs

#### Digital input

|      |                       |
|------|-----------------------|
| Type | 230 V AC, dry contact |
|------|-----------------------|

#### Digital output

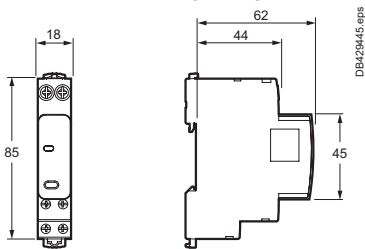
|   |   |
|---|---|
| Type  | 230 V AC, dry contact                           |
| Relay type                                      | Normally open or normally closed <sup>(3)</sup> |
| Applicable voltage on output                    | 230 V AC ± 20%                                  |
| Minimum/maximum current on output               | 10 mA / 2 A                                     |
| Type of output order                            | Pulse or latch <sup>(3)</sup>                   |
| Pulse length in control mode with impulse relay | Nominal: 300 ms                                 |

### Radio-frequency communication

|                          |                       |   |
|--------------------------|-----------------------|---|
| ISM band 2.4 GHz         | 2.4 GHz to 2.4835 GHz |   |
| Channels                 | As per IEEE 802.15.4  | 11 to 26  |
| Isotropic Radiated Power | Equivalent (EIRP)     | 0 dBm   |
| Channel occupancy        | Messages sent         | <ul style="list-style-type: none"> <li>■ On event</li> <li>■ Periodically (5s nominal)</li> </ul> |

(3) Setting adjustable

## Dimensions (mm)

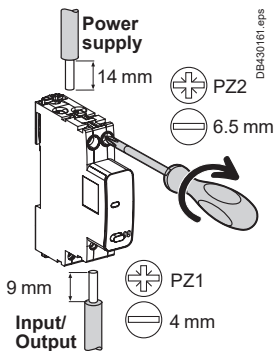





## Weight (g)

### PowerTag C

|                      |    |
|----------------------|----|
| PowerTag C IO 230 V  | 80 |
| PowerTag C 2DI 230 V | 75 |

## Connection

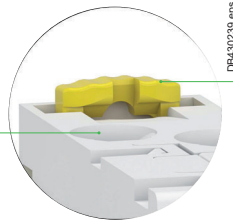


|                       | Terminals | Tightening torque | Copper cables   |   |  |
|-----------------------|-----------|-------------------|---|---|--|
|                       |           |                   | Rigid   | Flexible  | Flexible with ferrule  |
| Power supply (Top)    |           | 2 N.m             |  DB122945.eps<br>1 to 16 mm <sup>2</sup> (AWG: 18...6) |  DB123007.eps<br>0.5 to 10 mm <sup>2</sup> (AWG: 21...8) | -  |
| Input/Output (Bottom) |           | 1 N.m             | 1x: 1 to 6 mm <sup>2</sup> (AWG: 18...10)<br>2x: 1.5 to 2.5 mm <sup>2</sup> (AWG: 16...14)  | 1x: 0.5 to 4 mm <sup>2</sup> (AWG: 21...12)<br>2x: 1.5 to 2.5 mm <sup>2</sup> (AWG: 16...14)  |  DB122946.eps<br>1x: 0.5 to 4 mm <sup>2</sup> (AWG: 21...12)<br>2x: - |

# PowerTag Control

## PowerTag C IO module

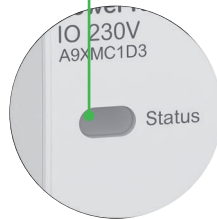
- Compatible with horizontal comb busbars 9 mm modules
- Automatic cable guiding in the correct position: terminals with guard



- Assembly and disassembly by operating toggle latches at the top and bottom of the products

### Status LED

- Provide information about PowerTag C status



- Insulated terminals IP20



### Logo

- Wireless communication device

### Push button

- Local output control
- Decommissioning



### Monitoring / Back loop circuit

- "I" digital input terminal
- "C" common powered terminal 230 V AC

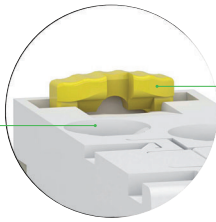
### Control circuit

- Logical output relay
- "O" output terminals 230 V AC - 2 A max.

# PowerTag Control

## PowerTag C 2DI module

- Compatible with horizontal comb busbars 9 mm modules
- Automatic cable guiding in the correct position: terminals with guard

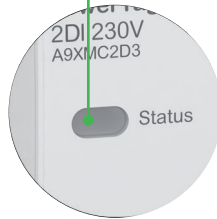


DB430243.eps

- Assembly and disassembly by operating toggle latches at the top and bottom of the products

### Status LED

- Provide information about PowerTag C status



DB430244.eps

- Insulated terminals IP20



A9XMC2D3\_image2.45.eps

### Logo

- Wireless communication device



DB430245.eps

### Flush mounted push button

- Decommissioning



DB430242.eps

### Monitoring circuits

- "I" digital input terminals
- "C" common powered terminals 230 V AC

# PowerLogic™ HeatTag

## Wireless Sensor for early detection of overheating cables

The PowerLogic HeatTag sensor analyzes gas and airborne particles helping facility manager to anticipate and act before smoke appears or an electrical fire starts.

Electrical fires generate huge losses in commercial and industrial buildings, interrupting production and delaying service delivery. These losses can be prevented if early detection of component overheating is accurately detected and alarmed.

PowerLogic HeatTag helps prevent electrical cabinets from being damaged by analyzing airborne gas and particles and sending alerts before smoke appears or an electrical fire starts. HeatTag is much more than a fire or smoke detector - it scientifically detects overheating in electrical installations before any damage is done.



PE120568

## The solution for

Markets that can benefit from a solution that includes PowerLogic HeatTag smart sensors:

- Buildings
- Industry
- Healthcare
- Data Center and networks
- Infrastructure

## Benefits

### System integrators' benefit

- Ease of integration
- Ease of setup
- Cost effectiveness
- Seamless integration with EcoStruxure™ solutions

### Panel builders' benefit

- No settings
- Nominal environment auto-learning to avoid false alerts
- Concentrator auto-discovery
- Alerts generated by a powerful algorithm integrated in HeatTag

### End users' benefit

- Ease of use
- Prevents fire damage and associated costs
- Comprehensive, consistent and superior performance
- Maximize uptime, eliminate faults, and enhance safety

## Competitive advantages

- Easy to install and operate
- Suitable for non forced ventilated cabinets  $\geq$  IP31
- Immediately detects overheating in cables and connections
- More than a smoke detector or heat sensor
- 3 levels of alert recording
- Monitors air quality index
- Continuous improvements of algorithms

## Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximize electrical network reliability and availability, and optimize electrical asset performance.

## Conformity of standards

- IEC/UL 61010-1
- IEC 61010-2-201
- IEC 61326-1
- IEC61326-2-3
- ETSI EN 301 489-1
- ETSI EN 301 489-17
- ETSI EN 300 328
- EN 62311
- EN IEC 63000
- IEEE 802.15.4 protocol
- FCC and IC certified

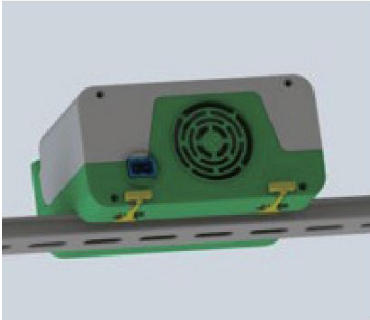
# HeatTag sensors

PB120568



PowerLogic™ HeatTag sensor

PB120569

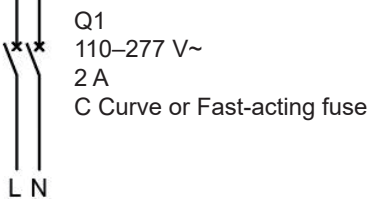


HeatTag rear view showing fan

PB120570



HeatTag sensor DIN mounted



## HeatTag features

### Sensor Characteristics

|                                 |  |   |
|---------------------------------|--|---|
| Temperature measurement         | Measurement range                                | -15 °C / +70 °C (5 °F to 158 °F)                          |
|                                 | Measurement accuracy                             | -1.1 °C / +1.1 °C   |
| Humidity measurement            | Measurement range                                | 15–90 %   |
|                                 | Measurement accuracy                             | ±9 RH %   |
| Air quality                     | Default transmission period                      | 60 seconds (higher in case of high wireless data traffic) |
|                                 | Index (0 to 10), alert generation when index ≥10 |   |
| Test alert after pairing        | During first 30 minutes                          |   |
| Environment auto-learning phase | 8 hours after the first 30 minutes               |   |

### Mechanical Characteristics

|                                  |                   |
|----------------------------------|-------------------|
| Dimensions (W x H x D)           | 108 x 107 x 55 mm |
| Weight                           | 270 g             |
| Degree of protection (IEC 60529) | IP 20             |

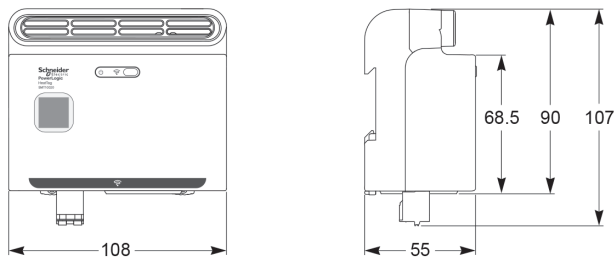
### Electrical Characteristics

|                                   |                                   |
|-----------------------------------|-----------------------------------|
| Supply voltage                    | 110–277 V AC, -15 % / +15 %       |
| Frequency                         | 50–60 Hz                          |
| Max. consumption                  | 0.1 A                             |
| Operating temperature             | -15 °C / +70 °C (5 °F to 158 °F)  |
| Storage temperature               | -20 °C / +85 °C (-4 °F to 185 °F) |
| Relative humidity in operation    | 15–90 %                           |
| Altitude of use                   | 0–2000 m (0–6500 ft)              |
| Degree of pollution (IEC 60664-1) | 3                                 |
| Overvoltage category              | OVC III                           |

### Commercial Reference Number

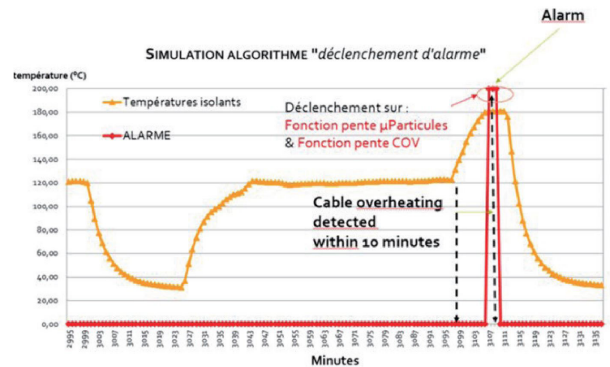
|                           |          |
|---------------------------|----------|
| PowerLogic HeatTag Sensor | SMT10020 |
|---------------------------|----------|

PB120573



HeatTag sensor dimensions. See the appropriate Installation Guide.

PB120572



HeatTag simulation algorithm display

**NOTE:** Do not use HeatTag as a safety device or to replace fire protection devices. Please see the appropriate **User Guide** for this product.

# Basic multi-function metering

A range of meters designed for cost management and simple network management. Affordable to buy and easy to choose, the highly-capable PowerLogic PM5000 and PM5350 series meters are designed to provide the best combination of features to match all your energy cost management needs.

As well as pin-point energy savings, optimal equipment efficiency and utilisation, basic multi-function meters perform a high level assessment of the power quality in an electrical network.

- PowerLogic PM5000
- PowerLogic PM5350
- PowerLogic PM5350IB
- PowerLogic PM5350PB
- PowerLogic PM5350P

PB111770  
PB108447



[METSEPM5110](#)



[METSEPM5560](#)

# PM5000 series

The PowerLogic PM5000 series power meters are the new benchmark in affordable, precision metering.

The value you want, the precision you need. Compact, affordable power meters with high-end cost capabilities and basic mobile energy management.

## Applications

### Capable of essential cost management:

- Sub-billing/tenant metering
- Equipment sub-billing
- Energy cost allocation

### Also ideal for electrical network management:

- Track real-time power conditions
- Monitor control functions
- Provide basic power quality values
- Detect and capture voltage sag and swell events
- Monitor residual current
- Analyze equipment and network status
- BACnet/IP, EtherNet/IP, and DNP3.0 protocol support



METSEPM5760

## The solution for

Markets that can benefit from a solution that includes PowerLogic PM5000 series meters:

- Buildings
- Industry
- Healthcare
- Data Center and networks
- Infrastructure

## Benefits

### System integrators' benefit

- Ease of integration
- Ease of setup
- Cost effectiveness

### Panel builders' benefit

- Ease of installation
- Cost effectiveness
- Aesthetically pleasing
- Simplified ordering

### End users' benefit

- Ease of use
- Precision metering & sub-billing
- Billing flexibility
- Comprehensive, consistent and superior performance
- Maximize uptime, eliminate faults, and enhance safety

## Competitive advantages

- Easy to install and operate
- Easy for circuit breaker monitoring and control
- Data logging up to 16 parameters
- Power quality analysis
- Load management combined with alarm and timestamping
- High performance and accuracy
- Residual Current Monitoring
- Voltage sag and swell detection with waveform capture
- MID ready compliance for legal billing application
- BACnet/IP, EtherNet/IP, and DNP3.0 protocol support

## Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximize electrical network reliability and availability, and optimize electrical asset performance.

## Conformity of standards

- IEC 61557-12
- IEC 62053-22
- IEC 62053-24
- IEEE 802.3
- EN 50470-1
- EN 50470-3
- IEC/UL/EN 61010-1
- IEC 62052-11
- FCC part 15 Class B
- EN 55022 Class B
- ODVA certification
- ANSI C12.1-2008 (PM55xx)
- ANSI C12.20 Class 0.2 & 0.5
- Align with cyber security guidelines as per IEC 62443

# PM5000 series

## PowerLogic™ PM5100, PM5300 and PM5500 series

The PowerLogic™ PM5000 power meter is the ideal fit for cost management applications. Designed for use in both energy management systems and building management systems, it provides the measurement capabilities needed to allocate energy usage, perform tenant metering and sub-billing, pin-point energy savings, optimize equipment efficiency and utilization, and perform a high level assessment of the power quality of the electrical network.

In a single 96 x 96 mm unit, with a graphical display, (plus optional remote display) all three phases, neutral and ground can be monitored simultaneously.

The bright, anti-glare display features large characters and powerful backlighting for easy reading even in extreme lighting conditions and viewing angles. Easy to understand menus, text in 8 selectable languages, icons and graphics create a friendly environment to learn about your electrical network. Ethernet gateway and enhanced cyber security. These are highly accurate devices with global billing certifications.

### Applications

**Cost management:** Cost saving opportunities become clear once you understand how and when your facility uses electricity. The PowerLogic™ PM5000 series meters are ideal for:

- **Sub-billing / tenant metering:** allows a landlord, property management firm, condominium association, homeowners association, or other multi-tenant property to bill tenants for individual measured utility (electricity) usage. MID approved meters for billing applications across Europe.
- **Cost allocation:** allocate energy costs between different departments (HVAC, indoor and outdoor lighting, refrigeration, etc.), different parts of an industrial process or different cost centres. Cost allocation systems can help you save money by making changes to your operation, better maintaining your equipment, taking advantage of pricing fluctuations, and managing your demand.

**Network management:** Improving reliability of the electrical network is key for success in any business. Monitoring values such as voltage levels, harmonics distortions, voltage unbalance, residual current, voltage sag and swell will help you to ensure proper operation and maintenance of your electrical network and equipment. PowerLogic™ PM5000 series meters are the perfect tool for:

- **Basic Power Quality monitoring:** power quality phenomena can cause undesirable effects such as heating in transformers, capacitors, motors, generators and misoperation of electronic equipment and protection devices.
- **Min/ Max monitoring (with timestamp):** understanding when electrical parameters, such as voltage, current and power demand, reach maximum and minimum values will give you the insight to correctly maintain your electrical network and assure equipment will not be damaged.
- **Alarming:** alarms help you to be aware of any abnormal behaviour on the electrical network in the moment it happens.
- **WAGES monitoring:** take advantage of the input metering on PM5000 meters to integrate measurements from third party devices such as water, air, gas, electricity or steam, meters.
- **Residual current monitoring:** measures leakage current flowing in TN & TT network system.
- **Voltage sags and swells:** measures and captures wave form in the event of voltage sags and swells in the network.

### Main characteristics

#### Easy to install

Mounts using two clips, in standard cut out for DIN 96 x 96 mm, no tools required. Compact meter with 72 mm (77 mm for PM5500) depth connectable up to 690 V L-L without voltage transformers for installations compliant with category III. Optional remote display (PM5563). Ethernet gateway functionality via RS-485 port.

#### Easy to operate

Intuitive navigation with self-guided, language selectable menus, six lines, four concurrent values. Two LEDs on the meter face help the user confirm normal operation with a green LED - heartbeat/communications indicator, and the amber LED - customizable either for alarms or energy pulse outputs. Onboard web pages (PM5500) show real-time and logged information, and verify communications.

#### Easy circuit breaker monitoring and control

The PM5300 provides two relay outputs (high performance Form A type) with capability to command most of the circuit breaker coils directly. For Digital Inputs, monitored switches can be wired directly to the meter without external power supply by using whetting output voltage. PM5500 series have 4 status inputs (digital) and 2 digital output (solid state) to use for WAGES monitoring, control and alarm annunciation.

#### Accurate energy measurement for precise cost allocation:

|                              | PM5100     | PM5300     | PM5500     | PM5600     | PM5700     |
|------------------------------|------------|------------|------------|------------|------------|
| IEC 62053-22 (Active Energy) | Class 0.5S | Class 0.5S | Class 0.2S | Class 0.2S | Class 0.2S |

PB111777



PowerLogic™ PM5563 remote display

PB111784



PowerLogic™ PM5563 remote display

# PM5000 series

PB111777



PowerLogic™ PM5500 meter

PB111772



PowerLogic™ PM5300 meter

PB111768



PowerLogic™ PM5100 meter

**MID** Certified according to MID Directive, Annex "B" + Annex "D" for legal metrology relevant to active electrical energy meters (see Annex MI-003 of MID). Can be used for fiscal (legal) metrology.

**MID ready compliance, EN 50470-1/3 – Class C**

## Native multi-protocol support

The PM55/PM56/PM5700 is now easier than ever to integrate into new and existing BMS systems. With native BACnet/IP protocol support, meters can simultaneously communicate via BACnet and Modbus in applications where multiple software systems are used (building management and energy management systems).

The PM55/PM56/PM5700 series has been tested and certified in accordance with BACnet Testing Laboratories (BTL) requirements.

## PM55/PM56/PM5700 Direct metering of neutral current

The PM55/PM56/PM5700 has a fourth CT for measuring neutral current. In demanding IT applications, where loads are non-linear (i.e. switching power supplies on computers/servers), measuring neutral current is essential to avoid overload and resulting outage.

## Power Quality analysis

The PM5000 offers Total Harmonic Distortion (THD/thd), Total Demand Distortion (TDD) measurements and individual harmonics (odd) magnitudes and angles for voltage and current:

|                             | PM5100                | PM5300                | PM55/56/5700                   |
|-----------------------------|-----------------------|-----------------------|--------------------------------|
| <b>Individual Harmonics</b> | magnitudes up to 15th | magnitudes up to 31st | magnitudes & angles up to 63rd |

These types of power quality parameters help to identify the source of harmonics that can harm transformers, capacitors, generators, motors and electronic equipment.

## Load management

Peak demands with time stamping are provided. Predicted demand values can be used in combination with alarms for basic load shedding applications.

## Alarming with time stamping

A different combination of set point driven alarms and digital alarms with 1s time stamping are available in the PM5000 family:

|                                | PM5100 | PM5300 | PM55/56/5700 |
|--------------------------------|--------|--------|--------------|
| <b>Set point driven alarms</b> | 29     | 29     | 29 or 33*    |
| <b>Unary</b>                   | 4      | 4      | 4            |
| <b>Digital</b>                 | -      | 2      | 4 or 2       |
| <b>Boolean / Logic</b>         | -      | -      | 10           |
| <b>Custom defined</b>          | -      | -      | 5            |

\*Applicable in specific meter models. 2 alarms for disturbance (Sag/ Swell)

Alarms can be visualized as Active (the ones that have picked up and did not drop out yet) or Historical (the ones that happened in the past). Alarms can be programmed and combined to trigger digital outputs and mechanical relays (PM5300).

The PM5000 series keeps an alarm log with the active and historical alarms with date and time stamping. SMTP protocol for receiving alarm conditions via email and text. SNTP protocol for date/time network synchronization.

## Load timer

A load timer can be set to count load running hours based on a minimum current withdraw, adjustable to monitor and advise maintenance requirements on the load.

## High Performance and accuracy

IEC 61557-12 Performance measuring and monitoring devices (PMD). Defines the performance expectation based on classes. It defines the allowable error in the class for real and reactive power and energy, frequency, current, voltage, power factor, voltage unbalance, voltage and current harmonics (odds), voltage THD, current THD, as well as ratings for temperature, relative humidity, altitude, start-up current and safety. It makes compliant meters readings comparable - they will measure the same values when connected to the same load.

**Meets IEC 61557-12 PMD/[SD|SS]/K70/0.5 for PM5100 and PM5300**  
**Meets IEC 61557-12 PMD/[SD|SS]/K70/0.2 for PM5500**

## Legal billing compliance

MID compliance is compulsory for billing applications across Europe. In addition to billing applications, for facility managers responsible for energy cost MID means same level of quality as a billing meter.

# PM5000 series

## PM5000 series feature selection

|   | PM5100 |        | PM5300  |         |         |         |         |         |
|---|--------|--------|---------|---------|---------|---------|---------|---------|
|   | PM5100 | PM5110 | PM5310  | PM5310R | PM5320  | PM5320R | PM5330  | PM5340  |
| <b>Installation</b>   |        |        |         |         |         |         |         |         |
| Fast installation, panel mount with integrated display                | ■      | ■      | ■       | ■       | ■       | ■       | ■       | ■       |
| Fast installation, DIN rail mountable                                 | –      | –      | –       | –       | –       | –       | –       | –       |
| Accuracy  | CL0.5S | CL0.5S | CL0.5S  | CL0.5S  | CL0.5S  | CL0.5S  | CL0.5S  | CL0.5S  |
| <b>Display</b>  |        |        |         |         |         |         |         |         |
| Backlit LCD, multilingual, bar graphs, 6 lines, 4 concurrent values   | ■      | ■      | ■       | ■       | ■       | ■       | ■       | ■       |
| <b>Power and energy metering</b>                                      |        |        |         |         |         |         |         |         |
| 3-ph voltage, current, power, demand, energy, frequency, power factor | ■      | ■      | ■       | ■       | ■       | ■       | ■       | ■       |
| Multi-tariff  | –      | –      | 4       | 4       | 4       | 4       | 4       | 4       |
| MID ready compliance, EN50470-1/3, Annex B & Annex D Class C          | –      | PM5111 | –       | –       | –       | –       | PM5331  | PM5341  |
| <b>Power quality analysis</b>   |        |        |         |         |         |         |         |         |
| THD, thd, TDD   | ■      | ■      | ■       | ■       | ■       | ■       | ■       | ■       |
| Harmonics, individual (odd) up to                                     | 15th   | 15th   | 31st    | 31st    | 31st    | 31st    | 31st    | 31st    |
| Waveform capture & sag/swell detection                                | –      | –      | –       | –       | –       | –       | –       | –       |
| <b>I/Os and relays</b>  |        |        |         |         |         |         |         |         |
| I/Os  | 1DO    | 1DO    | 2DI/2DO | 2DI/2DO | 2DI/2DO | 2DI/2DO | 2DI/2DO | 2DI/2DO |
| Relays  | 0      | 0      | 0       | 0       | 0       | 0       | 2       | 2       |
| Analog inputs   | –      | –      | –       | –       | –       | –       | –       | –       |
| Residual Current inputs   | –      | –      | –       | –       | –       | –       | –       | –       |
| <b>Alarms and control</b>   |        |        |         |         |         |         |         |         |
| Alarms  | 33     | 33     | 35      | 35      | 35      | 35      | 35      | 35      |
| Set point response time, seconds                                      | 1      | 1      | 1       | 1       | 1       | 1       | 1       | 1       |
| Single and multi-condition alarms                                     | –      | –      | ■       | ■       | ■       | ■       | ■       | ■       |
| Boolean alarm logic   | –      | –      | –       | –       | –       | –       | –       | –       |
| Memory for data logging   | –      | –      | 256KB   | 256KB   | 256KB   | 256KB   | 256KB   | 256KB   |
| <b>Communications</b>   |        |        |         |         |         |         |         |         |
| Serial ports with modbus protocol                                     | –      | 1      | 1       | 1       | –       | –       | 1       | –       |
| Ethernet port with Modbus TCP protocol                                | –      | –      | –       | –       | 1       | 1       | –       | 1       |
| BACnet/IP protocol  | –      | –      | –       | –       | ■       | ■       | –       | ■       |
| EtherNet/IP protocol  | –      | –      | –       | –       | –       | –       | –       | –       |
| DNP3.0 over Ethernet  | –      | –      | –       | –       | –       | –       | –       | –       |
| Onboard web server with web pages                                     | –      | –      | –       | –       | –       | –       | –       | –       |
| Serial to Ethernet gateway  | –      | –      | –       | –       | –       | –       | –       | –       |
| Short ref. numbers  | PM5100 | PM5110 | PM5310  | PM5310R | PM5320  | PM5320R | PM5330  | PM5340  |
| (See table below for complete commercial reference numbers)           |        |        |         |         |         |         |         |         |

NOTE: PM5310R and PM5320R must be used with Schneider Electric's "Quick Click" 3-in-1 LVCTs

# PM5000 series

| PM5000 series feature selection                                       |         |         |          |         |         |                              |         |                              |
|---|---------|---------|----------|---------|---------|------------------------------|---------|------------------------------|
|   | PM5500  |         |          |         |         | PM5600                       |         | PM5700                       |
|   | PM5560  | PM5563  | PM5563RD | PM5570  | PM5580  | PM5650                       | PM5660  | PM5760                       |
| <b>Installation</b>   |         |         |          |         |         |                              |         |                              |
| Fast installation, panel mount with integrated display                | ■       | –       | –        | ■       | ■       | ■                            | ■       | ■                            |
| Fast installation, DIN rail mountable                                 | –       | ■       | ■        | –       | –       | –                            | –       | –                            |
| <b>Accuracy</b>   | CL 0.2S | CL 0.2S | CL 0.2S  | CL 0.2S | CL 0.2S | CL 0.2S                      | CL 0.2S | CL 0.2S                      |
| <b>Display</b>  |         |         |          |         |         |                              |         |                              |
| Backlit LCD, multilingual, bar graphs, 6 lines, 4 concurrent values   | ■       | –       | ■        | ■       | ■       | ■                            | ■       | ■                            |
| <b>Power and energy metering</b>                                      |         |         |          |         |         |                              |         |                              |
| 3-ph voltage, current, power, demand, energy, frequency, power factor | ■       | ■       | ■        | ■       | ■       | ■                            | ■       | ■                            |
| Multi-tariff  | 8       | 8       | 8        | 8       | 8       | 8                            | 8       | 8                            |
| MID ready compliance, EN50470-1/3, Annex B & Annex D Class C          | PM5561  | –       | –        | –       | –       | –                            | PM5661  | PM5761                       |
| <b>Power quality analysis</b>   |         |         |          |         |         |                              |         |                              |
| THD, thd, TDD   | ■       | ■       | ■        | ■       | ■       | ■                            | ■       | ■                            |
| Harmonics, individual (odd) up to                                     | 63rd    | 63rd    | 63rd     | 63rd    | 63rd    | 63rd                         | 63rd    | 63rd                         |
| Waveform capture & sag/swell detection                                | –       | –       | –        | –       | –       | 8 cycles @ 128 samples/cycle | –       | 8 cycles @ 128 samples/cycle |
| <b>I/Os and relays</b>  |         |         |          |         |         |                              |         |                              |
| I/Os  | 4DI/2DO | 4DI/2DO | 4DI/2DO  | 2DI/2DO | 4DI/2DO | 4DI/2DO                      | 2DI/2DO | 2DI/2DO                      |
| Relays  | 0       | 0       | 0        | 0       | 0       | 0                            | 0       | 0                            |
| Analog inputs   | 0       | 0       | 0        | 2       | 0       | 0                            | 0       | 0                            |
| Residual Current inputs   | 0       | 0       | 0        | 0       | 0       | 0                            | 2       | 2                            |
| <b>Alarms and control</b>   |         |         |          |         |         |                              |         |                              |
| Alarms  | 52      | 52      | 52       | 50      | 52      | 54                           | 54      | 56                           |
| Set point response time, seconds                                      | 1       | 1       | 1        | 1       | 1       | 1                            | 1       | 1                            |
| Single and multi-condition alarms                                     | ■       | ■       | ■        | ■       | ■       | ■                            | ■       | ■                            |
| Boolean alarm logic   | ■       | ■       | ■        | ■       | ■       | ■                            | ■       | ■                            |
| Memory for data logging   | 1.1 MB  | 1.1 MB  | 1.1 MB   | 1.1 MB  | 1.1 MB  | 1.1 MB                       | 1.1 MB  | 1.1 MB                       |
| <b>Communications</b>   |         |         |          |         |         |                              |         |                              |
| Serial ports with modbus protocol                                     | 1       | 1       | 1        | 1       | 1       | 1                            | 1       | 1                            |
| Ethernet port with Modbus TCP protocol                                | 2★      | 2★      | 2★       | 2★      | 2★      | 2★                           | 2★      | 2★                           |
| BACnet/IP protocol  | ■       | ■       | ■        | ■       | ■       | ■                            | ■       | ■                            |
| EtherNet/IP protocol  | ■       | ■       | ■        | ■       | ■       | ■                            | ■       | ■                            |
| DNP3.0 over Ethernet  | ■       | ■       | ■        | ■       | ■       | ■                            | ■       | ■                            |
| Onboard web server with web pages                                     | ■       | ■       | ■        | ■       | ■       | ■                            | ■       | ■                            |
| Serial to Ethernet gateway  | ■       | ■       | ■        | ■       | ■       | ■                            | ■       | ■                            |
| Short ref numbers   | PM5560  | PM5563  | PM5563RD | PM5570  | PM5580  | PM5650                       | PM5660  | PM5760                       |

(See table below for complete commercial reference numbers)

★ 2 Ethernet ports for daisy chain, one IP address.

# PM5000 series

| PM5000 technical specifications   |   | PM5100  | PM5300   | PM5500  | PM5600 | PM5700 |
|---|---|---|--|---|--------|--------|
| Use on LV and MV systems  |   |   |  | ■   |        |        |
| Basic metering with THD and min/max readings  |   |   |  | ■   |        |        |
| Instantaneous rms values  |   |   |  |   |        |        |
| Current   | per phase, neutral and ground (PM5500)            |   |  | ■   |        |        |
| Voltage   | Total, per phase L-L and L-N                      |   |  | ■   |        |        |
| Frequency   |   |   |  | ■   |        |        |
| Real, reactive, and apparent power  | Total and per phase                               |   |  | Signed, Four Quadrant   |        |        |
| True Power Factor   | Total and per phase                               |   |  | Signed, Four Quadrant   |        |        |
| Displacement PF   | Total and per phase                               |   |  | Signed, Four Quadrant   |        |        |
| % Unbalanced I, V L-N, V L-L  |   |   |  | ■   |        |        |
| Direct monitoring of neutral current  |   |   |  | ■   |        |        |
| Energy values   |   |   |  |   |        |        |
| Accumulated Active, Reactive and Apparent Energy  |   | Received/Delivered; Net and absolute; Time Counters |  |   |        |        |
| Demand value  |   |   |  |   |        |        |
| Current average   |   | Present, Last, Predicted, Peak, and Peak Date Time  |  |   |        |        |
| Active power  |   | Present, Last, Predicted, Peak, and Peak Date Time  |  |   |        |        |
| Reactive power  |   | Present, Last, Predicted, Peak, and Peak Date Time  |  |   |        |        |
| Apparent power  |   | Present, Last, Predicted, Peak, and Peak Date Time  |  |   |        |        |
| Peak demand with timestamping D/T for current and powers                                    |   |   |  | ■   |        |        |
| Demand calculation  | Sliding, fixed and rolling block, thermal methods |   |  | ■   |        |        |
| Synchronisation of the measurement window to input, communication command or internal clock |   |   |  | ■   |        |        |
| Settable Demand intervals   |   |   |  | ■   |        |        |
| Demand synchronization with pulse input   |   |   |  | ■   |        |        |
| Other measurements  |   |   |  |   |        |        |
| I/O timer   |   |   |  | ■   |        |        |
| Operating timer   |   |   |  | ■   |        |        |
| Load timer  |   |   |  | ■   |        |        |
| Alarm counters and alarm logs   |   |   |  | ■   |        |        |
| Power quality measurements  |   |   |  |   |        |        |
| THD, thd (Total Harmonic Distortion) I, VLN, VLL  |   | I, VLN, VLL   |  |   |        |        |
| TDD (Total Demand Distortion)   |   | ■   |  |   |        |        |
| Individual harmonics (odds)   |   | 15 <sup>th</sup> (PM5110)                           | 31 <sup>st</sup>   | 63 <sup>rd</sup>  |        |        |
| Neutral Current metering with ground current calculation                                    |   |   |  | ■   |        |        |
| Waveform capture and sag/swell detection  |   |   |  | 8 cycles @ 128 samples/cycle  |        |        |
| Data recording  |   |   |  |   |        |        |
| Min/max of instantaneous values, plus phase identification★                                 |   |   |  | ■   |        |        |
| Alarms with 1s timestamping★  |   |   |  | ■   |        |        |
| Data logging  |   |   | 2 fixed parameters kWh and kVAh with configurable interval & duration (e.g. 2 parameters for 60 days at 15-minute intervals) | Up to 14 selectable parameters with configurable interval and duration (e.g. 6 parameters for 90 days at 15-minute intervals) |        |        |
| Min/max log   |   | ■   | ■  |   | ■      |        |
| Maintenance, alarm and event logs   |   |   | ■  |   | ■      |        |
| Customisable data logs  |   |   |  |   | ■      |        |

★ Stored in non-volatile memory

# PM5000 series

| PM5000 technical specifications                               |  | PM5100   | PM5300        | PM5500  | PM5600                         | PM5700       |
|---|--|--|---------------|---|--------------------------------|--------------|
| Inputs / Outputs / Mechanical Relays                          |  |  |               |   |                                |              |
| Digital inputs  |  |  | 2             | 4 in PM5560, PM5563, PM5580, PM5650<br>2 in PM5570, PM5660, PM5760                              |                                |              |
| Digital outputs   |  | 1 (kWh only)   | 2             | 2   |                                |              |
| Form A Relay outputs  |  |  | 2             |   |                                |              |
| Analog inputs   |  |  |               | 2 for PM5570  |                                |              |
| Residual Current inputs                                       |  |  |               |   | 2 for PM5660                   | 2 for PM5760 |
| Timestamp resolution in seconds                               |  | 1  | 1             | 1   | 1                              | 1            |
| Whetting source   |  |  | 24 V DC, 8 mA |   |                                |              |
| Type of measurement: True rms on three-phase (3P, 3P + N)     |  | 64 samples per cycle   |               |   | 128 samples per cycle          |              |
| Measurement accuracy  | IEC 61557-12                                     | PMD/[SD SS]/K70/0.5  |               |   | PMD/[SD SS]/K70/0.2            |              |
|   | Active Energy                                    | Class 0.5S as per IEC 62053-22   |               |   | Class 0.2S as per IEC 62053-22 |              |
|   | Reactive Energy                                  | Class 2 as per IEC 62053-23  |               |   | Class 2 as per IEC 62053-23    |              |
|   | Active Power                                     | Class 0.5 as per IEC 61557-12  |               |   | Class 0.2 as per IEC 61557-12  |              |
|   | Apparent Power                                   | Class 0.5 as per IEC 61557-12  |               |   |                                |              |
|   | Current, Phase                                   | Class 0.5 as per IEC 61557-12 ±0.15 %  |               |   |                                |              |
|   | Voltage, L-N                                     | Class 0.5 as per IEC 61557-12 ±0.1 %   |               |   |                                |              |
|   | Frequency  | ±0.005 %   |               |   |                                |              |
|   | Power Factor                                     | ±0.005 count   |               |   |                                |              |
|   | MID Directive EN50470-1, EN50470-3               | Annex B and Annex D (Optional model references) Class C  |               |   |                                |              |
| Input-voltage (up to 1.0 MV AC max, with voltage transformer) | Nominal Measured Voltage range                   | 20 V L-N / 35 V L-L to 400 V L-N /690 V L-L<br>absolute range 35 V L-L to 760 V L-L  |               | 20 V L-N / 20 V L-L to 400 V L-N /690 V L-L<br>absolute range 20 V L-L to 828 V L-L             |                                |              |
|   | Impedance  | 5 MΩ   |               |   |                                |              |
|   | Frequency nom                                    | 50 or 60 Hz ±5 %   |               | 50 or 60 Hz ±10 %   |                                |              |
| Input-current (configurable for 1 or 5 A secondary CTs)       | I nom  | 5 A  |               |   |                                |              |
|   | Measured Amps with over range and Crest Factor   | Starting current: 5 mA<br>Operating range: 50 mA to 8.5 A  |               | Starting current: 5 mA<br>Operating range: 50 mA to 10 A  |                                |              |
|   | Withstand  | Continuous 20 A, 10 s/hr 50 A, 1s/hr 500 A   |               |   |                                |              |
|   | Impedance  | < 0.3 mΩ   |               |   |                                |              |
|   | Frequency nom                                    | 50 or 60 Hz ±5 %   |               | 50 or 60 Hz ±10 %   |                                |              |
|   | Burden   | <0.026 VA at 8.5 A   |               |   |                                |              |
| AC control power  | Operating range                                  | 100 - 277 V AC L-N / 415 V L-L +/-10 %<br>CAT III 300V class per IEC 61010   |               | 100-480 V AC ±10 %<br>CAT III 600V class per IEC 61010  |                                |              |
|   | Burden   | <5 W,11 VA at 415V L-L   |               | <5W/16.0 VA at 480 V AC   |                                |              |
|   | Frequency  | 45 to 65 Hz  |               |   |                                |              |
|   | Ride-through time                                | 80 mS typical at 120V AC and maximum burden.<br>100 mS typical at 230 V AC and maximum burden<br>100 mS typical at 415 V AC and maximum burden |               | 35 ms typical at 120 V L-N and maximum burden<br>129 ms typical at 230 V L-N and maximum burden |                                |              |
| DC control power  | Operating range                                  | 125–250 V DC ±20 % (100 to 300 V DC)   |               |   |                                |              |
|   | Burden   | <4 W at 250 V DC   |               | typical 3.1W at 125 V DC, max. 5W   |                                |              |
|   | Ride-through time                                | 50 mS typical at 125 V DC and maximum burden   |               |   |                                |              |
| LV DC control power   | 20-60 V DC ±10 %<br>CAT III<br>Burden 4.1 W max. |  |               | ■ PM5580  |                                |              |

# PM5000 series

## PM5000 technical specifications

|  |                 | PM5100  | PM5300                               | PM5500   | PM5600   | PM5700 |  |
|--|-----------------|---|--------------------------------------|--|--|--------|--|
| Outputs  | Relay           | Max output frequency  |                                      | 0.5 Hz maximum (1 second ON / 1 second OFF - min times)  |  |        |  |
|  |                 | Switching current   |                                      | 250 V AC at 8.0 Amps, 25 k cycles, resistive<br>30 V DC at 2.0 Amps, 75 k cycles, resistive<br>30 V DC at 5.0 Amps, 12.5 k cycles, resistive |  |        |  |
|  |                 | Isolation   |                                      | 2.5 kV rms   |  |        |  |
|  |                 | Max load voltage  | 40 V DC                              |  | 30 V AC / 40 V DC PM5570, PM5560, PM5561, PM5760, PM5761   |        |  |
|  |                 | Max load current  | 20 mA                                |  | 125 mA   |        |  |
|  |                 | On Resistance   | 50 Ω max                             |  | 8 Ω  |        |  |
|  |                 | Meter constant  | from 1 to 9,999,999 pulses per kWh   |  |  |        |  |
|  |                 | Pulse width for Digital Output  | 50 % duty cycle                      |  |  |        |  |
|  |                 | Pulse frequency for Digital Output  | 25 Hz max.                           |  |  |        |  |
|  |                 | Leakage current   | 0.03 micro Amps                      |  | 1 micro Amps   |        |  |
|  | Optical outputs | Isolation   | 5 kV rms                             |  | 2.5 kV rms   |        |  |
|  |                 | Pulse width (LED)   | 200 ms                               |  |  |        |  |
|  |                 | Pulse frequency   | 2.5 kHz. max                         |  | 2.5 kHz. max   |        |  |
|  | Status Inputs   | Meter constant  | from 1 to 9,999,999 pulses per k_h   |  |  |        |  |
|  |                 | ON Voltage  |                                      | 18.5 to 36 V DC  | 30 V AC / 60 V DC max  |        |  |
| OFF Voltage                                    |                 | 0 to 4 V DC   |                                      |  |  |        |  |
| Input Resistance                               |                 |   | 110 k Ω                              | 100 k Ω  |  |        |  |
| Maximum Frequency                              |                 |   | 2 Hz (T ON min = T OFF min = 250 ms) | 25 Hz (T ON min = T OFF min = 20 ms)   |  |        |  |
| Response Time                                  |                 | 20 ms   |                                      |  |  |        |  |
| Opto Isolation                                 |                 |   | 5 kV rms                             | 2.5 kV rms   |  |        |  |
| Analog inputs                                  | Whetting output |   | 24 V DC/ 8 mA max                    |  |  |        |  |
|  | Input Burden    |   | 2mA @24V DC                          | 2 mA @ 24 V AC/DC  |  |        |  |
| Residual Current inputs                        |                 |   |                                      |  | 5 uA to 1,200 uA (nominal), 1,500 uA max (continuous) Input type: AC 45 to 65 Hz Burden: 150 ohms Default toroid: 1000 turns |        |  |
| <b>Mechanical characteristics</b>              |                 |   |                                      |  |  |        |  |
| Product weight                                 |                 | 380 g   | 430 g                                | 450 g  | 450 g  | 450 g  |  |
| IP degree of protection (IEC 60529)            |                 | IP54 front display, IP30 rear side, IP65 front side with Optional accessory kit METSEIP65OP96X96FF. |                                      |  |  |        |  |
| Dimensions W x H x D [protrusion from cabinet] |                 | 96 x 96 x 72 mm (77 mm for PM5500) (depth of meter from housing mounting flange) [13 mm]            |                                      |  |  |        |  |
| Mounting position                              |                 | Vertical  |                                      |  |  |        |  |
| Panel thickness                                |                 | 6 mm maximum  |                                      |  |  |        |  |

# PM5000 series

| PM5000 technical specifications                         |  | PM5100  | PM5300                             | PM5500              | PM5600 | PM5700 |
|---|--|---|------------------------------------|---------------------|--------|--------|
| <b>Environmental characteristics</b>                    |  |   |                                    |                     |        |        |
| Operating temperature                                   | Operating temperature  | -25 °C to 70 °C   |                                    |                     |        |        |
|   | Display (Display functions to -25 °C with reduced performance) | -25 °C to 70 °C   |                                    |                     |        |        |
| Storage temp.   |  | -40 °C to 85 °C   |                                    |                     |        |        |
| Humidity range  |  | 5 to 95 % RH at 50 °C (non-condensing)  |                                    |                     |        |        |
| Pollution degree  |  | 2   |                                    |                     |        |        |
| Altitude  |  | 2000 m CAT III / 3000 m CAT II  |                                    | 3000 m max. CAT III |        |        |
| <b>Electromagnetic compatibility</b>                    |  |   |                                    |                     |        |        |
| Harmonic current emissions                              |  | IEC 61000-3-2   |                                    |                     |        |        |
| Flicker emissions                                       |  | IEC 61000-3-3   |                                    |                     |        |        |
| Electrostatic discharge                                 |  | IEC 61000-4-2   |                                    |                     |        |        |
| Immunity to radiated fields                             |  | IEC 61000-4-3   |                                    |                     |        |        |
| Immunity to fast transients                             |  | IEC 61000-4-4   |                                    |                     |        |        |
| Immunity to surge                                       |  | IEC 61000-4-5   |                                    |                     |        |        |
| Conducted immunity 150 kHz to 80 MHz                    |  | IEC 61000-4-6   |                                    |                     |        |        |
| Immunity to magnetic fields                             |  | IEC 61000-4-8   |                                    |                     |        |        |
| Immunity to voltage dips                                |  | IEC 61000-4-11  |                                    |                     |        |        |
| Radiated emissions                                      |  | FCC part 15, EN 55022 Class B   |                                    |                     |        |        |
| Conducted emissions                                     |  | FCC part 15, EN 55022 Class B   |                                    |                     |        |        |
| <b>Safety</b>   |  |   |                                    |                     |        |        |
| Europe  |  | CE, as per IEC 61010-1 Ed. 3, IEC 62052-11 & IEC 61557-12   |                                    |                     |        |        |
| U.S. and Canada   |  | cULus as per UL 61010-1 (3rd Edition)   |                                    |                     |        |        |
| Measurement category (Voltage & Current inputs)         |  | CAT III up to 400 V L-N / 690 V L-L   |                                    |                     |        |        |
| Dielectric  |  | As per IEC/UL 61010-1 Ed. 3   |                                    |                     |        |        |
| Protective Class  |  | II, Double insulated for user accessible parts  |                                    |                     |        |        |
| <b>Communication</b>                                    |  |   |                                    |                     |        |        |
| RS-485 port Modbus RTU, Modbus ASCII (7 or 8 bit), JBUS |  | 2-Wire, 9600, 19200 or 38400 baud, Parity - Even, Odd, None, 1 stop bit if parity Odd or Even, 2 stop bits if None; (Optional in PM51x and PM53x) |                                    |                     |        |        |
| Ethernet port: 10/100 Mbps; Modbus TCP/IP               |  | 1 Optional  | 2 (daisy chain only, 1 IP address) |                     |        |        |
| Native Ethernet/IP & DNP3.0 over Ethernet               |  |   | Yes                                | Yes                 | Yes    |        |
| Firmware and language file update                       |  | Meter firmware update via the communication ports   |                                    |                     |        |        |
| Isolation   |  | 2.5 kVrms, double insulated   |                                    |                     |        |        |
| <b>Human machine interface</b>                          |  |   |                                    |                     |        |        |
| Display type  |  | Monochrome Graphics LCD   |                                    |                     |        |        |
| Resolution  |  | 128 x 128   |                                    |                     |        |        |
| Backlight   |  | White LED   |                                    |                     |        |        |
| Viewable area (W x H)                                   |  | 67 x 62.5 mm  |                                    |                     |        |        |
| Keypad  |  | 4-button  |                                    |                     |        |        |
| Indicator Heartbeat / Comm activity                     |  | Green LED   |                                    |                     |        |        |
| Energy pulse output / Active alarm (configurable)       |  | Optical, amber LED  |                                    |                     |        |        |
| Wavelength  |  | 590 to 635 nm   |                                    |                     |        |        |
| Maximum pulse rate                                      |  | 2.5 kHz   |                                    |                     |        |        |

## PM5000 series commercial reference numbers

| Comm ref numbers                                     | Description   |
|--|---|
| <b>METSEPM5100</b>                                   | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 15th harmonic, no communication, 1DO   |
| <b>METSEPM5110</b>                                   | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 15th harmonic, RS-485 Modbus, 1DO  |
| <b>METSEPM5111</b>                                   | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 15th harmonic, RS-485 Modbus, 1DO, MID certified.  |
| <b>METSEPM5310</b>                                   | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, RS-485 Modbus, 2DI/2DO  |
| <b>METSEPM5310R</b>                                  | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, RJ45 LVCT, RS-485 Modbus, 2DI/2DO   |
| <b>METSEPM5320</b>                                   | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, Ethernet, 2DI/2DO   |
| <b>METSEPM5320R</b>                                  | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, RJ45 LVCT, Ethernet, 2DI/2DO  |
| <b>METSEPM5330</b>                                   | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, RS-485 Modbus, 2DI/2DO, 2Relay  |
| <b>METSEPM5331</b>                                   | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, RS-485 Modbus, 2DI/2DO, 2Relay, MID certified.                                    |
| <b>METSEPM5340</b>                                   | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, Ethernet, 2DI/2DO, 2Relay   |
| <b>METSEPM5341</b>                                   | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, Ethernet, 2DI/2DO, 2Relay, MID certified.   |
| <b>METSEPM5560</b>                                   | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, Modbus and Ethernet, 4DI/2DO  |
| <b>METSEPM5561</b>                                   | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, Modbus and Ethernet, MID certified.   |
| <b>METSEPM5562</b>                                   | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, RMICAN approved, HW lockable, 4DI/2DO   |
| <b>METSEPM5562MC</b>                                 | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, RMICAN approved, factory sealed, 4DI/2DO  |
| <b>METSEPM5563</b>                                   | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, DIN mount, no display, 4DI/2DO  |
| <b>METSEPM5563RD</b>                                 | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, DIN mount, remote display, 4DI/2DO  |
| <b>METSEPM5570</b>                                   | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, Modbus and Ethernet, 2DI/2DO/2AI  |
| <b>METSEPM5580</b>                                   | Power Meter range 77 mm depth, control power 24-60 VDC, CI 0.2S, 63rd harmonic, 1.1 MB, Modbus and Ethernet, 4DI/2DO  |
| <b>METSEPM5650</b>                                   | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, waveform capture and sag/swell, 1.1 MB, Modbus and Ethernet, 2DI/2DO                      |
| <b>METSEPM5660</b>                                   | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, Modbus and Ethernet, 2DI/2DO, RCM   |
| <b>METSEPM5661</b>                                   | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, Modbus and Ethernet, 2DI/2DO, RCM, MID certified.                                 |
| <b>METSEPM5760</b>                                   | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, waveform capture and sag/swell, 1.1 MB, Modbus and Ethernet, 2DI/2DO, RCM, MID certified. |
| <b>METSEPM5761</b>                                   | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, waveform capture and sag/swell, 1.1 MB, Modbus and Ethernet, 2DI/2DO, RCM, MID certified. |
| <b>Residual Current Monitoring Toroids (Vigirex)</b> |   |
| <b>Closed Toroids, A Type</b>                        |   |
| <b>50437</b>   | TA30 - 30 mm inside diameter, le (A) 65, 1000 turns   |
| <b>50438</b>   | PA50 - 50 mm inside diameter, le (A) 85, 1000 turns   |
| <b>50439</b>   | IA80 - 80 mm inside diameter, le (A) 160, 1000 turns  |
| <b>50440</b>   | MA120 - 120 mm inside diameter, le (A) 250, 1000 turns  |
| <b>50441</b>   | SA200 - 200 mm inside diameter, le (A) 400, 1000 turns  |
| <b>50442</b>   | GA300 - 300 mm inside diameter, le (A) 630, 1000 turns  |
| <b>Accessories for Closed Toroids</b>                |   |
| <b>56055</b>   | Magnetic ring for TA30 toroid   |
| <b>56056</b>   | Magnetic ring for PA50 toroid   |
| <b>56057</b>   | Magnetic ring for IA80 toroid   |
| <b>56058</b>   | Magnetic ring for MA120 toroid  |
| <b>Split Toroids, OA Type</b>                        |   |
| <b>50420</b>   | TOA80 - 80 mm inside diameter, le (A) 160, 1000 turns   |
| <b>50421</b>   | TOA120 - 120 mm inside diameter, le (A) 250, 1000 turns   |
| <b>56053</b>   | L1 - 280 x 115 mm inside diameter, le (A) 1600, 1000 turns  |
| <b>56054</b>   | L2 - 470 x 160 mm inside diameter, le (A) 3200, 1000 turns  |

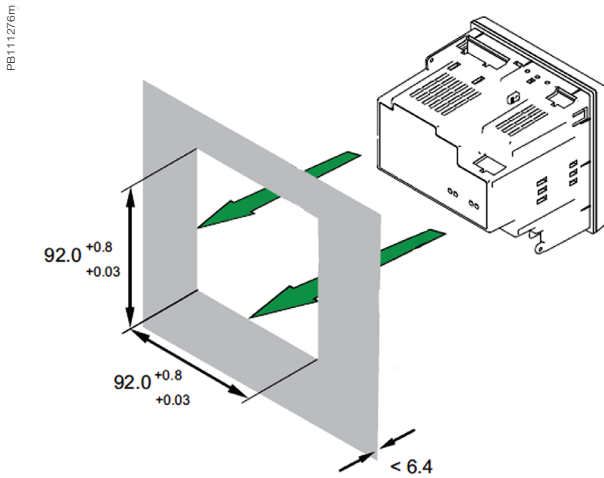
## PM5300R series commercial reference numbers

| Comm. ref numbers                              | Description                               |
|--|---|
| <b>0.333V 3-in-1 CTs with RJ45 for PM53x0R</b> |   |
| METSECTV25006                                  | LVCT SolidC 3in1 RJ45 25mmCtr 60A:1/3V    |
| METSECTV25010                                  | LVCT SolidC 3in1 RJ45 25mmCtr 100A:1/3V   |
| METSECTV25013                                  | LVCT SolidC 3in1 RJ45 25mmCtr 125A:1/3V   |
| METSECTV25016                                  | LVCT SolidC 3in1 RJ45 25mmCtr 160A:1/3V   |
| METSECTV35006                                  | LVCT SolidC 3in1 RJ45 35mmCtr 60A:1/3V    |
| METSECTV35010                                  | LVCT SolidC 3in1 RJ45 35mmCtr 100A:1/3V   |
| METSECTV35012                                  | LVCT SolidC 3in1 RJ45 35mmCtr 120A:1/3V   |
| METSECTV35013                                  | LVCT SolidC 3in1 RJ45 35mmCtr 125A:1/3V   |
| METSECTV35015                                  | LVCT SolidC 3in1 RJ45 35mmCtr 150A:1/3V   |
| METSECTV35016                                  | LVCT SolidC 3in1 RJ45 35mmCtr 160A:1/3V   |
| METSECTV35020                                  | LVCT SolidC 3in1 RJ45 35mmCtr 200A:1/3V   |
| METSECTV35025                                  | LVCT SolidC 3in1 RJ45 35mmCtr 250A:1/3V   |
| METSECTV45025                                  | LVCT SolidC 3in1 RJ45 45mmCtr 250A:1/3V   |
| METSECTV45030                                  | LVCT SolidC 3in1 RJ45 45mmCtr 300A:1/3V   |
| METSECTV45040                                  | LVCT SolidC 3in1 RJ45 45mmCtr 400A:1/3V   |
| METSECTV45050                                  | LVCT SolidC 3in1 RJ45 45mmCtr 500A:1/3V   |
| METSECTV45060                                  | LVCT SolidC 3in1 RJ45 45mmCtr 600A:1/3V   |
| METSECTV45063                                  | LVCT SolidC 3in1 RJ45 45mmCtr 630A:1/3V   |
| METSECTV29006                                  | LVCT SolidC 3in1 RJ45 29mmCtr 60A:1/3V    |
| METSECTV29010                                  | LVCT SolidC 3in1 RJ45 29mmCtr 100A:1/3V   |
| METSECTV29012                                  | LVCT SolidC 3in1 RJ45 29mmCtr 120A:1/3V   |
| METSECTV29013                                  | LVCT SolidC 3in1 RJ45 29mmCtr 125A:1/3V   |
| METSECTV29015                                  | LVCT SolidC 3in1 RJ45 29mmCtr 150A:1/3V   |
| METSECTV29016                                  | LVCT SolidC 3in1 RJ45 29mmCtr 160A:1/3V   |
| METSECTV29020                                  | LVCT SolidC 3in1 RJ45 29mmCtr 200A:1/3V   |
| METSECTV70080                                  | LVCT SolidC 3in1 RJ45 70mmCtr 800A:1/3V   |
| METSECTV70100                                  | LVCT SolidC 3in1 RJ45 70mmCtr 1000A:1/3V  |
| METSECTV70125                                  | LVCT SolidC 3in1 RJ45 70mmCtr 1250A:1/3V  |
| <b>Cables</b>                                  |   |
| DCEPCURJX5GYM                                  | Category 5e, Patch Cord, UTP, 0.5 M, Grey |
| DCEPCURJ01GYM                                  | Category 5e, Patch Cord, UTP, 1 M, Grey   |
| DCEPCURJ02GYM                                  | Category 5e, Patch Cord, UTP, 2 M, Grey   |
| DCEPCURJ03GYM                                  | Category 5e, Patch Cord, UTP, 3 M, Grey   |
| DCEPCURJ05GYM                                  | Category 5e, Patch Cord, UTP, 5 M, Grey   |
| DCEPCURJ10GYM                                  | Category 5e, Patch Cord, UTP, 10 M, Grey  |
| <b>Other related products</b>                  |   |
| METSEPM5RD                                     | Remote display for PM5563                 |
| METSEPM51HK                                    | Hardware kit for PM51xx                   |
| METSEPM53HK                                    | Hardware kit for PM53xx                   |
| METSEPM51_3RSK                                 | Revenue sealing kit for PM51XX & PM53XX   |
| METSEPM55RSK                                   | Revenue sealing kit for PM55XX            |
| METSEPM55HK                                    | Hardware kit for PM55xx                   |
| METSEPM5CAB3                                   | Remote Display cable                      |

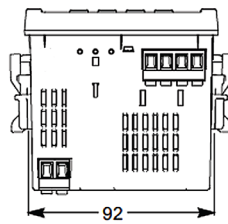
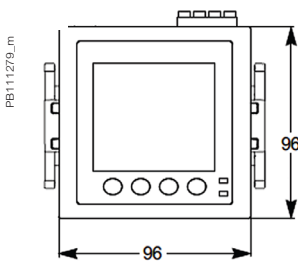
See your Schneider Electric representative for complete ordering information.

# PM5000 series

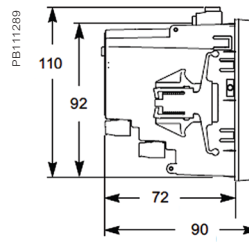
## PM5000 Series meter flush mounting



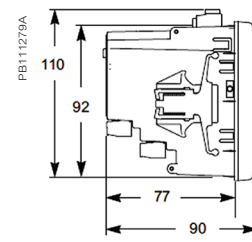
## PM5000 series meter dimensions



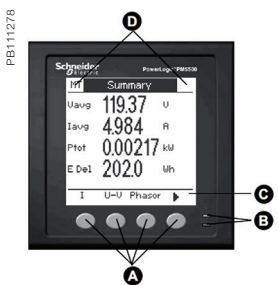
PM5000



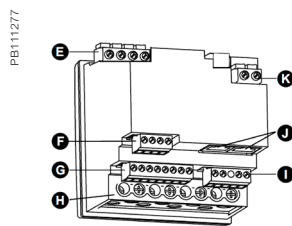
PM5100 / PM5300



PM5500 / PM5600

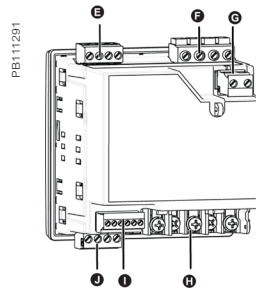


- PM5000 meter parts**
- A Menu selection buttons
  - B LED indicators
  - C Navigation or menu selections
  - D Maintenance and alarm notification area



PM5500

- PM5500 / PM5600 meter parts**
- E Voltage inputs
  - F RS-485 comms
  - G Digital inputs
  - H Current inputs
  - I Digital outputs
  - J Ethernet ports
  - K Control power



- PM5100 / PM5300 meter parts**
- E Relay output (PM5300 only)
  - F Voltage inputs
  - G Control power
  - H Current inputs
  - I Status inputs/digital outputs
  - J Communications port: Ethernet (PM5300 only) or RS-485

Please see the appropriate Installation Guide for accurate and complete information on the installation of this product.

# PM5350 series

The PowerLogic PM5350 series power meters are the new benchmark in affordable, precision metering.

The PowerLogic PM5350, PM5350IB, PM5350PB, and PM5350P power meters offer all the measurement capabilities required to monitor an electrical installation in a space-efficient, single 96 x 96 mm unit with small depth. DNC certifies for marine applications.

## Applications

- Panel instrumentation.
- Cost allocation or energy management
- Electrical installation remote monitoring
- Sophisticated alarming
- Circuit breaker monitoring and control



METSEPM5350P

### The solution for

Markets that can benefit from a solution that includes PowerLogic PM5350 series meters:

- Buildings
- Industry
- Healthcare
- Data Centre and networks
- Infrastructure

### Benefits

#### System integrators' benefit

- Ease of integration
- Ease of setup
- Cost effectiveness

#### Panel builders' benefit

- Ease of installation
- Cost effectiveness
- Aesthetically pleasing
- Simplified ordering

#### End users' benefit

- Ease of use
- Precision metering & sub-billing
- Billing flexibility
- Comprehensive, consistent and superior performance

### Competitive advantages

- Easy to install and operate
- Easy for circuit breaker monitoring and control
- Power quality analysis
- Load management combined with alarm and timestamping
- High performance and accuracy
- Multi-tariff capabilities
- Individual harmonics up to 31st

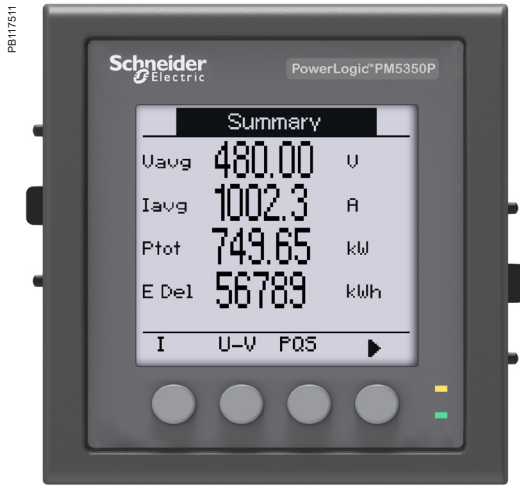
### Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

### Conformity of standards

- IEC 62053-22
- IEC 61557-12
- IEC 62053-23
- IEC/UL 61010-1
- IEC 61326-1
- UL 61010-1
- IEC 61000-3-3
- FCC part 15 Class A
- DNV GL certified

# PM5350 series



Front display of PowerLogic PM5350P front display



Rear view of PowerLogic PM5350P

The PowerLogic PM5350 series power meter offer electrical installation measurement capabilities in a single 96 x 96 mm unit. Three-phases and neutral can be monitored simultaneously using a bright, anti-glare display with large characters and backlighting. Menus are intuitive and the meter supports English, Chinese, Hebrew, and Spanish languages. Its compact size and high performance make the PowerLogic PM5350 series suitable for many applications.

- Applications
  - Panel instrumentation.
  - Cost allocation or energy management.
  - Electrical installation remote monitoring.
  - Alarming with under/over, digital status, control power interruption, meter reset, self diagnostic issue.
  - Circuit Breaker monitoring and control with relay outputs and whetted digital inputs.

- Main characteristics
  - Easy to install
    - Mounts using two clips, no tools required. Ultra compact meter with 44 mm depth connectable up to 480 V L-L without voltage transformers for installations compliant with category III, as per IEC 61010-1. See specification table for UL voltage limits.
  - Easy to operate
    - Intuitive navigation with self-guided, language selectable menus, six lines, four concurrent values. Two LEDs help confirm normal operation.
  - Easy circuit breaker monitoring and control
    - Two relay outputs (high performance) to command most circuit breaker coils directly. Monitored switches can be wired directly without external power supply.
  - System status at a glance
    - Bright, anti-glare, backlit display plus two LEDs; orange for energy pulse or alarm and green for heartbeat/communications indication.
  - IEC 62053-22 class 0.5S accuracy for active energy
    - Accurate energy measurement for cost allocation.
  - Power Quality analysis
    - The PM5350P offers THD and TDD measurements as standard. Total Demand Distortion is based on a point of common coupling (PCC), which is a common point that each user receives power from the power source. The TDD compares the contribution of harmonics versus the maximum demand load. In addition, it has individual harmonics (odd) measurement up to 31st harmonics. These types of power quality parameters help to identify the source of harmonics that can harm transformers, capacitors, generators, motors and electronic equipment.

- Load management
  - Peak demands with Timestamping are provided. Predicted demand values can be used in basic load shedding applications. Alarming with timestamping
  - Over 30 alarm conditions, such as under/over conditions, digital input changes, and phase unbalance inform you of events. A time-stamped log maintains a record of the last 40 alarm events.
  - Load timer setpoint adjustable to monitor and advise maintenance requirements.
  - Performance Standard Meets IEC 61557-12 PMD/Sx/K70/0.5.

| Commercial reference number | Description   |
|-----------------------------|---|
| <b>METSEPM5350</b>          | RS-485 Modbus, THD, 4DI, 2Relay   |
| <b>METSEPM5350IB</b>        | RS-485, 4DI/2Relay, Multi-level alarm, UL480V, 4DI/2Relay               |
| <b>METSEPM5350PB</b>        | RS-485, 4DI/2Relay, Multi-level alarm, UL300V, 4DI/2Relay               |
| <b>METSEPM5350P</b>         | RS-485 Modbus, THD, 31st Individual harmonics, Multi-tariff, 4DI/2Relay |

# PM5350 series

| Feature guide   |  | PM5350P                               | PM5350                     | PM5350IB                        | PM5350PB |
|---|--|---------------------------------------|----------------------------|---------------------------------|----------|
| <b>General</b>  |  |                                       |                            |                                 |          |
| Use on LV and MV systems  |  |                                       |                            | ■                               |          |
| Basic metering with THD and min/max readings  |  |                                       |                            | ■                               |          |
| <b>Instantaneous rms values</b>   |  |                                       |                            |                                 |          |
| Current   | Total, Phases and neutral                        |                                       |                            | ■                               |          |
| Voltage   | Total, Ph-Ph and Ph-N                            |                                       |                            | ■                               |          |
| Frequency   |  |                                       |                            | ■                               |          |
| Real, reactive, and apparent power  | Total and per phase                              |                                       |                            | Signed                          |          |
| True Power Factor   | Total and per phase                              |                                       |                            | Signed, Four Quadrant           |          |
| Displacement PF   | Total and per phase                              |                                       |                            | Signed, Four Quadrant           |          |
| Unbalanced I, VL-N, VL-L  |  |                                       |                            | ■                               |          |
| Accumulated Active, Reactive and Apparent Energy Stored in non-volatile memory                  |  | Received/Delivered; Net and absolute; |                            |                                 |          |
| <b>Demand values</b>  |  |                                       |                            |                                 |          |
| Current average   | Present, Last, Predicted, Peak, & Peak Date Time |                                       |                            | ■                               |          |
| Active power  | Present, Last, Predicted, Peak, & Peak Date Time |                                       |                            | ■                               |          |
| Reactive power  | Present, Last, Predicted, Peak, & Peak Date Time |                                       |                            | ■                               |          |
| Apparent power  | Present, Last, Predicted, Peak, & Peak Date Time |                                       |                            | ■                               |          |
| Multi-tariff  |  | 16 tariffs                            |                            |                                 |          |
| Peak demand with timestamping D/T for current & powers  |  |                                       |                            | ■                               |          |
| Demand calculation  | Sliding, fixed and rolling block, thermal        |                                       | ■                          |                                 |          |
| Synchronization of the measurement window   |  |                                       | ■                          |                                 |          |
| <b>Other measurements</b>   |  |                                       |                            |                                 |          |
| I/O timer   |  |                                       | ■                          |                                 |          |
| Operating timer   |  |                                       | ■                          |                                 |          |
| Active load timer   |  |                                       | ■                          |                                 |          |
| Alarm counters  |  |                                       | ■                          |                                 |          |
| <b>Power quality measurements</b>   |  |                                       |                            |                                 |          |
| THD, thd (Total Harmonic Distortion)  |  |                                       |                            | I, V L-N, V L-L                 |          |
| TDD, thd (Total Demand Distortion)  |  |                                       |                            | ■                               |          |
| Harmonics Individual (Odd)  |  | 31st                                  |                            |                                 |          |
| <b>Data recording</b>   |  |                                       |                            |                                 |          |
| Min/max of instantaneous values, plus phase identification                                      |  |                                       |                            | ■                               |          |
| Alarms with 1s timestamping   |  |                                       |                            | Standard 29; Unary 4; Digital 4 |          |
| Alarms stored in non-volatile memory  |  |                                       |                            | 40 events                       |          |
| <b>Inputs/Outputs</b>   |  |                                       |                            |                                 |          |
| Digital inputs  |  |                                       | 4 (DI1, DI2, DI3, DI4)     |                                 |          |
| Digital outputs   |  |                                       | 2 relay outputs (DO1, DO2) |                                 |          |
| <b>Display</b>  |  |                                       |                            |                                 |          |
| White backlit LCD display, 6 lines, 4 concurrent values   |  |                                       |                            | ■                               |          |
| IEC or IEEE visualization mode  |  |                                       |                            | ■                               |          |
| <b>Communication</b>  |  |                                       |                            |                                 |          |
| Modbus RTU, Modbus ASCII, Jbus Protocol   |  |                                       |                            | ■                               |          |
| Firmware update via RS-485 serial port (DLF3000 via the Schneider Electric website: www.se.com) |  |                                       |                            | ■                               |          |

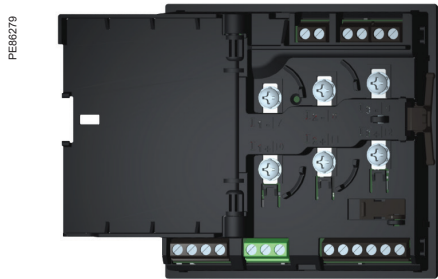
# PM5350 series

| Electrical characteristics |  |  | PM5350  | PM5350P                                   | PM5350PB/IB   |
|----------------------------|--|--|---|---|---|
| Type of measurement        | True rms measurement in 1P, 2P, 3P network, supports 13 wiring schemes. 32 samples per cycle, zero blind |  | ■   | 31 <sup>st</sup>                          | ■   |
| Measurement accuracy       | Current, Phase <sup>(1)</sup>  | ±0.30 %  | ■   | 0.2% (Avg A)                              | ■   |
|                            | Voltage, L-N <sup>(1)</sup>  | ±0.30 %  | ■   | 0.2% (Avg A)                              | ■   |
|                            | Power Factor <sup>(1)</sup>  | ±0.005   |   | ■   |   |
|                            | Power, Phase <sup>(2)</sup>  | IEC 61557-12 Class 0.5; For 5 A nominal CT   |   | ■   |   |
|                            | Frequency <sup>(1)</sup>   | ±0.05 %  |   | ■   |   |
|                            | Real Energy <sup>(3)</sup>   | IEC 62053-22 Class 0.5S<br>IEC 61557-12 Class 0.5  |   | ■   |   |
|                            | Reactive Energy <sup>(4)</sup>   | IEC 62053-23 Class 2<br>IEC 61557-12 Class 2   |   | ■   |   |
| Data update rate           | 1 second nominal (50/60 cycles)  |  |   | ■   |   |
| Input-voltage              | VT primary   | 1.0 MV AC max, starting voltage depends on VT ratio  |   | ■   |   |
|                            | U <sub>nom</sub>   | 277 V L-N  |   | ■   |   |
|                            | Measured voltage with overrange & Crest Factor   | IEC: 20 to 480 V AC L-L; 20 to 277 V AC L-N, CAT III<br>IEC: 20 to 690 V AC L-L; 20 to 400 V AC L-N, CAT II<br>UL: 20 to 300 V AC L-L, CAT III |   | ■   | ■ and<br>UL: 20 to 480 V AC L-L                     |
|                            | Permanent overload   | 700 V AC L-L, 404 V AC L-N   |   | ■   |   |
|                            | Impedance  | 10 MΩ  |   | ■   |   |
|                            | Burden   | 0.2 VA at 240 V AC L-N   |   | ■   |   |
|                            | Frequency range  | 45 to 70 Hz  | ■   | 45 to 65 Hz                               | ■   |
| Input-current              | CT ratings Secondary   | 1 A, 5 A nominal   |   | ■   |   |
|                            | Measured voltage with overrange & crest factor   | 5 mA to 9 A  |   | ■   |   |
|                            | Withstand  | Continuous 20 A, 10 sec/hr 50 A, 1 sec/hr 500 A  |   | ■   |   |
|                            | Impedance  | < 0.3 mΩ   |   | ■   |   |
|                            | Frequency range  | 45 to 70 Hz  |   | ■   |   |
|                            | Burden   | < 0.024 VA at 9 A  |   | ■   |   |
| AC control power           | Operating range  | 85 - 265 V AC  |   | ■   |   |
|                            | Burden   | At 120 V AC, 4.1 VA/ 1.5 W typical<br>At 230 V AC, 6.3 VA/ 2.0 W typical<br>At 265 V AC, 9.6 VA/ 3.5 W typical                                 | 6.7 VA / 2.7 W<br>8.6 VA / 2.9 W<br>11.9 VA / 3.5 W | 7 VA / 4 W<br>9 VA / 5 W<br>11.9 VA / 5 W | 6.7 VA / 2.7 W<br>8.6 VA / 2.9 W<br>11.9 VA / 3.5 W |
|                            | Frequency  | 45 to 65 Hz  |   | ■   |   |
|                            | Ride-through time  | Typical at 120 V AC and with maximum burden<br>Typical at 230 V AC and with maximum burden   | 100 mS<br>400 mS                                    | 40 mS<br>250 mS                           | 100 mS<br>400 mS                                    |
| DC control power           | Operating range  | 100 to 300 V DC  |   | ■   |   |
|                            | Burden   | Typical/ Maximum at 125 V DC<br>Typical/ Maximum at 250 V DC<br>Typical Maximum at 300 V DC  | 1.4 W / 2.6 W<br>1.8 W / 2.7 W<br>3.8 W max         | 4 W max<br>5 W max<br>5 W max             | 1.4 W / 2.6 W<br>1.8 W / 2.7 W<br>3.8 W max         |
|                            | Ride-through time  | Typical at 125 V DC and with maximum burden  | 50 mS   | 30 mS                                     | 50 mS   |
| Real time clock            | Battery backup   | 30 seconds ride-through  | ■   | 3 years backup without control power      | ■   |
| Digital output             | Number/Type  | 2 - Mechanical Relays  |   | ■   |   |
|                            | Output frequency   | 0.5 Hz maximum<br>(1 second ON / 1 second OFF - minimum times)   |   | ■   |   |
|                            | Switching Current  | 30 V DC, 5 A<br>250 V AC, 8 A Cos φ = 1<br>250 V AC, 6 A Cos φ = 0.4   |   | ■   |   |
|                            | Isolation  | 2.5 kVrms  |   | ■   |   |
| Status Digital Inputs      | Voltage ratings  | ON 18.5 to 36 V DC,<br>OFF 0 to 4 V DC   |   | ■   |   |
|                            | Input Resistance   | 110 k Ω  |   | ■   |   |
|                            | Maximum Frequency  | 2 Hz (T ON min = T OFF min = 250 ms)   |   | ■   |   |
|                            | Response Time  | 10 ms  |   | ■   |   |
|                            | Isolation  | 2.5 kVrms  |   | ■   |   |
| Whetting output            | Nominal voltage  | 24 V DC  |   | ■   |   |
|                            | Allowable load   | 4 mA   |   | ■   |   |
|                            | Isolation  | 2.5 kVrms  |   | ■   |   |

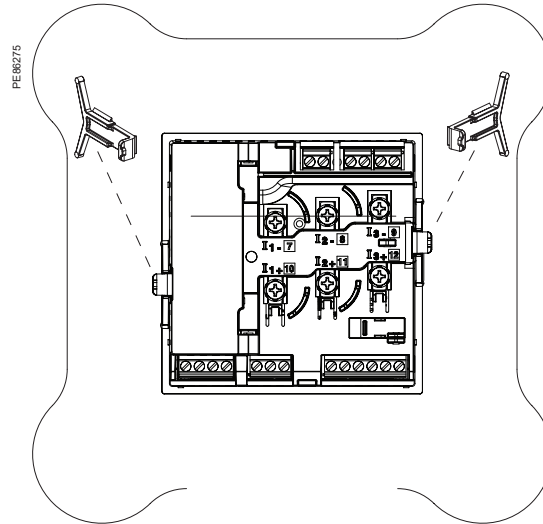
(1) Measurements taken from 45 Hz to 65 Hz, 0.5 A to 9 A, 57 V to 347 V & 0.5 ind to 0.5 cap power factor with a sinusoidal wave.  
 (2) Active power: ±0.5 % from 0.25 A to 9.0 A at Cos φ = 1, ±0.6 % from 0.50 A to 9.0 A at Cos φ = 0.5 (ind or cap)  
 (3) Real/active Energy: ±0.5 % from 0.25 A to 9.0 A at Cos φ = 1, ±0.6 % from 0.50 A to 9.0 A at Cos φ = 0.5 (ind or cap) IEC 61557-12 Class 0.5  
 (4) Reactive energy: ±2.0 % from 0.25 A to 9.0 A at Sin φ = 1±2.5 % from 0

# PM5350 / PM5350P series

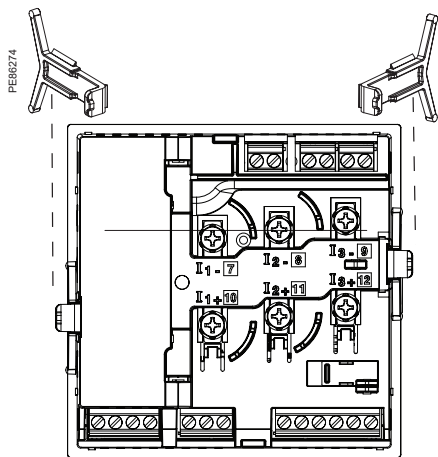
Rear of meter - open



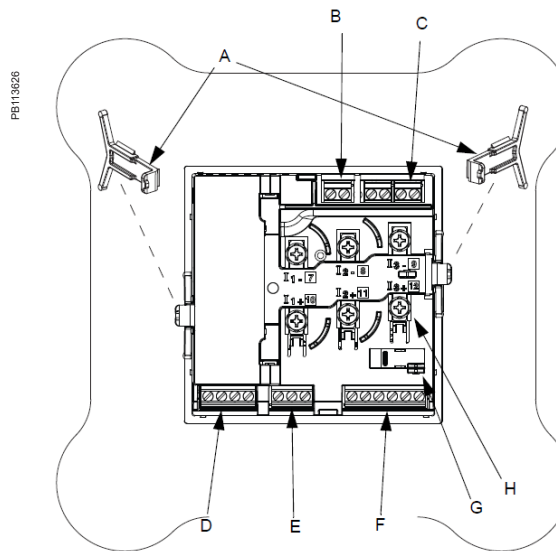
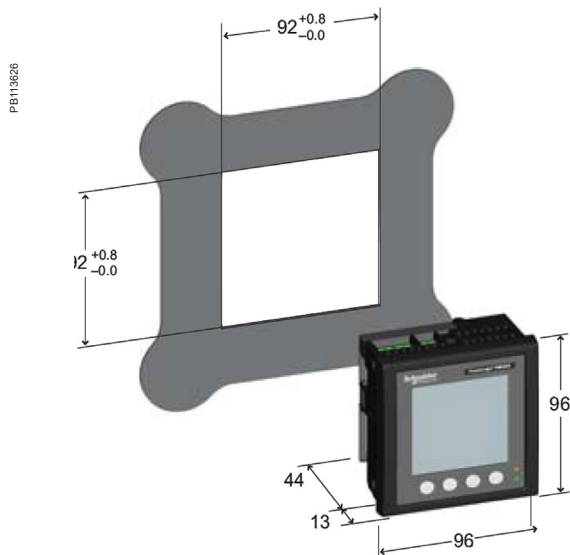
Rear view retainers - users



Rear view retainers - installation



For detailed installation instructions see the product's Installation Guide.

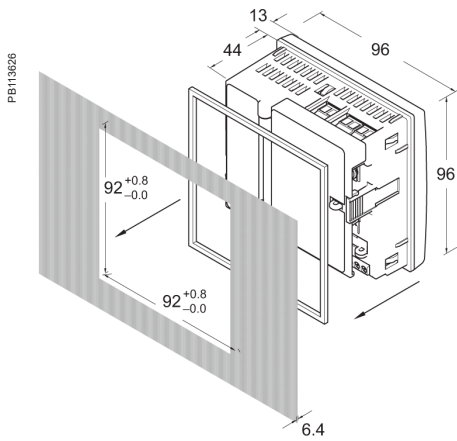


PM5350 / PM5350P meter parts

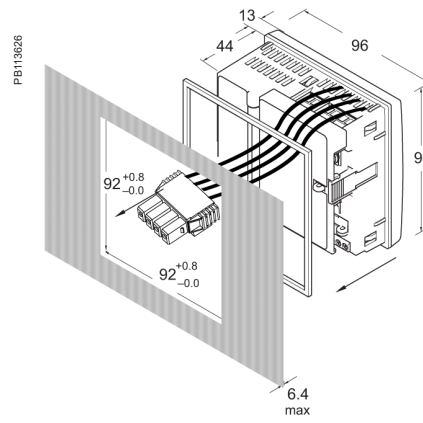
- A Retainer clips.
- B Control power supply connector.
- C Voltage inputs.
- D Digital outputs.
- E RS-485 port (COM1).
- F Digital input.
- G Optical revenue switch.
- H Current inputs.

For detailed installation instructions see the product's Installation Guide.

# PM5350IB/PB series

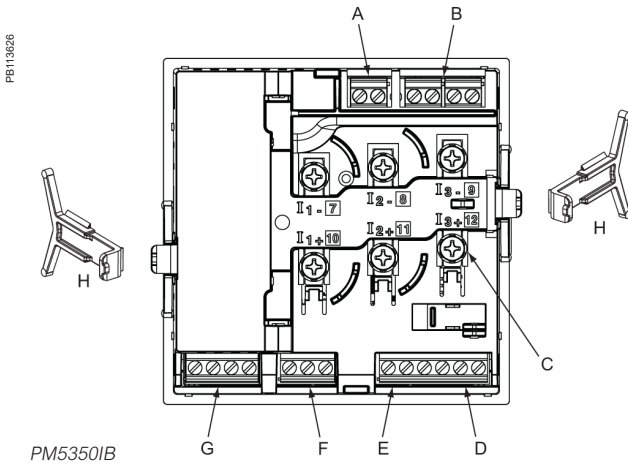


Dimensions PM5350IB

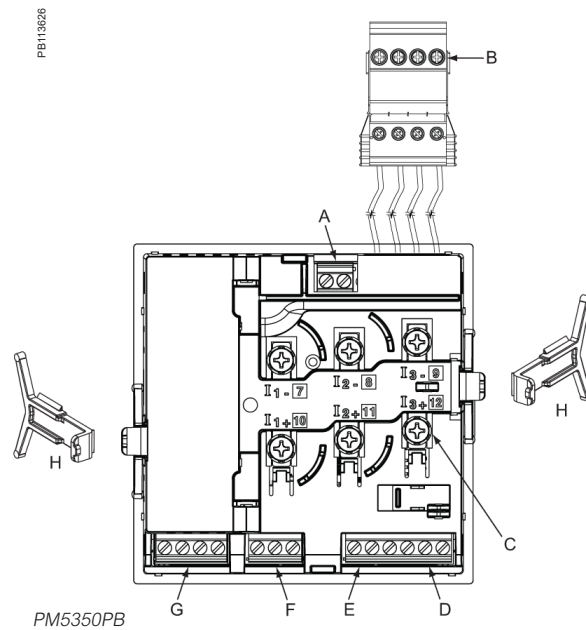


Dimensions PM5350PB

## Parts of PM5350IB and PM5350PB (rear panel door removed)

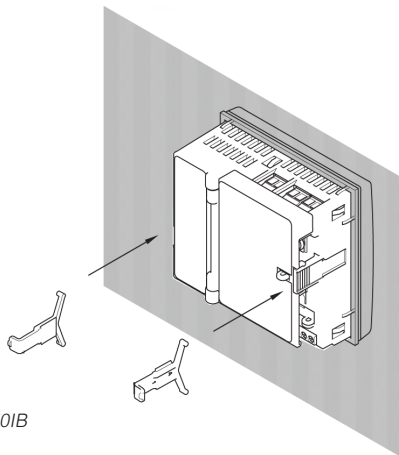


PM5350IB

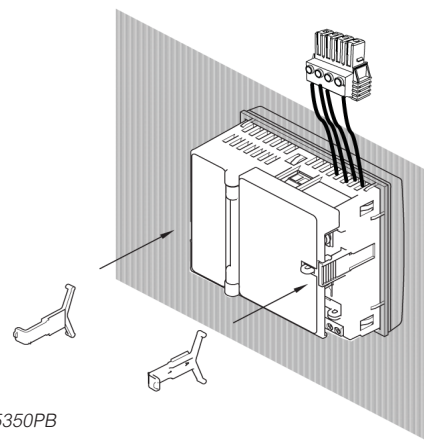


PM5350PB

- A** Control power
- B** Voltage inputs
- C** Current inputs
- D** Digital inputs
- E** Whetting voltage source (for digital inputs)
- F** RS-485 communications
- G** Digital outputs
- H** Retainer clips



PM5350IB



PM5350PB

For detailed installation instructions see the product's Installation Guide.

# Advanced metering

Advanced high performance meters are designed for mains or critical loads on MV/LV networks. They provide analysis of efficiency, losses and capacity, bill verification, power quality compliance monitoring, problem notification and diagnosis and control of loads, etc. Power quality meters are classified as advanced meters designed to monitor service entrances and critical network locations to maximize power availability and reliability by providing a comprehensive system load profile, power quality and root cause analyses.

- PowerLogic™ PM8000
- PowerLogic™ ION9000



METSEPM8240



M7650

# PM8000 series

The PowerLogic™ PM8000 series meters are compact, cost-effective multifunction power meters that will help you ensure reliability and efficiency of your power-critical facility.

Reveal and understand complex power quality conditions. Measure, understand and act on insightful data gathered from your entire power system. Designed for key metering points throughout your energy infrastructure, the PowerLogic PM8000 series meter has the versatility to perform nearly any job you need a meter to do, wherever you need it!

## Applications

Ideal for low to high voltage applications in industrial facilities, data centers, infrastructure and other critical power environments.

PE113687



METSEPM8240

# PM8000 series

## The solution for

Markets that can benefit from a solution that includes PowerLogic PM8000 series meters:

- Industry
- Data centers
- Infrastructure
- Healthcare
- Buildings

## Benefits

- Makes understanding power quality simple to help operations personnel avoid downtime and helps ensure increased productivity and equipment life.
- Makes energy and power quality immediately relevant and actionable to support your operational and sustainability goals.

## Competitive advantages

- Modular, flexible patented ION technology architecture enables a simple building block approach.
- Disturbance direction detection, modularity and compliance with latest power quality standards.
- Color screen.
- Multiple communication options.
- Excellent accuracy.

## Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximize electrical network reliability and availability, and optimise electrical asset performance.

## Conformity of standards

- EN 50160
- EN 50470
- IEC 61000-4-30
- IEC 61010-1
- IEC 61326-1
- IEC 61557-12
- IEC 62052-11
- IEC 62053-11
- IEC 62053-22
- IEC 62053-23
- IEC 62053-24
- IEC 62053-24
- IEC 62586-2
- IEEE 519
- UL 61010-1

# PM8000 series

PB113641



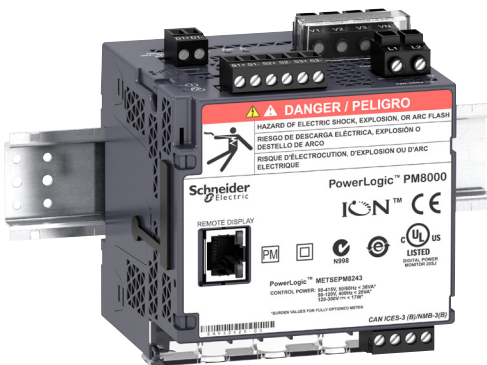
PowerLogic PM8000 series meter.

PB113668



PowerLogic PM8000 series meter - rear view.

PB113692



PowerLogic PM8000 DIN rail mounted meter.

## Main characteristics

- Precision metering:
  - IEC 61557-12 PMD/SD/K70/0.2 and PMD/SS/K70/0.2 3000m (performance measuring and monitoring functions).
  - Class 0.2S accuracy IEC 62053-22, ANSI C12.20 Class 0.2 (active energy).
  - Industry leading Class 0.5S accuracy for reactive energy (IEC 62053-24).
  - Cycle-by-cycle RMS measurements updated every 1/2 cycle.
  - Full 'multi-utility' WAGES metering support.
  - Net metering.
  - Anti-tamper protection seals.
- PQ compliance reporting and basic PQ analysis:
  - Monitors and logs parameters in support of international PQ standards,
    - IEC 61000-4-30 Class S (test methods as per IEC 62586-2).
  - Generates onboard PQ compliance reports accessible via onboard web pages:
    - Basic event summary and pass/fail reports, for EN 50160 for power frequency, supply voltage indication, supply voltage dips, short and long interruptions, temporary over voltages, voltage unbalance and harmonic voltage.
    - ITIC (CBEMA) and SEMI curves, with alarm categorization to support further analyses.
    - NEMA Motor Derating curve.
    - Pass/fail report for IEEE 519 for voltage and current harmonic limits.
  - Harmonic analysis:
    - THD on voltage and current, per phase, min/max, custom alarming.
    - Individual harmonic magnitudes and angles on voltage and current, up to the 63rd harmonic.
  - High resolution waveform capture: triggered manually or by alarm, captured waveforms available directly from the meter via FTP in a COMTRADE format.
  - Disturbance detection and capture: sag/swell on any current and voltage channel, alarm on disturbance event, waveform capture with pre-event information.
  - Patented disturbance direction detection: provides indication of the captured disturbance occurring upstream or downstream of the meter; timestamped results provided in the event log, with degree of certainty of disturbance direction.
- Used with Schneider Electric's sophisticated software tools, provides detailed PQ reporting across entire network:
  - EN 50160 report.
  - IEC 61000-4-30 report.
  - IEEE 519 harmonic compliance report.
  - PQ compliance summary.
  - Display of waveforms and PQ data from all connected meters.
  - Onboard web-based waveform viewer.
  - Energy reports for consumption analysis and cost management.
  - WAGES dashboards and reports.
  - EcoStruxure Power Events Analysis, including alarm management, sequence of events, and root cause analysis.
- Cybersecurity:
  - Security events logging with Syslog protocol support.
  - HTTPS secure protocol.
  - Ability to enable or disable any communication port and any protocol per port.
  - Anti-tamper protection seals and hardware metrology lock.
  - User accounts with strong passwords.
- Data and event logging:
  - Onboard data and event logging.
  - 512 MB of standard non-volatile memory.

# PM8000 series

## Main characteristics (contd.)

- No data gaps due to network outages or server downtime.
- Min/Max log for standard values.
- 50 user-definable data logs, recording up to 16 parameters on a cycle-by-cycle or other user definable interval.
- Continuous logging or 'snapshot' triggered by setpoint and stopped after defined duration.
- Trend energy, demand and other measured parameters.
- Forecasting via web pages: average, minimum and maximum for the next four hours and next four days.
- Advanced time-of-use capability.
- Security / event log: alarm conditions, metering configuration changes, power outages, firmware download, and user login/logout all timestamped to  $\pm 1$  millisecond.

- Alarming and control:

- 50+ definable alarms to log critical event data, trigger waveform recording, or perform control function.
- Trigger on any condition, with 1/2-cycle and 1-second response time.
- Combine alarms using Boolean logic and to create alarm levels.
- Alarm notification via email.
- In conjunction with Schneider Electric's EcoStruxure software, alarms, software alarms, and alarm frequency are categorized and trended enabling sequence of events and root cause analyses.

## Usability

- Easy installation and setup:

- Panel and DIN rail mounting options, remote display option.
- Pluggable connectors.
- Free setup application simplifies meter configuration.
- Auto-discovery using DPWS (Device Profile Web Services).
- DHCP for automatic IP address configuration.

- Front panel:

- Easy to read color graphic display.
- Simple, intuitive menu navigation with multi-language (8) support.

- Flexible remote communications:

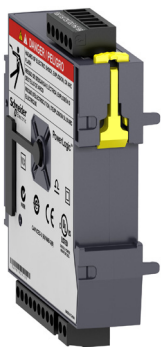
- Multiple simultaneously operating communication ports and protocols allow interfacing with other automation systems; (e.g. waveforms, alarms, billing data, etc.) can be uploaded for viewing/analysis while other systems access real-time information.
- Supports Modbus, ION, DNP3, IEC 61850.
- Dual port Ethernet: 10/100BASE-TX; supports IPV4 and IPV6; daisy-chaining capability removes need for additional switches.
- Secure web interface with HTTPS and TLS 1.2 with support for user-provided certificates.
- Create redundant network loop using Rapid Spanning Tree Protocol (RSTP) and managed Ethernet switches.
- Customize TCP/IP port numbers and enable/disable individual ports.
- RS-485 2-wire connection, up to 115,200 baud, Modbus RTU, ION and DNP3 protocols.
- Ethernet to serial gateway with Modbus Master functionality, connecting to 31 downstream serial Modbus devices. Also supports Modbus Mastering over TCP/IP (Ethernet) network.
- Full function web server with factory and customizable pages to access real-time and PQ compliance data.
- Push historical data via email.
- Advanced security: Up to 50 configurable user accounts.

PB113669



PowerLogic PM8000 series meter with remote display.

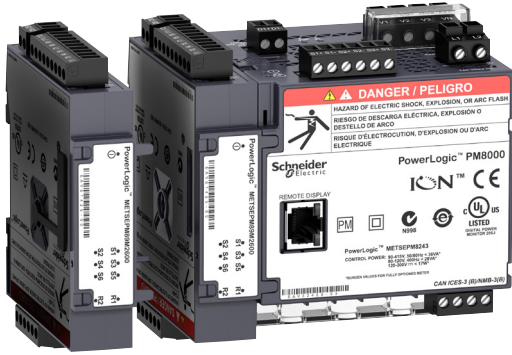
PB113671



PowerLogic I/O module.

# PM8000 series

PB113086



PowerLogic PM8000 series meter with I/O modules.

- Time synchronization via:
  - GPS clock (RS-485) or IRIG-B (digital input) to  $\pm 1$  millisecond.
  - Network Time Protocol (NTP/SNTP).
  - Precision Time Protocol (PTP - IEEE 1588 / IEC 61588).
  - Time set function from Schneider Electric software server.

## Adaptability

- ION™ frameworks allow customisable, scalable applications, object-oriented programming, compartmentalizes functions, and increases flexibility and adaptability.
- Applications include: access and aggregate data from Modbus devices on serial port or across the network (Modbus TCP/IP), logging and/or processing data by totaling, unit conversion or other calculations, applying complex logic for alarming or control operations, data visualization via web pages.

## Standard meter I/O

- 3 digital status/counter inputs.
- 1 KY (form A) energy pulse output for interfacing with other systems.

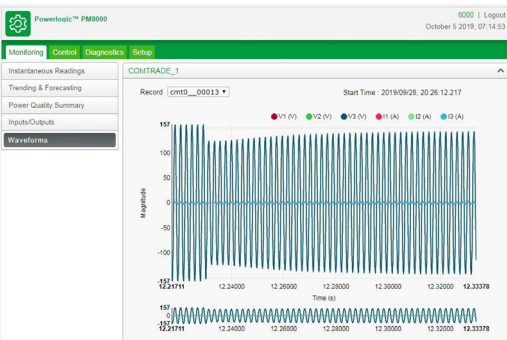
## Modular I/O options

- Optional expansion modules.
- Up to 4 modules per meter.

### Option modules include:

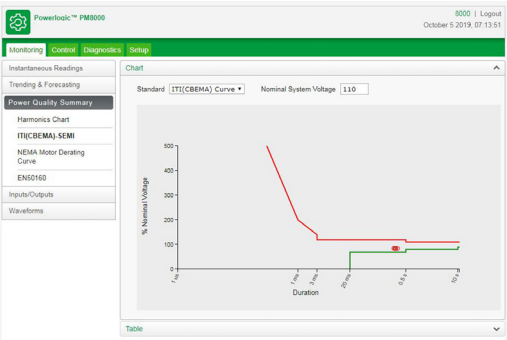
- Digital module:
  - 6 digital status/counter inputs.
  - 2 Form C relay outputs, 250 V, 8 A.
- Analog module:
  - 4 analog inputs (4-20 mA; 0-20 mA; 0-30 V).
  - 2 analog outputs (4-20 mA; 0-20 mA; 0-10 V) for interfacing with building management sensors and systems.

PB119094



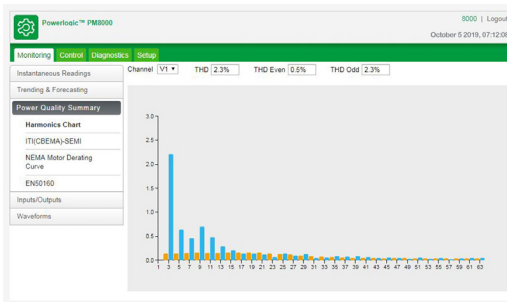
PowerLogic PM8000 series waveform web page sample

PB119093



PowerLogic PM8000 series CBEMA web page sample

PB119095



PowerLogic PM8000 series PQ harmonics web page sample

# PM8000 series

PB113686



Underside of PM8000 meter (DIN rail version).

| Feature selection           |  |
|-----------------------------|--|
| Commercial reference number | Description  |
| <b>METSEPM8240</b>          | 96 x 96 panel mount meter, AC/DC power.  |
| <b>METSEPM8210</b>          | 96 x 96 panel mount meter, LV DC power.  |
| <b>METSEPM8243</b>          | DIN rail mount meter, AC/DC power.   |
| <b>METSEPM8213</b>          | DIN rail mount meter, LV DC power.   |
| <b>METSEPM8244</b>          | DIN rail mount meter with remote display, AC/DC power.   |
| <b>METSEPM8214</b>          | DIN rail mount meter with remote display, LV DC power.   |
| <b>METSEPM82401</b>         | MID approved panel mount meter.  |
| <b>METSEPM82403</b>         | RMICAN approved panel mount meter.   |
| <b>METSEPM82404</b>         | RMICAN sealed panel mount meter.   |
| Accessories                 | Description  |
| <b>METSEPM89RD96</b>        | Remote display, 3 metre cable, mounting hardware for 30 mm hole (nut & centering pin), mounting hardware for DIN96 cutout (92 x 92 mm) adapter plate |
| <b>METSEPM89M2600</b>       | Digital I/O module (6 digital inputs & 2 relay outputs)  |
| <b>METSEPM89M0024</b>       | Analog I/O module (4 analog inputs & 2 analog outputs)   |
| <b>METSEPM8HWK</b>          | Replacement hardware kit (connectors, screws, retainer clips, mounting template)   |

| Feature guide   |                              | PM8000                           |
|---|------------------------------|----------------------------------|
| <b>General</b>  |                              |                                  |
| Use on LV, MV, and HV systems   |                              | ■                                |
| Current accuracy  |                              | 0.1 % reading                    |
| Voltage accuracy  |                              | 0.1 % reading                    |
| Active energy accuracy  |                              | 0.2 Class                        |
| Number of samples/cycle or sample frequency                                     |                              | 256                              |
| <b>Instantaneous rms values</b>   |                              |                                  |
| Current, voltage, frequency   |                              | ■                                |
| Active, reactive, apparent power  | Total and per phase          | ■                                |
| Power factor  | Total and per phase          | ■                                |
| Current measurement range (autoranging)   |                              | 0.05 - 10 A                      |
| <b>Energy values</b>  |                              |                                  |
| Active, reactive, apparent energy   |                              | ■                                |
| Settable accumulation modes   |                              | ■                                |
| <b>Demand values</b>  |                              |                                  |
| Current   | Present and max. values      | ■                                |
| Active, reactive, apparent power  | Present and max. values      | ■                                |
| Predicted active, reactive, apparent power                                      |                              | ■                                |
| Synchronization of the measurement window                                       |                              | ■                                |
| Setting of calculation mode   | Block, sliding               | ■                                |
| <b>Power quality measurements</b>   |                              |                                  |
| Harmonic distortion   | Current and voltage          | ■                                |
| Individual harmonics  | Via front panel and web page | 63                               |
|   | Via EcoStruxure™ software    | 127                              |
| Waveform capture  |                              | ■                                |
| Detection of voltage swells and sags  |                              | ■                                |
| Fast acquisition  | 1/2 cycle data               | ■                                |
| EN 50160 compliance checking  |                              | ■                                |
| IEEE 519 compliance checking  |                              | ■                                |
| Customizable data outputs (using logic and math functions)                      |                              | ■                                |
| <b>Data recording</b>   |                              |                                  |
| Min/max of instantaneous values   |                              | ■                                |
| Data logs   |                              | ■                                |
| Event logs  |                              | ■                                |
| Trending/forecasting  |                              | ■                                |
| SER (Sequence of event recording)   |                              | ■                                |
| Time stamping   |                              | ■                                |
| GPS synchronization (+/- 1 ms)  |                              | ■                                |
| Memory (in Mbytes)  |                              | 512                              |
| <b>Display and I/O</b>  |                              |                                  |
| Front panel display   |                              | ■                                |
| Wiring self-test  |                              | ■                                |
| Pulse output  |                              | 1                                |
| Digital or analog inputs(max)   |                              | 27 digital<br>16 analog          |
| Digital or analog outputs (max, including pulse output)                         |                              | 1 digital<br>8 relay<br>8 analog |
| <b>Communication</b>  |                              |                                  |
| RS-485 port   |                              | 1                                |
| Ethernet port   |                              | 2                                |
| Serial port (Modbus, ION, DNP3)   |                              | ■                                |
| Ethernet port (Modbus/TCP, ION TCP, DNP3 TCP, DHCP, DNS, IPv4, IPv6, IEC 61850) |                              | ■                                |
| Ethernet gateway  |                              | ■                                |
| Alarm notification via email  |                              | ■                                |
| HTTP/HTTPs web server with waveform viewer                                      |                              | ■                                |
| SNMP with custom MIB and traps for alarms                                       |                              | ■                                |
| SMTP email  |                              | ■                                |
| PTP and NTP time synchronization  |                              | ■                                |
| FTP file transfer   |                              | ■                                |

# PM8000 series

## Technical specifications

### Electrical characteristics

|                                   |  |  |
|-----------------------------------|--|--|
| Type of measurement               | True rms to 256 samples per cycle  |  |
| Measurement accuracy              | Current & voltage  | Class 0.2 as per IEC 61557-12  |
|                                   | Active Power   | Class 0.2 as per IEC 61557-12  |
|                                   | Power factor   | Class 0.5 as per IEC 61557-12  |
|                                   | Frequency  | Class 0.02 as per IEC 61557-12   |
|                                   | Active energy  | Class 0.2S IEC 62053-22<br>Class 0.2 IEC 61557-12, ANSI C12.20 Class 0.2   |
|                                   | Reactive Energy  | Class 0.5S IEC 62053-24*   |
|                                   | MID Directive  | EN 50470-1, EN 50470-1, AnnexB & AnnexD (optional model)   |
| Display refresh rate              | 1/2 cycle or 1 second  |  |
| Input-voltage characteristics     | Specified accuracy voltage   | 57 - 400 V L-N / 100 - 690 V L-L   |
|                                   | Impedance  | 5 MΩ per phase   |
|                                   | Specified accuracy frequency - Frequency   | 42 to 69 Hz<br>(50/60 Hz nominal)  |
|                                   | Limit range of operation - frequency   | 20 to 450 Hz   |
| Input-current characteristics     | Rated nominal current  | 1 A (0.2S), 5 A (0.2S) , 10 A (0.2 ANSI)   |
|                                   | Specified accuracy current range   | Starting Current: 5 mA<br>Accurate Range: 50 mA - 10 A   |
|                                   | Permissible overload   | 200 A rms for 0.5s, non-recurring  |
|                                   | Impedance  | 0.0003 Ω per phase   |
|                                   | Burden   | 0.01 VA max at 5 A   |
| Power supply AC/DC                | AC   | 90-415 V AC ±10 % (50/60 Hz ±10 %) 90-120 V AC +/- 10% (400 Hz)  |
|                                   | DC   | 110-415 V DC ±15 % (20-60 V DC ±10 % for PM8210)   |
|                                   | Ride-through time  | 100 ms (6 cycles at 60 Hz) min., any condition<br>200 ms (12 cycles at 60 Hz) typ., 120 V AC<br>500 ms (30 cycles at 60 Hz) typ., 415 V AC   |
|                                   | Burden   | Typical: 7.7 W / 16 VA at 230 V (50/60 Hz)<br>Fully optioned: max. 18 W / 40 VA at 415 V (50/60 Hz).   |
| Power supply LV DC                | DC   | 20 to 60 V DC ±10 %  |
|                                   | Burden   | Fully optioned: max. 18 W at 18 to 60 V DC   |
| Input/outputs                     | Meter Base Only  | 3 digital inputs (30 V AC/60 V DC)<br>1 form A (KY) solid state digital output (30 V AC/60 V DC, 75 mA).   |
|                                   | Optional   | Digital - 6 digital inputs (30 V AC / 60 V DC) wetted + 2 form C relay outputs (250 V AC, 8 A)<br>Analog - 4 analog inputs (4-20 mA, 0-30 V DC) + 2 analog outputs (4-20 mA, 0-10 V DC). |
| <b>Mechanical characteristics</b> |  |  |
| Weight                            | Integrated Display Model 0.581 kg<br>DIN rail mounted Model 0.528 kg<br>IO modules 0.140 kg<br>Remote display 0.300 kg |  |
| IP degree of protection           | IP 54, UL type 12: Panel mount and Remote display, front.<br>IP 30: Panel mount rear, DIN rail mount, I/O modules.     |  |
| Excellent quality                 | ISO 9001 and ISO 14000 certified manufacturing.  |  |
| Dimensions                        | Panel mount model  | 96 x 96 x 77.5 mm  |
|                                   | DIN model  | 90.5 x 90.5 x 90.8 mm  |
|                                   | Remote display   | 96 x 96 x 27 mm  |
|                                   | IO modules   | 90.5 x 90.5 x 22 mm  |

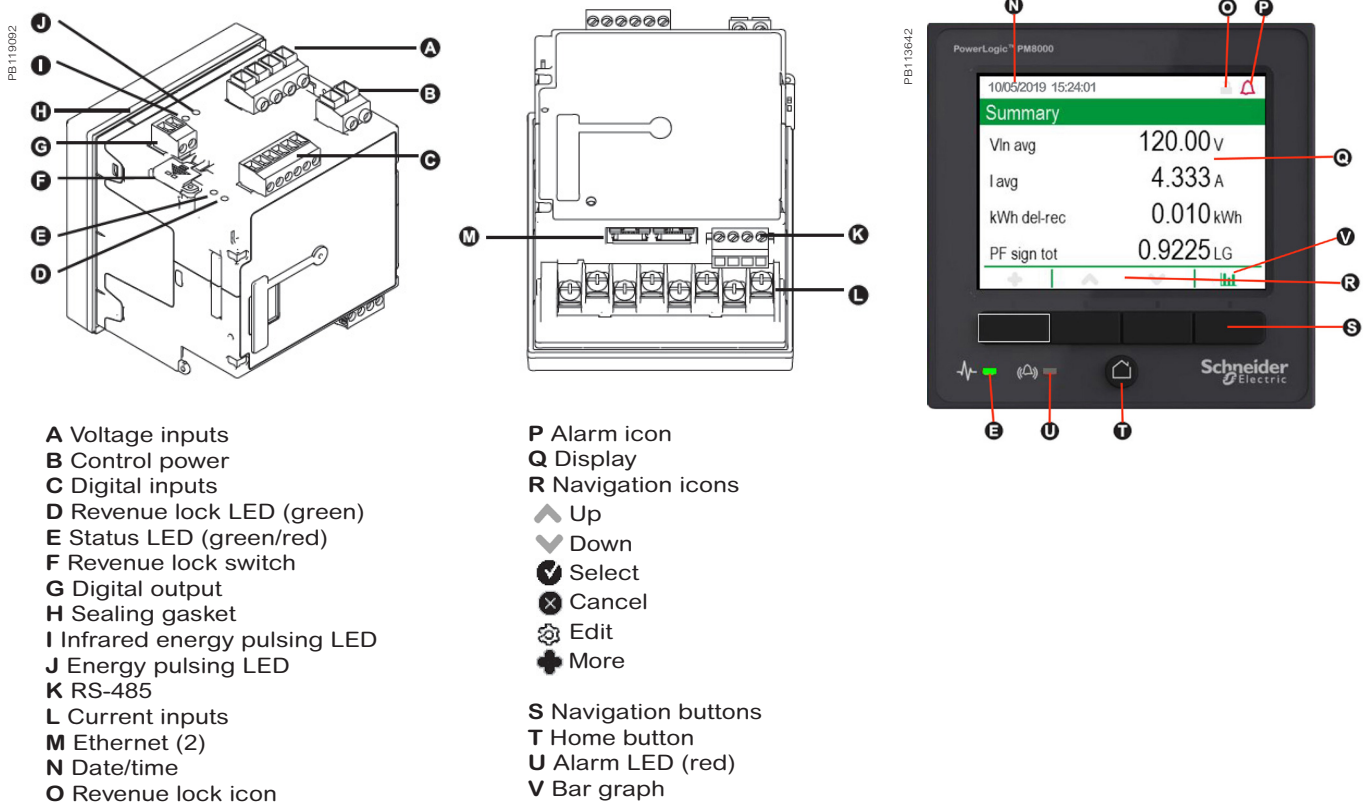
# PM8000 series

| Environmental conditions                     |  |
|--|--|
| Operating temperature                        | -25 °C to 70 °C  |
| Remote Display Unit                          | -25 °C to 60 °C  |
| Storage temperature                          | -40 °C to 85 °C  |
| Humidity rating                              | 5 % to 95 % non-condensing   |
| Installation category                        | III  |
| Operating altitude (maximum)                 | 3000 m above sea-level   |
| Electromagnetic compatibility                |  |
| EMC standards                                | IEC 62052-11 and IEC 61326-1   |
| Immunity to electrostatic discharge          | IEC 61000-4-2  |
| Immunity to radiated fields                  | IEC 61000-4-3  |
| Immunity to fast transients                  | IEC 61000-4-4  |
| Immunity to surges                           | IEC 61000-4-5  |
| Immunity to conducted disturbances           | IEC 61000-4-6  |
| Immunity to power frequency magnetic fields  | IEC 61000-4-8  |
| Immunity to conducted disturbances, 2-150kHz | CLC/TR 50579   |
| Immunity to voltage dips & interruptions     | IEC 61000-4-11   |
| Immunity to ring waves                       | IEC 61000-4-12   |
| Conducted and radiated emissions             | EN 55022, EN 55011, FCC part 15 Class B, EN55011, EN55022 Class B, ICES-003 Class B  |
| Surge withstand Capability (SWC)             | IEEE / ANSI C37.90.1   |
| Safety                                       |  |
| Safety Construction                          | IEC/EN 61010-1 ed.3, CAT III, 400 V L-N / 690 V L-L<br>UL 61010-1 ed.3 and CSA-C22.2 No. 61010-1 ed.3, CAT III, 347 V L-N / 600 V L-L<br>IEC/EN 62052-11, protective class II.   |
| Communication                                |  |
| Ethernet to serial line gateway              | Communicates directly with up to 31 unit load devices.   |
| Web server                                   | Customisable pages, new page creation capabilities, HTML/XML compatible.   |
| Serial port RS-485                           | Baud rates of 2400 to 115200, pluggable screw terminal connector.  |
| Ethernet port(s)                             | 2x 10/100BASE-TX, RJ45 connector (UTP).  |
| Protocol                                     | Modbus, ION, DNP3, IEC 61850, HTTPS, FTP, SNMP, SMTP, DPWS, RSTR, NTR, PTR, NTP/SNTP, GPS, IPv4 /IPv6, DHCP, Syslog protocols.   |
| Firmware characteristics                     |  |
| High-speed data recording                    | Down to 1/2 cycle interval burst recording, stores detailed characteristics of disturbances or outages. Trigger recording by a user-defined setpoint, or from external equipment.  |
| Harmonic distortion                          | Up to 63rd harmonic (127th via Schneider Electric software) for all voltage and current inputs.  |
| Sag/swell detection                          | Analyse severity/potential impact of sags and swells: magnitude and duration data suitable for plotting on voltage tolerance curves per phase triggers for waveform recording, control.  |
| Disturbance direction detection              | Determine the location of a disturbance more quickly and accurately by determining the direction of the disturbance relative to the meter. Analysis results are captured in the event log, along with a timestamp and confidence level indicating level of certainty.  |
| Instantaneous                                | High accuracy of standard speed (1s) and high-speed (1/2 cycle) measurements, including true rms per phase and total for: voltage, current, active power (kW), reactive power (kvar), apparent power (kVA), power factor, frequency, voltage and current unbalance, phase reversal.                                      |
| Load profiling                               | Channel assignments (800 channels via 50 data recorders) configurable for any measurable parameter, including historical trend recording of energy, demand, voltage, current, power quality, or any measured parameter. Trigger recorders based on time interval, calendar schedule, alarm/event condition, or manually. |
| Trend curves                                 | Historical trends and future forecasts to better manage demand, circuit loading, and other parameters. Provides average, min, max and standard deviation every hour for last 24 hours, every day for last month, every week for last 8 weeks and every month for last 12 months.   |
| Waveform captures                            | Simultaneous capture of all voltage and current channels, sub-cycle disturbance capture, ability to record from 210 cycles at 256 sample per cycle to over 2880 cycles at 16 points per cycle with user selectable sampling speed as well as pre- and post-trigger length.   |
| Alarms                                       | Threshold alarms: adjustable pickup and dropout setpoints and time delays, numerous activation levels possible for a given type of alarm, user-defined or automatic alarm threshold settings, user-defined priority levels (optional automatic alarm setting).   |
| Advanced Time of Use (TOU)                   | 6 seasons; 3 different day types: weekend, weekday, and holiday; up to 8 tariffs per day type.   |

# PM8000 series

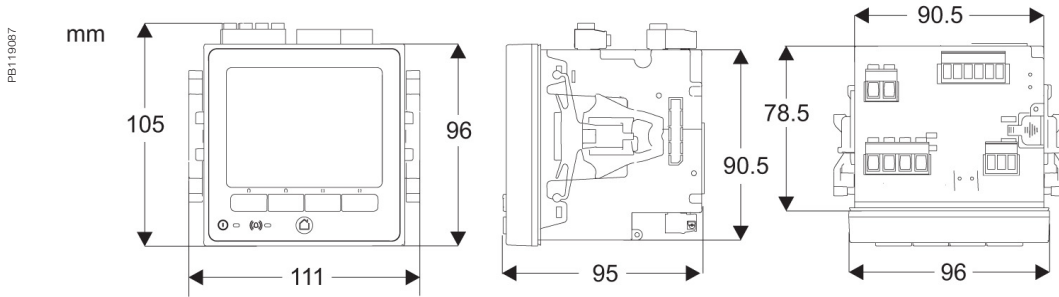
| Firmware characteristics (cont.) |  |
|----------------------------------|--|
| Advanced security                | Up to 50 users with unique access rights. Perform resets, time sync, or meter configurations based on user privileges.                           |
| Memory                           | 512 MB.  |
| Firmware update                  | Update via the communication ports.  |
| Display characteristics          |  |
| Integrated or Remote display     | 320 x 240 (1/4 VGA) Color LCD, configurable screens , 5 buttons and 2 LED indicators (alarm and meter status).                                   |
| Languages                        | English, French, Spanish, Russian, Portugese, German, Italian, Chinese.  |
| Notations                        | IEC, IEEE.   |
| The HMI menu includes            |  |
| Alarms                           | Active alarms, historic alarms (50+ alarms).   |
| Basic Reading                    | Voltage, current, frequency, power summary.  |
| Power                            | Power summary, demand, power factor.   |
| Energy                           | Energy total, delivered, received.   |
| Events                           | Timestamped verbose event log.   |
| Power Quality                    | EN 50160, IEEE 519, harmonics, phasor diagrams.  |
| Inputs/Outputs                   | Digital inputs, digital outputs, analog inputs, analog outputs.  |
| Nameplate                        | Model, serial and FW version.  |
| Custom Screens                   | Build your own metrics.  |
| Setup Menu                       | Meter setup, communications setup, display setup, date/time/clock setup, alarm setup, language setup, time of use setup, resets, password setup. |

## PM8000 series parts

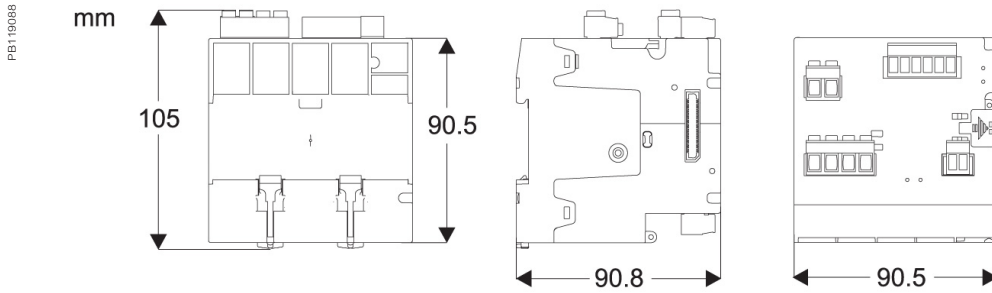


# PM8000 series

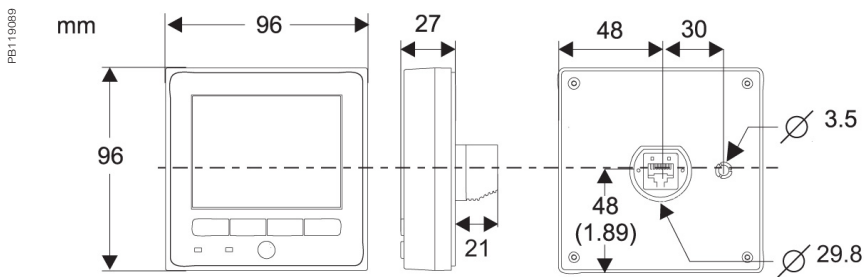
## PM8000 panel mount meter dimensions



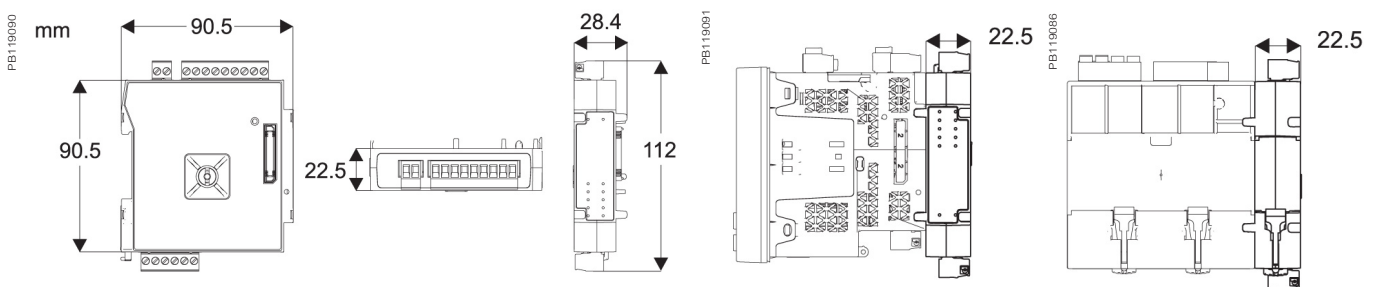
## PM8000 DIN rail mount meter dimensions



## PM8000 remote display dimensions



## PM8000 with I/O modules dimensions



Please see the appropriate **Installation Guide** for accurate and complete information on the installation of this product.

# ION9000 series

The PowerLogic™ ION9000 is your 24/7 power quality expert, providing information, not just data.

With a comprehensive, industry-leading Power Quality Instrument (PQI) performance designation according to IEC 62586-1/-2, the PowerLogic ION9000 is third-party certified ANSI C12.20 Class 0.1 and IEC 62053-22 Class 0.1S accurate, the most accurate power meter available today. Lab-verified power quality and safety ensure reliable, precision performance that is perfect for supply- or demand-side applications. Its patented Disturbance Direction Detection also helps you pinpoint the source of power quality issues faster. Capable of sampling at 10 MHz, the ION9000T captures extremely fast voltage events that are missed by most other power meters, enabling advanced diagnostics and high-resolution event associations for fast, conclusive diagnosis and resolution to transient voltages.

Highly customizable and modular, the ION9000's field programmability can adapt to satisfy any solution, protecting your investment now and in the future. All designed to align with your comprehensive grid cybersecurity policies and backed by Schneider Electric's global services and support.

## Applications

Ideal for critical power and large energy users who cannot afford to be shut down, the ION9000T has High-Speed Transient Capture (HSTC) to detect and record transient events that exceed the voltage withstand of sensitive equipment.

PB115917



METSEION92040

### The market solution for

Markets that benefit from a solution that includes PowerLogic ION9000 series meters:

- Data centers
- Healthcare facilities
- Semiconductor
- Pharmaceutical & chemical
- Energy industries
- Mining, Minerals, & Metals
- Renewable energy interconnects
- Medium voltage distribution & energy automation

### Benefits

- Makes understanding power quality simple which helps operations personnel avoid downtime and increase productivity and equipment life
- Makes energy and power quality data immediately actionable and relevant to operational and sustainability goals

### Competitive advantages

- Modular, flexible, patented ION™ programmable technology
- Utility grade energy accuracy
- Patented Disturbance Direction Detection
- Third-party, lab-verified compliance with latest PQ standards
- Onboard pass/fail PQ characterization and assessment according to EN50160 and IEEE519
- Cybersecurity event logging, Syslog protocol, HTTPS, SFTP, and full control of each communication port
- High-speed impulsive and oscillatory transient detection

### Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings. Maximize electrical network reliability and availability, and optimize electrical asset performance.

### Conformity of standards

- |                  |                |
|------------------|----------------|
| • ANSI C12.20    | • IEC 61850    |
| • ANSI C37.90.1  | • IEC 62052-11 |
| • IEC 61000-4-7  | • IEC 62052-31 |
| • IEC 61000-4-15 | • IEC 62053-22 |
| • IEC 61000-4-30 | • IEC 62053-23 |
| • IEC 61010-1    | • IEC 62053-24 |
| • IEC 61326-1    | • IEC 62586    |
| • IEC 61557-12   | • UL 61010-1   |



PowerLogic™ ION9000 series meter with RD192 display



PowerLogic™ ION9000 RD192 remote display

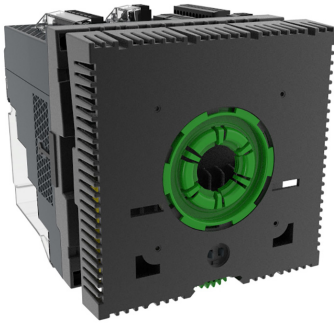


PowerLogic™ ION9000 front view

### Main characteristics

- PQ compliance reporting and basic PQ analysis:
  - Monitors and logs parameters according to IEC 61000-4-30 Class A international PQ standards (test methods as per IEC 62586-2).
  - High resolution waveform capture: triggered manually or by event. Captured waveforms available directly from the meter via SFTP in a COMTRADE format, and viewable in the meter's web interface.
  - Generates onboard PQ compliance reports accessible via onboard web pages:
    - Pass/fail report for IEEE 519 for voltage and current harmonic limits.
    - ITIC (CBEMA) and SEMI curves, with alarm categorization to support further analyses.
    - NEMA Motor Derating curve.
  - Harmonic analysis:
    - THD and TDD per phase, min/max, custom alarming.
    - Individual harmonic magnitudes and angles on voltage and current, up to the 63rd harmonic.
  - Disturbance detection and capture: sag/swell on any current and voltage channel, alarm on disturbance event, and waveform capture.
  - Patented Disturbance Direction Detection: provides indication of the captured disturbance occurring upstream or downstream of the meter; timestamped results provided in the event log, with degree of certainty of disturbance direction.
- Transient detection and capture: events 20 microseconds or longer in duration on any voltage channel with alarm, event log, and waveform capture.
- PowerLogic ION9000T also provides High-Speed Transient Capture (HSTC) of voltage events 100 nanoseconds or longer in duration and up to 10,000 V in magnitude with high-speed and disturbance waveform captures, as well as per-event statistics on each transient.
- Metering precision:
  - IEC 61557-12 PMD/SD/K70/0.2 and PMD/SS/K70/0.2 3000m (Performance Measuring and Monitoring devices (PMD)).
  - Class 0.1S accuracy IEC 62053-22, ANSI C12.20 Class 0.1 (active energy).
  - Industry leading Class 0.5S accuracy for reactive energy (IEC 62053-24).
  - Cycle-by-cycle RMS measurements updated every ½ cycle.
  - Full 'multi-utility' WAGES metering support.
  - Net metering.
  - Anti-tamper protection seals and hardware metrology lock.
- Cybersecurity:
  - Security events logging with Syslog protocol support.
  - HTTPS and SFTP secure protocols.
  - Ability to enable or disable any communication port and any protocol per port.
  - Anti-tamper protection seals and hardware metrology lock.
  - User accounts with strong passwords.

PB115916



PowerLogic ION9000 with panel mounting adapter

PB115919



PowerLogic ION9000 front with two option modules

PB115920



PowerLogic ION9000 bottom with two option modules

- Used with Schneider Electric's advanced software tools, provides detailed PQ reporting across entire network:
  - EN 50160 compliance report.
  - IEEE 519 harmonic compliance report.
  - IEC 61000-4-30 report.
  - Power quality compliance summary.
  - Energy reports for consumption analysis and cost management.
  - WAGES dashboards and reports.
  - Display of waveforms and PQ data from all connected meters.
  - Onboard web-based waveform viewer.
  - EcoStruxure Power Events Analysis, including alarm management, sequence of events, and root cause analysis.
- Data and event logging:
  - Onboard data and event logging.
  - 2 GB of standard non-volatile memory.
  - No data gaps due to network outages or server downtime.
  - Min/max log for standard values.
  - 100 user-definable data logs, recording up to 16 parameters at a 1/2 cycle or other user definable interval.
  - Continuous logging or snapshot, triggered by setpoint and stopped after defined duration.
  - Trend energy, demand and other measured parameters.
  - Forecasting via web pages: average, minimum and maximum for the next four hours and next four days.
  - Advanced time-of-use capability.
  - Security/event log: alarm conditions, metering configuration changes, power outages, firmware download, and user login/logout with timestamp.
- Alarming and control:
  - 50+ definable alarms to log critical event data, trigger waveform recording, or perform control function.
  - Trigger on any condition, with 1/2-cycle and 1-second response time.
  - Combine alarms using Boolean logic enabling customization of alarms.
  - Alarm notification via email.
  - In conjunction with Schneider Electric's EcoStruxure software, alarms, software alarms, and alarm frequency are categorized and trended enabling sequence of events and root cause analyses.

### Usability

- Auto-discovery using DPWS (Device Profile Web Services).
- DHCP for automatic IP address configuration.
- Full function web server enables simple web commissioning.
- Free setup wizard simplifies meter configuration.
- Front panel:
  - Easy to read color graphic display.
  - Simple and intuitive menu navigation with multiple language interface and support.
- DIN rail mounting options.
- Remote display option.
- Pluggable connectors.
- Low Voltage Current Sensors Input option.



PowerLogic ION9000 Harmonics display

- Flexible remote communications:
  - Multiple simultaneously operating communication ports and protocols allow interfacing with other automation systems, e.g. waveforms, alarms, billing data, etc. Data can be uploaded for viewing/analysis while other systems access real-time information.
  - Supports: Modbus, ION, DNP3, DLMS/COSEM, SNMP, and IEC 61850.
  - Dual port Ethernet: 2x 10/100BASE-TX; supports IPV4 and IPV6; daisy-chaining capability removes need for additional switches.
  - Create redundant network loop using Rapid Spanning Tree Protocol (RSTP) and managed Ethernet switches.
  - Secure web interface with HTTPS and TLS 1.2 with support for user-provided certificates.
  - Customize TCP/IP port numbers and enable/disable individual ports.
  - RS-485 2-wire connection, up to 115,200 baud, Modbus RTU, ION and DNP3 protocols.
  - Ethernet to serial gateway with Modbus Master functionality, connecting to 31 unit loads of downstream serial Modbus devices. Also supports Modbus Mastering over TCP/IP (Ethernet) network.
  - Full function web server with factory and customizable pages to access real-time and PQ compliance data.
  - Push historical data via email.
  - Advanced network security: Up to 50 configurable user accounts.
  
- Time synchronization via:
  - Precision network time protocol (PTP) based on IEEE 1588 / IEC 61588.
  - GPS clock (RS-485) or IRIG-B (digital input) to ±1 millisecond.
  - Network Time Protocol (NTP/SNTP).
  - Automatic time synchronization available through Schneider Electric software server.

### Adaptability

- ION™ frameworks are customizable, scalable applications with object-oriented programming that compartmentalizes functions, and increases flexibility and adaptability.
- Applications include: access and aggregate data from Modbus devices on serial port or across the network (Modbus TCP/IP), logging and/or processing data by totaling, unit conversion or other calculations, applying complex logic for alarming or control operations, data visualization via web pages.

### Standard meter I/O

- 8 digital status/counter inputs with ±1 millisecond timestamp.
- 4 solid state digital outputs (Form A) for energy pulsing, interfacing with other systems or control.
- 2 Form C relay outputs for control applications.

### Modular I/O options

- Optional expansion modules.
- Up to 4 modules per meter.

### Option modules include:

- Digital module:
  - 6 digital status/counter inputs.
  - 2 Form C relay outputs, 250 V AC, 8 A.
- Analog module:
  - 4 analog inputs (0-20 mA, 4-20 mA; 0-30 V).
  - 2 analog outputs (0-20 mA, 4-20 mA; 0-10 V) for interfacing with building management sensors and systems.

# ION9000 series

## Feature guide

| General  | ION9000 | ION9000T |
|--|---------|----------|
| Use on LV, MV, and HV systems  | ■       | ■        |
| Current accuracy: 0.1 % reading  | ■       | ■        |
| Voltage accuracy: 0.1 % reading  | ■       | ■        |
| Active energy accuracy: 0.1 Class  | ■       | ■        |
| Number of samples/cycle or sample frequency: 1024  | ■       | ■        |
| High-Speed Transient Capture: 10 MHz (200 k for 50 Hz, 167 k for 60 Hz)                  | -       | ■        |
| <b>Instantaneous rms values</b>  |         |          |
| Current, voltage, frequency  | ■       | ■        |
| Active, reactive, apparent power: Total and per phase                                    | ■       | ■        |
| Power factor: Total and per phase  | ■       | ■        |
| <b>Energy values</b>   |         |          |
| Active, reactive, apparent energy  | ■       | ■        |
| Settable accumulation modes  | ■       | ■        |
| <b>Demand values</b>   |         |          |
| Current: Present and max. values   | ■       | ■        |
| Active, reactive, apparent power: Present and max. values                                | ■       | ■        |
| Predicted active, reactive, apparent power   | ■       | ■        |
| Synchronization of the measurement window  | ■       | ■        |
| Setting of calculation mode: Block, sliding  | ■       | ■        |
| <b>Power Quality measurements</b>  |         |          |
| Harmonic distortion: Current and voltage   | ■       | ■        |
| Individual harmonics: via front panel and web page: 63<br>via EcoStruxure™ software: 511 | ■       | ■        |
| Waveform capture   | ■       | ■        |
| Detection of voltage swells and sags   | ■       | ■        |
| Fast acquisition: 1/2 cycle data   | ■       | ■        |
| EN 50160 compliance checking   | ■       | ■        |
| Customizable data outputs (using logic and math functions)                               | ■       | ■        |
| IEEE 519 compliance checking   | ■       | ■        |
| <b>Data recording</b>  |         |          |
| Min/max of instantaneous values  | ■       | ■        |
| Data logs  | ■       | ■        |
| Event logs   | ■       | ■        |
| Trending/forecasting   | ■       | ■        |
| SER (Sequence of event recording)  | ■       | ■        |
| Time stamping  | ■       | ■        |
| GPS synchronization (± 1ms)  | ■       | ■        |
| Memory: 2000 MB  | ■       | ■        |
| <b>Display and I/O</b>   |         |          |
| Front panel display, 2 options: 96 mm & 192 mm   | ■       | ■        |
| Pulse output: 2  | ■       | ■        |
| Digital or analog inputs(max): 32 digital, 16 analog                                     | ■       | ■        |
| Digital or analog outputs (max, including pulse output): 4 digital, 10 relay, 8 analog   | ■       | ■        |
| <b>Communication</b>   |         |          |
| RS-485 port(s): 2  | ■       | ■        |
| Ethernet port(s): 2x 10/100BASE-TX, RJ45 connector, CAT5/5e/6/6a cable                   | ■       | ■        |
| Serial port protocols (Modbus, ION, DNP3, DLMS/COSEM)                                    | ■       | ■        |
| Ethernet port protocols (Modbus, ION, DNP3, DLMS/COSEM, IEC 61850)                       | ■       | ■        |
| Ethernet gateway   | ■       | ■        |
| Alarm notification via email   | ■       | ■        |
| HTTP/HTTPS web server with waveform viewer   | ■       | ■        |
| SNMP with custom MIB and traps for alarms  | ■       | ■        |
| SMTP email   | ■       | ■        |
| PTP and NTP time synchronization   | ■       | ■        |
| SFTP file transfer   | ■       | ■        |

# ION9000 series

## Technical specifications

| Electrical characteristics       |  |  | ION9000        | ION9000T |
|----------------------------------|--|--|----------------|----------|
| Type of measurement              |  | True rms to 1,024 samples per cycle  | ■              | ■        |
|                                  |  | High-speed transient detection, 10 MHz, 10 kV  | -              | ■        |
| Measurement accuracy             | Current & voltage  | Class 0.1 as per IEC 61557-12  | ■              | ■        |
|                                  | Active Power   | Class 0.1 as per IEC 61557-12  | ■              | ■        |
|                                  | Power factor   | Class 0.5 as per IEC 61557-12  | ■              | ■        |
|                                  | Frequency  | Class 0.02 as per IEC 61557-12   | ■              | ■        |
|                                  | Active energy  | Class 0.1S IEC 62053-22<br>Class 0.1 IEC 61557-12<br>Class 0.1 ANSI C12.20   | ■              | ■        |
|                                  | Reactive Energy  | Class 0.5S IEC 62053-24  | ■              | ■        |
| Display refresh rate             |  | HMI display updated once per second; data refresh rate 1/2 cycle or 1 second   | ■              | ■        |
| Input-voltage characteristics    | Specified accuracy voltage   | 57 - 400 V L-N / 100 - 690 V L-L   | ■              | ■        |
|                                  | Impedance  | 5 MΩ per phase   | ■              | ■        |
|                                  | Specified accuracy frequency                                       | 42 to 69 Hz (50/60 Hz nominal)   | ■              | ■        |
|                                  | Limit range of operation - frequency                               | 20 to 450 Hz   | ■              | ■        |
| Input-current characteristics    | Rated nominal current  | 1 A (0.1S), 5 A (0.1S); current class 2, 10, 20 A (0.1 ANSI)   | ■              | ■        |
|                                  | Specified accuracy current range                                   | Starting Current: 1 mA (no accuracy)<br>Accurate Range: 10 mA - 20 A   | ■              | ■        |
|                                  | Permissible overload   | 500 A rms for 1.0s   | ■              | ■        |
|                                  | Impedance  | 0.0003 Ω per phase   | ■              | ■        |
|                                  | Burden   | 0.01 VA max at 5 A   | ■              | ■        |
| LV Input-current characteristics | Input voltage range  | ±5.5 V pk  | ■ <sup>1</sup> | -        |
|                                  | Minimum signal   | 1 mV   | ■ <sup>1</sup> | -        |
|                                  | Withstand  | 30 V pk continuous   | ■ <sup>1</sup> | -        |
|                                  | Input impedance  | 200 k Ω  | ■ <sup>1</sup> | -        |
|                                  | Safety   | For use with listed Energy Monitoring current transformers   | ■ <sup>1</sup> | -        |
| Power supply AC/DC               | AC   | 90-480 V AC ±10 % (50/60 Hz ±10 %) 90-120 V AC ±10% (400 Hz)   | ■              | ■        |
|                                  | DC   | 110-480 V DC ±15 %   | ■              | ■        |
|                                  | Ride-through time (Values for meters with no optional accessories) | 100 ms (5 cycles at 50/60 Hz) typ., 120 V AC<br>400 ms (20 cycles at 50/60 Hz) typ., 240 V AC<br>1,200 ms (60 cycles at 50/60 Hz) typ., 480 V AC             | ■              | ■        |
|                                  | Burden   | Typical: 16.5 W / 38 VA at 480 V (50/60 Hz)<br>Fully optioned: max. 40 W / 80 VA at 480 V (50/60 Hz).  | ■              | ■        |
| Power supply LV DC               | DC   | 20 to 60 V DC ±10 %  | ■              | -        |
|                                  | Burden   | Typical: 15 W at 20 to 60 V DC<br>Fully optioned: 38 W at 20 to 60 V DC  | ■              | -        |
| Input/outputs                    | Meter base Only  | 8 digital inputs (30 V AC/60 V DC)<br>4 Form A (KY) solid state digital output (30 V AC/60 V DC, 75 mA)<br>2 Form C relays (8 A at 250 V AC, 5 A at 24 V DC) | ■              | ■        |
|                                  | Optional   | Digital - 6 digital inputs (30 V AC / 60 V DC) wetted + 2 Form C relay outputs (250 V AC, 8 A)   | ■              | ■        |
|                                  |  | Analog - 4 analog inputs (0-20 mA, 4-20 mA, 0-30 V DC) + 2 analog outputs (0-20 mA, 4-20 mA, 0-10 V DC).   | ■              | ■        |

<sup>1</sup> The LV Input-current option replaces standard CT inputs

# ION9000 series

| Mechanical characteristics                   |  |   | ION9000 | ION9000T |
|--|--|---|---------|----------|
| Weight                                       |  | DIN rail mount meter 1.5 kg<br>IO modules 0.140 kg<br>Touchscreen display 0.300 kg                                      | ■       | ■        |
| IP degree of protection                      |  | IP 65, UL type 12: Panel mount and touchscreen display, front.<br>IP 30: Panel mount rear, DIN rail mount, I/O modules. | ■       | ■        |
| Excellent quality                            |  | ISO 9001 and ISO 14000 certified manufacturing.   | ■       | ■        |
| Dimensions                                   | Panel mount  | 160 x 160 x 135.3 mm  | ■       | ■        |
|  | DIN rail mount meter   | 160 x 160 x 135.3 mm  | ■       | ■        |
|  | Color remote display (2 options)   | 197 x 175 x 27.5 mm touchscreen   | ■       | ■        |
|  | I/O modules  | 90.5 x 90.5 x 22 mm   | ■       | ■        |
|  | Touchscreen display(s)   | 192 mm and 96 mm  | ■       | ■        |
| Environmental conditions                     |  |   |         |          |
| Operating temperature                        | -25 to 70 °C   |   | ■       | ■        |
| Remote Display Unit                          | -25 to 60 °C   |   | ■       | ■        |
| Storage temperature                          | -40 to 85 °C   |   | ■       | ■        |
| Humidity rating                              | 5 to 95 % non-condensing   |   | ■       | ■        |
| Installation category                        | III  |   | ■       | ■        |
| Operating altitude (maximum)                 | 3,000 m above sea-level  |   | ■       | ■        |
| Electromagnetic compatibility                |  |   |         |          |
| EMC standards                                | IEC 62052-11, IEC 61326-1, IEC 61000-6-5   |   | ■       | ■        |
| Immunity to electrostatic discharge          | IEC 61000-4-2  |   | ■       | ■        |
| Immunity to radiated fields                  | IEC 61000-4-3  |   | ■       | ■        |
| Immunity to fast transients                  | IEC 61000-4-4  |   | ■       | ■        |
| Immunity to surges                           | IEC 61000-4-5  |   | ■       | ■        |
| Immunity to conducted disturbances           | IEC 61000-4-6  |   | ■       | ■        |
| Immunity to power frequency magnetic fields  | IEC 61000-4-8  |   | ■       | ■        |
| Immunity to conducted disturbances, 2-150kHz | CLC/TR 50579   |   | ■       | ■        |
| Immunity to voltage dips & interruptions     | IEC 61000-4-11   |   | ■       | ■        |
| Immunity to ring waves                       | IEC 61000-4-12   |   | ■       | ■        |
| Conducted and radiated emissions             | EN 55011 and EN 55032 Class B, FCC part 15 Class B, ICES-003 Class B   |   | ■       | ■        |
| Surge withstand Capability (SWC)             | IEEE/ANSI C37.90.1   |   | ■       | ■        |
| Safety                                       |  |   |         |          |
| Safety Construction                          | IEC/EN 61010-1 ed.3, CAT III, 400 V L-N / 690 V L-L, UL 61010-1 ed.3 and CSA-C22.2 No. 61010-1 ed.3, CAT III, 347 V L-N / 600 V L-L, IEC/EN 62052-31, protective class II.     |   | ■       | ■        |
| Communication                                |  |   |         |          |
| Ethernet to serial line gateway              | Communicates directly with up to 31 serial devices.  |   | ■       | ■        |
| Web server                                   | Customizable pages, new page creation capabilities, HTML/XML compatible.   |   | ■       | ■        |
| Serial port RS-485                           | 2x, Baud rates of 2,400 to 115,200, pluggable screw terminal connector.  |   | ■       | ■        |
| Ethernet port(s)                             | 2x 10/100BASE-TX, RJ45 connector, CAT5/5e/6/6a cable.  |   | ■       | ■        |
| Protocol                                     | HTTPS, SFTP, SNMP, SMTP, DPWS, RSTP, PTR, NTP/SNTP, GPS, Syslog, DHCP, IPv4, IPv6.   |   | ■       | ■        |
| Firmware characteristics                     |  |   |         |          |
| High-speed data recording                    | Down to 1/2 cycle interval recording, stores detailed characteristics of disturbances or outages. Trigger recording by a user-defined setpoint, or from external equipment.    |   | ■       | ■        |
| Harmonic distortion                          | Up to 63rd harmonic (511th via Schneider Electric EcoStruxure software) for all voltage and current inputs.  |   | ■       | ■        |
| Sag/swell detection                          | Analyze severity/potential impact of sags and swells: magnitude and duration data suitable for plotting on voltage tolerance curves per phase triggers for waveform recording. |   | ■       | ■        |

# ION9000 series

| Firmware characteristics (cont.)       |   | ION9000 | ION9000T |
|--|---|---------|----------|
| Disturbance direction detection        | Determine the location of a disturbance more quickly and accurately by determining the direction of the disturbance relative to the meter. Results are captured in the event log, along with a timestamp and confidence level indicating level of certainty.  | ■       | ■        |
| Detection & capture of transients      | As short as 20 μs at 50 Hz (17 μs at 60 Hz)   | ■       | ■        |
| High-speed transient capture           | Detection and capture of high-speed impulsive and oscillatory transients as short as 100 ns in duration and up to 10 kV in magnitude.   | -       | ■        |
| Instantaneous                          | High accuracy of standard speed (1s) and high-speed (1/2 cycle) measurements, including true rms per phase and total for: voltage, current, active power (kW), reactive power (kvar), apparent power (kVA), power factor, frequency, voltage and current unbalance, phase reversal.                                   | ■       | ■        |
| Load profiling                         | Channel assignments (1600 channels via 100 recorders) configurable for any measurable parameter, including historical trend recording of energy, demand, voltage, current, power quality, or any measured parameter. Trigger recorders based on time interval, calendar schedule, alarm/event condition, or manually. | ■       | ■        |
| Trend curves                           | Historical trends and future forecasts to better manage demand, circuit loading, and other parameters. Provides average, min, max, and standard deviation every hour for last 24 hours, every day for last month, every week for last 8 weeks and every month for last 12 months.                                     | ■       | ■        |
| Waveform captures                      | Simultaneous capture of voltage and current channels, sub-cycle disturbance captures of 180-cycles @ 1,024 samples/cycle to 7,200-cycles @ 16 sample/cycle, retriggerable.  | ■       | ■        |
| High-speed transient waveform captures | Simultaneous capture of voltage channels, impulsive and oscillatory transient capture of up to 1-cycle @ 200 k samples per cycle (50 Hz) along with coincidence disturbance waveform capture.   | -       | ■        |
| Alarms                                 | Threshold alarms: adjustable pickup and dropout setpoints and time delays, numerous activation levels possible for a given type of alarm, user-defined or automatic alarm threshold settings, user-defined priority levels (optional automatic alarm setting)   | ■       | ■        |
| Advanced Time of Use (TOU)             | 4 seasons; 5 different day types: weekend, weekday, and holiday; up to 4 tariffs per day type.  | ■       | ■        |
| Advanced network security              | Up to 50 users with unique access rights. Perform resets, time sync, or meter configurations based on user privileges.  | ■       | ■        |
| Memory                                 | 2,000 MB.   | ■       | ■        |
| Firmware update                        | Update via the communication ports.   | ■       | ■        |
| Display characteristics                |   |         |          |
| 96 mm pushbutton display               | 320 x 240 (1/4 VGA) color LCD, configurable screens, 5 buttons and 2 LED indicators (alarm and meter status).   | ■       | ■        |
| 192 mm touchscreen display             | 800 x 480 pixels, 177.8 mm (7") Color LCD, +/- 85 degree view angle, sunlight readable, dual capacitive touch, usable when wet or through Class 0 lineman gloves, impact resistant to 5 joules, IP65 rating.  | ■       | ■        |
| Languages                              | English, French, Spanish, Russian, Portugese, German, Italian, Chinese.   | ■       | ■        |
| Notations                              | IEC, IEEE.  | ■       | ■        |

# ION9000 series

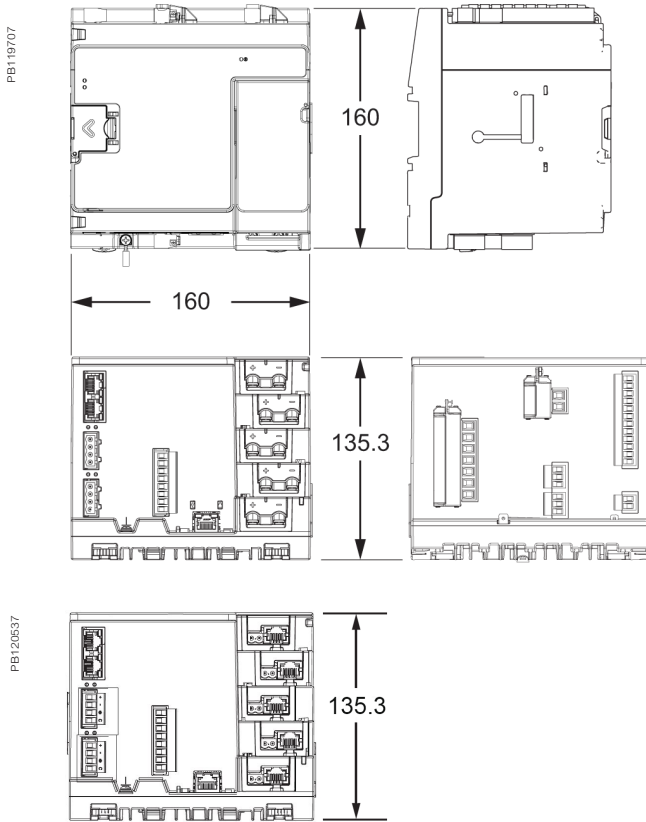
## ION9000 Commercial reference numbers

| Comm ref number       | Description  |
|-----------------------|--|
| <b>METSEION92030</b>  | ION9000 meter, DIN mount, no display, hardware kit   |
| <b>METSEION92040</b>  | ION9000 meter, DIN mount, 192 mm display, B2B adapter, hardware kit  |
| <b>METSEION92043</b>  | ION9000 meter, DIN mount, 192 mm display, B2B adapter, hardware kit, Measurement Canada Ready (Canada only)  |
| <b>METSEION92044</b>  | ION9000 meter, DIN mount, 192 mm display, B2B adapter, hardware kit, Measurement Canada Sealed (Canada only) |
| <b>METSEION92130</b>  | ION9000 Meter, 20-60 Vdc control input, DIN mount, no display, hardware kit                                  |
| <b>METSEION92140</b>  | ION9000 Meter, 20-60 Vdc control input, DIN mount, 192 mm display, B2B adapter, hardware kit                 |
| <b>METSEION93030</b>  | ION9000 meter, LVCS, DIN mount, no display, hardware kit   |
| <b>METSEION93040</b>  | ION9000 meter, LVCS, DIN mount, 192 mm display, B2B adapter, hardware kit                                    |
| <b>METSEION93130</b>  | ION9000 Meter, LVCS, 20-60 Vdc control power, DIN mount, no display, hardware kit                            |
| <b>METSEION93140</b>  | ION9000 Meter, LVCS, 20-60 Vdc control power, DIN mount, 192 mm display, B2B adapter, hardware kit           |
| <b>METSEION95030</b>  | ION9000T meter, HSTC, DIN mount, no display, hardware kit  |
| <b>METSEION95040</b>  | ION9000T meter, HSTC, DIN mount, 192 mm display, B2B adapter, hardware kit                                   |
| <b>METSEPM89RD96</b>  | Remote display, color LCD, 96 x 96 mm  |
| <b>METSERD192</b>     | Remote display, color touchscreen, 192 x 192 mm  |
| <b>METSEPM89M2600</b> | I/O module, 2 relay outputs, 6 digital inputs  |
| <b>METSEPM89M0024</b> | I/O module, 2 analog outputs, 4 analog inputs  |
| <b>METSE9HWK</b>      | ION9000 meter hardware kit – plugs, terminal guards, spare grounding screw, DIN clips                        |
| <b>METSE9CTHWK</b>    | ION9000 Current Input hardware kit - terminal screws, CT covers  |
| <b>METSERD192HWK</b>  | RD192 remote display hardware kit  |
| <b>METSE9B2BMA</b>    | ION9000 B2B (back to back) mounting adapter  |
| <b>METSE9HWKLVCS</b>  | ION9000 hardware kit for LVCS  |
| <b>METSE9USBK</b>     | ION9000 USB cover hardware kit   |
| <b>METSE7X4MAK</b>    | ION7X50 mounting adapter kit   |

Contact your Schneider Electric representative for complete ordering information.

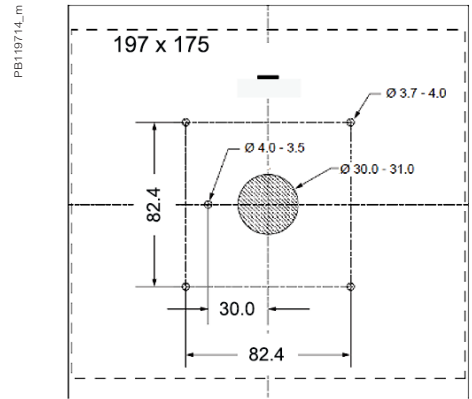
# ION9000 series

## ION9000 meter dimensions

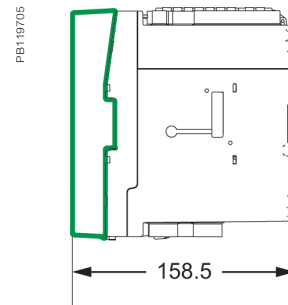


LVCS Input-current option

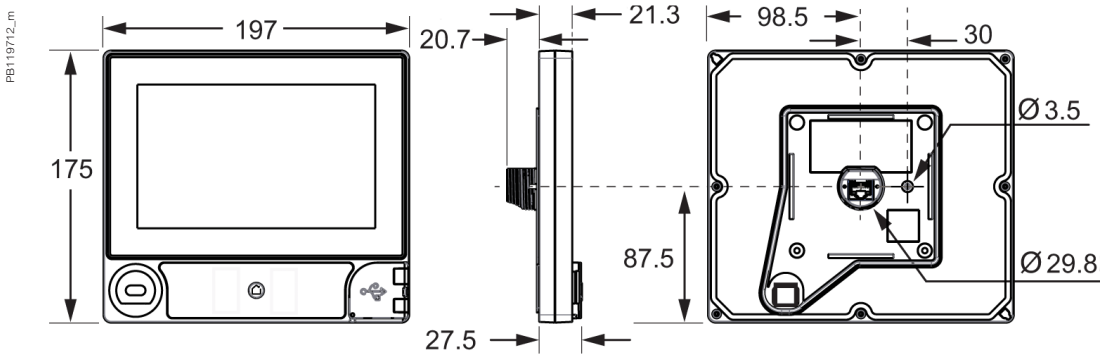
## ION9000 mounting template



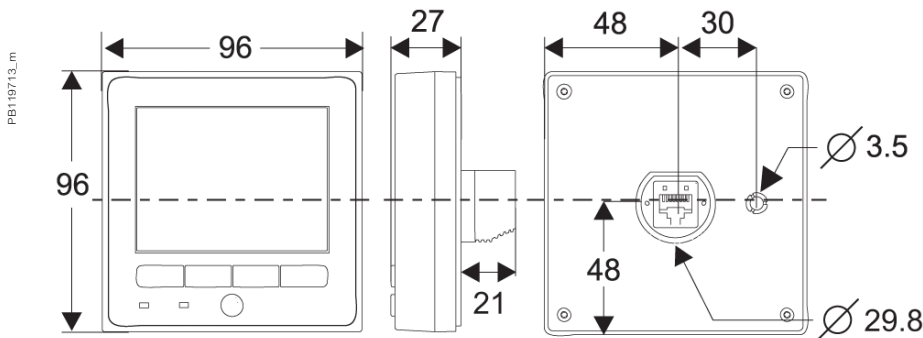
## ION9000 back-to-back (B2B) dimensions



## ION9000 192 mm display dimensions



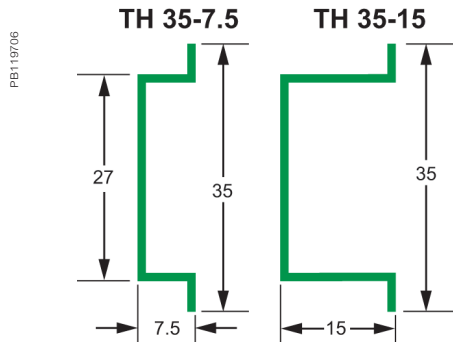
## ION9000 96 mm display dimensions



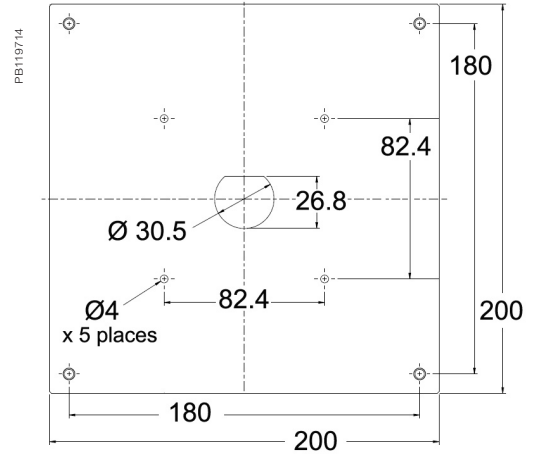
Please refer to ION9000 Series Meter Installation Sheet for accurate and complete information on the installation of this product.

# ION9000 series

## ION9000 meter DIN rail dimensions



## ION7x50 mounting adapter dimensions



## ION9000 LV Current Input wiring options

**A** 2-pin / 2 pines / 2 broches / 2-polig

|  |  |
|--|--|
|  | 0.20 - 1.31 mm <sup>2</sup><br>(24 - 16 AWG) |
|  | 7 mm (0.28 in)                               |
|  | Ø 3.2 mm<br>(1/8 in)                         |
|  | 0.5 - 0.6 N·m<br>(4.4 - 5.3 in·lb)           |

**B** RJ45 / RJ45 / RJ45 / RJ45

| Pin / Pines / Broches / Polig | Function / Fonction / Funktion   |
|-------------------------------|--|
| 1                             | LVCT +   |
| 2                             | LVCT -   |
| 3 - 8                         | Do not connect /<br>Do not connect /<br>Do not connect /<br>Do not connect |

# Advanced utility metering

Power quality and revenue meters are designed for utility network monitoring, e.g. transmission and distribution network monitoring.

Revenue and power quality meters designed for precision metering at key transmission network inter-ties, distribution substations and service entrances to optimise power reliability and energy efficiency in utility smart grids.

- PowerLogic ION7400
- PowerLogic ION8650
- PowerLogic ION8800



ION7400



ION8650



ION8800

# ION7400 series

Providing high accuracy and a wide range of features for transmission and distribution metering, the versatile PowerLogic ION7400 series advanced utility meter has the flexibility to change along with your needs.

- Compact 3-phase, multifunction energy and power quality compliance
- Flexible and modular installation with object-oriented intelligence
- Accurate, precise, and highly adaptable metering

## Applications

- Substation feeder metering
- Revenue metering
- Extensive power quality monitoring and cause analysis
- End feeder line monitoring
- Digital fault recording



ION7400

PB115152

### The solution for

Markets that can benefit from a solution that includes PowerLogic ION7400 series meters:

- Transmission networks
- Distribution network

### Benefits

- Reduce operations costs
- Improve power quality
- Improve continuity of service

### Competitive advantages

- Be able to use Power Monitoring Expert software for data analysis or share operation data with SCADA systems through multiple communication channels and protocols
- Transformer/line loss compensation
- Instrument transformer correction
- Utilize disturbance direction detection to help locate fault

### Power management solutions

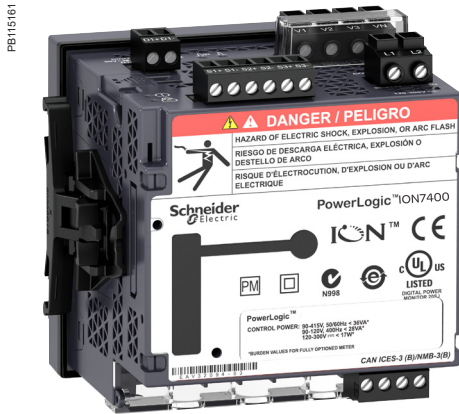
Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

### Conformity of standards

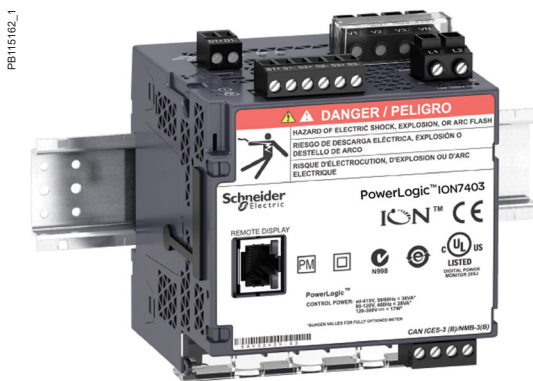
- ANSI C12.20
- CLC/TTR50579
- EN 50160
- IEC 61000-4-7
- IEC 61000-4-15
- IEC 61000-4-30
- IEC 61010-1
- IEC 61326
- IEC 61557-12
- IEC 61850
- IEC 62052-11
- IEC 62053-22
- IEC 62053-23
- IEC 62586
- IEEE 519



PowerLogic ION7400 meter showing active alarms.



PowerLogic ION7400 meter - rear view.



PowerLogic ION7403 DIN rail mounted meter.

### Applications and benefits

- Maximize profits by providing the highest output possible with the least amount of risk to availability
- Optimize availability and reliability of electrical systems and equipment
- Monitor power quality (PQ) for compliance and to prevent problems
- Meters fully supported by EcoStruxure™ Power Monitoring Expert and EcoStruxure™ Power SCADA Operation software

### Main characteristics

- Precision metering:
  - IEC 61557-12 PMD/Sx/K70/0.2 3000m (performance measuring and monitoring functions)
  - IEC 62053-22 for active energy Class 0.2s accuracy and 0.5s accuracy, ANSI C12.20 Class 0.2 for active energy
  - IEC 62053-23 for reactive energy Class 2 accuracy and Class 3
  - Cycle-by-cycle RMS measurements updated every 1/2 cycle
  - Full 'multi-utility' WAGES metering support
  - Net metering
  - Anti-tamper protection seals
  - Test mode
- PQ Compliance and basic PQ analysis.
  - Monitors and logs parameters in support of international PQ standards,
    - IEC 61000-4-30 Class S
    - IEC 61000-4-15 Flicker
    - IEC 62586
    - EN 50160
  - Generates onboard PQ compliance reports accessible via onboard web pages:
    - Basic event summary and pass/fail reports, such as EN 50160 for power
    - Frequency, supply voltage magnitude, supply voltage dips, short and long interruptions, temporary over voltages, voltage unbalance and harmonic voltage
    - ITIC (CBEMA) and SEMI curves, with alarm categorization to support further analyses
    - Basic meter provides EN 50160 but can be configured to provide IEEE 519
  - Harmonic analysis:
    - THD on voltage and current, per phase, min/max, custom alarming
    - Individual harmonic magnitudes and angles on voltage and current, up to the 63rd harmonic (up to 127th via EcoStruxure™ software).
  - High resolution waveform capture: triggered manually or by alarm, captured waveforms available directly from the meter via FTP in a COMTRADE format or can be viewed via onboard webpages
  - Disturbance detection and capture: sag/swell on any current and voltage channel, alarm on disturbance event, waveform capture with pre-event information
  - Patented disturbance direction detection: provides indication of the captured disturbance occurring upstream or downstream of the meter; timestamped results provided in the event log, with degree of certainty of disturbance direction
- Used with EcoStruxure™ Power Monitoring Expert software, provides detailed PQ reporting across entire network:
  - EN 50160 report
  - IEC 61000-4-30 report
  - PQ compliance summary
  - Display of waveforms and PQ data from all connected meters.



PowerLogic ION7400 with Harmonics display.



PowerLogic remote display.



PowerLogic I/O module.



PowerLogic ION7400 meter with remote display.

- Onboard data and event logging
  - 512 MB of standard non-volatile memory
  - No data gaps due to network outages or server downtime
  - Min/Max log for standard values
  - 50 user-definable data logs, recording up to 16 parameters on a cycle-by-cycle or other user definable interval
  - Continuous logging or 'snapshot' triggered by setpoint and stopped after defined duration
  - Trend energy, demand and other measured parameters
  - Forecasting via web pages: average, minimum and maximum for the next four hours and next four days
  - Time-of-use in conjunction with EcoStruxure™ software
  - Event log: alarm conditions, metering configuration changes, and power outages, timestamped to 1 millisecond

- Alarming and control.
  - 50+ definable alarms to log critical event data, trigger waveform recording, or perform control function
  - Trigger on any condition, with cycle-by-cycle and 1-second response time
  - Combine alarms using Boolean logic and to create alarm levels
  - Alarm notification via email text message
  - In conjunction with EcoStruxure™ Power Monitoring Expert, software alarms and alarm frequency are categorized and trended for easy evaluation of worsening/improving conditions

- Excellent quality: ISO 9001 and ISO 14000 certified manufacturing

### Usability

- Easy installation and setup
  - Panel and DIN rail mounting options, remote display option
  - Pluggable connectors
  - Free setup application simplifies meter configuration
- Front panel
  - Easy to read color graphic display
  - Simple, intuitive menu navigation with multi-language (8) support
  - Optical port
  - 2 energy pulsing LEDs
  - Alt/Norm screens.

- Flexible remote communications
  - Multiple simultaneously operating communication ports and protocols allow interfacing with other automation systems; (e.g. waveforms, alarms, billing data, etc.) can be uploaded for viewing/analysis while other systems access real-time information
  - Supports Modbus, ION, DNP3, IEC 61850, MV-90
  - Dual port Ethernet: 10/100BASE-TX; daisy-chaining capability removes need for additional switches
  - Create redundant network loop using Rapid Spanning Tree Protocol (RSTP) and managed Ethernet switches
  - Customize TCP/IP port numbers enable/disable individual ports
  - RS-485 2-wire connection, up to 115200 baud, Modbus RTU and ION protocols, DNP3 is also supported via RS-485.



PowerLogic ION7400 series meter with phasor display.

- Flexible remote communications (cont'd)
    - Ethernet to serial gateway with Modbus Master functionality, connecting to 31 downstream serial Modbus devices. Also supports Modbus Mastering over TCP/IP (Ethernet) network.
    - Full function web server with factory and customizable pages to access real-time and PQ compliance data.
    - Push historical data via email.
    - Advanced security: Up to 16 configurable user accounts.
  - Time synchronization via:
    - GPS clock (RS-485) or IRIG-B (digital input) to +/- 1 millisecond.
- Also supports Network Time Protocol (NTP/SNTP) and time set function from EcoStruxure software server.

### Adaptability

- ION™ frameworks allow customizable, scalable applications, object-oriented programming, compartmentalizes functions, and increases flexibility and adaptability.
- Applications include: access and aggregate data from Modbus devices on serial port or across the network (Modbus TCP/IP), logging and/or processing data by totalizing, unit conversion or other calculations, applying complex logic for alarming or control operations, data visualization via web pages.

### Standard meter I/O

- 3 digital status/counter inputs.
- 1 KY (form A) energy pulse output for interfacing with other systems.

### Modular I/O options

- Optional expansion modules (up to 4 per meter) add digital/analog I/O.

### Option modules include:

- Digital module
  - 6 digital status/counter inputs.
  - 2 Form C relay outputs, 250 V, 8 A
- Analog module.
  - 4 analog inputs (4-20 mA; 0-30 V)
  - 2 analog outputs (4-20 mA; 0-10 V) for interfacing with building management sensors and systems

### Standards

- IEC 61000-4-30
- IEC 61000-4-7
- IEC 61000-4-15
- IEC 61326-1
- ANSI C12.20
- IEC 62052-11
- IEC 62053-22
- IEC 62053-23
- CLC/TR50579

### Languages supported

- English, French, Spanish, Chinese, Italian, German, Russian, Portuguese

| Feature selection           |  |
|-----------------------------|--|
| Commercial reference number | Description  |
| <b>METSEION7400</b>         | ION7400 Panel mount meter (integrated display with optical port and 2 energy pulse LEDs)   |
| <b>METSEION7410</b>         | ION7400 Panel mount meter (integrated display with optical port and 2 energy pulse LEDs) 20-60 V DC control power                                    |
| <b>METSEION7403</b>         | DIN rail mount - utility meter base  |
| <b>METSEION7413</b>         | DIN rail mount - utility meter base 20-60 V DC control power   |
| Accessories                 | Description  |
| <b>METSEPM89RD96</b>        | Remote display, 3 metre cable, mounting hardware for 30 mm hole (nut & centering pin), mounting hardware for DIN96 cutout (92 x 92 mm) adapter plate |
| <b>METSEPM89M2600</b>       | Digital I/O module (6 digital inputs & 2 relay outputs)  |
| <b>METSEPM89M0024</b>       | Analog I/O module (4 analog inputs & 2 analog outputs)   |
| <b>METSECAB10</b>           | Display Cable, 10 m  |
| <b>METSEPM8000SK</b>        | Sealing kit  |

# ION7400 series



PowerLogic™ ION7400 bottom view DIN mounting.

| Feature guide  |                              | ION7400                          |
|--|------------------------------|----------------------------------|
| <b>General</b>   |                              |                                  |
| Use on LV and MV systems   |                              | ■                                |
| Current accuracy (5 A Nominal)                                       |                              | 0.1 % reading                    |
| Voltage accuracy (90-690 V AC L-L, 50, 60, 400 Hz)                   |                              | 0.1 % reading                    |
| Active energy accuracy   |                              | 0.2 %                            |
| Reactive energy accuracy   |                              | 2 %                              |
| Number of samples/cycle or sample frequency                          |                              | 256                              |
| <b>Instantaneous rms values</b>                                      |                              |                                  |
| Current, voltage, frequency  |                              | ■                                |
| Active, reactive, apparent power                                     | Total and per phase          | ■                                |
| Power factor   | Total and per phase          | ■                                |
| Current measurement range (autoranging)                              |                              | 0.05 A - 10 A                    |
| <b>Energy values</b>   |                              |                                  |
| Active, reactive, apparent energy                                    |                              | ■                                |
| Settable accumulation modes  |                              | ■                                |
| <b>Demand values</b>   |                              |                                  |
| Current  | Present and max. values      | ■                                |
| Active, reactive, apparent power                                     | Present and max. values      | ■                                |
| Predicted active, reactive, apparent power                           |                              | ■                                |
| Synchronisation of the measurement window                            |                              | ■                                |
| Setting of calculation mode  | Block, sliding               | ■                                |
| <b>Power quality measurements</b>                                    |                              |                                  |
| Harmonic distortion  | Current and voltage          | ■                                |
| Individual harmonics   | Via front panel and web page | 63                               |
|  | Via EcoStruxure software     | 127                              |
| Waveform capture   |                              | ■                                |
| Detection of voltage swells and sags                                 |                              | ■                                |
| Flicker  |                              | ■                                |
| Fast acquisition   | 1/2 cycle data               | ■                                |
| EN 50160 compliance checking   |                              | ■                                |
| Customizable data outputs (using logic and math functions)           |                              | ■                                |
| <b>Data recording</b>  |                              |                                  |
| Min/max of instantaneous values                                      |                              | ■                                |
| Data logs  |                              | ■                                |
| Event logs   |                              | ■                                |
| Trending/forecasting   |                              | ■                                |
| SER (Sequence of event recording)                                    |                              | ■                                |
| Time stamping  |                              | ■                                |
| GPS synchronisation (+/- 1 ms)                                       |                              | ■                                |
| Memory (in Mbytes)   |                              | 512                              |
| <b>Display and I/O</b>   |                              |                                  |
| Front panel display 89 mm TFT  |                              | ■                                |
| Wiring self-test   |                              | ■                                |
| Pulse output   |                              | 1                                |
| Digital  |                              | 6 In / 2 Out                     |
| Analog   |                              | 4 In / 2 Out                     |
| Digital or analog outputs (max, including pulse output)              |                              | 1 digital<br>8 relay<br>8 analog |
| <b>Communication</b>   |                              |                                  |
| RS-485 port  |                              | 1                                |
| 10/100BASE-TX  |                              | 2                                |
| Serial port (Modbus, ION, DNP3, DLMS/COSEM)                          |                              | ■                                |
| Ethernet port (Modbus/TCP, ION TCP, DNP3 TCP, IEC 61850, DLMS/COSEM) |                              | ■                                |
| USB port (mini type B)   |                              | ■                                |
| ANSI C12.19 Optical port   |                              | ■                                |

All the communications ports may be used simultaneously

## ION7400 series

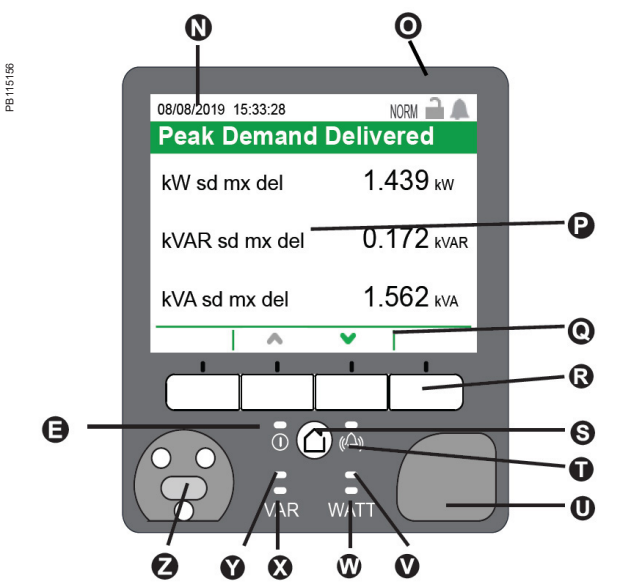
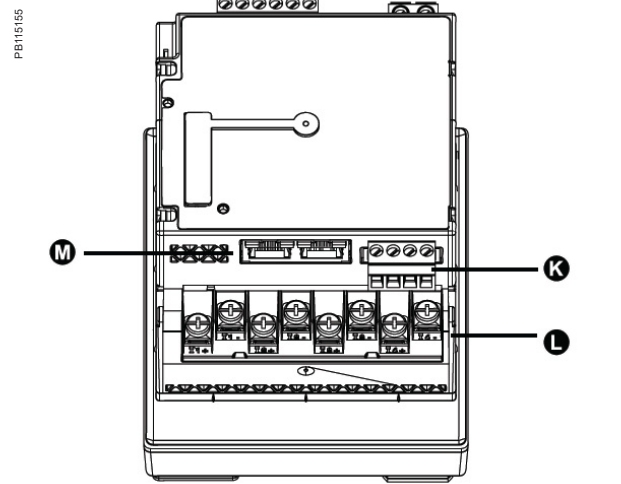
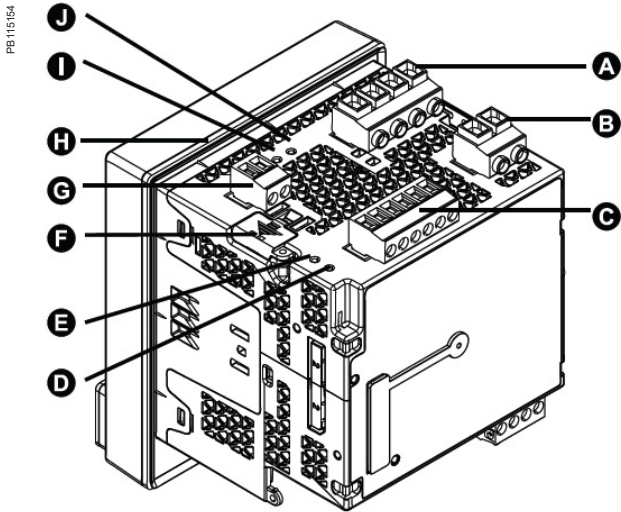
| Electrical characteristics    |  | ION7400   |
|-------------------------------|--|---|
| Type of measurement           |  | True rms to 256 samples per cycle   |
| Measurement accuracy          | Current & voltage                        | Class 0.2 as per IEC 61557-12   |
|                               | Active Power                             | Class 0.2 as per IEC 61557-12   |
|                               | Power factor                             | Class 0.5 as per IEC 61557-12   |
|                               | Frequency                                | Class 0.2 as per IEC 61557-12   |
|                               | Active energy                            | Class 0.2S IEC 62053-22 (In=5A)<br>Class 0.2 IEC 61557-12, ANSI C12.20 Class 0.2  |
|                               | Reactive Energy                          | Class 2 IEC 62053-23  |
| Data update rate              |  | 1/2 cycle or 1 second   |
| Input-voltage characteristics | Specified accuracy voltage               | 57 V L-N/100 V L-L to 400 V L-N/690 V L-L   |
|                               | Impedance                                | 5 M $\Omega$ per phase  |
|                               | Specified accuracy frequency - Frequency | 42 to 69 Hz<br>(50/60 Hz nominal)   |
|                               | Limit range of operation - frequency     | 20 Hz to 450 Hz   |
| Input-current characteristics | Rated nominal current                    | 1 A (0.2S), 5 A (0.2S) , 10 A (0.2 ANSI)  |
|                               | Specified accuracy current range         | Starting Current: 5 mA<br>Accurate Range: 50 mA - 10 A  |
|                               | Permissible overload                     | 200 A rms for 0.5s, non-recurring   |
|                               | Impedance                                | 0.0003 $\Omega$ per phase   |
| Power supply                  | Burden                                   | 0.024 VA at 10 A  |
|                               | AC/DC                                    | 90-415 V AC $\pm$ 10 % 16 VA at 230 V (50/60 Hz $\pm$ 10%), 110-300 V DC $\pm$ 10% 18 W (max)   |
|                               | LV DC                                    | 20-60 V DC, $\pm$ 10 %, 18 W (max)  |
|                               | Ride-through time                        | 100 ms (6 cycles at 60 Hz) min., any condition<br>200 ms (12 cycles at 60 Hz) typ., 120 V AC, 110-415 V DC<br>500 ms (30 cycles at 60 Hz) typ., 415 V AC  |
|                               | Burden                                   | Meter Only: 18 VA max at 415 V AC, 6W at 300 V DC<br>Fully optioned meter: 36 VA max at 415 V AC, 17 W at 300 V DC.   |
| Input/outputs                 | Meter Base Only                          | 3 form A digital inputs (30 V AC/60 V DC)<br>1 form A (KY) solid state digital output (30 V AC/60 V DC, 75 mA).   |
|                               | Optional                                 | Digital - 6 form A digital inputs (30 V AC / 60 V DC) wetted + 2 form C relay outputs (250 V AC / 30 V DC, 8 A at 250 V AC or 5 A at 24 V DC)<br>Analog - 4 analog inputs (4-20 mA, 0-30 V DC) + 2 analog outputs (4-20 mA, 0-10 V DC). |
| Mechanical characteristics    |  |   |
| Weight                        |  | Integrated Display Model 0.710 kg (without option modules)<br>DIN rail mounted Model 0.530 kg (without remote display or option modules)<br>IO modules 0.140 kg<br>Remote display 0.300 kg  |
|                               |  | IP 54, UL type 12: Panel mount and Remote display, front.<br>IP 30: Panel mount rear, DIN rail mount, I/O modules.  |
| Dimensions                    | Panel mount model                        | 98 x 112 x 78.5 mm  |
|                               | DIN model                                | 90.5 x 90.5 x 90.8 mm   |
|                               | Remote display                           | 96 x 96 x 27 mm   |
|                               | IO modules                               | 90.5 x 90.5 x 22 mm   |
| Environmental conditions      |  |   |
| Operating temperature         |  | -25 °C to 70 °C   |
| Remote Display Unit           |  | -25 °C to 60 °C   |
| Storage temperature           |  | -40 °C to 85 °C   |
| Humidity rating               |  | 5 % to 95 % non-condensing  |
| Installation category         |  | III   |
| Operating altitude (maximum)  |  | 3000 m above sea level  |

# ION7400 series

| Electromagnetic compatibility                |  |
|--|--|
| Product standards                            | IEC 62052-11 and IEC 61326-1   |
| Immunity to electrostatic discharge          | IEC 61000-4-2  |
| Immunity to radiated fields                  | IEC 61000-4-3  |
| Immunity to fast transients                  | IEC 61000-4-4  |
| Immunity to surges                           | IEC 61000-4-5  |
| Immunity to conducted disturbances           | IEC 61000-4-6  |
| Immunity to power frequency magnetic fields  | IEC 61000-4-8  |
| Immunity to conducted disturbances, 2-150kHz | CLC/TR 50579   |
| Immunity to voltage dips & interruptions     | IEC 61000-4-11   |
| Immunity to ring waves                       | IEC 61000-4-12   |
| Conducted and radiated emissions             | EN 55022, EN 55011, FCC part 15, ICES-003  |
| Surge withstand Capability (SWC)             | IEEE C37.90.1  |
| Safety                                       |  |
| Safety Construction                          | IEC/EN 61010-1 ed.3, CAT III, 400 V L-N / 690 V L-L<br>UL 61010-1 ed.3 and CSA-C22.2 No. 61010-1 ed.3, CAT III, 347 V L-N / 600 V L-L<br>IEC/EN 62052-11, protective class II  |
| Communication                                |  |
| Ethernet to serial line gateway              | Communicates directly with up to 32 unit load ION slave devices.   |
| Web server                                   | Customisable pages, new page creation capabilities, HTML/XML compatible.   |
| Serial port RS 485                           | Baud rates of 2400 to 115200, pluggable screw terminal connector.  |
| Ethernet port(s)                             | 2 x 10/100BASE-TX, RJ45 connector (UTP).   |
| USB port                                     | Virtual serial port supports USB 3.0, 2.0, 1.1 using ION protocol.   |
| Protocol                                     | Modbus, ION, DNP3, IEC 61850, MV-90, DLMS/COSEM, HTTPS, SFTP, SNMP, SMTP, DPWS, RSTP, NTP, SNTP, GPS protocols.  |
| Firmware characteristics                     |  |
| High-speed data recording                    | Down to 1/2 cycle interval burst recording, stores detailed characteristics of disturbances or outages. Trigger recording by a user-defined setpoint, or from external equipment.  |
| Harmonic distortion                          | Up to 63rd harmonic (via EcoStruxure™ software) for all voltage and current inputs.  |
| Sag/swell detection                          | Analyse severity/potential impact of sags and swells: magnitude and duration data suitable for plotting on voltage tolerance curves per phase triggers for waveform recording, control.  |
| Disturbance direction detection              | Determine the location of a disturbance more quickly and accurately by determining the direction of the disturbance relative to the meter. Analysis results are captured in the event log, along with a timestamp and confidence level indicating level of certainty.  |
| Instantaneous                                | High accuracy of standard speed (1s) and high-speed (1/2 cycle) measurements, including true rms per phase and total for:<br>voltage, current, active power (kW), reactive power (kvar), apparent power (kVA), power factor, frequency, voltage and current unbalance, phase reversal.                                   |
| Load profiling                               | Channel assignments (800 channels via 50 data recorders) configurable for any measurable parameter, including historical trend recording of energy, demand, voltage, current, power quality, or any measured parameter. Trigger recorders based on time interval, calendar schedule, alarm/event condition, or manually. |
| Trend curves                                 | Historical trends and future forecasts to better manage demand, circuit loading, and other parameters. Provides average, min, max and standard deviation every hour for last 24 hours, every day for last month, every week for last 8 weeks and every month for last 12 months.   |
| Waveform captures                            | Simultaneous capture of all voltage and current channels<br>sub-cycle disturbance capture, maximum cycles is 100,000 (16 samples/cycle x 96 cycles, 10 MB memory), max 256 samples/cycle.  |
| Alarms                                       | Threshold alarms: adjustable pickup and dropout setpoints and time delays, numerous activation levels possible for a given type of alarm, user-defined or automatic alarm threshold settings, user-defined priority levels (optional automatic alarm setting).   |

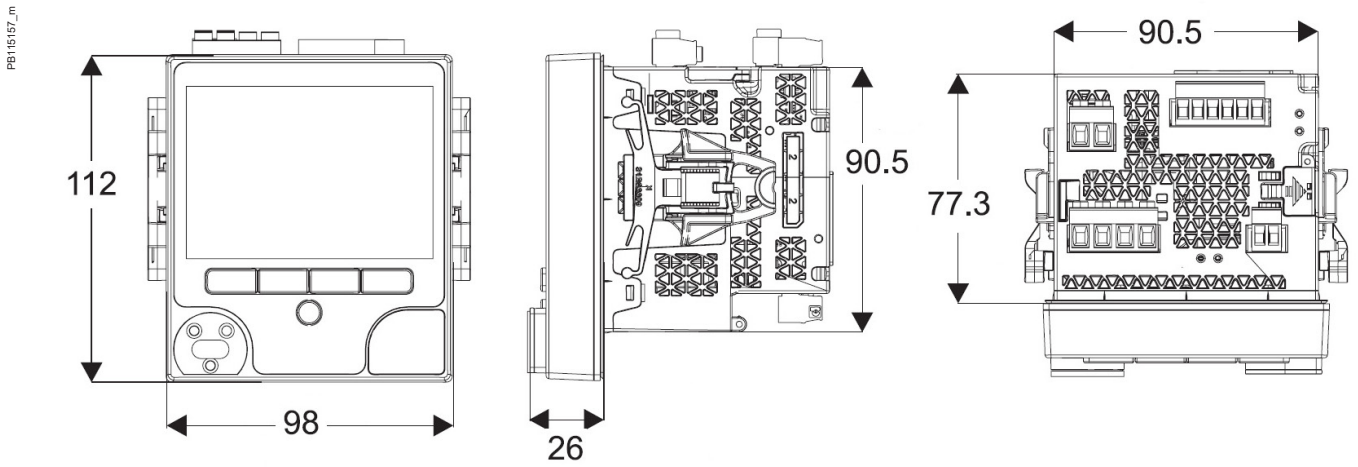
All the communication ports may be used simultaneously.

ION7400 meter parts descriptions

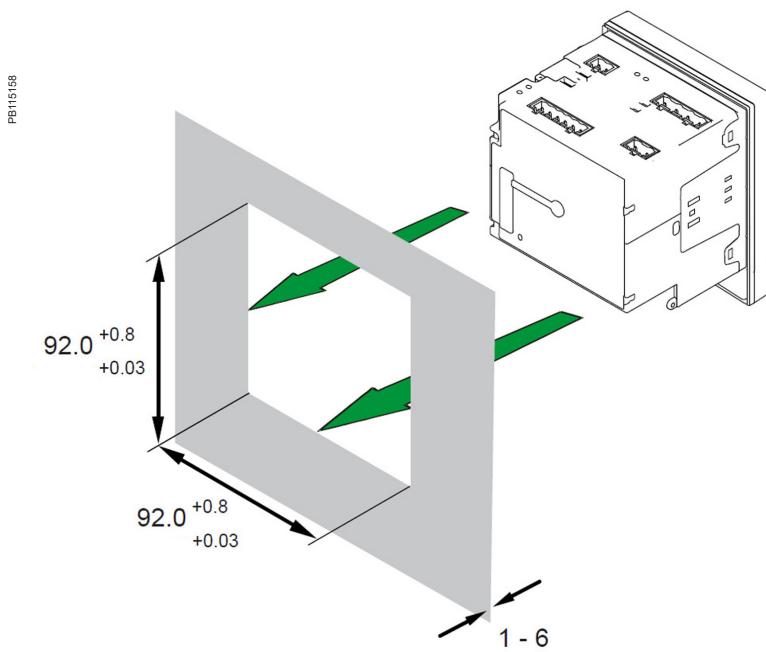


- A Voltage inputs
- B Control power
- C Digital inputs
- D Revenue lock LED
- E Status LED (2 green/red)
- F Revenue lock switch
- G Digital output
- H Sealing gasket
- I Infrared energy pulsing LED
- J Energy pulsing LED
- K RS-485
- L Current inputs
- M Ethernet (2)
- N Date/time
- O Indicator icons  
 NORM/ALT Mode    Revenue    Alarm
- P Display
- Q Navigation icons  
 Select    Cancel    Edit    More
- R Navigation buttons
- S Home button
- T Alarm LED (red)
- U USB ports cover
- V Watt energy pulsing LED
- W Watt infrared energy pulsing LED
- X VAR infrared energy pulsing LED
- Y VAR energy pulsing LED
- Z Optical port

ION7400 meter dimensions



ION7400 panel cutout dimensions



For further details please see appropriate Schneider Electric Installation Guide for this product.

# ION8650 series

Providing high accuracy and a wide range of features for transmission and distribution metering, the PowerLogic ION8650 advanced revenue and power quality meter has the flexibility to change along with your needs. The meter provides the tools necessary to:

- Manage energy procurement and supply contracts
- Perform network capacity planning and stability analysis
- Monitor power quality compliance, supply agreements, and regulatory requirements

## Applications

- Transmission and distribution metering
- Revenue metering
- Extensive power quality monitoring and analysis
- Power quality compliance monitoring
- Digital fault recording
- Instrument transformer correction

PB107500



ION8650

The solution for

Markets that can benefit from a solution that includes PowerLogic ION8650 series meters:

- Transmission networks
- Distribution network

Benefits

- Reduce operations costs
- Improve power quality
- Improve continuity of service

Competitive advantages

- Be integrated into existing wholesale settlement system
- Be able to use Power Monitoring Expert software for data analysis or share operation data with SCADA systems through multiple communication channels and protocols
- Transformer/line loss compensation
- Instrument transformer correction

Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

Conformity of standards

- IEC 62053-22/23
- IEC 61000-4-4
- IEC 61000-4-30
- IEC 61000-4-5
- EN 50160
- IEC 61000-4-6
- IEC 61000-4-7
- IEC 61000-4-12
- IEC 61000-4-15
- CISPR 22
- IEEE 1159
- IEC 62052-11
- IEEE 519
- IEC 60950
- IEC 61000-4-2
- ANSI C12.20
- IEC 61000-4-3

PB107500



PowerLogic ION8650 socket meter

### Main characteristics

Used to monitor electric energy provider networks, service entrances and substations, PowerLogic ION8650 meters are ideal for independent power producers and cogeneration applications that need to accurately measure energy bi-directionally in both generation and stand-by modes. These meters give utilities the tools to manage complex energy supply contracts that include commitments to power quality. Integrate them with our EcoStruxure™ Power Monitoring operations software or other energy management and SCADA systems through multiple communication channels and protocols, including Itron MV-90, Modbus, DNP, DLMS, IEC 61850 Ed. 3.

### Applications

- Revenue metering.
- Cogeneration and IPP monitoring.
- Compliance monitoring.
- Power quality analysis.
- Demand and power factor control.
- Load curtailment.
- Equipment monitoring and control.
- Energy pulsing and totalisation.
- Instrument transformer correction.
- Outage Notification

### Main characteristics

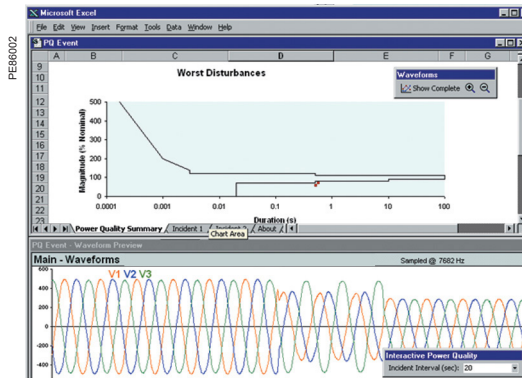
- ANSI Class 0.1 and IEC 62053-22/23 Class 0.2 S metering
  - For interconnection points on medium, high, and ultra-high voltage networks; twice as accurate as current IEC and meets ANSI Class standards over all conditions and including single wide range current measurement.
- Power quality compliance monitoring
  - Monitor compliance with international quality-of-supply standards (IEC 61000-4-30 Ed. 3 Class A/S, EN 50160 Ed. 4, IEC 61000-4-7, IEC 61000-4-15, IEEE 1159, IEEE 519). Also detects disturbance direction.
- Digital fault recording
  - Simultaneous capture of voltage and current channels for sub-cycle disturbance.
- Complete communications
  - Multi-port, multi-protocol ports including serial, infrared, modem and ethernet. Simultaneously supports multiple industry standard protocols including: Itron MV-90, Modbus, Modbus Master, DLMS, DNP 3.0 and IEC 61850 Ed. 2. Cell modem option using LTE.
- Multiple tariffs and time-of-use
  - Apply tariffs, seasonal rate schedules to measure energy and demand values for time periods with specific billing requirements.
- Multiple setpoints for alarm and functions
  - Use up to 65 setpoints for single/multi-condition alarms and I/O functions with response times down to 1/2 cycle.
- Multiple setpoints for alarm and functions
  - Use up to 65 setpoints.
- Instrument transformer correction
  - Save money and improve accuracy by correcting for less accurate transformers.
- Alarm notification via email
  - High-priority alarms, data logs sent directly to the user's PC. Instant notification of power quality events by email.
- Cyber security enhancements
  - Assign communication admin rights to selected user; prevention measures ensure no loss of security logs; support syslog for external security.

| Feature selection           |                |
|-----------------------------|----------------|
| Commercial reference number | ION8650 meters |
| <b>S8650A</b>               | ION8650A       |
| <b>S8650B</b>               | ION8650B       |
| <b>S8650C</b>               | ION8650C       |



PowerLogic ION8650 switchboard meter.

- 1 Terminals
- 2 Optical port
- 3 Main display status bar
- 4 Watt LED
- 5 Navigation, ALT/Enter buttons
- 6 VAR LED
- 7 Nameplate label
- 8 Demand reset switch



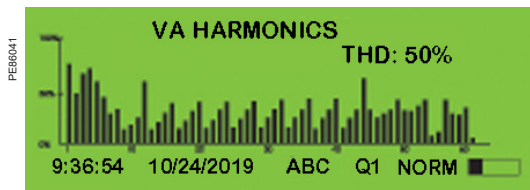
Disturbance waveform capture and power quality report

| Selection guide  |  | ION8650 A            | ION8650 B  | ION8650 C  |
|--|--|----------------------|------------|------------|
| <b>General</b>   |  |                      |            |            |
| Use on LV, MV and HV systems   |  | ■                    | ■          | ■          |
| Current accuracy   |  | 0.1 %                | 0.1 %      | 0.1 %      |
| Voltage accuracy   |  | 0.1 %                | 0.1 %      | 0.1 %      |
| Power accuracy   |  | 0.1 %                | 0.1 %      | 0.1 %      |
| Samples/cycle  |  | 1024                 | 1024       | 1024       |
| <b>Instantaneous values</b>  |  |                      |            |            |
| Current, voltage, frequency  |  | ■                    | ■          | ■          |
| Active, reactive, apparent power                                       |  | Total & per phase    |            |            |
| Power factor   |  | Total & per phase    |            |            |
| Current measurement range  |  | 0 A - 20 A           | 0 A - 20 A | 0 A - 20 A |
| <b>Energy values</b>   |  |                      |            |            |
| Active, reactive, apparent energy                                      |  | ■                    | ■          | ■          |
| Settable accumulation modes  |  | ■                    | ■          | ■          |
| <b>Demand values</b>   |  |                      |            |            |
| Current  |  | Present & max values |            |            |
| Active, reactive, apparent power                                       |  | Present & max values |            |            |
| Predicted active, reactive, apparent power                             |  | ■                    | ■          | ■          |
| Synchronisation of the measurement window                              |  | ■                    | ■          | ■          |
| Demand modes: Block (sliding), thermal (exponential)                   |  | ■                    | ■          | ■          |
| <b>Power quality measurements</b>                                      |  |                      |            |            |
| Harmonic distortion  |  | Current & voltage    |            |            |
| Individual harmonics   |  | Via front panel      |            |            |
| Waveform / transient capture   |  | ■ / ■                | - / ■      | - / -      |
| Harmonics: magnitude, phase, and interharmonics                        |  | 50                   | 40         | -          |
| Detection of voltage sags and swells                                   |  | ■                    | ■          | ■          |
| IEC 61000-4-30 class A / S   |  | A                    | S          | -          |
| IEC 61000-4-15 (Flicker)   |  | ■                    | ■          | -          |
| High speed data recording (down to 10 ms)                              |  | ■                    | ■          | -          |
| EN 50160 compliance reporting  |  | ■                    | ■          | -          |
| Programmable (logic and math functions)                                |  | ■                    | ■          | ■          |
| <b>Data recording</b>  |  |                      |            |            |
| Onboard Memory (in Mbytes)   |  | 128                  | 64         | 32         |
| Revenue logs   |  | ■                    | ■          | ■          |
| Event logs   |  | ■                    | ■          | ■          |
| Historical logs  |  | ■                    | ■          | ■          |
| Harmonics logs   |  | ■                    | ■          | ■          |
| Sag/swell logs   |  | ■                    | ■          | ■          |
| Transient logs   |  | ■                    | -          | -          |
| Time stamping to 1 ms  |  | ■                    | ■          | ■          |
| GPS synchronisation (IRIG-B standard)                                  |  | ■                    | ■          | ■          |
| <b>Display and I/O</b>   |  |                      |            |            |
| Front panel display  |  | ■                    | ■          | ■          |
| Wiring self-test (requires PowerLogic ION Setup)                       |  | ■                    | ■          | ■          |
| Pulse output (front panel LED)   |  | 2                    | 2          | 2          |
| Digital or analog inputs* (max)  |  | 11                   | 11         | 11         |
| Digital or analog outputs* (max, including pulse output)               |  | 16                   | 16         | 16         |
| <b>Communication</b>   |  |                      |            |            |
| Infrared port  |  | 1                    | 1          | 1          |
| RS-485 / RS-232 port   |  | 1                    | 1          | 1***       |
| RS-485 port  |  | 1                    | 1          | 1***       |
| Ethernet port (Modbus/TCP/IP protocol) with gateway                    |  | 1                    | 1          | 1***       |
| Internal modem with gateway (ModemGate)                                |  | 1                    | 1          | 1***       |
| HTML web page server   |  | ■                    | ■          | ■          |
| IRIG-B port (unmodulated IRIG B00x time format)                        |  | 1                    | 1          | 1          |
| Modbus TCP Master / Slave (Ethernet port)                              |  | ■ / ■                | ■ / ■      | - / ■      |
| Modbus RTU Master / Slave (Serial ports)                               |  | ■ / ■                | ■ / ■      | - / ■      |
| DNP 3.0 through serial, modem, and I/R ports                           |  | ■                    | ■          | ■          |
| Cell modem option (LTE)  |  | ■                    | ■          | ■          |
| DLMS COSEM through serial, Ethernet and optical ports for all variants |  | ■                    | ■          | ■          |

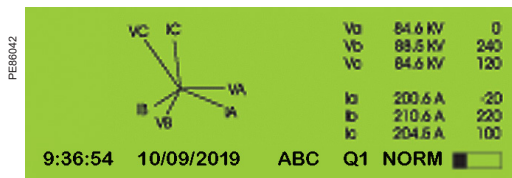
\* With optional I/O Expander.

\*\* For 9S, and 36S only. For 35S system up to 480 V L-L.

\*\*\* C model limited to IR + 2 other ports at one time. Ports can be enabled/disabled by user.



PowerLogic ION8650 front panel harmonic display.



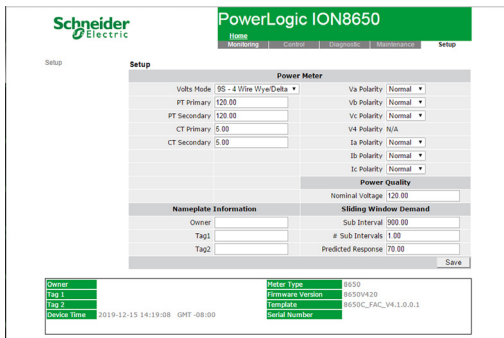
ION8650 front panel phasor display and table.

| Electrical characteristics        |                                      |  |
|-----------------------------------|--------------------------------------|--|
| Type of measurement               |                                      | True rms 1024 samples per cycle  |
| Measurement accuracy              | Current and voltage                  | 0.1 % Reading  |
|                                   | Power                                | 0.1 %  |
|                                   | Frequency                            | ±0.001 Hz  |
|                                   | Power factor                         | 0.1 %  |
|                                   | Energy                               | 0.1 %, twice as accurate as ANSI Class 0.2 and IEC 62053-22/23 (0,2S)  |
| Data update rate                  |                                      | 0.5 cycle or 1 second (depending on value)   |
| Input-voltage characteristics*    | Nominal voltage                      | 57 V to 277 V L-N rms<br>100 V to 480 V L-L rms (35S)  |
|                                   | Maximum voltage                      | 347 V L-N rms, 600 V L-L rms (9S)  |
|                                   | Impedance                            | 5 MΩ /phase (phase-Vref/Ground)  |
|                                   | Inputs                               | V1, V2, V3, VREF   |
| Input-current characteristics     | Rated nominal/current class          | 1A, 2 A, 5 A and/or 10 A (Class 1/2/10/20)   |
|                                   | Accuracy range                       | 0.01 - 20 A (standard range)   |
|                                   | Measurement range                    | 0.001 - 24 A   |
|                                   | Permissible overload                 | 500 A rms for 1 second, non-recurring  |
| Power supply                      | Burden per phase                     | Socket: Typical: 3 W, 8 VA/phase, 3-phase operation; Maximum: 4 W, 11 VA/phase, 3-phase operation<br>Switchboard: 0.05 V A at 1 A (0.05 Ω max) |
|                                   | Standard power supply, blade powered | 120-277 V L-N RMS (-15 %/+20 %) 47-63 Hz or 120-480 V L-L RMS (-15 %/+20 %) 47-63 Hz (35S)   |
|                                   | Auxiliary powered low voltage        | AC: 65-120 (+/- 15 %) VLN RMS, 47-63 Hz<br>DC: 80-160 (+/- 20 %) VDC   |
|                                   | Auxiliary powered high voltage       | AC: 160-277 (+/- 20 %) V L-N RMS, 47-63 Hz<br>DC: 200-300 (+/- 20 %) V DC  |
| Input/outputs**                   | Digital outputs                      | 4 (Form C) Solid state relays (130 V AC/ 200 V DC) 50 mA AC/DC, 1 (Form A) output  |
|                                   | Digital inputs                       | upto 3 Self-excited, dry contact sensing inputs  |
| Mechanical characteristics        |                                      |  |
| Weight                            |                                      | 7.0 kg   |
| IP degree of protection           | Socket                               | Front IP65, back IP51  |
|                                   | Switchboard                          | Front IP50, back IP30  |
| Dimensions                        | Socket                               | 178 x 237 mm   |
|                                   | Switchboard                          | 285 x 228 x 163 mm   |
| Environmental conditions          |                                      |  |
| Operating temperature             |                                      | -40 °C to 85 °C  |
| Display operating range           |                                      | -40 °C to 70 °C  |
| Storage temperature               |                                      | -40 °C to 85 °C  |
| Humidity rating                   |                                      | 5 % to 95 % RH non-condensing  |
| Pollution degree                  |                                      | 2  |
| Installation category             |                                      | Cat III  |
| Dielectric withstand              |                                      | 2.5 kV   |
| Electromagnetic compatibility     |                                      |  |
| Electrostatic discharge           |                                      | IEC 61000-4-2  |
| Immunity to radiated fields       |                                      | IEC 61000-4-3  |
| Immunity to fast transients       |                                      | IEC 61000-4-4  |
| Immunity to surge                 |                                      | IEC 61000-4-5  |
| Immunity conducted                |                                      | IEC 61000-4-6  |
| Damped oscillatory waves immunity |                                      | IEC 61000-4-12   |
| Conducted and radiated emissions  |                                      | CISPR 22 (class B)   |
| Safety                            |                                      |  |
| Europe                            |                                      | As per IEC 62052-11  |
| North America                     |                                      | As per ANSI C12.1  |

\* Specifications are limited by the operating range of the power supply if a non-aux power supply is used.

\*\* More input and output selections available via optional I/O expander.

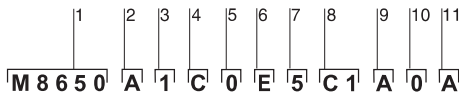
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Example embedded webserver page (WebMeter) showing realtime values.

| Communication                          |  |
|--|--|
| RS-232 / RS-485 port (COM1)            | User-selectable RS-232 or RS-485. 300 - 115,200 baud (RS-485 limited to 57,600 bps); protocols: ION, Modbus/RTU/Mastering, DLMS, DNP 3.0, GPSTRUETIME/DATUM.   |
| Internal modem port (COM2)             | 300-57,600 bps   |
| Cell modem option (CDMA/LTE)           | CDMA2000 1xRTT / EV-DO Rev A (backwards compatible to EVDO Rev. 0 and CDMA 1x networks) 800/1900 MHz. MTSMC-LVW3 / LTE FDD Cat 1, 3GPP release 9 compliant, 4G: 1900 (B2) / 700 (B13) / AWS 1700 (B4)  |
| ANSI 12.18 Type II optical port (COM3) | Up to 57,600 bps   |
| RS-485 port (COM4)                     | Up to 57,600 baud, Modbus, direct connection to a PC or modem  |
| Ethernet port                          | 10/100BASE-T, RJ45 connector, protocols: DNP, ION, Modbus/TCP/Mastering, IEC 61850 Ed. 2 or 100BASE-FX multimode, male ST connectors, DLMS   |
| EtherGate                              | Up to 31 slave devices via serial ports  |
| ModemGate                              | Up to 31 slave devices   |
| Firmware characteristics               |  |
| High-speed data recording              | Up to 1/2-cycle interval burst recording, stores detailed characteristics of disturbances or outages. Trigger recording by a user-defined setpoint, or from external equipment.  |
| Harmonic distortion                    | Up to 63rd harmonic for all voltage and current inputs   |
| Dip/swell detection                    | Analyse severity/potential impact of sags and swells: <ul style="list-style-type: none"> <li>– magnitude and duration data suitable for plotting on voltage tolerance curves</li> <li>– per phase triggers for waveform recording or control operations</li> </ul>   |
| Instantaneous                          | High accuracy measurements with 1s or 1/2 cycle update rate for: <ul style="list-style-type: none"> <li>– voltage and current</li> <li>– active power (kW) and reactive power (kVAR)</li> <li>– apparent power (kVA)</li> <li>– power factor and frequency</li> <li>– voltage and current unbalance</li> <li>– phase reversal</li> </ul>   |
| Load profiling                         | Channel assignments are user configurable: <ul style="list-style-type: none"> <li>– 800 channels via 50 data recorders (feature set A),</li> <li>– 720 channels via 45 data recorders (feature set B),</li> <li>– 80 channels via 5 data recorders (feature set C).</li> </ul> Configure for historical trend recording of energy, demand, voltage, current, power quality, other measured parameters. Recorders can trigger on time interval basis, calendar schedule, alarm/event condition, manually. |
| Waveform captures                      | Simultaneous capture of all voltage and current channels <ul style="list-style-type: none"> <li>– sub-cycle disturbance capture (16 to 1024 samples/cycle)</li> </ul>  |
| Alarms                                 | Threshold alarms: <ul style="list-style-type: none"> <li>– adjustable pickup and dropout setpoints and time delays, numerous activation levels possible for a given type of alarm</li> <li>– user-defined priority levels</li> <li>– boolean combination of alarms</li> </ul>  |
| Advanced security                      | Up to 50 users with unique access rights. Perform resets, time syncs, or meter configurations based on user privileges.  |
| Transformer correction                 | Correct for phase / magnitude inaccuracies in current transformers (CTs), potential transformers (PTs)   |
| Memory                                 | 128 MB (A), 64 MB (B), 32 MB (C)   |
| Firmware update                        | Update via the communication ports   |
| Display characteristics                |  |
| Type                                   | FSTN transreflective LCD   |
| Backlight                              | LED  |
| Languages                              | English  |

PB107507



Example product part number.

- 1 Model.
- 2 Feature set.
- 3 Form factor.
- 4 Current Inputs.
- 5 Voltage inputs.
- 6 Power supply.
- 7 System frequency.
- 8 Communications.
- 9 Input/output options.
- 10 Security.
- 11 Special order options.

PB107507

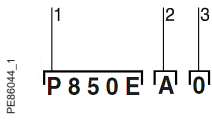


PowerLogic ION8650 meter with switchboard case

Commercial reference numbers

| Item | Code  | Description  |
|------|---|--|
| 1    | Model   | M8650 Schneider Electric energy and power quality meter.   |
| 2    | Feature Set   | A 128 MB Memory Class A power quality analysis, waveforms and transient capture with 1024 samples/cycle.   |
|      |   | B 64 MB memory, energy meter Class S EN 50160 Ed. 4 power quality monitoring.  |
|      |   | C 32 MB memory, basic tariff/energy metering (5 data recorders, 80 channels).  |
| 3    | Form Factor (1)   | 0 Form 9S/29S/36S Base, 57-277 V L-N (autoranging) 3-Element, 4-Wire / 2 1/2-Element, 4-Wire   |
|      |   | 1 Form 35S Base - 120-480 V L-L (autoranging) 2-Element, 3-Wire  |
|      |   | 4 Form 9/29/35/36S FT21 Switchboard (meter + case) with break out panel  |
|      |   | 7 Form 9/29/35/36S FT21 Switchboard (meter + case) with break out cable  |
| 4    | Current Inputs  | C 1, 2 or 5 A nominal, 20 A full scale (24 A fault capture, start at 0.001 A)  |
| 5    | Voltage Inputs  | 0 Standard (see Form Factor above)   |
| 6    | Power Supply*   | E Form 9/29/35/36S, (socket) and Form 9, 36 (FT21 switchboard): 120-277 V AC. Form 35S (socket) and Form 35 (FT21 switchboard): 120-480 V AC. Powered from the meter's voltage connections.  |
|      |   | H Auxiliary Power Pigtail: 65-120 V AC or 80-160 V DC (power from external source)   |
|      |   | J Auxiliary Power Pigtail: 160-277 V AC or 200-300 V DC (power from external source)   |
|      |   | K Auxiliary Power Pigtail: 65-120 V AC, 80-160 V DC (power from external source), Universal Socket Style   |
|      |   | L Auxiliary Power Pigtail: 160-277 V AC, 200-350 V DC (power from external source), Universal Socket Style   |
|      |   |  |
| 7    | System Frequency  | 5 Calibrated for 50 Hz systems.  |
|      |   | 6 Calibrated for 60 Hz systems.  |
| 8    | Communications  | C 7 Infrared optical port, Ethernet (10/100BASE-T), RS-232/485 port, RS-485 port (note: in addition to infrared optical port, Feature Set C can use any two ports (configurable)), 56 k universal internal modem (RJ11)  |
|      |   | E 1 Infrared optical port, Ethernet (10/100BASE-T), RS 232/485 port, RS-485 port (note: in addition to infrared optical port, Feature Set C can use any two ports (configurable))  |
|      |   | F 1 Infrared Optical port, Ethernet (100BASE-FX multi-mode) with male ST connectors (available on socket meters only, Forms 0 & 1 above. I/O card not available if this option is ordered.) RS-232/485 port, RS-485 port (Note: in addition to Infrared Optical port Feature Set C can use any two ports (configurable)) |
|      |   | S 1 Infrared optical port, Ethernet (10 BASE-T), RS-232/485 port, RS-485 port (note: in addition to infrared optical port, Feature Set C can use any two ports (configurable)), Verizon 4G LTE cell modem.   |
| 9    | Onboard I/O   | A None.  |
|      |   | B 4 Form C digital outputs, 3 Form A digital inputs.   |
|      |   | C 4 Form C digital outputs, 1 Form A digital output, 1 digital input.  |
| 10   | Security  | 0 Password protected no security lock.   |
|      |   | 1 Password protected with security lock enabled  |
|      |   | 3 RMICAN (Measurement Canada approved)   |
|      |   | 4 RMICAN-SEAL (Measurement Canada approved, and factory sealed)  |
|      |   | 7 Password protected, no security lock (US only)   |
|      | 8 Password protected with security lock enabled (US only) |  |
| 11   | Special Order   | A None   |

\*Specifications are limited by the operating range of the power supply if a non-aux power supply is used.



Example order code. Use this group of codes when ordering the I/O Expander.

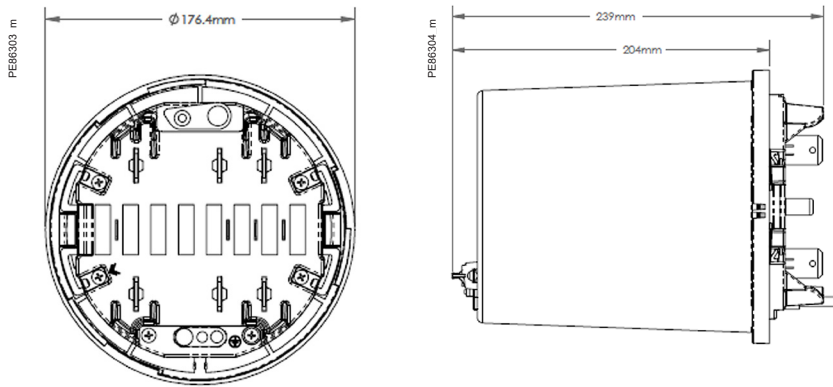
- 1 Digital / Analog I/O.
- 2 I/O option.
- 3 Cable option.



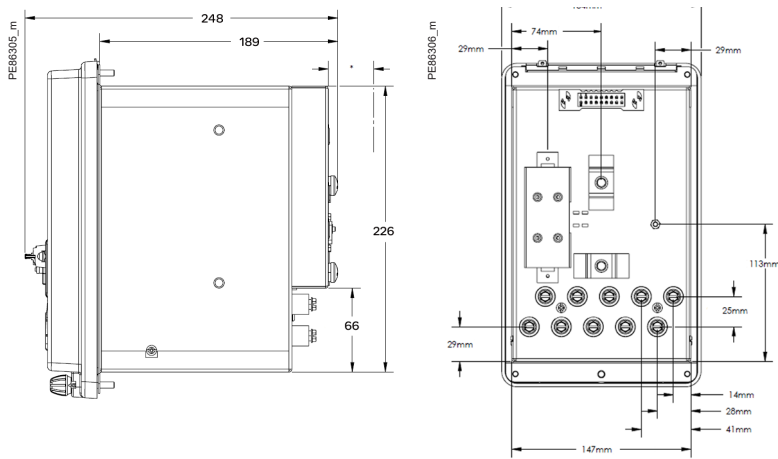
Commercial reference numbers (cont.)

| I/O Expander                    |       |  |
|---------------------------------|-------|--|
| Digital/Analog I/O              | P850E | Schneider Electric I/O Expander for ION8600 meters: Inputs and Outputs for energy pulsing, control, energy counting, status monitoring, and analog interface to SCADA.                                   |
| I/O option                      | A     | External I/O box with 8 digital inputs and 8 digital outputs (4 Form A, 4 Form C)  |
|                                 | B     | External I/O box with 8 digital inputs and 4 digital outputs (4 Form C) and 4 analog outputs (0 to 20 mA)  |
|                                 | C     | External I/O box with 8 digital inputs and 4 digital outputs (4 Form C) and 4 analog outputs (-1 mA to 1 mA)   |
|                                 | D     | External I/O box with 8 digital inputs and 4 digital outputs (4 Form C) and 4 analog outputs (two -1 to 1 mA, and two 0 to 20 mA outputs)  |
| Cable                           | 0     | No cable - cables for the I/O box are no ordered as a separate part number. Refer to commercial reference numbers: CBL-8X00IOE5FT, CBL-8X00IOE15FT and CBL-8XX0-BOP-IOBOX under Connector cables, below. |
| Comm. ref. no.                  |       |  |
| <b>A-BASE-ADAPTER-9</b>         |       | A-base adapters<br>Form 9S to Form 9A adapter  |
| <b>A-BASE-ADAPTER-35</b>        |       | Form 35S to Form 35A adapter   |
| Optical communication interface |       |  |
| <b>OPTICAL-PROBE</b>            |       | Optical communication interface  |
| Connector cables                |       |  |
| <b>CBL-8X00BRKOUT</b>           |       | 1.5 m extension cable, mates with 24-pin male Molex connector from the meter to the 24-pin Molex connector on the I/O expander box (not for use with breakout panel E8, F8 & G8 form factors)            |
| <b>CBL-8X00IOE5FT</b>           |       | 44.57 m extension cable, mates with 24-pin male Molex connector from the meter to the 24-pin Molex connector on the I/O expander box (not for use with breakout panel E8, F8 & G8 form factors)          |
| <b>CBL-8X00IOE15FT</b>          |       | 44.57 m extension cable, mates with 24-pin male Molex connector from the meter to the 24-pin female Molex connector on the I/O Expander box (not for use with breakout panel E8, F8 & G8 form factors)   |
| <b>CBL-8XX0-BOP-IOBOX</b>       |       | 1.8 m connector cable, 24-pin male to 14-pin male Molex connector for connecting an ION8000 Series meter with breakout panel to an I/O Expander Box  |

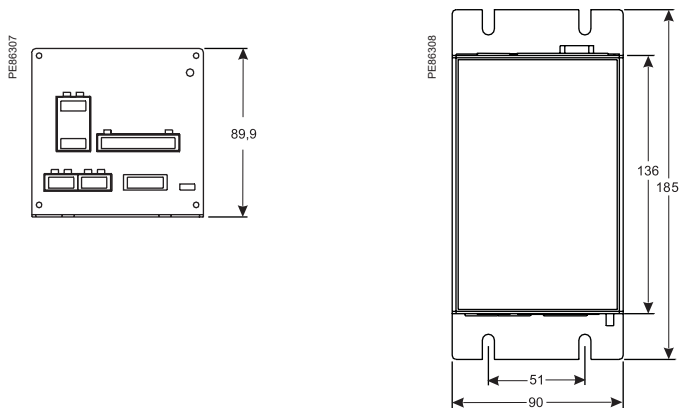
ION8650 socket dimensions



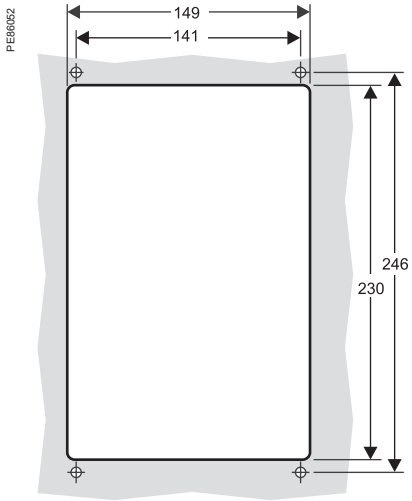
ION8650 switchboard dimensions



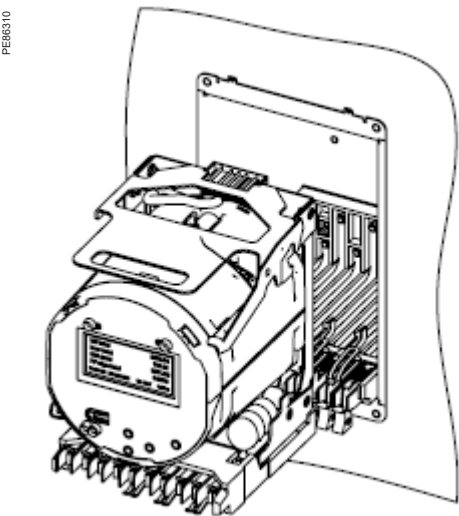
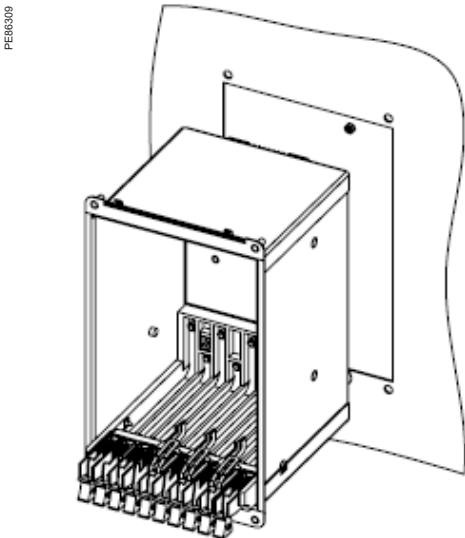
I/O Expander dimensions



### ION8650 suggested switchboard mounting dimensions



### ION8650 switchboard mounting



Please see appropriate Installation Guide for these products for further details.

# ION8800 series

Providing high accuracy and a wide range of features for transmission and distribution metering, the PowerLogic ION8800 advanced revenue and power quality meter has the flexibility to change along with your needs. The meter provides the tools necessary to:

- Manage energy procurement and supply contracts
- Perform network capacity planning and stability analysis
- Monitor power quality compliance, supply agreements, and regulatory requirements

## Applications

- Transmission and distribution metering
- Revenue metering
- Extensive power quality monitoring and analysis
- Power quality compliance monitoring
- Digital fault recording
- Instrument transformer correction

PE86176



ION8800

The solution for

Markets that can benefit from a solution that includes PowerLogic ION8800 series meters:

- Transmission networks
- Distribution network

Benefits

- Reduce operations costs
- Improve power quality
- Improve continuity of service

Competitive advantages

- Integrated into existing wholesale settlement system
- Able to use EcoStruxure™ software for data analysis or share operation data with SCADA systems through multiple communication channels and protocols
- Transformer/line loss compensation
- Instrument transformer correction

Power management solutions

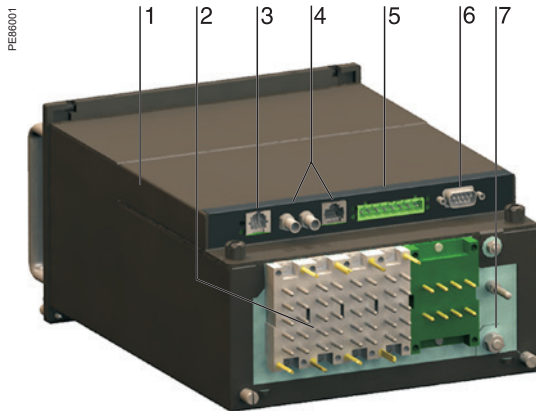
Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

Conformity of standards

- IEC 62053-22/23
- IEC 61000-4-3
- IEC 61000-4-30
- IEC 61000-4-4
- EN 50160
- IEC 61000-4-5
- IEC 61000-4-7
- IEC 61000-4-6
- IEC 61000-4-15
- IEC 61000-4-12
- IEEE 1159
- CISPR 22
- IEEE 519
- IEC 62052-11
- IEC 61000-4-2
- IEC 60950

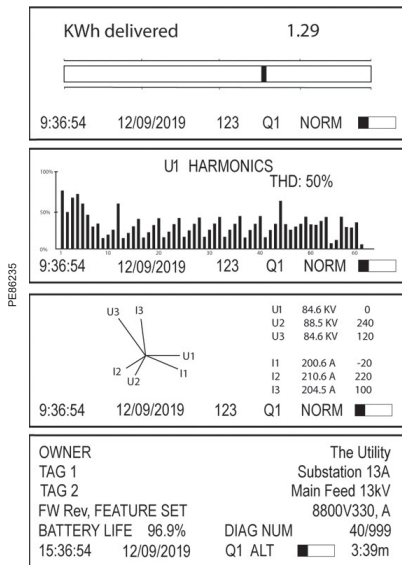
## Main characteristics

- IEC 19-inch rack mount design to DIN 43862 standard
  - Use Essailec connectors with common measurement and energy pulsing pin-out to easily retrofit into existing systems.
- Accurate metering
  - Interconnection points on medium, high, and ultra-high voltage networks are in compliance with IEC 62053-22/23 Class 0,2S.
- Power quality compliance monitoring
  - Monitor compliance with international quality-of-supply standards (IEC 61000-4-30 Class A/S, EN50160, IEC 61000-4-7, IEC 61000-4-15, IEEE 1159, IEEE 519).
- Power quality summary
  - Consolidate power quality characteristics into easily viewable reports indices.
- Digital fault recording
  - Capture voltage and current channels simultaneously for sub-cycle disturbances.
- Complete communications
  - Use the IEC1107 optical port or the optional communications module that supports concurrent Ethernet, serial, and modem communications.
- Multiple tariffs and time-of-use
  - Apply tariffs and seasonal rate schedules to measure energy and demand values for time periods with specific billing requirements.
- Alarms and I/O functions
  - Use up to 65 setpoints for single/multi-condition alarms and I/O functions with response times down to 1/2 cycle.
- Alarm notification via email
  - High-priority alarms, data logs sent directly to the user's PC. Instant notification of power quality events by email.
- Software integration
  - Easily integrate the meter with EcoStruxure™ Power Monitoring Expert, EcoStruxure™ Power SCADA Operation, or other utility software; MV-90, Pacis and third-party SCADA packages.
- Transformer/line loss compensation
  - Compensate for system losses in real time directly in the meter.
- Instrument transformer correction
  - Save money and improve accuracy by correcting for less accurate transformers.



PowerLogic ION8800 meter

- 1 Optional communications module.
- 2 Essailec connectors.
- 3 Internal modem.
- 4 Optional Ethernet communications.
- 5 Selectable RS-485 serial port.
- 6 Selectable RS-232 or RS-485 serial port.
- 7 Ground terminal.



Display screen examples: KWh disk simulator, voltage harmonics histogram, phasor diagram, and name plate 1.

Selection guide

|  | ION8800A<br>ION8800B | ION8800C                                 |
|--|----------------------|--|
| <b>General</b>   |                      |  |
| Use on LV, MV and HV systems   | ■                    | ■  |
| Current accuracy   | 0.1 %                | 0.1 %                                    |
| Voltage accuracy   | 0.1 %                | 0.1 %                                    |
| Power accuracy   | 0.2 %                | 0.2 %                                    |
| Samples/cycle  | 1024                 | 1024                                     |
| <b>Instantaneous rms values</b>  |                      |  |
| Current, voltage, frequency (Class 0,2S)                                 | ■                    | ■  |
| Active, reactive, apparent power   | Total and per phase  | ■  |
| Power factor   | Total and per phase  | ■  |
| Current measurement range  | 0.001 - 10 A         | 0.001 - 10 A                             |
| Current measurement range  | 0.001 - 10 A         | 0.001 - 10 A                             |
| <b>Energy values</b>   |                      |  |
| Active, reactive, apparent energy  | ■                    | ■  |
| Settable accumulation modes  | ■                    | ■  |
| <b>Demand values</b>   |                      |  |
| Current  | ■                    | ■  |
| Active, reactive, apparent   | ■                    | ■  |
| Predicted active, reactive, apparent                                     | ■                    | ■  |
| Demand modes (block, sliding, thermal, predicted)                        | ■                    | ■  |
| <b>Power quality measurements</b>  |                      |  |
| Detection of voltage dips (sags) and swells                              | 10 ms                | 10 ms                                    |
| Symmetrical components: zero, positive, negative                         | ■                    | -  |
| Transient detection, microseconds (50 Hz)                                | 20 <sup>(1)</sup>    | 20 <sup>(1)</sup>                        |
| Harmonics: individual, even, odd, total up to                            | 63 <sup>rd</sup>     | 63 <sup>rd</sup>                         |
| Harmonics via EcoStruxure software: magnitude, phase and inter-harmonics | 50 <sup>th</sup>     | 40 <sup>th</sup>                         |
| EN 50160 compliance  | ■                    | ■  |
| IEC 61000-4-30 class A   | ■                    | ■  |
| IEC 61000-4-30 class S   | ■ <sup>(2)</sup>     | ■  |
| IEC 61000-4-15 (Flicker)   | ■                    | -  |
| Configurable for IEEE 519 - 1992, IEEE1159-1995                          | ■ <sup>(1)</sup>     | -  |
| Programmable (logic and math functions)                                  | ■                    | ■  |
| <b>Data recording</b>  |                      |  |
| Min/max logging for any parameter  | ■                    | ■  |
| Historical logs  | Maximum # of records | 960 <sup>(1)</sup> 800 <sup>(2)</sup> 80 |
| Waveform logs  | Maximum # of records | 96 <sup>(1)</sup> 64                     |
| Timestamp resolution in seconds  |                      | 0.001 0.001                              |
| Setpoints, minimum response time   |                      | ½ cycle ½ cycle                          |
| Number of setpoints  |                      | 65 65                                    |
| GPS time synchronisation (IRIG-B)  | ■                    | ■  |
| Could add transient logs. COMTRADE fault records.                        | ■                    | ■  |
| User configurable log memory   | 10 MB                | 10 MB                                    |
| <b>Display and I/O</b>   |                      |  |
| Front panel display  | ■                    | ■  |
| Active/reactive energy pulser, LED and IEC 1107 style port               | ■                    | ■  |
| Digital pulse outputs, optional  | Solid state Form A   | 8 8                                      |
| Digital pulse outputs  | Solid state Form C   | 4 4                                      |
| Alarm relay output   | Form C               | 1 1                                      |
| Digital inputs (optional)  |                      | 3 3                                      |
| <b>Communications</b>  |                      |  |
| RS-232/485 port  | 1                    | 1  |
| RS-485 port  | 1                    | 1  |
| Ethernet port  | 1                    | 1  |
| IEC 1107 optical port  | 1                    | 1  |
| Internal modem   | 1                    | 1  |
| 3-port DNP 3.0 through serial, modem, Ethernet and I/R ports             | ■                    | ■  |
| Modbus RTU master / slave (serial, modem and I/R ports)                  | ■ / ■                | - / ■                                    |
| Modbus TCP master / slave (via Ethernet port)                            | ■ / ■                | - / ■                                    |
| DLMS/COSEM RS-485 port or Ethernet                                       | ■                    | ■  |
| Data transfer between Ethernet and RS-485 (EtherGate)                    | ■                    | ■  |
| Data transfer between internal modem, RS-485 (ModemGate)                 | ■                    | ■  |
| Alarms, single or multi-condition  | ■                    | ■  |
| Alarm notification & logged data via email                               | ■                    | ■  |
| Embedded web server (WebMeter)   | ■                    | ■  |

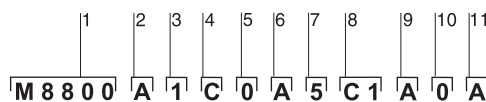
(1) ION8800A only.

(2) ION8800B only.

| Part numbers |   |             |  |
|--------------|---|-------------|--|
| Item         | Code  | Description |  |
| 1            | Model   | M8800       | ION8800 IEC/DIN 43862 19" rack mount energy and power quality meter.   |
| 2            | Feature Set   | A           | Class A power quality analysis, waveforms and transient capture with 1024 samples/cycle.   |
|              |   | B           | Energy meter Class S EN50160 power quality monitoring.   |
|              |   | C           | Basic tariff/energy revenue meter with sag/swell monitoring.   |
| 3            | Memory/Form Factor  | 1           | 10 MB logging memory, Essailec connectors.   |
|              |   | 2           | 5 MB logging memory, Essailec connectors, with IEC61850 protocol   |
| 4            | Current Inputs  | C           | (I1-I3): Configured for 5 A nominal, 10 A full scale, 14 A fault capture, 0.001 A starting current.  |
|              |   | E           | (I1-I3): Configured for 1 A nominal, 10 A full scale, 14 A fault capture, 0.001 A starting current.  |
| 5            | Voltage Inputs  | 0           | (V1-V3): Autoranging (57-288 VAC L-N or 99-500 VAC L-L)  |
| 6            | Power Supply  | B           | Single phase power supply: 85-240 VAC ±10% (47-63 Hz) or 110-270 VDC.  |
| 7            | System Frequency  | 5           | Calibrated for 50 Hz systems.  |
|              |   | 6           | Calibrated for 60 Hz systems.  |
| 8            | Communications module (field serviceable)                                 | Z0          | No communications module - meter includes Base Onboard I/O and comms (see below for details).  |
|              |   | A0          | Standard communications: 1 RS 232/RS-485 port, 1 RS-485 port (COM2) <sup>(1)</sup> .   |
|              |   | C1          | Standard communications plus 10BASE-T Ethernet (RJ45), 56 k universal internal modem (RJ11).   |
|              |   | D1          | Standard communications plus 10BASE-T/100BASE-TX Ethernet (RJ45) / 10Base-FL/100BASE-FX Ethernet Fiber, 56 k universal internal modem (RJ11) |
|              |   | E0          | Standard communications plus 10BASE-T/100BASE-TX Ethernet (RJ45).  |
|              |   | F0          | Standard communications plus 10BASE-T/100BASE-TX Ethernet (RJ45) / 10Base-FL/100BASE-FX (ST male Fiber Optic connection).                    |
| 9            | Onboard I/O and communications (not field serviceable, part of base unit) | A           | Base option AND 8 Form A digital outputs <sup>(2)</sup> , 1 RS-485 (COM2) port <sup>(1)</sup> .  |
|              |   | B           | Base Option AND 8 Form A digital outputs <sup>(2)</sup> , 3 digital inputs (20-56 VDC/AC).   |
|              |   | C           | Base Option AND 8 Form A digital outputs <sup>(2)</sup> , 3 digital inputs (80-280 VDC/AC).  |
|              |   | D           | Base Option AND 1 IRIG-B time sync port <sup>(2)</sup> , 1 RS-485 port (COM2), 3 digital inputs (20-56 V DC/AC) <sup>(1)</sup> .             |
|              |   | E           | Base Option AND 1 IRIG-B time sync port <sup>(2)</sup> , 1 RS-485 port (COM2), 3 digital inputs (80-280 V DC/AC) <sup>(1)</sup> .            |
| 10           | Security  | 0           | Password protected, no security lock.  |
|              |   | 1           | Password protected with security lock enabled.   |
| 11           | Special Order   | A           | None.  |
|              |   | C           | Tropicalisation treatment applied.   |

Example product part number.

- 1 Model.
- 2 Feature set.
- 3 Memory / form factor.
- 4 Current Inputs.
- 5 Voltage inputs.
- 6 Power supply.
- 7 System frequency.
- 8 Communications.
- 9 Onboard inputs/outputs.
- 10 Security.
- 11 Special order.



(1) Channel COM2 is available on the port at the back of the meter OR on the Comm Module (if installed). You must select which connectors your communications wiring is connected to during meter setup.

(2) All Onboard I/O and Comms (Base Option) options include: 4 Form C solid-state digital outputs, 1 Form C mechanical relay output, one IEC 1107 optical communications port, two IEC 1107 style optical pulsing ports.

PE86006

ION8800 Accessories

| Ordering reference       | Communication Card for ION8800   |
|--------------------------|--|
| <b>P880CA0A</b>          | Std. comms: 1 RS-232/RS-485 port, **1 RS-485 port (COM2)   |
| <b>P880CA0C</b>          | Std. comms: 1 RS-232/RS-485 port, **1 RS-485 port (COM2), tropicalisation treatment applied  |
| <b>P880CC1A</b>          | Std. comms AND 10/1000BASE-TX Ethernet (RJ45), 56k universal internal modem (RJ11)   |
| <b>P880CC1C</b>          | Std. comms AND 10/1000BASE-TX Ethernet (RJ45), 56k universal internal modem (RJ11), tropicalisation treatment applied                                |
| <b>P880CD1A</b>          | Std. comms AND 10/1000BASE-TX Ethernet (RJ45) / 10/100BASE-FX Ethernet Fiber, 56k universal internal modem (RJ11)                                    |
| <b>P880CD1C</b>          | Std. comms AND 10/1000BASE-TX Ethernet (RJ45) / 10/100BASE-FX Ethernet Fiber, 56k universal internal modem (RJ11), tropicalisation treatment applied |
| <b>P880CE0A</b>          | Std. comms AND 10/1000BASE-TX Ethernet (RJ45)  |
| <b>P880CE0C</b>          | Std. comms AND 10/1000BASE-TX Ethernet (RJ45), tropicalisation treatment applied   |
| <b>P880CF0A</b>          | Std. comms AND 10/1000BASE-TX Ethernet (RJ45) / 10/100BASE-FX (ST Fiber Optic connection)  |
| <b>P880CF0C</b>          | Std. comms AND 10/1000BASE-TX Ethernet (RJ45) / 10/100BASE-FX (ST Fiber Optic connection), tropicalisation treatment applied                         |
| <b>P880CM1A</b>          | Std. comms AND 56k universal internal modem (RJ11)   |
| <b>P880CM1C</b>          | Std. comms AND 56k universal internal modem (RJ11), tropicalisation treatment applied  |
| Ordering reference       | ION8800 related items  |
| <b>BATT-REPLACE-8XXX</b> | Replacement batteries for the ION8600 or ION8800, quantity 10  |
| <b>RACK-8800-RAW</b>     | IEC/DIN 34862 19" Rack with female mating voltage/current and I/O blocks unassembled.  |
| <b>IEC-OPTICAL-PROBE</b> | IEC 61107 compliant Optical Probe (DB-9) for use with ION8800 meters   |

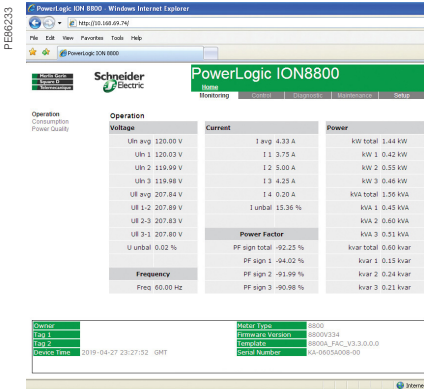
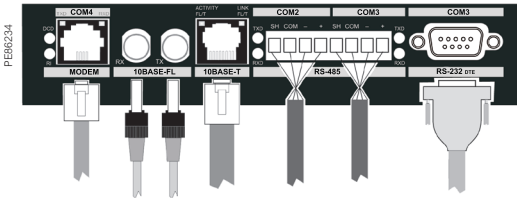
PE88007\_C



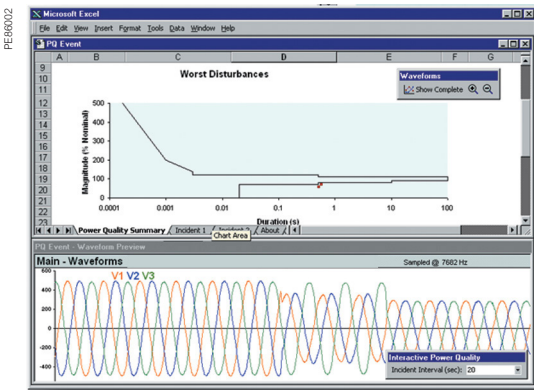
Optional ION8800 communications module

# ION8800 series

| Technical Specification             |  |   |
|-------------------------------------|--|---|
| Electrical characteristics          |  |   |
| Type of measurement                 | True rms<br>1024 samples per cycle                     |   |
| Measurement accuracy                | Current and voltage                                    | 0.1 %   |
|                                     | Power  | 0.2 %   |
|                                     | Frequency  | ±0.005 Hz   |
|                                     | Power factor   | 0.1%  |
|                                     | Energy   | IEC 62053-22/23 Class 0.2 S   |
| Data update rate                    | ½ cycle or 1 second                                    |   |
| Input-voltage characteristics       | Inputs   | U1, U2, U3, Uref  |
|                                     | Measurement range                                      | 57-288 L-N V AC rms (99-500 L-L V AC rms)   |
|                                     | Dielectric withstand                                   | 3320 V AC rms   |
|                                     | Impedance  | 5 MΩ /phase (phase-Uref/Ground)   |
| Input-current characteristics       | Rated nominals   | 5 A, 1 A, 2 A   |
|                                     | Permissible overload                                   | 200A rms for 0.5s, non-recurring (IEC 62053-22)   |
|                                     | Impedance  | 10 mΩ /phase  |
|                                     | Burden   | 0.01 VA per phase (1A), 0.25 VA per phase (5 A)   |
| Power supply                        | AC   | 85 - 240 V AC (+/- 10 %), 47-63 Hz  |
|                                     | DC   | 110 - 270 V DC (+/- 10 %)   |
|                                     | Burden   | Typical (without comm module): 13 VA, 8 W    Typical (with comm module): 19 VA, 12 W<br>Max (without comm module): 24 VA, 10 W    Max (with comm module): 32 VA, 14 W |
|                                     | Ride-through time                                      | Typical: 0.5 s to 5 s depending on configuration<br>Min: 120 ms (6 cycles @ 50 Hz)  |
|                                     | Dielectric withstand                                   | 2000 V AC   |
| Input/outputs                       | Mechanical alarm relay                                 | 1 Form C digital output (250 V AC / 125 V DC, 1 A AC / 0.1 A DC max)  |
|                                     | Digital outputs (Form C)                               | 4 Solid state relay outputs (210 V AC / 250 V DC)<br>100 mA AC/DC   |
|                                     | Digital outputs (Form A)                               | 8 Solid state relay outputs (210 V AC / 250 V DC)<br>100 mA AC/DC   |
|                                     | Digital inputs   | 3 Solid state digital inputs (low-voltage inputs 15 to 75 V AC/DC; high-voltage inputs 75 to 280 V AC/DC; 3 mA max.)  |
|                                     | Pulse rate   | 20 Hz maximum   |
| Mechanical characteristics          |  |   |
| Weight                              | 6.0 kg<br>(6.5 kg with optional communications module) |   |
| IP degree of protection (IEC 60529) | IP51   |   |
| Dimensions                          | 202.1 x 261.51 x 132.2 mm                              |   |
| Environmental conditions            |  |   |
| Mounting location                   | Indoor   |   |
| Maximum altitude                    | 2000 metres above sea-level                            |   |
| Limit range of operation            | -25 °C to 70 °C  |   |
| Specified operating temperature     | -10 °C to 45 °C (as per 62052-11)                      |   |
| Display operating range             | -10 °C to 60 °C  |   |
| Storage temperature                 | -25 °C to 70 °C  |   |
| Humidity rating                     | 5 to 95 % RH non-condensing                            |   |
| Pollution degree                    | 2  |   |
| Installation category               | Power supply (II) Metering inputs (III)                |   |
| Electromagnetic compatibility       |  |   |
| Electrostatic discharge             | IEC 61000-4-2  |   |
| Immunity to radiated fields         | IEC 61000-4-3  |   |
| Immunity to fast transients         | IEC 61000-4-4  |   |
| Immunity to surge waves             | IEC 61000-4-5  |   |
| Conducted immunity                  | IEC 61000-4-6  |   |
| Damped oscillatory waves immunity   | IEC 61000-4-12   |   |
| Conducted and radiated emissions    | CISPR 22 (class B)                                     |   |
| Safety                              |  |   |
| Europe                              | As per IEC 62052-11                                    |   |
| International                       | As per IEC 60950                                       |   |



Ports on the optional communications module.



Example embedded page showing realtime values.

## Technical Specification

### Communication

|                       |   |
|-----------------------|---|
| IEC 1107 optical port | 2/4 wires, up to 19200 baud   |
| RS-485 port           | Up to 57600 baud, direct connection to a PC or modem, protocols: ION, Modbus RTU, Modbus Master, DNP 3.0, GPSTRUETIME/DATUM, DLMS/COSEM |

### Communications module (optional)

|                           |  |
|---------------------------|--|
| RS-232/485 port           | 300 - 115,200 baud (RS-485 limited to 57,600 baud); protocols: same as RS-485 port   |
| Internal modem port       | 300 baud - 56000 baud, RJ11 connector  |
| Ethernet port             | 10/100BASE-TX, RJ45 connector, 100 m link; protocols: DNP TCP, ION, Modbus TCP, Modbus Master, DLMS/COSEM, IEC 61850                           |
| Fiber-optic Ethernet link | 10/100BASE-FX, ST connector, 1300 nm, FO multimode with gradient index 62.5/125 µm or 50/125 µm, 2000 m link; protocols: same as Ethernet port |
| EtherGate                 | Communicates directly with up to 62 slave devices via available serial ports   |
| ModemGate                 | Communicates directly with up to 31 slave devices  |

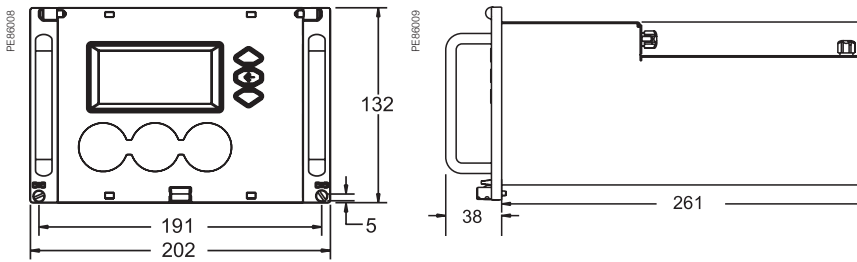
### Firmware characteristics

|                           |  |
|---------------------------|--|
| High-speed data recording | Up to ½-cycle interval burst recording, stores detailed characteristics of disturbances or outages<br>Trigger recording by a user-defined setpoint, or from external equipment.  |
| Harmonic distortion       | Up to 63 <sup>rd</sup> harmonic for all voltage and current inputs   |
| Dip/swell detection       | Analyse severity/potential impact of sags and swells: magnitude and duration data suitable for plotting on voltage tolerance curves per phase triggers for waveform recording or control operations  |
| Instantaneous             | High accuracy measurements with 1s or 1/2 cycle update rate for:<br>voltage and current<br>active power (kW) and reactive power (kvar)<br>apparent power (kVA)<br>power factor and frequency<br>voltage and current unbalance<br>phase reversal  |
| Load profiling            | Channel assignments (800 channels via 50 data recorders) are configurable for any measurable parameter, including historical trend recording of energy, demand, voltage, current, power quality, or any measured parameter<br>Trigger recorders based on time interval, calendar schedule, alarm/event condition, or manually. |
| Modbus Master             | Master up to 32 slave devices per serial channel and store their data at programmable intervals. Use this data to aggregate and sum energy values and perform complex totaling.  |
| Waveform captures         | Simultaneous capture of all voltage and current channels<br>sub-cycle disturbance capture<br>maximum cycles is 214,000<br>(16 samples/cycle x 96 cycles, 10 MB memory)<br>1024 samples/cycle   |
| Alarms                    | Threshold alarms:<br>adjustable pickup and dropout setpoints and time delays, numerous activation levels possible for a given type of alarm<br>user-defined priority levels<br>boolean combination of alarms possible  |
| Advanced security         | Up to 50 users with unique access rights. Perform resets, time syncs, or meter configurations based on user privileges.  |
| Transformer correction    | Correct for phase / magnitude inaccuracies in current transformers (CTs), potential transformers (PTs)   |
| Memory                    | 5 -10 MB(specified at time of order)   |
| Firmware update           | Update via the communication ports   |

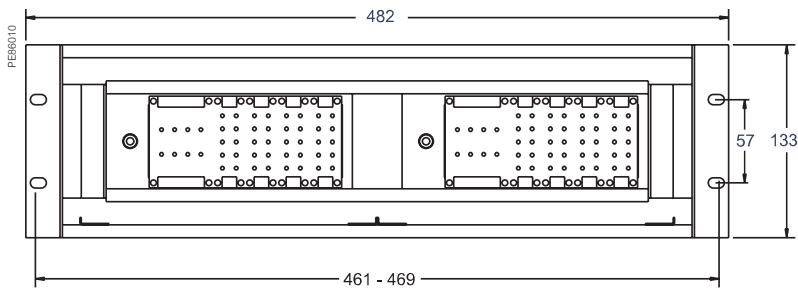
### Display characteristics

|           |                          |
|-----------|--------------------------|
| Type      | FSTN transreflective LCD |
| Backlight | LED                      |
| Languages | English                  |

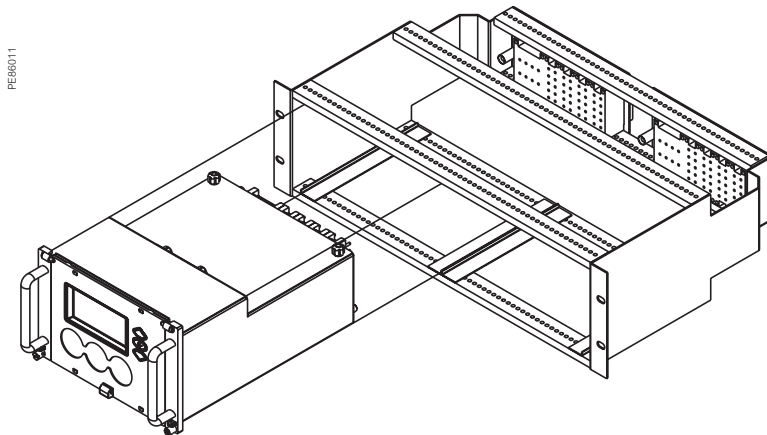
ION8800 dimensions



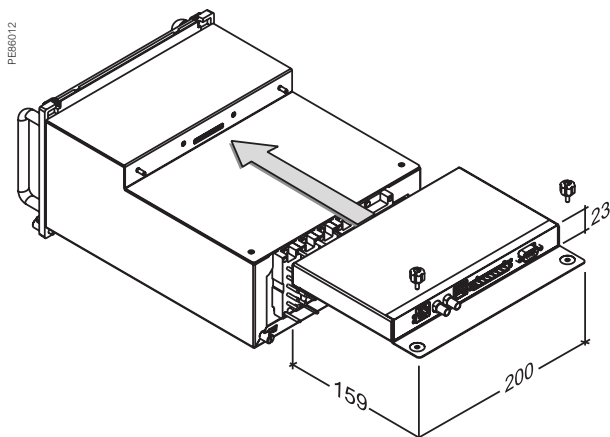
ION8800 Essailec rack dimensions



Rack mounting the ION8800



ION8800 communication module dimensions



Please see the appropriate **Installation Guide** for accurate and complete information on the installation of this product.

# Multi-circuit metering

This is an integrated solution for monitoring multi-circuits and mains by using a single meter. The meter is designed for use in both new build and retrofit and is used for critical power operations in data centres and energy management in buildings.

The ideal solution for data centre managers, energy or facility managers, engineers and operational executives who are responsible for delivering power to critical applications.

In corporate and hosted data centre facilities, this technology helps you plan and optimise the critical power infrastructure to meet the demands of continuous availability.

- PowerLogic™ HDPM6000
- PowerLogic™ BCPM
- EM4000 series
- EM4800 series
- EM4900 series

PB113665 PB113664  
PE86325



BCPMA084S



BCPMA042S



BCPMA084S

# HDPM6000

The PowerLogic™ HDPM6000 sets a new standard for Power Quality Meters as both a standalone three-phase PQM and the foundation for an entire suite of devices: HDPM6000R, HDPM6000S, and HDPM6000B

The HDPM6000 is both a standalone 3-phase power quality meter (PQM) and the hub for Schneider Electric's branch circuit accessory modules (HDPM6000R, HDPM6000S, HDPM6000B). It can monitor loads up to 4000 A with utility grade system accuracy, delivers a complete range of power quality metrics (vTHD, iTHD), and provides waveform capture functionality without the need for additional proprietary software. The HDPM6000 can also maintain multiple, concurrent sessions with EPMS, DCIM or BMS applications via the Modbus, SNMP and BACnet IP protocols. Dual Ethernet ports allow multiple HDPM6000 head units to be daisy-chained in a single run.

Thanks to open protocols, the HDPM6000 is easily integrated into any data center or building management information system. Gateways or additional hardware are not required and the platform offers most standard forms of data connectivity. The on-board environmental communications port enables one-wire sensors to detect abnormal temperature and humidity conditions so adjustments can be made before problems occur.

## Applications

Ideal for large critical and non-critical building applications such as data centers, industrial facilities, infrastructure and other similar environments.connectivity.

PB120560



### Market solutions

Markets that benefit from a solution that includes HDP6000S:

- Data centers
- Industrial facilities
- Healthcare facilities
- Manufacturing
- Many other critical and non-critical facilities

### Benefits

- Modular platform approach provides scalability and minimizes integration costs, start up time and operational expenses.
- Provides power quality metrics down to the branch circuit allowing users to effectively monitor circuit loads, manage power consumption, allocate energy costs and maximize uptime across their facilities.
- Makes energy and power quality data immediately actionable and relevant to operational and sustainability goals

### Competitive advantages

- Asset management
  - Identify increased harmonics in the rack servers to detect a potential disruption
  - Total Harmonics Distortion
  - Waveform capture
- Display and web page visualization
  - Optional touchscreen display accesses meter data
  - User-friendly web interface allows configuration of branch circuits and commissioning of meter system
- Data logging and software monitoring
  - Data logging and on-board memory storage
  - EcoStruxure™ PME and PSO integration

### Power management solutions

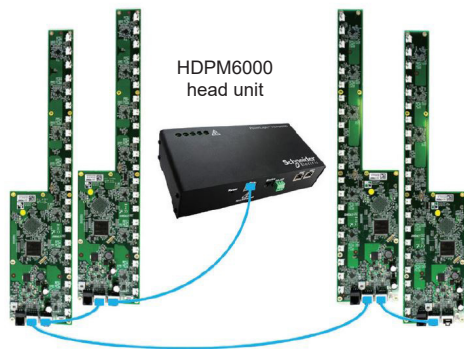
Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings. Maximize electrical network reliability and availability, and optimize electrical asset performance.

### Standards

- EN 55011/CISPR11
- EN 61326-1
- IEC 61000-4-2
- IEC 61000-4-3
- IEC 61000-4-4
- IEC 61000-4-5
- IEC 61000-4-6
- IEC 61000-4-11
- IEC 61010-1
- IEC 61010-030
- UL 61010-1
- UL 61010-2-030

# HDPM6000

PB120563



HDPM6000 head unit with modules

PB120548



HDPM6000 head unit

PB120549



HDPM6000 I/O module

## Measurements

- Current per branch and sum of all phases
- Energy (kWh) per branch and sum of all phases
- Real Power (kW) per branch and sum of all phases
- Apparent Power (kVA) per branch and sum of all phases
- Reactive Power (kVAR) per branch and sum of all phases
- Current waveform capture (optional)
- Total Harmonic Distortion (THD)
- Power factor (signed, to show leading or lagging current), per branch and average of all phases for multi-phase logical circuits.

## Features guide

|                          |  |
|--------------------------|--|
| Power quality analytics  | Waveform capture and voltage and current THD |
| Web interface            | For configuration and live data access       |
| Supported protocols      | Modbus TCP/IP, SNMP, BACnet                  |
| Data storage and logging | 8 GB Class 10 SD card included               |
| Alarms                   | On-board user-configurable alarms and alerts |

## Technical specifications

### Electrical characteristics

|            |   |
|------------|---|
| CT support | 20–4000 A with internal burdened resistor and 250 mV signal (no shorting blocks required)   |
| CT options | Solid-core or split-core type current transformers with a maximum voltage of 480 V. CTs are accurate from 1–100% of the range and are factory calibrated to ensure system accuracy. |

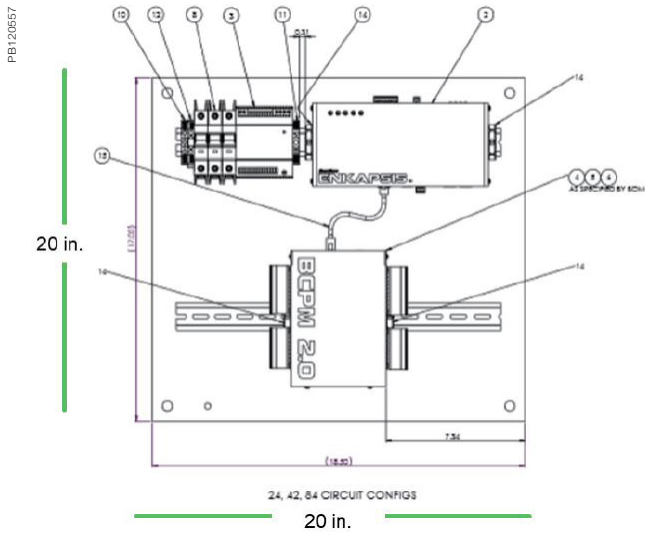
### Environmental characteristics

|                            |  |
|----------------------------|--|
| Operating temperature      | -20 to 60 °C   |
| Storage temperature        | -40 to 85 °C   |
| Relative humidity          | 5 to 90% non-condensing                              |
| Maximum operating altitude | 2,000 m  |
| Non-operating altitude     | 15,000 m   |
| Noise level                | < 65 dba at six feet from the PQM                    |
| Mounting location          | Not suitable for wet locations. For indoor use only. |

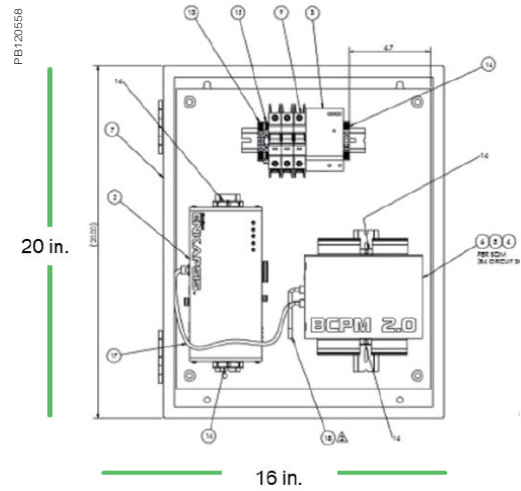
**Note:** For detailed electrical specifications on measurement voltage and power supply input voltage, refer to the HDPM6000 Technical Datasheet.

# HDPM6000 Enclosure

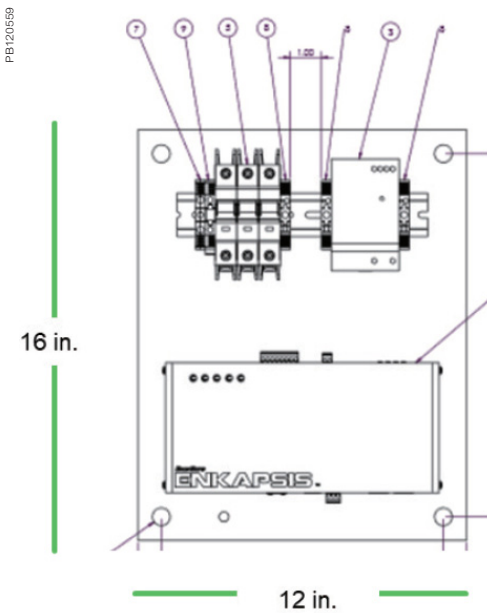
## PowerLogic™ HDPM6000 Enclosure Size Options



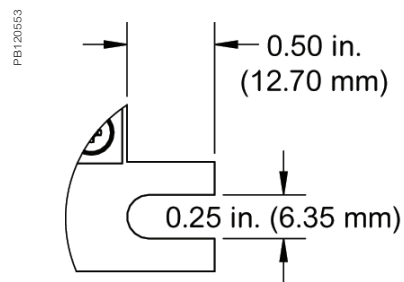
PowerLogic™ HDPM6000 large size enclosure



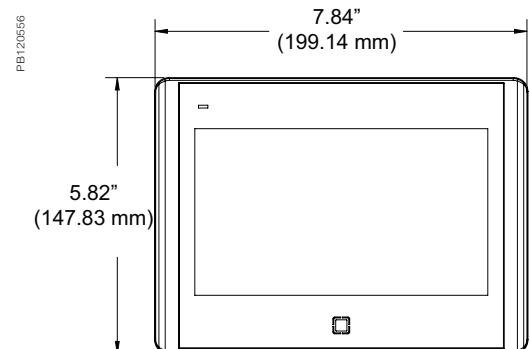
PowerLogic™ HDPM6000 medium size enclosure



PowerLogic™ HDPM6000 small size enclosure



PowerLogic™ HDPM6000 detail dimensions



HMI display dimensions

## Commercial Reference Numbers

A complete list of HPDM commercial reference numbers appears in the Commercial Reference Numbers section of the PowerLogic Catalog. Contact your Schneider Electric representative for complete ordering information.

# PowerLogic BCPM

The PowerLogic BCPM is a highly accurate, full-featured metering product designed for the unique, multi-circuit and minimal space requirements of a high performance power distribution unit (PDU) or remote power panel (RPP).

It offers class 1 (1 %) power and energy system accuracy (including 50 A or 100 A CTs) on all branch channels. The BCPM monitors up to 84 branch circuits and the incoming power mains to provide information on a complete PDU. Full alarming capabilities ensure that potential issues are dealt with before they become problems.

## Applications

- Maximise uptime and avoid outages
- Optimise existing infrastructure
- Improve power distribution efficiency
- Track usage and allocate energy costs
- Enable accurate sub-metering

PB 113086



BCPMA084S

### The solution for

Markets that can benefit from a solution that includes PowerLogic BCPM series meters:

- Data centres
- Buildings

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### Benefits

The flexible BCPM fits any PDU or RPP design and supports both new and retrofit installations. It has exceptional dynamic range and accuracy, and optional feature sets to meet the energy challenges of mission critical data centres.

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### Competitive advantages

- Fit any PDU or RPP design for both new and retrofit projects
- Class 1.0 system accuracy
- Ethernet communication

### Power management solutions

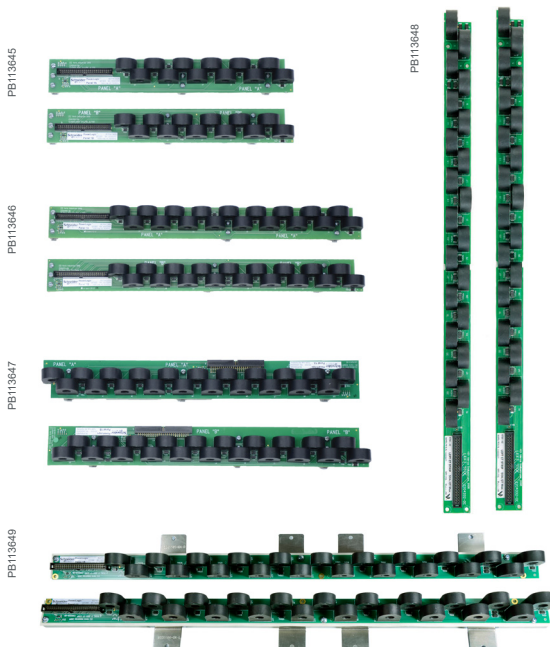
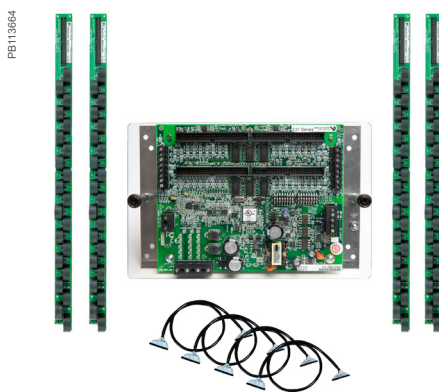
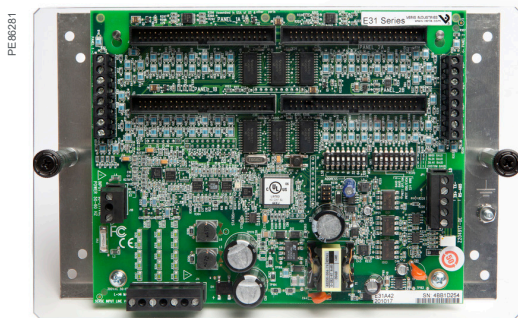
Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

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### Conformity of standards

- ANSI C12.1
- IEC 61010-1
- IEC 62053-21 Class 1
- UL508

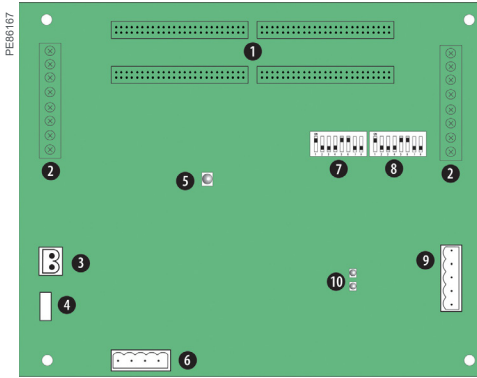
# BCPM



## Main characteristics

- Monitor up to 84 branch circuits with a single BCPM.
- Ideal for installation in both new PDUs and retrofit projects
- New installations:
  - BCPM with solid core CTs monitors up to 84 branch circuits using 2 or 4 CT strips. Solid core CTs are rated to 100 A CTs and are mounted on strips to simplify installation. CT strips are available with 12, 18 or 21 CTs per strip on 18 mm spacings. 21 CT strips with 3/4in or 1in spacings are also available.
- Retrofit projects:
  - BCPMSC with split-core CTs is ideal for retrofits. Any number of split-core CTs, up to 84 maximum, can be installed with a single BCPM. Three sizes of CT are supported (50 A, 100 A, and 200 A) and all three CT sizes can be used on a single BCPM. Adapter boards with terminals for split-core CTs can be mounted using DIN-rail, Snaptrack or on a common mounting plate with the main board (42 ch Y63 models only).
- IEC Class 1 metering accuracy
  - Accurately monitor very low current levels, down to a quarter-Amp.
  - Easily differentiate between the flow of low current and a trip where no current flows.
- Class 1.0 system accuracy for Revenue Grade measurements
  - Branch Power and Energy measurements fully meet ANSI and IEC class 1 accuracy requirements with 50 or 100 A CTs included. No need to de-rate meter branch accuracy to allow for CTs. Voltage and current measurement accuracy is 0.5 % and currents are measured down to 50mA. Easily differentiate between the flow of low current and a trip where no current flows.
  - Class 1.0 system accuracy for Revenue Grade measurements
  - Branch Power and Energy measurements fully meet ANSI and IEC class 1 accuracy require
- Power quality: obtain basic power quality data thanks to the measurement of Total Harmonic Distortion percentages on voltages and current. (V L-L, V L-N, I L-N).
- Designed to fit any PDU or RPP design
  - Lowers your total installation costs as well as the cost per meter point by supporting both new and retrofit installations.
- Communicates with your various systems: BCPMA, and BCPMSCA have a Modbus RTU connection BCPME, and BCPMSCE, have a serial connection for either Modbus RTU or BACnet MS/TP. And there is an ethernet connection for Modbus TCP, BACnet IP and SNMP at the same time. Allowing the concurrent use of an Energy Management System, a Building Management System and an IT system.
- Compatible with PowerLogic power monitoring software
  - Easily turn the large amount of data collected by the devices into useful decision-making information.
- Flexible Configuration capability
  - Set the ordering and orientation of CT strips, assign individual CT size and phases, support for 1, 2, and 3-pole breakers in any configuration.

# BCPM

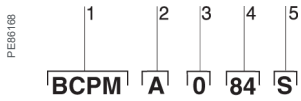


- PowerLogic BCPM
- 1 50-pin ribbon cable connectors (data acquisition board).
  - 2 Auxiliary inputs.
  - 3 Control (mains) power connection.
  - 4 Control power fuse.
  - 5 Alive LED.
  - 6 Voltage taps.
  - 7 Communications address DIP switches.
  - 8 Communications settings DIP switch.
  - 9 RS-485 2 connection.
  - 10 RS-485 LEDs.

| Feature selection                       |                         | BCPMA       | BCPME        |
|---|-------------------------|-------------|--------------|
| <b>General</b>                          |                         |             |              |
| Use on LV systems                       |                         | ■           | ■            |
| <b>Power and energy measurements</b>    |                         |             |              |
| Mains                                   |                         | ■           | ■            |
| Branch circuits                         |                         | ■           | ■            |
| <b>Instantaneous rms values</b>         |                         |             |              |
| Voltage, frequency                      |                         | ■           | ■            |
| Current                                 |                         | ■           | ■            |
| Active power                            | Total and per phase     | ■           | ■            |
| Power factor                            | Total and per phase     | ■           | ■            |
| <b>Energy values</b>                    |                         |             |              |
| Active energy                           |                         | ■           | ■            |
| <b>Demand values</b>                    |                         |             |              |
| Total active power                      | Present and max. values | ■           | ■            |
| <b>Power quality measurements</b>       |                         |             |              |
| THD % (V L-L, V L-N, I L-N)             |                         | ■           | ■            |
| Detection of over-voltage/under-voltage |                         | ■           | ■            |
| Sampling rate points per cycle          |                         | 2560 Hz     | 2560 Hz      |
| <b>Alarming</b>                         |                         |             |              |
| Alarms                                  |                         | ■           | ■            |
| <b>Power supply</b>                     |                         |             |              |
| AC version                              |                         | 90-277 V AC | 100-277 V AC |
| <b>Communication</b>                    |                         |             |              |
| RS-485 port                             |                         | ■           | ■            |
| Modbus RTU                              |                         | RTU         | ■            |
| Modbus TCP                              |                         | 1★          | ■            |
| BACnet IP                               |                         | 1★          | ■            |
| BACnet MS/TP                            |                         | 1★          | ■            |
| SNMP protocol                           |                         | 1★          | ■            |
| Ethernet Port                           |                         | 1★          | ■            |

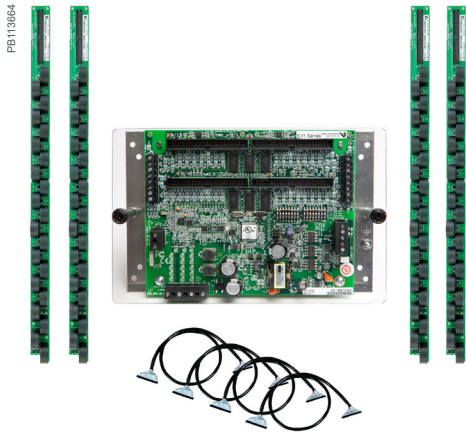
★1 Add E8951 Gateway

# BCPM



- Example BCPM with solid core CTs part number
1. Model
  2. Feature set
  3. CT spacing (solid core models only)
  4. Number of circuits
  5. Brand

The PowerLogic BCPM uses .333 V AC output split-core CTs for the auxiliary inputs. These CTs are ordered separately from the BCPM.

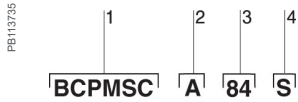


\* Quantity and style of CT strips and cables included varies by model

## BCPM part numbers

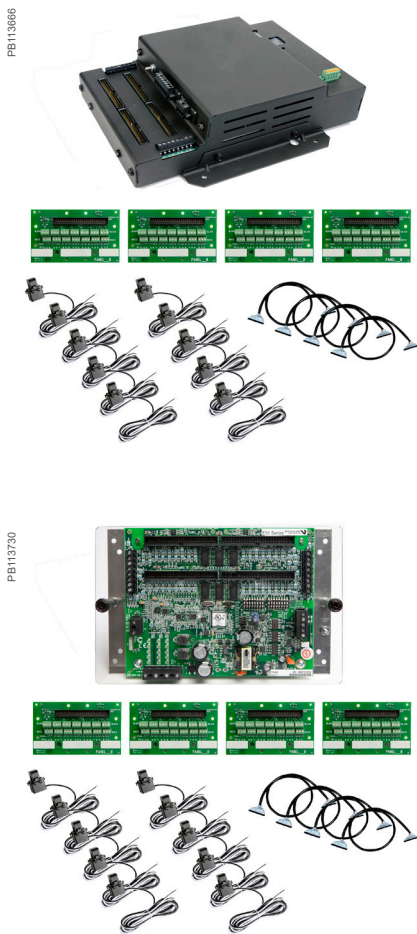
| BCPM with solid core CTs |                    |      |   |
|--------------------------|--------------------|------|---|
| Item                     |                    | Code | Description   |
| 1                        | Model              | BCPM | BCPM with solid core CTs. Highly accurate meter that monitors branch circuits and the incoming power mains and includes full alarming capabilities            |
| 2                        | Feature set        | A    | Advanced - Monitors power & energy per circuit & mains, Modbus RTU only (add E8951 for other protocols), Meter Main Board comes on an aluminum mounting plate |
|                          |                    | E    | Advanced, with Ethernet - Monitors power & energy per circuit & mains, Meter Main Board is partially enclosed in a metal housing                              |
| 3                        | CT spacing         | 0    | 3/4in (19 mm) CT spacing  |
|                          |                    | 1    | 1in (26 mm) CT spacing  |
|                          |                    | 2    | 18 mm CT spacing  |
| 4                        | Number of circuits | 24   | 24 circuits, (2) 12-CT strips (18 mm spacing only)  |
|                          |                    | 36   | 36 circuits, (2) 18-CT strips (18 mm spacing only)  |
|                          |                    | 42   | 42 circuits, (2) 21-CT strips   |
|                          |                    | 48   | 48 circuits, (4) 12-CT strips (18 mm spacing only)  |
|                          |                    | 72   | 72 circuits, (4) 18-CT strips (18 mm spacing only)  |
|                          |                    | 84   | 84 circuits, (4) 21-CT strips   |
| 5                        | Brand              | S    | Schneider Electric  |

# BCPM



Example BCPMSC with split-core CTs part number.

- 1 Model.
- 2 Feature set.
- 3 Number of circuits.
- 4 Brand.



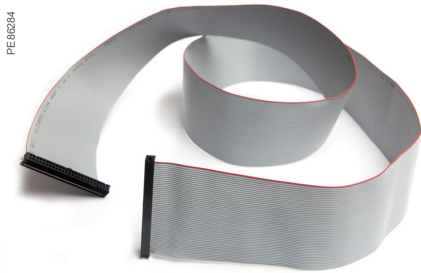
## BCPM part numbers (contd.)

| BCPM with split-core CTs |                    |        |  |
|--------------------------|--------------------|--------|--|
| 1                        | Model              | BCPMSC | BCPM with split-core CTs. Highly accurate meter that monitors branch circuits and the incoming power mains and includes full alarming capabilities                             |
| 2                        | Feature set        | A      | Advanced - Monitors power and energy per circuit and mains, Modbus RTU only (add E8951 for other protocols), Meter Main Board comes on an aluminum mounting plate              |
|                          |                    | B      | Intermediate - Monitors current per circuit, power and energy per mains, Modbus RTU only (add E8951 for other protocols), Meter Main Board comes on an aluminum mounting plate |
|                          |                    | C      | Basic - Monitors current only per circuit and mains, Modbus RTU only (add E8951 for other protocols), Meter Main Board comes on an aluminum mounting plate                     |
|                          |                    | E      | Advanced, with Ethernet - Monitors power & energy per circuit & mains, Meter Main Board is enclosed in a metal housing   |
| 3                        | Number of circuits | 1      | 42 circuit main and adapter boards (no branch CTs or ribbon cables, order separately)  |
|                          |                    | 2      | 84 circuit main and adapter boards (no branch CTs or ribbon cables, order separately)  |
|                          |                    | 30     | 30 split-core CTs (50 A)   |
|                          |                    | 42     | 42 split-core CTs (50 A)   |
|                          |                    | 60     | 60 split-core CTs (50 A)   |
|                          |                    | 84     | 84 split-core CTs (50 A)   |
| 4                        | Brand              | Y63    | 42 circuits – main and adapter boards on single mounting plate (no branch CTs or ribbon, order separately) - Feature set A only  |
|                          |                    | S      | Schneider Electric   |

\*The BCPMSC models with 1, 2 or Y63 as the number of circuits DO NOT INCLUDE ANY branch CTs or ribbon cables (they include only the Main board and adapter board assemblies). These models are provided to allow users to order a specific combination of CT quantities, CT sizes, CT lead lengths and ribbon cable styles and lengths. The CTs and cables must be ordered separately.

The PowerLogic BCPMSC uses .333 V AC output split-core CTs for the auxiliary inputs. These CTs are ordered separately from the BCPMSC.

# BCPM



Flat ribbon cable



CBL016



Round ribbon cable



CBL022

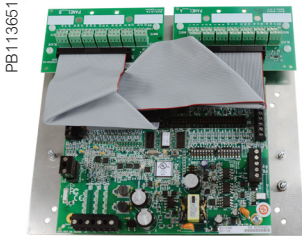
### Cabling and connection

Flat ribbon cables are recommended for use when the BCPM printed circuit board will be mounted inside of the PDU that is being monitored. Round ribbon cables are the preferred choice when the ribbon cable will be threaded through conduit.

### BCPM part numbers for solid and split-core CTs (contd.)

| BCPM with split-core CTs |  |
|--------------------------|--|
| Commercial ref. no.      | Description  |
| <b>BCPMA042S</b>         | 42-circuit solid core power & energy meter, 100 A CTs (2 strips), 19 mm spacing            |
| <b>BCPMA084S</b>         | 84-circuit solid core power & energy meter, 100 A CTs (4 strips), 19 mm spacing            |
| <b>BCPMA142S</b>         | 42-circuit solid core power & energy meter, 100 A CTs (2 strips), 25 mm spacing            |
| <b>BCPMA184S</b>         | 84-circuit solid core power & energy meter, 100 A CTs (4 strips), 25 mm spacing            |
| <b>BCPMA224S</b>         | 24-circuit solid core power & energy meter, 100 A CTs (2 strips), 18 mm spacing            |
| <b>BCPMA236S</b>         | 36-circuit solid core power & energy meter, 100 A CTs (2 strips), 18 mm spacing            |
| <b>BCPMA242S</b>         | 42-circuit solid core power & energy meter, 100 A CTs (2 strips), 18 mm spacing            |
| <b>BCPMA248S</b>         | 48-circuit solid core power & energy meter, 100 A CTs (4 strips), 18 mm spacing            |
| <b>BCPMA272S</b>         | 72-circuit solid core power & energy meter, 100 A CTs (4 strips), 18 mm spacing            |
| <b>BCPMA284S</b>         | 84-circuit solid core power & energy meter, 100 A CTs (4 strips), 18 mm spacing            |
| <b>BCPME042S</b>         | 42-circuit solid core power & energy meter w/Ethernet, 100 A CTs (2 strips), 19 mm spacing |
| <b>BCPME084S</b>         | 84-circuit solid core power & energy meter w/Ethernet, 100 A CTs (4 strips), 19 mm spacing |
| <b>BCPME142S</b>         | 42-circuit solid core power & energy meter w/Ethernet, 100 A CTs (2 strips), 25 mm spacing |
| <b>BCPME184S</b>         | 84-circuit solid core power & energy meter w/Ethernet, 100 A CTs (4 strips), 25 mm spacing |
| <b>BCPME224S</b>         | 24-circuit solid core power & energy meter w/Ethernet, 100 A CTs (2 strips), 18 mm spacing |
| <b>BCPME236S</b>         | 36-circuit solid core power & energy meter w/Ethernet, 100 A CTs (2 strips), 18 mm spacing |
| <b>BCPME242S</b>         | 42-circuit solid core power & energy meter w/Ethernet, 100 A CTs (2 strips), 18 mm spacing |
| <b>BCPME248S</b>         | 48-circuit solid core power & energy meter w/Ethernet, 100 A CTs (4 strips), 18 mm spacing |
| <b>BCPME272S</b>         | 72-circuit solid core power & energy meter w/Ethernet, 100 A CTs (4 strips), 18 mm spacing |
| <b>BCPME284S</b>         | 84-circuit solid core power & energy meter w/Ethernet, 100 A CTs (4 strips), 18 mm spacing |

# BCPM



BCPMSCA1S

BCPMSCxY63S 42-circuit split-core models come with the main board, (2) adapter boards and ribbon cables all mounted on a backplate, to simplify installation.



LVCT00050S

PowerLogic™ LVCT0xxxxS Split-core Low-voltage (1/3V) CTs for Aux inputs (Mains) are ideal for retrofit applications



LVCT20050S

PowerLogic™ LVCT2xxxxS Low-voltage (1/3V) solid core CTs for Aux inputs (Mains) are ideal for panel builders (small, medium, large)

## BCPM part numbers for solid and split-core CTs (contd.)

| BCPM with split-core CTs |   |
|--------------------------|---|
| Commercial ref. no.      | Description   |
| <b>BCPMSCA1S</b>         | 42-circuit split-core power and energy meter, CTs and cables sold separately                          |
| <b>BCPMSCA2S</b>         | 84-circuit split-core power and energy meter, CTs and cables sold separately                          |
| <b>BCPMSCA30S</b>        | 30-circuit split-core power and energy meter, (30) 50 A CTs & (2) 1.2 m cables                        |
| <b>BCPMSCA42S</b>        | 42-circuit split-core power and energy meter, (42) 50 A CTs & (2) 1.2 m cables                        |
| <b>BCPMSCA60S</b>        | 60-circuit split-core power and energy meter, (60) 50 A CTs & (4) 1.2 m cables                        |
| <b>BCPMSCAY63S</b>       | 42-circuit split-core power and energy meter, all boards on backplate, CTs and cables sold separately |
| <b>BCPMSCA84S</b>        | 84-circuit split-core power and energy meter, with (84) 50 A CTs & (4) 1.2 m cables                   |
| <b>BCPMSCE1S</b>         | 42-circuit split-core power and energy meter w/Ethernet, CTs and cables sold separately               |
| <b>BCPMSCE2S</b>         | 84-circuit split-core power and energy meter w/Ethernet, CTs and cables sold separately               |
| <b>BCPMSCE30S</b>        | 30-circuit split-core power and energy meter w/Ethernet, (30) 50 A CTs & (2) 1.2 m cables             |
| <b>BCPMSCE42S</b>        | 42-circuit split-core power and energy meter w/Ethernet, (42) 50 A CTs & (2) 1.2 m cables             |
| <b>BCPMSCE60S</b>        | 60-circuit split-core power and energy meter w/Ethernet, (60) 50 A CTs & (4) 1.2 m cables             |
| <b>BCPMSCE84S</b>        | 84-circuit split-core power and energy meter w/Ethernet, (84) 50 A CTs & (4) 1.2 m cables             |

The PowerLogic™ BCPM uses .333 V AC output split-core CTs for the auxiliary inputs. These CTs are ordered separately from the BCPM.

# BCPM

| Commercial ref. no.  |   |                   |
|--|---|-------------------|
| BCPM split-core branch CTs and adapter boards                  |   |                   |
| <b>BCPMSCADPBS</b>   | BCPM adapter boards, quantity 2, for split-core BCPM              |                   |
| <b>BCPMSCCT0</b>   | BCPM 50 A split-core CTs, Quantity 6, 1.8 m lead lengths          |                   |
| <b>BCPMSCCT0R20</b>  | BCPM 50 A split-core CTs, quantity 6, 6 m lead lengths            |                   |
| <b>BCPMSCCT1</b>   | BCPM 100 A split-core CTs, Quantity 6, 1.8 m lead lengths         |                   |
| <b>BCPMSCCT1R20</b>  | BCPM 100 A split-core CTs, Quantity 6, 6 m lead lengths           |                   |
| <b>BCPMSCCT3</b>   | BCPM 200 A split-core CTs, Quantity 1, 1.8 m lead lengths         |                   |
| <b>BCPMSCCT3R20</b>  | BCPM 200 A split-core CTs, Quantity 1, 6 m lead lengths           |                   |
| Commercial ref. no.  |   |                   |
| Additional accessories for use with BCPM products              |   |                   |
| <b>BCPMCOVERS</b>  | BCPM circuit board cover  |                   |
| <b>BCPMREPAIR</b>  | CT repair kit for solid core BCPM (includes one CT)               |                   |
| <b>H6803R-0100</b>   | Additional 100 A split-core CT for use with solid core repair kit |                   |
| <b>E8951</b>   | Modbus to BACnet protocol converter                               |                   |
| <b>CBL016</b>  | Flat Ribbon cable (quantity 1) for BCPM, length = 1.2 m           |                   |
| <b>CBL017</b>  | Flat Ribbon cable (quantity 1) for BCPM, length = 1.5 m           |                   |
| <b>CBL018</b>  | Flat Ribbon cable (quantity 1) for BCPM, length = 1.8 m           |                   |
| <b>CBL020</b>  | Flat Ribbon cable (quantity 1) for BCPM, length = 3.0 m           |                   |
| <b>CBL021</b>  | Flat Ribbon cable (quantity 1) for BCPM, length = 6.1 m           |                   |
| <b>CBL022</b>  | Round Ribbon cable (quantity 1) for BCPM, length = 1.2 m          |                   |
| <b>CBL024</b>  | Round Ribbon cable (quantity 1) for BCPM, length = 6.1 m          |                   |
| <b>1/3 V low-voltage Split-core CTs for Aux inputs (Mains)</b> |   |                   |
| Commercial ref. no.  | Amperage rating   | Inside dimensions |
| <b>LVCT00050S</b>  | 50 A  | 10 mm x 11 mm     |
| <b>LVCT00101S</b>  | 100 A   | 16 mm x 20 mm     |
| <b>LVCT00202S</b>  | 200 A   | 32 mm x 32 mm     |
| <b>LVCT00102S</b>  | 100 A   | 30 mm x 31 mm     |
| <b>LVCT00202S</b>  | 200 A   | 30 mm x 31 mm     |
| <b>LVCT00302S</b>  | 300 A   | 30 mm x 31 mm     |
| <b>LVCT00403S</b>  | 400 A   | 62 mm x 73 mm     |
| <b>LVCT00603S</b>  | 600 A   | 62 mm x 73 mm     |
| <b>LVCT00803S</b>  | 800 A   | 62 mm x 73 mm     |
| <b>LVCT00804S</b>  | 800 A   | 62 mm x 139 mm    |
| <b>LVCT01004S</b>  | 1000 A  | 62 mm x 139 mm    |
| <b>LVCT01204S</b>  | 1200 A  | 62 mm x 139 mm    |
| <b>LVCT01604S</b>  | 1600 A  | 62 mm x 139 mm    |
| <b>LVCT02004S</b>  | 2000 A  | 62 mm x 139 mm    |
| <b>LVCT02404S</b>  | 2400 A  | 62 mm x 139 mm    |
| <b>1/3 V low-voltage Solid core CTs for Aux inputs (Mains)</b> |   |                   |
| Commercial ref. no.  | Amperage rating   | Inside dimensions |
| <b>LVCT20050S</b>  | 50 A  | 10 mm             |
| <b>LVCT20100S</b>  | 100 A   | 10 mm             |
| <b>LVCT20202S</b>  | 200 A   | 25 mm             |
| <b>LVCT20403S</b>  | 400 A   | 31 mm             |

# BCPM

| Technical specifications                   |  |   |
|--|--|---|
| Electrical characteristics                 |  |   |
| Type of measurement                        |  |   |
| Accuracy                                   | Power/energy   | 1 % system accuracy (including 50A or 100A branch CTs)                |
|  | Voltage  | ±0.5 % of reading   |
|  | Current  | ±0.5 % of reading   |
| Minimum "ON" current                       |  | 50mA  |
| Sampling rate Points per cycle             |  | 2560 Hz   |
| Data update rate                           |  | 1.8 seconds (Modbus), 14 seconds (BACnet) 20 sec (SNMP)               |
| Input-voltage characteristics              | Measured voltage   | 150 – 480 V AC L-L <sup>(1)</sup><br>90 – 277 V AC L-N <sup>(1)</sup> |
|  | Measurement range  | 150 – 480 V AC L-L <sup>(1)</sup><br>90 – 277 V AC L-N <sup>(1)</sup> |
| Power supply                               | AC   | 100 – 277 V AC (50/60 Hz)   |
| Auxiliary CT Current Input Range           |  | 0-0.333V; CTs must be rated for use with Class 1 voltage inputs       |
| Mechanical characteristics                 |  |   |
| Weight                                     |  | 1.5 kg  |
| Dimensions                                 | A/B/C model Circuit board  | 288 x 146 mm  |
| E model housing (w/brackets on long sides) |  | 253 mm W x 307 mm H x 71 mm D   |
| E model housing (w/brackets on short ends) |  | 210 mm W x 353 mm H x 71 mm D   |
| Environmental conditions                   |  |   |
| Operating temperature                      | 0 to 60 °C   |   |
| Storage temperature                        | -40 °C to 70 °C  |   |
| Installation category                      | CAT III, pollution degree 2  |   |
| Safety                                     |  |   |
| Europe                                     | IEC 61010  |   |
| U.S. and Canada                            | UL 508 Open type device  |   |
| Communication                              |  |   |
| RS-485 (A/B/C models)                      | Baud rate: DIP-switch selectable 9600, 19200, 38400<br>DIP-switch selectable 2-wire or 4-wire RS-485. Parity selectable: Even, Odd or None.  |   |
| RS-485 (A models)                          | Baud rate: configured via Web-server. Baud selectable: 9600, 19200, 38400. Parity selectable: Even, Odd or None.<br>2-wire RS-485.   |   |
| Ethernet (E models)                        | 10/100 Mbit Ethernet. RJ-45 connection. Static IP or DHCP.   |   |
| Protocols                                  | Modbus RTU on all models, BCPME models also support Modbus TCP, SNMP, BACnet IP & BACnet MS/TP   |   |
| Firmware characteristics                   |  |   |
| Detection of over-voltage/under-voltage    | User-defined alarm thresholds for over-voltage and under-voltage detection   |   |
| Alarms                                     | Four alarm levels: high-high, high, low and low-low (users define the setpoints for each). Each alarm has a latching status to alert the operator that an alarm has previously occurred. High and Low alarms have instantaneous status to let the operator know if the alarm state is still occurring. |   |
| Firmware update                            | Update via Modbus  |   |

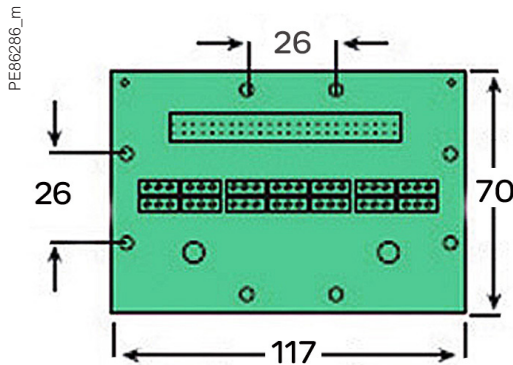
# BCPM

## 1/3 V low-voltage CT (LVCT) for Mains - Technical specifications

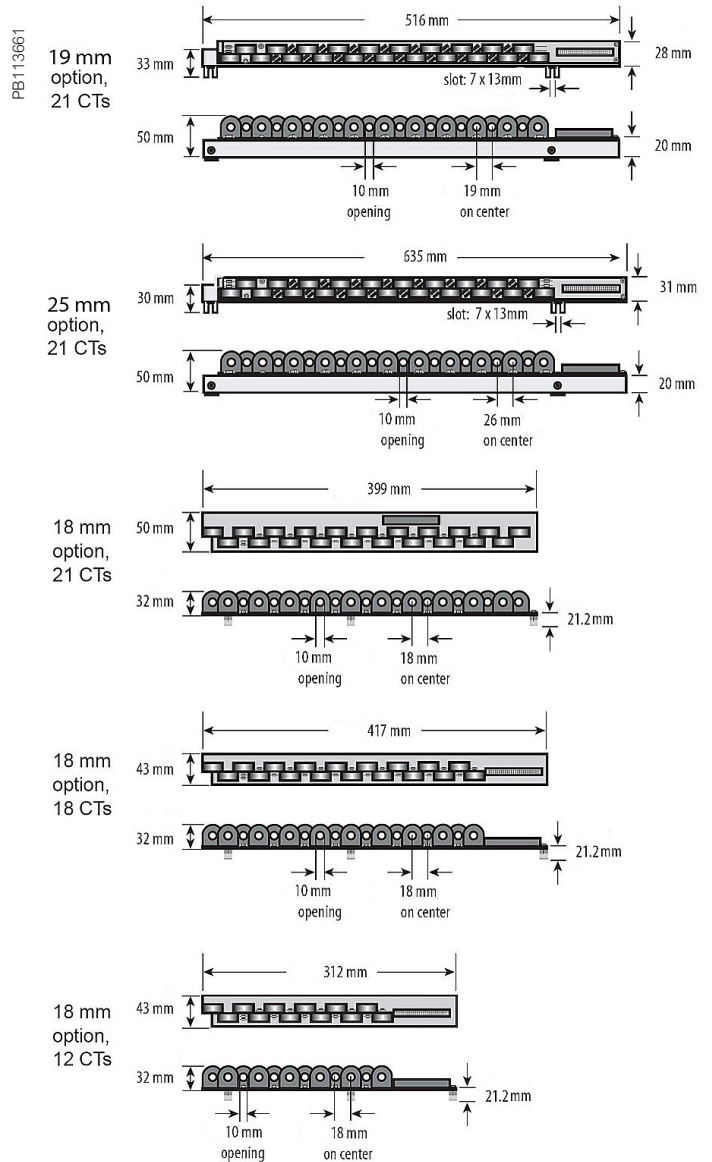
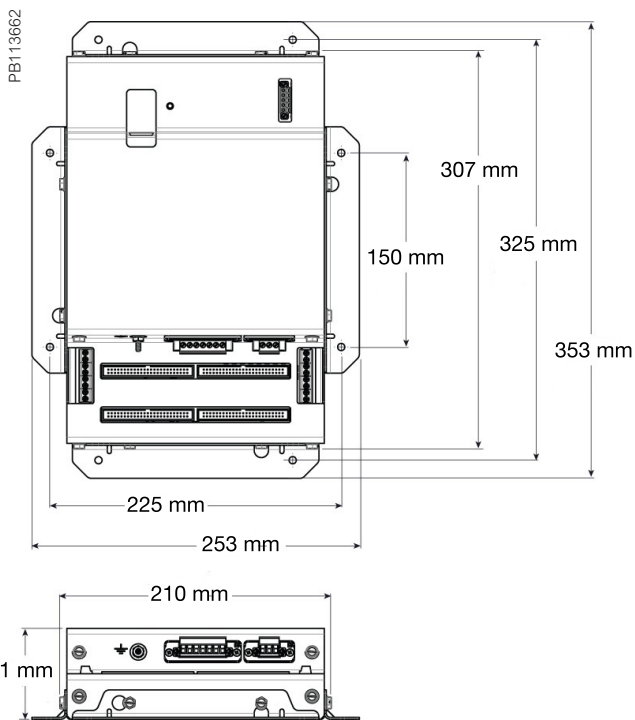
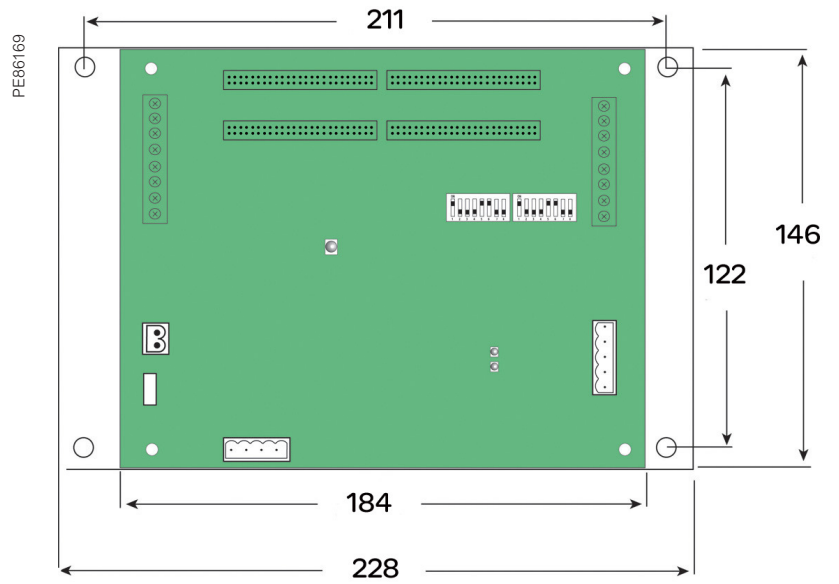
| Electrical characteristics        |  |
|-----------------------------------|--|
| Accuracy                          | 1 % from 10 % to 100 % of rated current(LVCT0xxx0S/1S/2S/3S/4S [split-core])<br>0.5 % from 5 % to 100 % of rated current (LVCT2xxx0S/2S/3S [solid core])                       |
| Frequency range                   | 50/60 Hz   |
| Leads                             | 18 AWG, 600 V AC, 1.8m standard length   |
| Max. voltage L-N sensed conductor | 300 V AC (LVCT0xxx0S)<br>600 V AC (LVCT0xxx1S/2S/3S/4S, LVCT2xxxxS)  |
| Environmental conditions          |  |
| Operating temperature             | 0 °C to 70 °C (LVCT0xxx0S/1S)<br>-15 °C to 60 °C (LVCT0xxx2S/3S/4S less than 2400A)<br>-15 °C to 60 °C (LVCT02404S [2400A])<br>-40 °C to 85 °C (LVCT2xxx0S/2S/3S [solid core]) |
| Storage temperature               | -40 °C to 105 °C (LVCT0xxx0S/1S)<br>-40 °C to 70 °C (LVCT0xxx2S/3S/4S)<br>-50 °C to 105 °C (LVCT2xxx0S/2S/3S [solid core])   |
| Humidity range                    | 0 to 95 % non-condensing   |

# BCPM

## PowerLogic BCPM dimensions

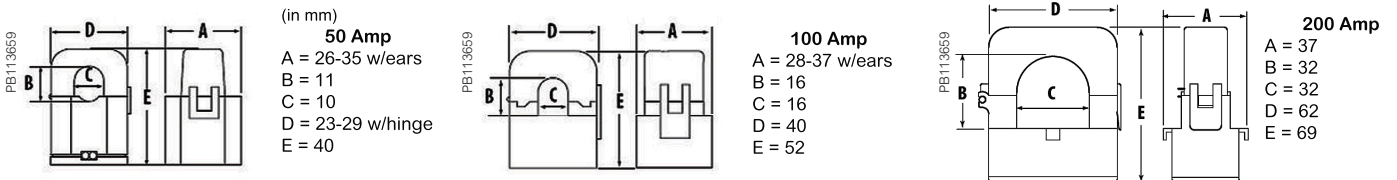


PowerLogic BCPM adapter board (one board per 21 split-core branch CTs)



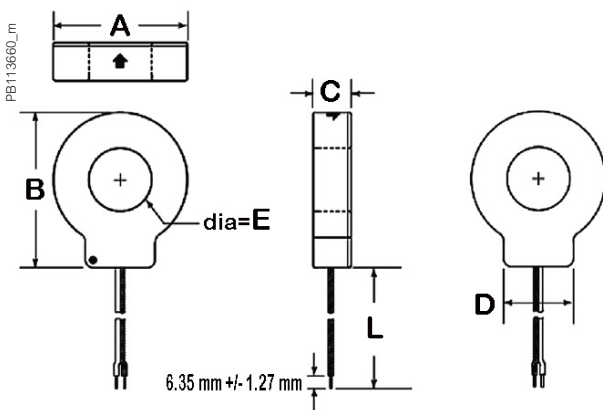
# BCPM

## 50 A-200 A Split-core CT dimensions



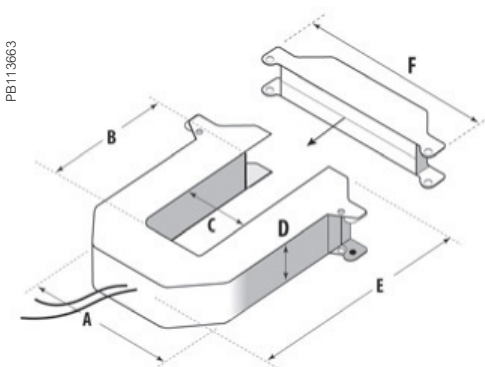
These dimensions apply to both BCPMSCCTxx (branch CTs) and LVCT0xxx0S/1S (for Mains) 50 A-200 A CT families.

## Solid core CT dimensions



| Model      | L     | A     | B     | C     | D     | E     |
|------------|-------|-------|-------|-------|-------|-------|
| LVCT20050S | 1.8 m | 33 mm | 38 mm | 18 mm | 21 mm | 10 mm |
| LVCT20100S | 1.8 m | 59 mm | 66 mm | 18 mm | 31 mm | 25 mm |
| LVCT20202S | 1.8 m | 70 mm | 82 mm | 25 mm | 36 mm | 31 mm |

## 1/3 V low-voltage CT form factor



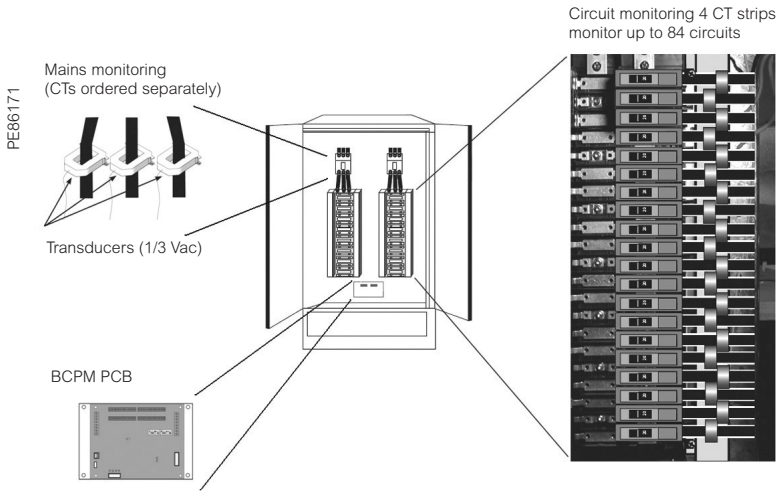
**Small form factor**  
 100/200/300 Amp  
 A = 96 mm  
 B = 30 mm  
 C = 31 mm  
 D = 30 mm  
 E = 100 mm  
 F = 121 mm

**Medium form factor**  
 400/600/800 Amp  
 A = 125 mm  
 B = 73 mm  
 C = 62 mm  
 D = 30 mm  
 E = 132 mm  
 F = 151 mm

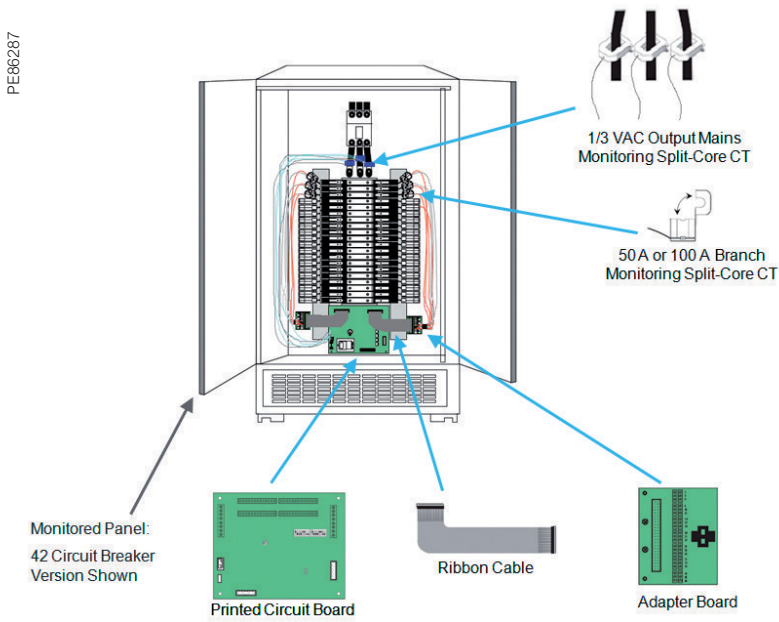
**Large form factor**  
 800/1000/1200/  
 1600/2000/2400 Amp  
 A = 125 mm  
 B = 139 mm  
 C = 62 mm  
 D = 30 mm  
 E = 201 mm  
 F = 151 mm

# BCPM

## PowerLogic BCPM with solid core CT strips installation details



## PowerLogic BCPM with split-core CTs installation details



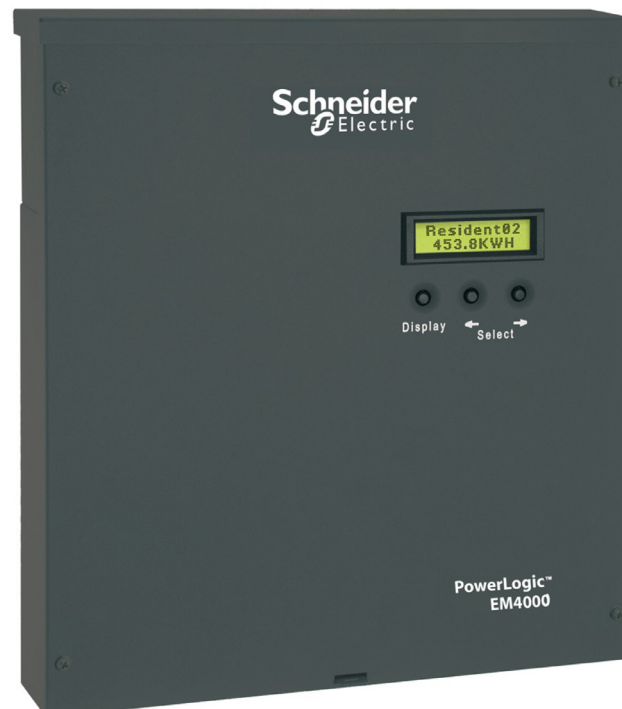
# EM4000 series

The compact PowerLogic EM4000 series multi-circuit energy meter from Schneider Electric enables the reliable monitoring of building electrical loads with a low installation cost-per-point by combining revenue-accurate electricity sub-metering with advanced communications technology.

## Applications

- Energy management
- Energy cost allocation
- Utility bill verification

PB113714



METSEEM403316

### The solution for

Markets that can benefit from a solution that includes PowerLogic EM4000 series meters:

- Buildings
- Industry
- Healthcare
- Data Centre and networks
- Infrastructure

### Benefits

#### System integrators' benefit

- Ease of integration
- Ease of setup
- Cost effectiveness

#### Panel builders' benefit

- Ease of installation
- Cost effectiveness
- Aesthetically pleasing
- Simplified ordering

#### End users' benefit

- Ease of use
- Precision metering & sub-billing
- Billing flexibility
- Comprehensive, consistent and superior performance

### Competitive advantages

- Compact, maintenance-free design
- Hi-density, flexible connection
- Direct connection
- Multiple CT types
- No rewiring required
- Integrated communications networks.

### Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

### Conformity of standards

- IEC 61557-12
- IEC 61000-4-4
- IEC 62053-22
- IEC 61000-4-5
- IEC 62053-24
- IEC 61000-4-6
- IEC 61010-1
- IEC 61000-4-8
- IEC 61000-4-2
- Etc.
- IEC 61000-4-3

# EM4000 series



EM4000 series multi-circuit energy meter

The compact PowerLogic EM4000 series multi-circuit energy meter from Schneider Electric enables the reliable monitoring of building electrical loads with a low installation cost-per-point by combining revenue-accurate electricity sub-metering with advanced communications technology.

The EM4000 is ideal for departmental metering applications and M&V within office towers, condominiums, apartment buildings, shopping centres and other multi-user environments, or small-footprint retail.

The PowerLogic EM4000 series meters monitor up to 24 meter points with a single device. Multiple meters can be combined to support an unlimited number of points.

Two meter models offer a choice of CTs and installation options:

- PowerLogic EM4033: 333 mV, split-core CTs
- PowerLogic EM4080: 80 mA solid core CTs

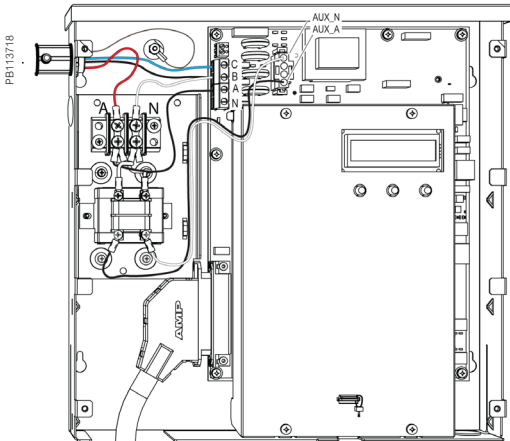
### Main characteristics

- Compact, maintenance-free design
  - Requires no floor space
- Hi-density, flexible connection
  - From single-pole to single- or three-phase metering, supports up to 24 circuits.
  - Select the connection type using an intuitive configuration tool.
- Direct connection
  - For 100 - 300 V AC L-N electrical distribution systems: 120/240 V, 120/208 V, 277/480 V
- Multiple CT types
  - Support a variety of needs in both new and retrofit installations.
  - 1/3 V output CT option does not require shorting blocks, making it the ideal choice for retrofit installations.
- No rewiring required
  - Use existing wiring to connect to existing panels.
- Integrated communications networks.
  - Onboard Ethernet or RS-485 allows for easy integration into existing communications networks.

### Feature selection

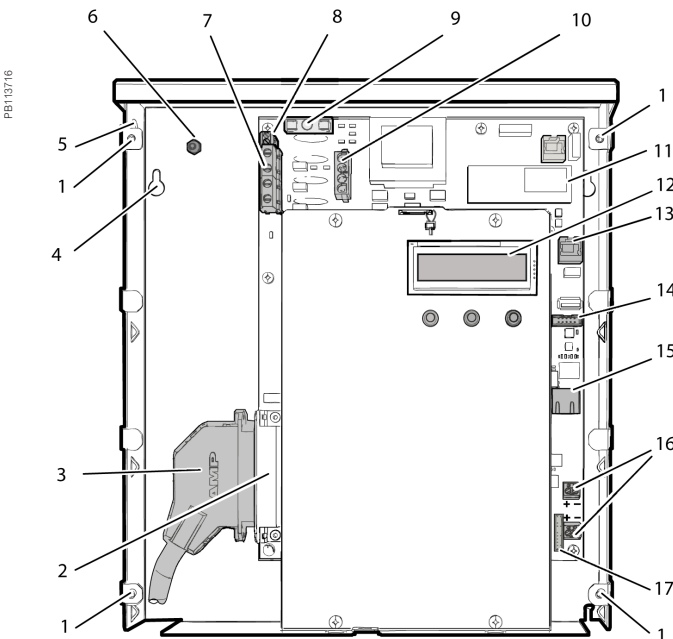
| Commercial ref. no.  | Model  | Description                                  |
|----------------------|--------|--|
| <b>METSEEM403316</b> | EM4033 | PM5310 CI 0.5, RS-485 Modbus, 2DI/2DO        |
| <b>METSEEM403336</b> |        | PM5330 CI 0.5, RS-485 Modbus, 2DI/2DO, Relay |
| <b>METSEEM408016</b> | EM4080 | PM5331 Power & Energy meter                  |
| <b>METSEEM408036</b> |        | PM5320 Power & Energy meter                  |

# EM4000 series



PowerLogic EM4000 meter 480Y/277V three-phase wye service connection

| Selection guide  |   | EM4033 | EM4080 |
|--|---|--------|--------|
| <b>General</b>   |   |        |        |
| Use on LV systems  |   | ■      | ■      |
| Accuracy   | +/- 0.5 %   | ■      | ■      |
| Accuracy compliance  | ANSI C12.1 and C12.20 Class 0.5; IEC 62053-22, Class 0.5S | ■      | ■      |
| Maximum circuits: single-pole / single-phase / three-phase | 24 / 12 / 8   | ■      | ■      |
| <b>Instantaneous rms values</b>                            |   |        |        |
| Energy   | real, kWh received/delivered                              | ■      | ■      |
|  | reactive, kvarh received/delivered                        | ■      | ■      |
|  | apparent, VAh   | ■      | ■      |
| Voltage  |   | ■      | ■      |
| Pulse counts   |   | ■      | ■      |
| Voltage and current  | V rms, I rms per phase                                    | ■      | ■      |
| Power  | real, reactive, apparent                                  | ■      | ■      |
| Power factor   |   | ■      | ■      |
| <b>Measurements available for data logging</b>             |   |        |        |
| Energy   | real, kWh received/delivered                              | ■      | ■      |
|  | reactive, kvarh received/delivered                        | ■      | ■      |
|  | apparent, VAh   | ■      | ■      |
| Voltage  |   | ■      | ■      |
| <b>Display</b>   |   |        |        |
| Backlit LCD display  | 2 lines of 16 characters                                  | ■      | ■      |
| Optional remote modular display available                  |   | ■      | ■      |
| <b>Communication</b>                                       |   |        |        |
| Ethernet port  |   | ■      | ■      |
| MODBUS-RTU over RS-485                                     |   | ■      | ■      |
| Pulse inputs   | 2   | ■      | ■      |
| Protocols: Modbus TCP/IP, HTTP, BACnet/IP, FTP, and SNMP   |   | ■      | ■      |
| <b>Installation options</b>                                |   |        |        |
| 0.333 V CTs  |   | ■      |        |
| 80 mA CTs  |   |        | ■      |
| Split-core CT  |   | ■      |        |
| Solid core CT  |   | ■      | ■      |



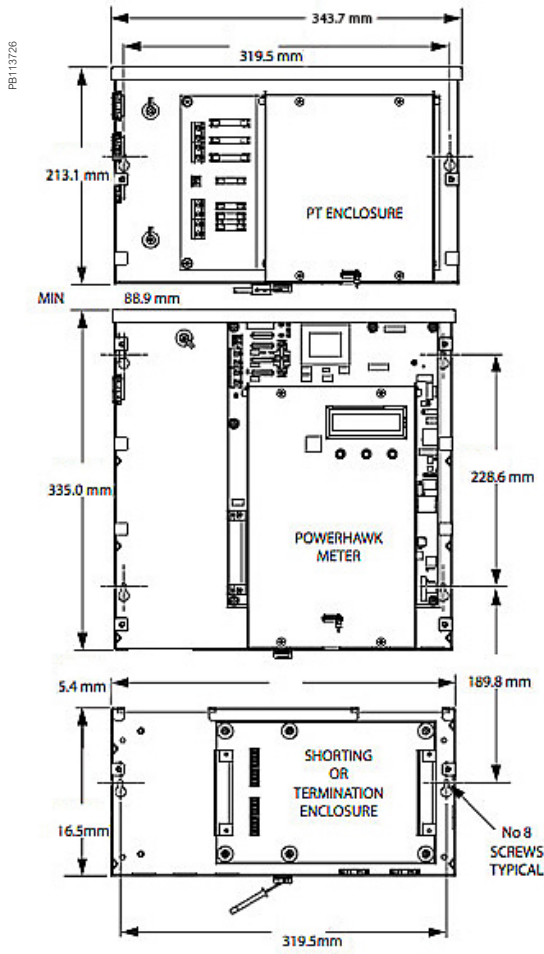
PowerLogic EM4033 and PowerLogic EM4080 internal view.

- Legend:
- 1 Cover screw location
  - 2 Meter point input connector
  - 3 Cable connector
  - 4 Mounting keyhole
  - 5 Ingress punch-outs
  - 6 Earth stud
  - 6 Sense voltage terminal block
  - 8 Control voltage terminal block
  - 9 Fuse
  - 10 Control voltage jumper
  - 11 RTU interface
  - 12 Display
  - 13 Remote display connector
  - 14 Serial RS-232
  - 15 Ethernet port
  - 16 Pulse in terminal blocks
  - 17 Pulse out connector

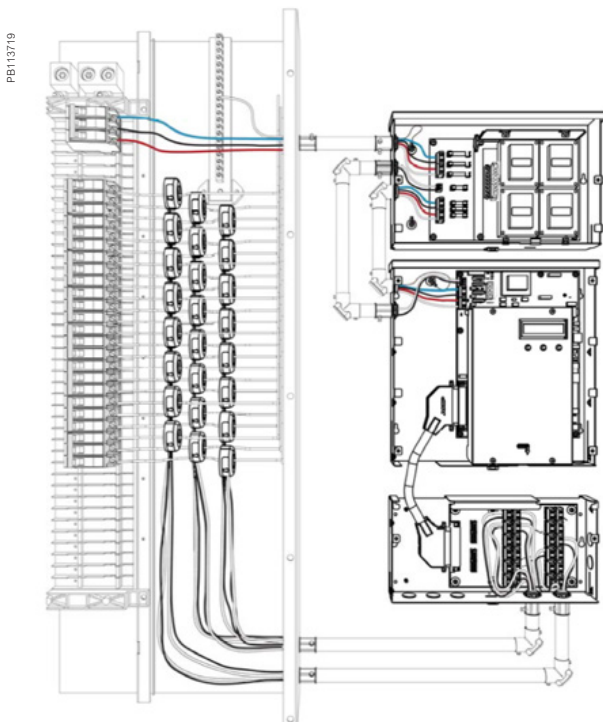
## EM4000 series

| EM4000 technical specifications                          |                  |   |
|--|------------------|---|
| <b>Electrical characteristics</b>                        |                  |   |
| Input-voltage characteristics                            | Inputs           | V1, V2, V3, Vn  |
|  | Measured voltage | 80 - 480 V AC L-L without PTs<br>Up to 999 kV with external PTs   |
|  | Frequency range  | 60 Hz   |
| <b>Mechanical characteristics</b>                        |                  |   |
| Weight   | EM4033/EM4080    | approx. 4.0 kg  |
| Dimensions   | EM4033/EM4080    | 335 x 305 x 55 mm   |
| <b>Environmental conditions</b>                          |                  |   |
| Operating temperature                                    |                  | -40 °C to 70 °C   |
| Storage temperature                                      |                  | -40 °C to 70 °C   |
| Humidity rating  |                  | 0 % to 90 % RH non-condensing   |
| Enclosure  |                  | Type 1 (indoor or enclosed outdoor use)   |
| Altitude   |                  | 3000 m  |
| Pollution degree   |                  | 2   |
| <b>Safety and standards</b>                              |                  |   |
| UL Certified to IEC/EA/CSA 61010-1                       |                  |   |
| CSA-C22.2 No 61010-1-04                                  |                  |   |
| FCC Part 15 Class B                                      |                  |   |
| ICES-003 EN 55022, IEC 6100-4-5                          |                  |   |
| ANSI/TIA968-A: 2002                                      |                  |   |
| <b>Communication</b>                                     |                  |   |
| Ports  |                  | Ethernet  |
|  |                  | MODBUS-RTU over RS-485  |
| Pulse inputs   |                  | 2   |
| Protocols: Modbus TCP/IP, HTTP, BACnet/IP, FTP, and SNMP |                  |   |
| <b>Display characteristics</b>                           |                  |   |
| Integrated backlit LCD display                           |                  | 2 lines, 16 digits per line display;<br>R / L arrow buttons select metering point;<br>Display button cycles through measurements per point. |

EM4X00, CT termination, PT module



EM4X00, CT termination, PT module



# EM4000 series

PB119724



METSEPTMOD480

## PT Module

The PT module provides step-down voltage connections to Schneider Electric PowerLogic meters for metering single-phase to three-phase voltages of 600 V, 347 V, or 400 V, while meeting all regulatory electrical safety and ANSI 0.5 Accuracy Class standards. The PT module provides both the per-phase input metering voltages and the auxiliary input power required by Schneider Electric PowerLogic energy meters.

There are two variants of the PT module that support the following source voltages and wiring configurations:

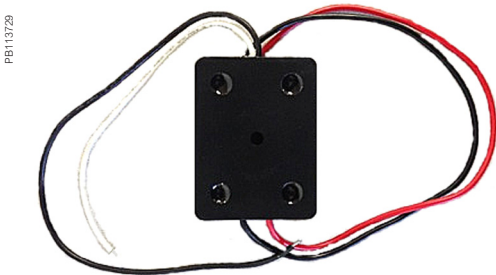
- 347 V Wye / 600 V Delta variant supports:
  - 347 V, three-phase, 4-wire wye
  - 600 V, three-phase, 3-wire delta
- 480V Delta variant supports:
  - 480 V, three-phase, 3-wire delta

The 347 V/600 V PT module variant has three sense voltage potential transformers for metering. The configuration of the transformers (347 V wye or 600 V delta) is selected by using the jumper provided. The 480V PT module has two sense voltage potential transformers for metering. There is a separate auxiliary power transformer in both variants to operate the meter. All voltage inputs are fused.

| PowerHawk PT module specifications |                       |  |                            |
|------------------------------------|-----------------------|--|----------------------------|
| Dimensions                         | Height                | 213.1 mm                               |                            |
|                                    | Width                 | 54 mm                                  |                            |
|                                    | Depth                 | 54 mm                                  |                            |
|                                    | Weight                | 5.67 kg                                |                            |
| Fuse ratings                       | High voltage inputs   | F1                                     | T315 mA, 1000 V            |
|                                    |                       | F2                                     | T315 mA, 1000 V            |
|                                    |                       | F3                                     | T315 mA, 1000 V            |
|                                    | Voltage inputs        | F4                                     | T250 mA, 250 V             |
|                                    |                       | F5                                     | T250 mA, 250 V             |
|                                    |                       | F6                                     | T250 mA, 250 V             |
|                                    |                       | F7                                     | T250 mA, 250 V             |
| Transformer specifications         | Input voltage         | 600 V                                  | Voltage tolerance: +/-10 % |
|                                    |                       | 480 V                                  | Voltage tolerance: +/-10 % |
|                                    |                       | 347 V                                  | Voltage tolerance: +/-10 % |
|                                    | Output voltage        | 120 V                                  | Accuracy: 0.3 %            |
| Environmental                      | Operating temperature | -40 °C to 70 °C                        |                            |
|                                    | Operating humidity    | 5 % to 90 % non-condensing             |                            |
|                                    | Usage environment     | Indoor or enclosed outdoor environment |                            |
|                                    | Maximum altitude      | 3000 m                                 |                            |
|                                    | Pollution degree      | 2                                      |                            |

| Feature selection       |  |
|-------------------------|--|
| Commercial ref. no.     | Description                            |
| <b>METSEPTMOD480</b>    | 480 V PT Module for EM4X00 meter       |
| <b>METSEPTMOD347600</b> | 347 V/600 V PT Module for EM4X00 meter |

# EM4000 series



METSECONV580

## CT Module

PowerLogic 4080 meters have two shorting options that provide a seamless and sealable mechanical package. The CT Shorting Module provides CT connections via the color coded 25 pair cable routed into the breaker panel. All CTs are shorted at the same time for safe removal of the meter for maintenance when the electrical circuits are still live.

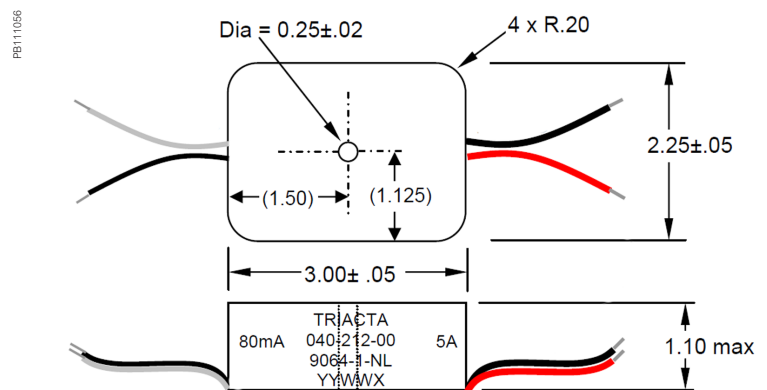
The CT Termination Module has the same shorting ability, but provides CT connections via 24 2-position screw-down terminal blocks. Individual pairs are then routed from the CT Termination Module to 1 or more breaker panels via conduit knock outs provided on the module. Thus eliminating the need for a splitter box to route CT cables to multiple panels.

| Commercial ref. no. | Description                            |
|---------------------|--|
| <b>METSECTTERM</b>  | CT Termination Module for EM4X00 meter |
| <b>METSECTSHORT</b> | CT Shorting Module for EM4X00 meter    |

## Converter

The 5 A:80 mA converter is useful in applications where there are existing 5 A CT's integrated into large motors or switch gear. The 5 A:80 mA converter matches the 5 A secondary of the load to the 80 mA input of the meter. In Billing Grade applications, the 5 A:80 mA converter is also used to connect regulatory grade large aperture, large amperage CT's with 5 A secondaries to the 80 mA of PowerLogic 4 X 80 meters.

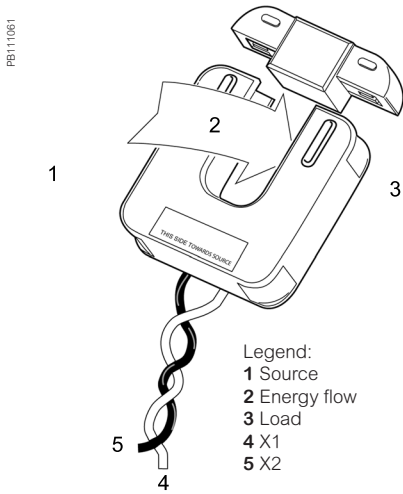
| Commercial ref. no. | Description                            |
|---------------------|--|
| <b>METSECONV580</b> | 5 A : 80 mA converter for EM4X00 meter |



The 5 A to 80 mA converter dimensions

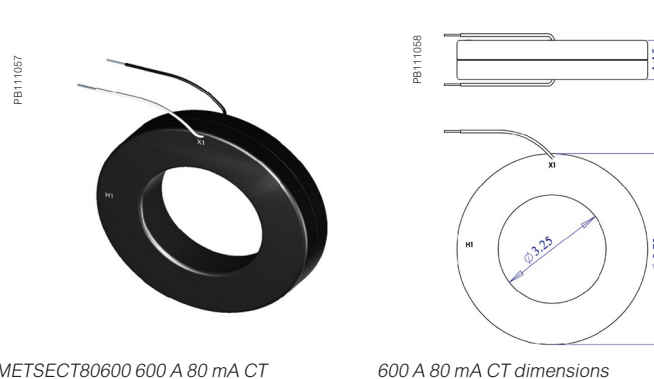
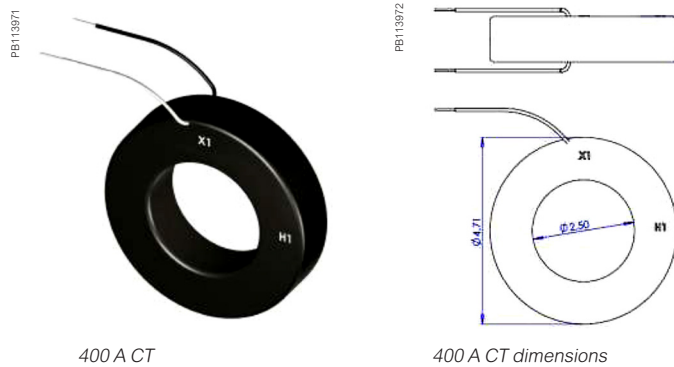
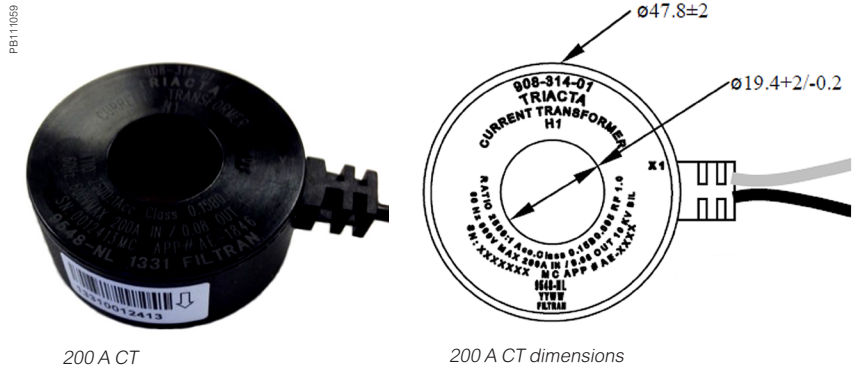
See appropriate Installation Guide for this product.

# EM4000 series



### CTs

- Model 8 (80/100 mA Secondary)
- Window Size: 82.5 mm Diameters
- Application: Metering
- Frequency: 50-400 Hz
- Insulation Level: 600 Volts, 10 Kv BIL Full Wave
- Flexible leads available for all case configurations. Flexible leads are UL 1015 105 °C, CSA approved #16 AWG, 609.6 mm long standard length. Non-standard lengths are available upon request.
- Terminals are brass studs No. 8-32 UNC with one flat washer, one lock washer and one nut each. Terminals are only available on the square case configuration.
- Mounting brackets kits for the Model 8SHT are available when required.
- Approximate weight: 1.36 kg



| Feature selections          |   |
|-----------------------------|---|
| Commercial reference number | Description   |
| <b>METSECT80200</b>         | CT, solid core, 200 A primary, 80 mA secondary, for use with EM4X80 multi-circuit meter |
| <b>METSECT80400</b>         | CT, solid core, 400 A primary, 80 mA secondary, for use with EM4X80 multi-circuit meter |
| <b>METSECT80600</b>         | CT, solid core, 600 A primary, 80 mA secondary, for use with EM4X80 multi-circuit meter |

# EM4800 series

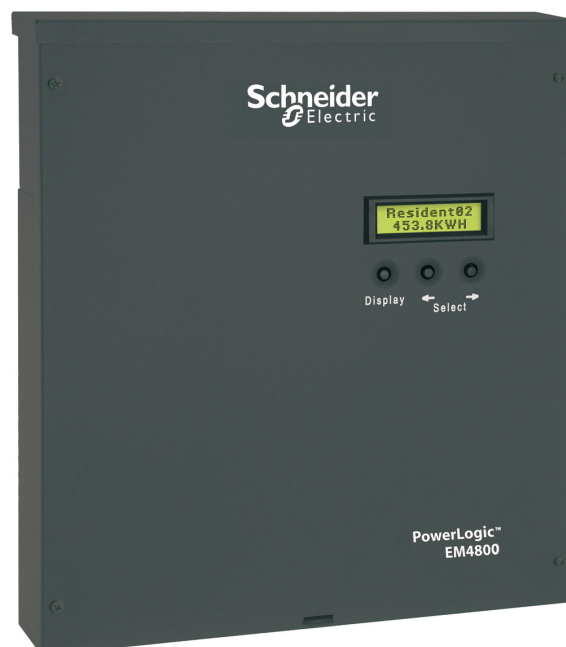
The compact PowerLogic EM4800 series multi-circuit energy meter from Schneider Electric enables reliable metering of individual tenants with a low installation cost-per-point by combining revenue-accurate electricity sub-metering with advanced communications technology. The ideal fit for high-end cost management applications, providing the measurement capabilities needed to allocate energy usage, perform tenant metering and sub-billing, pin-point energy savings, optimise equipment efficiency and utilisation, and perform a high level assessment of the power quality in an electrical network.

## Applications

### Capable of essential cost management:

- Multi-tenant metering
- Energy management
- Energy cost allocation
- Utility bill verification

PE66325



METSEEM480525

### The solution for

Markets that can benefit from a solution that includes PowerLogic EM4800 series meters:

- Buildings
- Industry
- Healthcare
- Data Centre and networks
- Infrastructure

### Benefits

#### System integrators' benefit

- Ease of integration
- Ease of setup
- Cost effectiveness

#### Panel builders' benefit

- Ease of installation
- Cost effectiveness
- Aesthetically pleasing
- Simplified ordering

#### End users' benefit

- Ease of use
- Precision metering & sub-billing
- Billing flexibility
- Comprehensive, consistent and superior performance

### Competitive advantages

- Compact, maintenance-free design
- Hi-density, flexible connection
- Direct connection
- Multiple CT types
- No rewiring required
- Integrated communications

### Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

### Conformity of standards

- IEC61557-12
- IEC62053-22
- IEC62053-24
- IEC 61010-1
- IEC 61000-4-2
- IEC 61000-4-3
- IEC 61000-4-4
- IEC 61000-4-5
- IEC 61000-4-6
- IEC 61000-4-8
- Etc.

# EM4800 series



EM4800 series multi-circuit energy meter front (above), installed in panel (below)



The compact PowerLogic EM4800 series multi-circuit energy meter from Schneider Electric enables reliable metering of individual tenants with a low installation cost-per-point by combining revenue-accurate electricity sub-metering with advanced communications technology.

The EM4800 is ideal for multi-tenant or departmental metering applications within office towers, condominiums, apartment buildings, shopping centres and other multi-user environments.

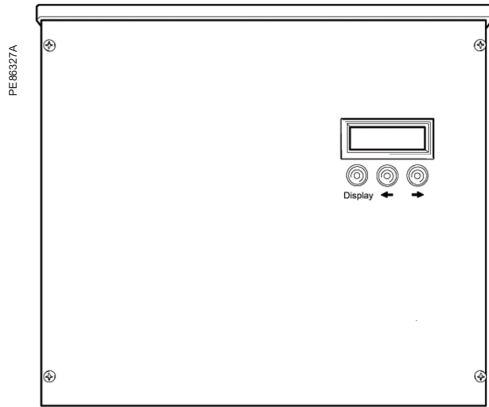
The PowerLogic EM4800 series meters monitor up to 24 tenants with a single device. Multiple meters can be combined to support an unlimited number of suites.

- Three meter models offer a choice of CT secondary ratings and installation options:
  - PowerLogic EM4805: 5 A, split or solid core CTs
  - PowerLogic EM4833: 0.333 V, split or solid core CTs
  - PowerLogic EM4880: 80 mA, solid core CTs
- Main characteristics
  - Compact, maintenance-free design
    - Requires no floor space.
- Hi-density, flexible connection
  - From single-pole to single- or three-phase metering, supports up to 24 circuits. Select the connection type using an intuitive configuration tool.
- Direct connection
  - For 100 - 300 V AC L-N electrical distribution systems:
    - 120/240 V, 120/208 V, 230/240 V, 220/380 V, 240/415 V, 277/480 V
- Multiple CT types
  - Support a variety of needs in both new and retrofit installations.
    - 1/3 V output CT option does not require shorting blocks, making it the ideal choice for retrofit installations.
- No rewiring required
  - Use existing wiring to connect to existing panels.
- Integrated communications
  - Onboard Ethernet and modem allows for easy integration into existing communications networks.

### Feature selections

| Commercial ref. no.  | Model  | Description  |
|----------------------|--------|--|
| <b>METSEEM480525</b> | EM4805 | 24 x 5 A inputs, 230/240 V control power, 50 Hz    |
| <b>METSEEM480516</b> |        | 24 x 5 A inputs, 120 V control power, 60 Hz        |
| <b>METSEEM483325</b> | EM4833 | 24 x 333 mV inputs, 230/240 V control power, 50 Hz |
| <b>METSEEM483316</b> |        | 24 x 333 mV inputs, 120 V control power, 60 Hz     |
| <b>METSEEM488016</b> | EM4880 | 24 x 80 mA inputs, 120 V control power, 60 Hz      |
| <b>METSEEM488025</b> |        | 24 x 80 mA inputs, 230/240 V control power, 50 Hz  |

# EM4800 series



PowerLogic EM4800 series digital panel meter.

| Selection guide  |  | EM4805 | EM4833 | EM4880 |
|--|--|--------|--------|--------|
| <b>General</b>   |  |        |        |        |
| Use on LV systems  |  | ■      | ■      | ■      |
| Accuracy   | +/- 0.5 %  | ■      | ■      | ■      |
| Accuracy compliance  | ANSI C12.1 and C12.20 Class 0.5;<br>IEC 62053-22, Class 0.5S | ■      | ■      | ■      |
| Maximum circuits:<br>single-pole / single phase /<br>three-phase | 24 / 12 / 8  | ■      | ■      | ■      |
| <b>Instantaneous rms values</b>                                  |  |        |        |        |
| Energy   | Real, kWh received/delivered                                 | ■      | ■      | ■      |
|  | Reactive, kvarh received/<br>delivered                       | ■      | ■      | ■      |
|  | Apparent, VAh  | ■      | ■      | ■      |
| Voltage  |  | ■      | ■      | ■      |
| Pulse counts   |  | ■      | ■      | ■      |
| Voltage and current  | V rms, I rms per phase                                       | ■      | ■      | ■      |
| Power  | Real, reactive, apparent                                     | ■      | ■      | ■      |
| Power factor   |  | ■      | ■      | ■      |
| <b>Measurements available for data logging</b>                   |  |        |        |        |
| Energy   | Real, kWh received/delivered                                 | ■      | ■      | ■      |
|  | Reactive, kvarh received/<br>delivered                       | ■      | ■      | ■      |
|  | Apparent, VAh  | ■      | ■      | ■      |
| Voltage  |  | ■      | ■      | ■      |
| <b>Display</b>   |  |        |        |        |
| Backlit LCD display  | 2 lines of 16 characters                                     | ■      | ■      | ■      |
| Optional remote modular display available                        |  | ■      | ■      | ■      |
| <b>Communication</b>   |  |        |        |        |
| Ethernet port  |  | ■      | ■      | ■      |
| V.90 modem port  |  | ■      | ■      | ■      |
| Pulse inputs   | 2  | ■      | ■      | ■      |
| Protocols: Modbus TCP/IP, HTTP, BACnet/IP, FTP, and SNTP         |  | ■      | ■      | ■      |
| <b>Installation options</b>                                      |  |        |        |        |
| 5 A CTs  |  | ■      |        |        |
| 0.333 V CTs  |  |        | ■      |        |
| 80 mA CTs  |  |        |        | ■      |
| Split-core CT  |  | ■      | ■      |        |
| Solid core CT  |  | ■      | ■      | ■      |
| Remote modular display   |  | ■      | ■      | ■      |

# EM4800 series

| Electrical characteristics                               |   |   |
|--|---|---|
| Input-voltage characteristics                            | Inputs  | V1, V2, V3, Vn  |
|  | Measured voltage  | 80 - 480 V AC L-L without PTs<br>Up to 999 kV with external PTs |
|  | Frequency range   | 50/60 Hz  |
| Mechanical characteristics                               |   |   |
| Weight   | EM4805  | approx. 5.4 kg  |
|  | EM4833/EM4880   | approx. 4.0 kg  |
| Dimensions   | EM4805  | 335 x 44 x 55 mm  |
|  | EM4833 / EM4880   | 335 x 305 x 55 mm   |
| Environmental conditions                                 |   |   |
| Operating temperature                                    | -40 °C to 70 °C   |   |
| Storage temperature                                      | -40 °C to 70 °C   |   |
| Humidity rating  | 0 % to 90 % RH non-condensing   |   |
| Enclosure  | Type 1 (indoor or enclosed outdoor use)   |   |
| Altitude   | 3000 m  |   |
| Pollution degree   | 2   |   |
| Safety and standards                                     |   |   |
| UL Certified to IEC/EA/CSA 61010-1                       |   |   |
| CSA-C22.2 No 61010-1-04                                  |   |   |
| FCC Part 15 Class B                                      |   |   |
| ICES-003 EN55022, IEC 6100-4-5                           |   |   |
| ANSI/TIA968-A: 2002                                      |   |   |
| Communication  |   |   |
| Ports  | Ethernet  |   |
|  | V.90 modem  |   |
| Pulse inputs   | 2   |   |
| Protocols: Modbus TCP/IP, HTTP, BACnet/IP, FTP, and SNMP |   |   |
| Display characteristics                                  |   |   |
| Integrated backlit LCD display                           | 2 lines, 16 digits per line display;<br>R / L arrow buttons select metering point;<br>Display button cycles through measurements per point. |   |

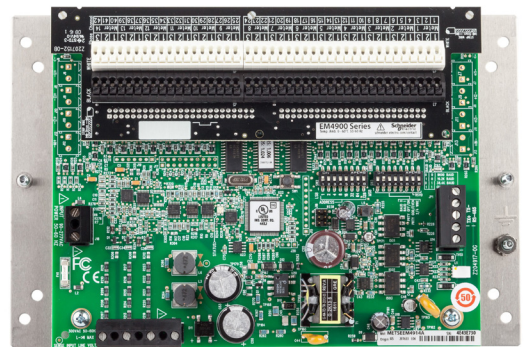
# EM4900 series

The PowerLogic EM4900 Series Multi-Circuit Meters make it easy to add many metering points without having to purchase, mount, wire and commission individual energy meters. Simply add a single device with common voltage inputs and communication interface that can measure the current, voltage, power, energy consumption, and Total harmonic Distortion (THD) of up to (14) 3-phase circuits with a single board or up to (28) 3-phase circuits with a two board configuration. Save on both equipment cost and installation.

## Applications

- Commercial and residential subtenant billing
- Load-based cost allocation
- Measuring for load balancing and demand response
- Overload protection

PB117150  
PB117149



METSEEM4904E



METSEEM4904A

### The solution for

Markets that can benefit from a solution that includes PowerLogic EM4900 series meters:

- Buildings
- Industry
- Healthcare
- Hotels, Multi-Dweller Units (condos)

### Benefits

#### System integrators' benefit

- Ease of integration
- Ease of setup
- Cost effectiveness

#### Panel builders' benefit

- Ease of installation
- Cost effectiveness
- Aesthetically pleasing
- Simplified ordering

#### End users' benefit

- Ease of use
- Precision metering & sub-billing
- Billing flexibility
- Comprehensive, consistent and superior performance

### Competitive advantages

- Lower cost and space per metering point
- Adapts to any mix of metering needs (1ph, 2ph, 3ph with or without Neutral wire)
- Class 0.5 accuracy for Revenue Grade measurement
- THD monitoring to help identify problem loads and early wear and tear
- Capable of concurrent communication to software packages, including PowerLogic software packages and third party systems

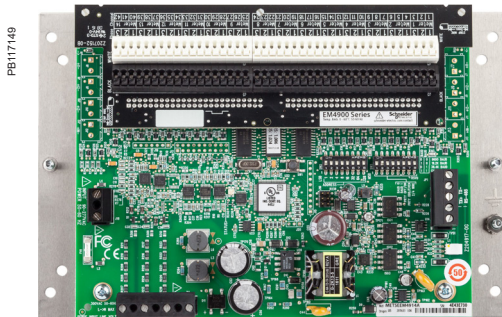
### Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

### Conformity of standards

- EN 61000-6-3 Class B - Part 6-3
- EN 61000-6-3 Class B - Part 6-3
- EN 61000-6-4 Class A - Part 6
- EN 61010-1 - Part 1
- EN 61326-1 Class A - Part 1
- EN 61326-1 Class B - Part 1
- IEC 62053-22 Class 0.5 - Part 21
- FCC 47 CFR Part 15 Class A & Class B
- UL 508 Open Device Type
- IEC 61010-1 - Part 1

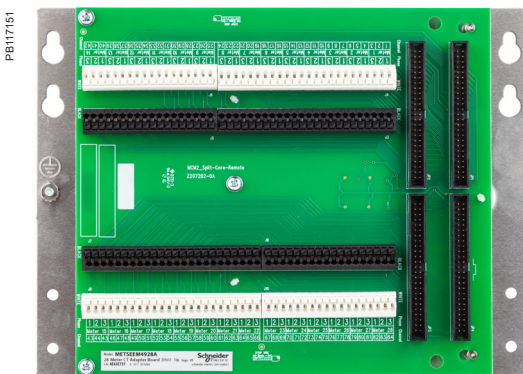
## EM4900 series



PowerLogic™ EM4914A



PowerLogic™ EM4914E



28 Meter adapter board (EM4928A and EM4928E)

To aid in commissioning, a configuration software tool, an Ethernet discovery tool (for the EM49xxE) and a User Guide are available online at [www.schneider-electric.com](http://www.schneider-electric.com).

- Main characteristics

- Add lots of metering points without lots of cost
  - Add up to 28 3-phase meters by installing a single product small enough to fit inside many distribution panels. Save on both equipment cost and installation cost. Common voltage and communication connections and color-coded push-in CT connections save installation time and effort.
- Class 0.5 accuracy for Revenue Grade measurements
  - Power and Energy measurements with ANSI and IEC class 0.5 accuracy provide the accuracy needed for tenant billing applications. Voltage and current measurement accuracy is 0.5 % and currents are measured down to 0.1% of the CT range. Easily differentiate between the flow of low current and a trip or load disconnect where no current flows.
- Total Harmonics Distortion measurements
  - Helps assess basic power quality to reduce risks to the load and provide indication of potential early wear and tear of the electrical network and its load.
- Common CTs, 1/3V outputs
  - CTs with low-voltage outputs eliminate the need for shorting blocks that add cost and labor to the installation. They also allow long CT lead extensions without compromising accuracy. Choose from a range of our CT styles and sizes or use any CTs with industry-standard 0.333V outputs.
- Models with integrated Ethernet offer broad protocol support
  - All models integrate easily into existing networks using Modbus RTU communications over an RS-485 serial link. EM49xxE models offer integrated Ethernet and add support for Modbus TCP, BACnet IP, BACnet MS/TP and SNMP. Those Ethernet protocols can be run in parallel allowing multiple software to access the device (Building Management System, Energy Management System, etc.) An optional external gateway can be added to EM49xxA models to offer the same capability.
- Compatible with PowerLogic power monitoring software
  - Easily turn the large amount of data collected by the devices into useful decision making information.
- Configure the meters you want
  - Choose 4, 8, 14 or 28 3-phase meters. User-configurable to any combination of 1-, 2-, 3-phase meters. Reconfigure channels as needed to monitor neutral current.

# EM4900 series specifications

|   |  |
|---|--|
| <b>Measurements</b>                                 |  |
| Measurement voltage                                 | 90 to 300 V AC L-N, 50/60 Hz   |
| Total Harmonic Distortion (THD)                     | THD % voltage L-L, L-N and THD % on current  |
| <b>Control power</b>                                |  |
| EM49xxA   | 90 to 277 V AC L-N, 50/60 Hz   |
| EM49xxE   | 100 to 277 V AC L-N, 50/60 Hz  |
| <b>Accuracy</b>                                     |  |
| Power/Energy  | IEC 62053-21 Class 0.5, ANSI C12.20 class 0.5  |
| Voltage   | ±0.5% of reading 90 to 277 V L-N   |
| Current   | ±0.5% of reading from 2% to 100% of full-scale   |
| <b>Operation</b>                                    |  |
| Sampling frequency                                  | 2560 Hz  |
| Update rate   | 1.8 seconds (both panels)  |
| Overload capability                                 | 22 kAIC  |
| <b>EM49xxA serial communication</b>                 |  |
| Type  | Modbus RTU   |
| Connection  | DIP switch-selectable 2-wire or 4-wire, RS-485   |
| Address   | DIP switch-selectable address 1 to 247 (in pairs of 2) (See Installation Guide)                        |
| Baud rate   | DIP switch-selectable 9600, 19200, 38400   |
| Parity  | DIP switch-selectable NONE, ODD, EVEN  |
| Communication format                                | 8 data bits, 1 start bit, 1 stop bit   |
| Termination   | 5-position plug-in connector (TX+ TX- SHIELD TX+/RX+ TX-/RX-)  |
| <b>EM49xxE serial communication</b>                 |  |
| Physical Interface                                  | 2-wire RS-485  |
| Serial protocols supported                          | Modbus RTU or BACnet MS/TP   |
| Address range                                       | 1 to 247 for Modbus RTU; 0 to 127 for BACnet MS/TP   |
| Baud rate   | 9600, 19200, 38400   |
| Parity  | Modbus RTU: NONE, ODD, EVEN BACnet MS/TP: NONE (fixed)   |
| Communication format                                | 8 data bits, 1 start bit, 1 stop bit   |
| Termination   | 2x3 position connector   |
| <b>EM49xxE Ethernet communication</b>               |  |
| Physical interface                                  | Protocols Supported  |
| Protocols supported                                 | Modbus TCP, BACnet IP, SNMP V2c  |
| <b>Wire size range</b>                              |  |
| Removable connectors on main board                  | 24 to 12 AWG   |
| CT Terminals and EM49xxE serial connector terminals | 26 to 16 AWG   |
| <b>Terminal block torque</b>                        |  |
| Removable connectors                                | 0.5 to 0.6 N-m   |
| <b>Mechanical</b>                                   |  |
| Ribbon cable support (28-meter models only)         | 0.9 m round ribbon cable ships standard; up to 6 m flat or round available                             |
| <b>Operating conditions</b>                         |  |
| Operating temperature range                         | 0 to 60 °C (<95% RH non-condensing)  |
| Storage temperature range                           | -40 to 70 °C   |
| Altitude of operation                               | 3000 m   |
| Mounting location                                   | Not suitable for wet locations. For indoor use only.   |
| <b>Compliance information</b>                       |  |
| Agency approvals                                    | UL 508 open type device <sup>*1</sup> , IEC/EN 61010-1   |
| Installation category                               | Cat III, pollution degree 2 <sup>*2</sup>  |
| Conducted emissions                                 | EM49xxA Models: FCC part 15 Class B, EN 61000-6-3, EN 61326-1 Class B (residential & light industrial) |
| Radiated emissions                                  | EM49xxE Models: FCC part 15 Class A, EN 6100-6-4, EN 61326-1 Class A                                   |
| Conducted and radiated immunity                     | EN 61000-6-2 and EN 61326-1  |

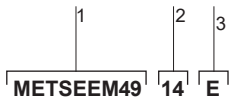
\*1 Install EM49xx in appropriate fire enclosure; if used with circuits higher than product ratings, circuits must be segregated per UL 508A Sec 17.5 (EM49xx internal circuitry are not circuits as defined by UL 508A).

\*2 A Pollution Degree 2 environment must control conductive pollution and the possibility of condensation or high humidity. Consideration must be given to the enclosure, the correct use of ventilation, thermal properties of the equipment and the relationship with the environment.

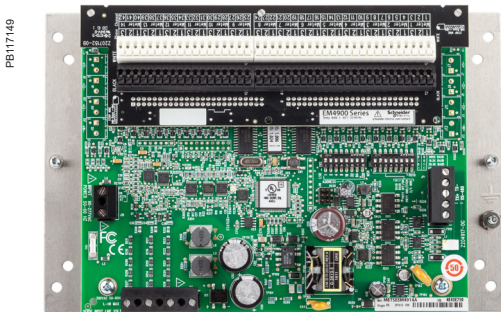
## EM4900 series

| 1/3 V low-voltage CT (LVCT)       |  |
|-----------------------------------|--|
| <b>Electrical characteristics</b> |  |
| Accuracy                          | 1 % from 10 % to 100 % of rated current(LVCT0xxxx0S/1S/2S/3S/4S [split-core])<br>0.5 % from 5 % to 100 % of rated current (LVCT2xxxx0S/2S/3S [solid core])   |
| Frequency range                   | 50/60 Hz   |
| Leads                             | 18 AWG, 600 V AC, 1.8 m standard length  |
| Max. voltage L-N sensed conductor | 300 V AC (LVCT0xxxx0S)<br>600 V AC (LVCT0xxxx1S/2S/3S/4S, LVCT2xxxxS)  |
| <b>Measurements</b>               |  |
| Real time measurements            | Current: multi-phase average and per phase<br>Current phase angle per branch<br>Real power (kW): multi-phase total and per phase<br>Apparent power (kVA): multi-phase total and per phase<br>Power factor: multi-phase average and per phase |
| Demand measurements               | Current present demand: multi-phase average and per phase<br>Real power (kW) present demand: multi-phase average and per phase   |
| Historic maximums                 | Maximum instantaneous current: multi-phase average and per phase<br>Maximum current demand: multi-phase average and per phase<br>Maximum real power demand: multi-phase total and per phase  |
| Accumulate energy                 | Energy (kWh): multi-phase total and per phase  |
| Energy snapshots                  | Energy (kWh): multi-phase total and per phase  |

# EM4900 series



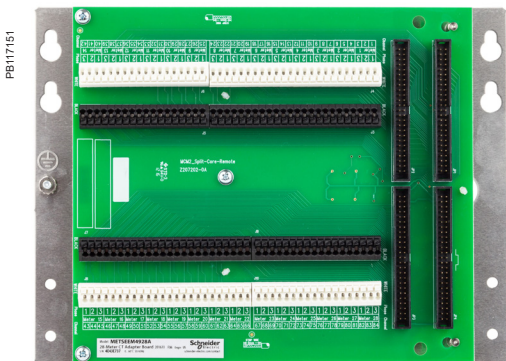
- 1 Model.
- 2 Number of 3-phase meters (without neutral current)
- 3 Communication interfaces & protocols.



EM49xxA Main Board



EM49xxE Main Unit



CT Adapter Assembly (28-Meter models only)

## EM4900 series part numbers - BCPM with solid core CTs

| Item | Code                                 | Description |
|------|--------------------------------------|-------------|
| 1    | Model                                | METSEEM49   |
| 2    | Number of 3-phase Meters             | 04          |
|      |                                      | 08          |
|      |                                      | 14          |
|      |                                      | 28          |
| 3    | Communication Interfaces & Protocols | A           |
|      |                                      | E           |

| Commercial ref. no. | "E" - Integrated Ethernet | Number of meters |         |         |
|---------------------|---------------------------|------------------|---------|---------|
|                     |                           | 3-phase          | 2-phase | 1-phase |
| <b>METSEEM4904A</b> | <b>METSEEM4904E</b>       | 4                | 6       | 12      |
| <b>METSEEM4908A</b> | <b>METSEEM4908E</b>       | 8                | 12      | 24      |
| <b>METSEEM4914A</b> | <b>METSEEM4914E</b>       | 14               | 21      | 42      |
| <b>METSEEM4928A</b> | <b>METSEEM4928E</b>       | 28               | 42      | 84      |

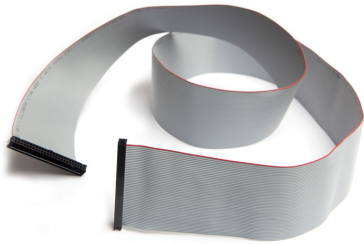
### Number of meters supported:

EM4900 models are all factory-configured as all 3-phase meters (w/o neutral). They can be easily re-configured to any combination of 1-ph, 2-ph or 3-ph meters (with ION Setup). Any unused channels can be used to measure neutral current. Label overlays (to re-number CT connections) are provided for 1-ph/2-ph applications.

| Commercial ref. no. | EM4900 multi-circuit meters   |
|---------------------|---|
| <b>METSEEM4904A</b> | Multi-Circuit Meter – (4) 3-phase meters - Modbus RTU only                              |
| <b>METSEEM4908A</b> | Multi-Circuit Meter – (8) 3-phase meters - Modbus RTU only                              |
| <b>METSEEM4914A</b> | Multi-Circuit Meter – (14) 3-phase meters - Modbus RTU only                             |
| <b>METSEEM4928A</b> | Multi-Circuit Meter – (28) 3-phase meters - Modbus RTU only                             |
| <b>METSEEM4904E</b> | Multi-Circuit Meter – (4) 3-phase meters - Ethernet and Serial (Modbus, BACnet & SNMP)  |
| <b>METSEEM4908E</b> | Multi-Circuit Meter – (8) 3-phase meters - Ethernet and Serial (Modbus, BACnet & SNMP)  |
| <b>METSEEM4914E</b> | Multi-Circuit Meter – (14) 3-phase meters - Ethernet and Serial (Modbus, BACnet & SNMP) |
| <b>METSEEM4928E</b> | Multi-Circuit Meter – (28) 3-phase meters - Ethernet and Serial (Modbus, BACnet & SNMP) |

# EM4900 series

PE66284



CBL008

Flat ribbon cable

PB117152



CBL022

Round ribbon cable

PE66183



LVCT00050S

PowerLogic™ LVCT0xxxxS split-core Low-voltage (1/3V) CTs are ideal for retrofit applications

PB113652



PB113657



PB113656



LVCT20050S

PowerLogic™ LVCT2xxxxS Low-voltage (1/3V) solid core CTs are ideal for panel builders (small, medium, large)

## EM4900 series accessories

| Commercial reference number | Description                         |
|-----------------------------|-------------------------------------|
| <b>BCPMCOVERS</b>           | EM4900 circuit board cover          |
| <b>E8951</b>                | Modbus to BACnet protocol converter |

### Ribbon cables for 28-meter models

1.22 m cables are standard – others must be ordered separately

|               |  |
|---------------|--|
| <b>CBL008</b> | Flat Ribbon cable (quantity 1) for BCPM, length = 0.45 m |
| <b>CBL016</b> | Flat Ribbon cable (quantity 1) for BCPM, length = 1.2 m  |
| <b>CBL017</b> | Flat Ribbon cable (quantity 1) for BCPM, length = 1.5 m  |
| <b>CBL018</b> | Flat Ribbon cable (quantity 1) for BCPM, length = 1.8 m  |
| <b>CBL019</b> | Flat Ribbon cable (quantity 1) for BCPM, length = 2.4 m  |
| <b>CBL020</b> | Flat Ribbon cable (quantity 1) for BCPM, length = 3.0 m  |
| <b>CBL021</b> | Flat Ribbon cable (quantity 1) for BCPM, length = 6.1 m  |
| <b>CBL022</b> | Round Ribbon cable (quantity 1) for BCPM, length = 1.2 m |
| <b>CBL023</b> | Round Ribbon cable (quantity 1) for BCPM, length = 3 m   |
| <b>CBL024</b> | Round Ribbon cable (quantity 1) for BCPM, length = 6.1 m |
| <b>CBL031</b> | Round Ribbon cable (quantity 1) for BCPM, length = 0.5 m |
| <b>CBL033</b> | Round Ribbon cable (quantity 1) for BCPM, length = 0.8 m |

### 1/3 V low-voltage Split-core CTs

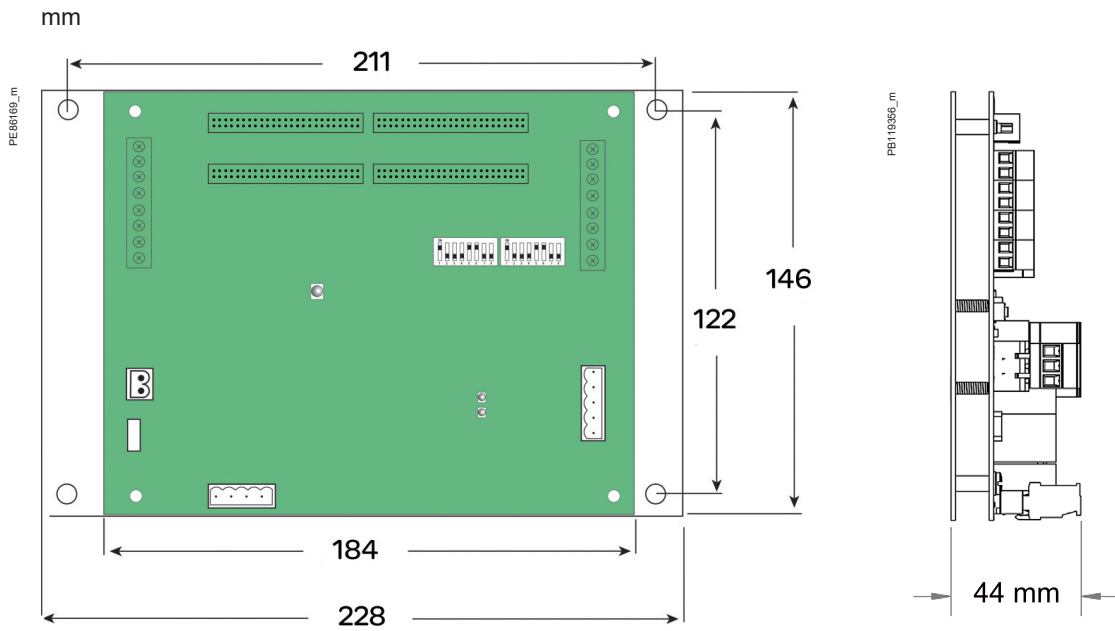
| Commercial reference number | Amperage rating | Inside dimensions |
|-----------------------------|-----------------|-------------------|
| <b>LVCT00050S</b>           | 50 A            | 10 x 11 mm        |
| <b>LVCT00101S</b>           | 100 A           | 16 x 20 mm        |
| <b>LVCT00201S</b>           | 200 A           | 32 x 32 mm        |
| <b>LVCT00102S</b>           | 100 A           | 30 x 31 mm        |
| <b>LVCT00202S</b>           | 200 A           | 30 x 31 mm        |
| <b>LVCT00302S</b>           | 300 A           | 30 x 31 mm        |
| <b>LVCT00403S</b>           | 400 A           | 62 x 73 mm        |
| <b>LVCT00603S</b>           | 600 A           | 62 x 73 mm        |
| <b>LVCT00803S</b>           | 800 A           | 62 x 73 mm        |
| <b>LVCT00804S</b>           | 800 A           | 62 x 139 mm       |
| <b>LVCT01004S</b>           | 1000 A          | 62 x 139 mm       |
| <b>LVCT01204S</b>           | 1200 A          | 62 x 139 mm       |
| <b>LVCT01604S</b>           | 1600 A          | 62 x 139 mm       |
| <b>LVCT02004S</b>           | 2000 A          | 62 x 139 mm       |
| <b>LVCT02404S</b>           | 2400 A          | 62 x 139 mm       |

### 1/3 V low-voltage Solid core CTs

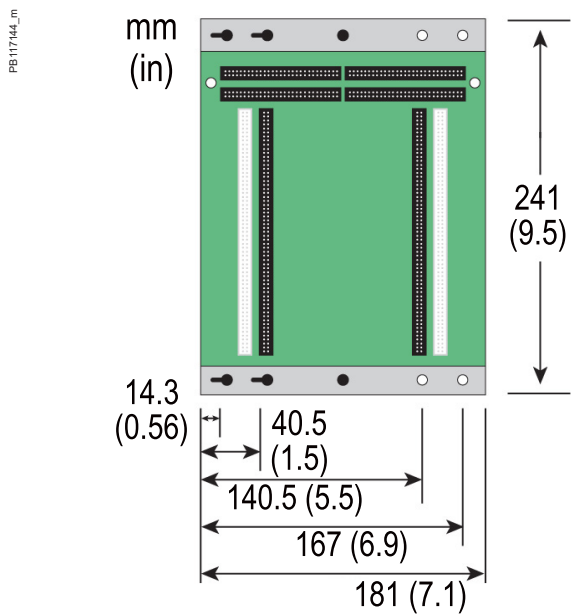
| Commercial reference number | Amperage rating | Inside dimensions |
|-----------------------------|-----------------|-------------------|
| <b>LVCT20050S</b>           | 50 A            | 10 mm             |
| <b>LVCT20100S</b>           | 100 A           | 10 mm             |
| <b>LVCT20202S</b>           | 200 A           | 25 mm             |
| <b>LVCT20403S</b>           | 400 A           | 31 mm             |

# EM4900 series

## EM49xxA main board dimensions



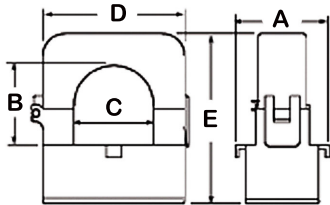
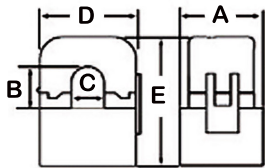
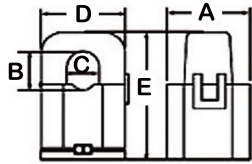
## 28-Meter CT adapter assembly dimensions



# EM4900 series

## 50 A-200 A Split-core CT dimensions

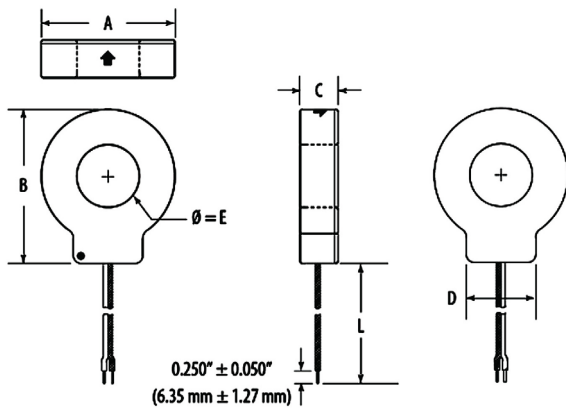
PB113659



| CT rating | A     | B     | C     | D     | E     |
|-----------|-------|-------|-------|-------|-------|
| 50 A      | 26 mm | 11 mm | 10 mm | 23 mm | 40 mm |
| 100 A     | 28 mm | 16 mm | 16 mm | 40 mm | 52 mm |
| 200 A     | 37 mm | 32 mm | 32 mm | 62 mm | 69 mm |

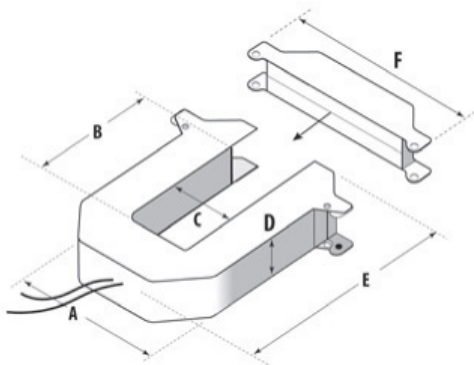
## Solid core CT dimensions

PB113660



| Model      | L     | A     | B     | C     | D     | E     |
|------------|-------|-------|-------|-------|-------|-------|
| LVCT20050S | 1.8 m | 33 mm | 38 mm | 18 mm | 21 mm | 10 mm |
| LVCT20100S |       |       |       |       |       |       |
| LVCT20202S | 1.8 m | 59 mm | 66 mm | 18 mm | 31 mm | 25 mm |
| LVCT20403S | 1.8 m | 70 mm | 82 mm | 25 mm | 36 mm | 31 mm |

PB113663



Split-core CT dimensions - see table.

## 1/3 V low-voltage CT form factor

| Small form factor<br>100/200/300 A | Medium form factor<br>400/600/800 A | Large form factor<br>800/1000/1200/<br>1600/2000/2400 A |
|------------------------------------|-------------------------------------|---|
| A = 96 mm                          | A = 125 mm                          | A = 125 mm  |
| B = 30 mm                          | B = 73 mm                           | B = 139 mm  |
| C = 31 mm                          | C = 62 mm                           | C = 62 mm   |
| D = 30 mm                          | D = 30 mm                           | D = 30 mm   |
| E = 100 mm                         | E = 132 mm                          | E = 201 mm  |
| F = 121 mm                         | F = 151 mm                          | F = 151 mm  |

# Retrofit products

The advantages of using retrofit products throughout your power monitoring system are numerous and proven. Whether you install these products as part of an upgrade or as add-on modules in a new build environment, ease of installation and commissioning will reap huge economic benefits. The PowerLogic range is designed to retrofit existing switchboards and enhance the energy efficiency of buildings for many years.

These products are:

- Easy and cost-effective to install
- Able to collect a broad scope of electrical data
- Able to utilize a variety of meters to measure WAGES (Water, Air, Gas, Electricity, Steam) usage
- Transmit all data to a centralized data concentrator for detailed analysis

PB1106431  
PB1106451



METSEEM3502



METSEEM4235

# EM3500 series

The EM3500 Series DIN Rail Meter combines exceptional performance and easy installation to deliver a cost-effective solution for power monitoring applications.

The EM35xx can be installed on standard DIN rail or surface mounted as needed. Pulse output and phase alarms provide additional versatility.

## Applications

### Capable of essential cost management:

- Energy monitoring in building automation systems
- Renewable energy monitoring
- Commercial sub-metering
- Energy management
- Industrial monitoring
- Accurate cost allocation



METSEEM3502

PB105431

### The solution for

Markets that can benefit from a solution that includes PowerLogic EM3500 series meters:

- Buildings
- Industry
- Healthcare
- Data Centre and networks
- Infrastructure

### Benefits

#### System integrators' benefit

- Ease of integration
- Ease of setup
- Cost effectiveness

#### Panel builders' benefit

- Ease of installation
- Cost effectiveness
- Aesthetically pleasing
- Simplified ordering

#### End users' benefit

- Ease of use
- Precision metering & sub-billing
- Billing flexibility
- Comprehensive, consistent and superior performance

### Competitive advantages

- DIN rail mounting option; easy installation
- Real energy output and phase loss alarm output
- 90-600 V AC; application versatility with fewer models to stock
- Bright backlit LCD; easy visibility in dark enclosures
- Data logging capability safeguard during power failures
- EM35xx models compatible with LVCTs from 5 A to 32000 A
- User-enabled password protection prevents tampering
- Native BACnet MS/TP support (no gateway)

### Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

### Conformity of standards

- IEC 61557-12
- IEC 61000-4-4
- IEC 62053-22
- IEC 61000-4-5
- IEC 62053-24
- IEC 61000-4-6
- IEC 61010-1
- IEC 61000-4-8
- IEC 61000-4-2
- Etc.
- IEC 61000-4-3

# EM3500 series

PB105451



PowerLogic™ EM3500

The data logging capability (EM3555 and EM3560) protects data in the event of a power failure. Modbus, pulse output, and phase alarms are all provided to suit a wide variety of applications. Additional pulse inputs on EM3560 provide an easy way to incorporate simple flow sensors to track gas, water, steam, or other energy forms using a BACnet system in addition to full monitoring of electrical energy.

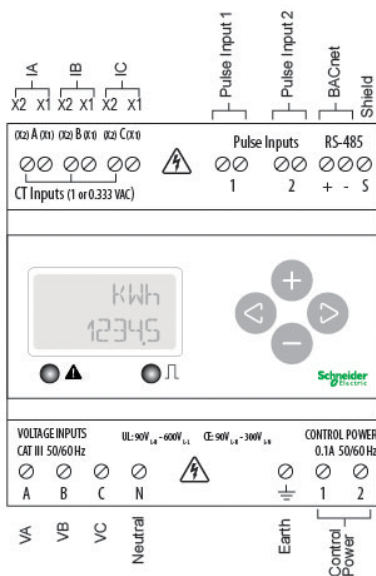
EM35xxA (Pulse, Modbus, BACnet) models designed for use exclusively with Rogowski coil CTs where integrator and power supply for the CTs are built into the meter, resulting in fewer devices to purchase and faster to install. (Not recommended for high harmonic applications.)

The EM3555 models adds a bi-directional monitoring feature designed expressly for renewable energy applications, allowing measurement of power imported from the utility grid as well as power exported from the renewable energy source (e.g. solar panels). In this way, a facility administrator track all energy data, ensuring accuracy in billing and crediting.

• Features

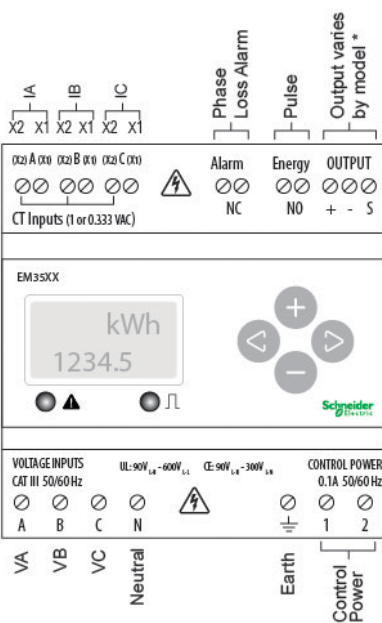
- All Models: A compact solution for panelboard monitoring
  - DIN rail mounting option; easy installation
  - ANSI 12.20 0.2% accuracy, IEC 62053-22 Class 0.2S for all 35xx models; great for cost allocation
  - ANSI C12.20 0.5% accuracy, IEC 62053-22 Class 0.5S for EM35xxA models
  - Real energy output and phase loss alarm output on EM3502(A), EM3550(A), and EM3555 models; one device serves multiple applications
  - 90-600 VAC; application versatility with fewer models to stock
  - Bright backlit LCD; easy visibility in dark enclosures
  - Data logging capability EM3555 & EM3560(A); safeguard during power failures
  - EM35xx models compatible with LVCTs from 5 A to 32000 A; wide range of service types
  - User-enabled password protection; prevents tampering
  - EM35xxA models are designed to work exclusively with Rogowski coil CTs 20-5000 A range. Eliminate site walks, save time and money. (Not recommended in high harmonic applications.)
  - System integration via Modbus EM355xx(A) or BACnet MS/TP EM356xx(A); convenient compatibility with existing systems
  - Native BACnet MS/TP support (no gateway) with serial rates up to 115.2 kbaud EM3560, EM3561, EM3560A, & EM3561A
- EM3555 Models: An essential solution for Solar and other renewable energy applications
  - Bi-directional metering (4-quadrant); allows net metering
  - Data logging capability; ensures long term data retrieval
  - CSI approved

PB113727



EM3500 parts and connection terminals

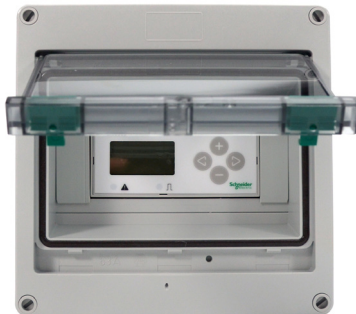
PB113728



EM3502/EM355x parts and connection terminals

# EM3500 series

PE105437



EM3500 in enclosure with door open

## Selection guide

| Electrical characteristics  |  |  |
|---|--|--|
| Inputs  | Control Power, AC                              | 50/60 Hz; 5 VA max.; 90 V min.;<br>UL Maximums: 600 V L-L (347V L-N );<br>CE Maximums: 300 V L-N (520V L-L ) |
|   | Control Power, DC                              | 3W max.; UL and CE: 125 to 300 V DC<br>(external DC current limiting required)                               |
|   | Voltage Input                                  | UL: 90 V L-N to 600 V L-L ;<br>CE: 90 V L-N to 300 V L   |
| Current Input   | Scaling  | 5 A to 32,000 A Non "A" models only<br>20 A to 5000 A for "A" models only                                    |
|   | Input Range                                    | 1/3V and 1V nominal LVCT (selectable)<br>Non "A" models only<br>Rogowski coil CTs only for "A" models        |
|   | Pulse Inputs (EM3560 & EM3560A)                | Two sets of contact inputs to pulse accumulators   |
| Accuracy  | Real Power and Energy                          | 0.2 % (ANSI C12.20, IEC 62053-22 Class 0.2S)<br>EM35xx models only   |
|   |  | 0.5 % (ANSI C12.20, IEC 62053-22 Class 0.5S)<br>EM35xxA models only  |
| Outputs   | All Models (EM3560, EM3560A, EM3561 & EM3561A) | Real Energy Pulse: N.O. static;<br>Alarm contacts: N.C. static   |
|   | EM3502   | Reactive energy pulse 30 VAC/DC  |
|   | EM3550, EM3555, EM3550A                        | RS-485 2-wire Modbus RTU<br>(1200 baud to 38.4 kbaud)  |
|   | EM3560, EM3560A, EM3561, EM3561A               | RS-485 2-wire BACnet MS/TP<br>(9600 baud to 115.2 kbaud)   |
| Mechanical characteristics  |  |  |
| Mounting  |  | DIN Rail or 3-point screw mount  |
| Environmental conditions  |  |  |
| Operating temperature Range                                       |  | -30 °C to 70 °C  |
| Storage Temperature Range   |  | -40 °C to 85°C   |
| Humidity Range  |  | <95 % RH non-condensing  |
| Accessories   |  |  |
| NEMA 4x enclosure (EM3500-ENC, pictured)                          |  |  |
| Split-core low voltage CTs (LVCTxx)                               |  |  |
| Fuse kits (EFP1, EFP2, EFP3)                                      |  |  |
| Safety  |  |  |
| US and Canada (cULus) UL508 (open type device)/CSA 22.2 No. 14-05 |  |  |
| Europe (CE) EN61010-1:2001  |  |  |

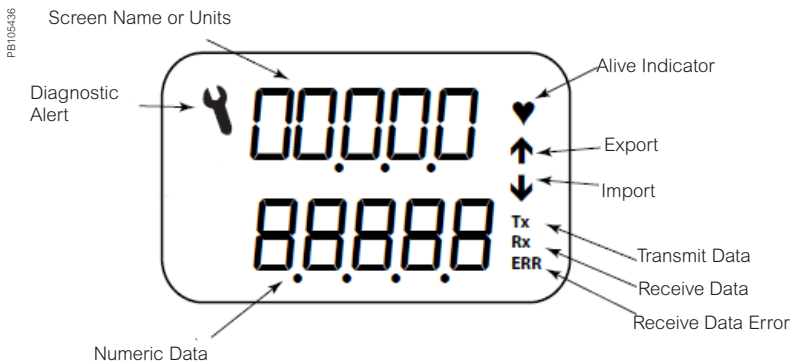
## Feature selection

| Commercial reference number | Model   | Description                          |
|-----------------------------|---------|--------------------------------------|
| <b>METSEEM3502</b>          | EM3502  | Pulse out only                       |
| <b>METSEEM3550</b>          | EM3550  | Modbus - 2 quadrant                  |
| <b>METSEEM3555</b>          | EM3555  | Modbus - 4 quadrant with logging     |
| <b>METSEEM3560</b>          | EM3560  | BACnet with logging                  |
| <b>METSEEM3502A</b>         | EM3502A | Pulse Rope CT model                  |
| <b>METSEEM3550A</b>         | EM3550A | Modbus Rope CT Model                 |
| <b>METSEEM3560A</b>         | EM3560A | BACnet w/ logging Rope CT Model      |
| <b>METSEEM3561</b>          | EM3561  | BACnet without logging               |
| <b>METSEEM3561A</b>         | EM3561A | BACnet without logging Rope CT Model |

# EM3500 series

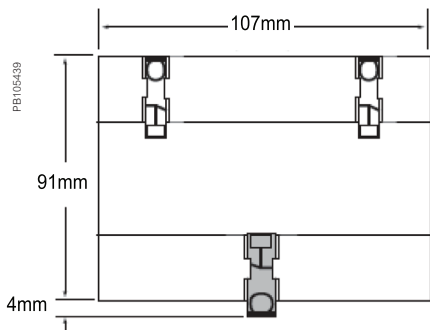
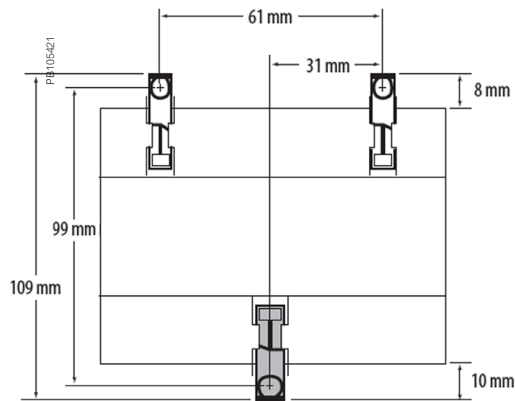
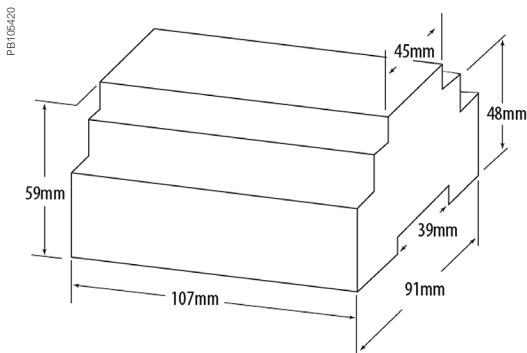
| EM3500 series  | EM3502 | EM3550 | EM3560 | EM3561 | EM3555 | EM3502A | EM3550A | EM3560A | EM3561A |
|--|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| <b>Measurement Capability, Full Data Set</b>   |        |        |        |        |        |         |         |         |         |
| Bi-directional Energy Measurements   |        |        |        |        | ■      |         |         |         |         |
| Power (3-phase total and per phase): Real (kW) Reactive (kVAR), and Apparent (kVA)             | ■      | ■      | ■      | ■      | ■      | ■       | ■       | ■       | ■       |
| Power Factor: 3-phase average & per phase  | ■      | ■      | ■      | ■      | ■      | ■       | ■       | ■       | ■       |
| Present Power Demand: Real (kW), Reactive (kVAR), and Apparent (kVA)                           | ■      | ■      | ■      | ■      | ■      | ■       | ■       | ■       | ■       |
| Import and Export totals of Present Power Demand: Real (kW), Reactive (kVAR), & Apparent (kVA) |        |        |        |        | ■      |         |         |         |         |
| Peak Power Demand: Real (kW), Reactive (kVAR), and Apparent (kVA)                              | ■      | ■      | ■      | ■      | ■      | ■       | ■       | ■       | ■       |
| Current (3-phase average and per phase)  | ■      | ■      | ■      | ■      | ■      | ■       | ■       | ■       | ■       |
| Voltage: Line-Line and Line-Neutral (3-phase average and per phase)                            | ■      | ■      | ■      | ■      | ■      | ■       | ■       | ■       | ■       |
| Frequency  | ■      | ■      | ■      | ■      | ■      | ■       | ■       | ■       | ■       |
| ANSI C12.20 0.5 % accuracy, IEC 62053-22 Class 0.5S  |        |        |        |        |        | ■       | ■       | ■       | ■       |
| ANSI C12.20 0.2 % accuracy, IEC 62053-22 Class 0.2S  | ■      | ■      | ■      | ■      | ■      |         |         |         |         |
| Accumulated Net Energy: Real (kWh), Reactive (kVARh), and Apparent (kVAh)                      | ■      | ■      | ■      | ■      | ■      | ■       | ■       | ■       | ■       |
| Accumulated Real Energy by phase (kWh)   | ■      | ■      | ■      | ■      | ■      | ■       | ■       | ■       | ■       |
| Import and Export Accumulators of Real and Apparent Energy                                     |        |        |        |        | ■      |         |         |         |         |
| Reactive Energy Accumulators by Quadrant (3-phase total & per phase)                           |        |        |        |        | ■      |         |         |         |         |
| Demand Interval Configuration: Fixed or Rolling Block  | ■      | ■      | ■      | ■      | ■      | ■       | ■       | ■       | ■       |
| Demand Interval Configuration: External Sync to Comms  |        | ■      | ■      | ■      | ■      |         | ■       | ■       | ■       |
| <b>Data Logging (Store up to 60 days at 15-minute interval)</b>                                |        |        |        |        |        |         |         |         |         |
| Data Logging: 10 16-Bit Configurable (can include Date/Time) Data Buffers                      |        |        |        |        | ■      |         |         |         |         |
| Data Logging: 3 Timestamped 32-Bit Configurable Data Buffers                                   |        |        | ■      |        |        |         |         | ■       |         |
| <b>Outputs</b>   |        |        |        |        |        |         |         |         |         |
| Alarm Output (N.C.)  | ■      | ■      | ■      |        | ■      | ■       | ■       | ■       |         |
| 1 Pulse Output (N.O.)  |        | ■      |        |        | ■      |         | ■       |         |         |
| 2 Pulse Outputs (N.O.)   | ■      |        |        |        |        | ■       |         |         |         |
| RS-485 Serial (Modbus RTU Protocol)  |        | ■      |        |        | ■      |         | ■       |         |         |
| RS-485 Serial (BACnet MS/TP Protocol)  |        |        | ■      | ■      |        |         |         | ■       | ■       |
| LON FT Serial (LonTalk Protocol)   |        |        |        |        |        |         |         |         |         |
| <b>Inputs</b>  |        |        |        |        |        |         |         |         |         |
| 2 Pulse Contact Accumulator Inputs   |        |        |        | ■      |        |         |         |         | ■       |
| 1 Pulse Contact Accumulator Input  |        |        | ■      |        |        |         |         | ■       |         |

## Display Screen Diagram



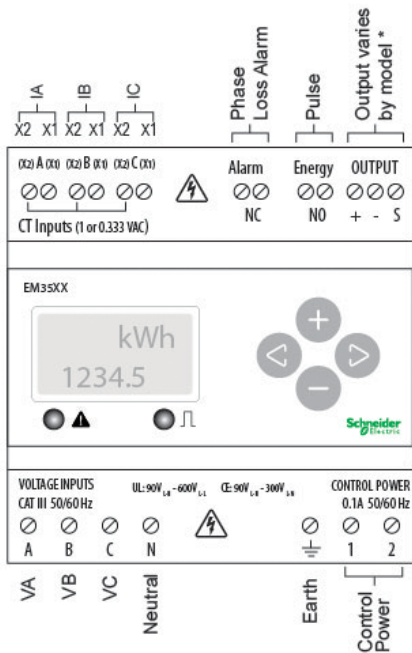
# EM3500 series

## EM3500 dimensions



Bottom View (DIN Mount Option)

## EM3500 connections



Two 5-character rows of display text.  
Top row alphanumeric;  
Bottom row numeric only

The red Alarm LED lights when any of the 3 phase voltages drop below the selected threshold.

The green Energy LED lights momentarily each time the Energy output pulse is active.

Please see EM3500 User Guide and EM3500 Installation Guide for safe and correct wiring and connection information.

# EM4200 series

The PowerLogic EM4200 Series Enercept power and energy meters provide a unique solution for measuring energy data.

Designed for simplicity, the range includes two main offers: System Calibrated and Flex. The EM4200 System Calibrated offers system accuracy, pre-mounted Current Transducers, with a simple to quote and order single part number.

The EM4200 Flex offers the flexibility of a wide range of Current Transducers to match most applications, no matter how varied.

## Applications

### Capable of essential cost management:

- Energy monitoring in building automation systems
- Renewable energy monitoring
- Energy management
- Commercial sub-metering
- Industrial monitoring
- Accurate cost allocation



METSEEM4235

PB120808

### The solution for

Markets that can benefit from a solution that includes PowerLogic EM4200 series:

- Buildings
- Industry
- Healthcare
- Data centre and networks
- Infrastructure

### Benefits

#### System integrators' benefit

- Ease of integration
- Ease of setup
- Cost effectiveness

#### Panel builders' benefit

- Ease of installation
- Cost effectiveness
- Aesthetically pleasing
- Simplified ordering

#### End users' benefit

- Ease of use
- Precision metering & sub-billing
- Billing flexibility
- Comprehensive, consistent and superior performance

### Competitive advantages

- High reliability with high system, or meter accuracy.
- Single part to order a metering chain (System Calibrated).
- Supports a large range of Sensor options. Flex can adapt to CTs from 50 to 5000 A, or different Rogowski coil sizes rated for up to 5000 A.
- Modbus and BACnet protocols along with uni-directional and bi-directional feature sets.
- Wide 90 to 480 V AC input range.
- DIN rail or screw-mount options, including mounting bracket for easy installation.
- Seamless integration with EcoStruxure™ Power Management software products.

### Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance.

### Conformity of standards

- CAN/CSA-C22.2
- EN 61326-1 Class A
- EN 61000-6-2
- EN 61000-6-4 Class A
- FCC 47 CFR Part 15 Class A
- EN 61010-1
- UL 61010-1

### Accuracy standards

#### Flex models

- ANSI C12.20-2015 Class 0.2
- IEC 62053-24 Class 1S

When used with 1/3 V CT (Meter accuracy)

- IEC 62053-22 Class 0.2S 0.2%

When used with Rogowski Coils (Meter accuracy)

- IEC 62053-22 Class 0.5S

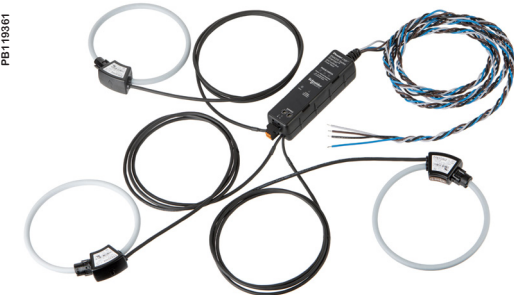
#### System calibrated

- ANSI C12.1, 1%
- IEC 62053-22 Class 1S 1%

# EM4200 series



EM4200 Flex Power Meter



EM4200 System Calibrated with calibrated Rogowski coils

The EM4200 meter series provides a highly flexible retrofit option ideal when adding metering to an existing building, or to integrate in an OEM solution. Designed to simplify the ordering process, the meter is declined in 2 major options:

System Calibrated offers the simplest way to order, deploy and meet requirements. The meter comes with pre-mounted Current Transducers (CT), or Rogowski Coils. A single reference provides a System calibrated accuracy meter with a 100, 200, 400A CT, or 5,000A Rogowski coil.

Flex offers the flexibility required when the CT, or Rogowski coil, rating or size needs to further adapt to the site. CTs can range from 50 to 5,000A and Rogowski coils can be different sizes with a 5,000 A rating.

- General features
  - Uni and Bi-Directional metering to support to power generation application.
  - Data logging.
  - Modbus and BACnet serial communication with auto-protocol and baud rate detection.
  - Configurable with or without power.
  - DIN rail or screw-mount options, including mounting brackets for easy installation.
  - Seamless integration in Power Monitoring Operations and Power SCADA Operations.
  - Wide input range of 90 to 480 V AC.
  - Approvals: UL 61010-1, IEC/EN 61010-1
  
- System calibrated features
  - Three factory mounted and calibrated Current Transducers (100, 200 or 400 A), or Rogowski coils (5,000 A, 12" or 18" (304.8 mm or 457.2 mm)). Simplifies ordering and commissioning.
  - ANSI version only: Fuse packs factory mounted.
  - System Accuracy from 1% to 100% load:
    - Real Power and Energy: ANSI C12.1 1%, IEC 62053-22 Class 1S, 1%.
    - Reactive Power and Energy: IEC 62053-24 Class 1, 1%
  
- Flex features
  - Supports generic 1/3 V CTs from 50 to 5,000 A. Or 1/3 V 5,000 A Rogowski coils.
  - ANSI: Optional fuse packs available.
  - Meter Accuracy from 1% to 100% of load (CT mode):
    - Real Power and Energy: ANSI C12.20 0.2%, IEC 62053-22 Class 0.2S, 0.2%.
    - Reactive Power and Energy: IEC 62053-24 Class 1, 1%.

# EM4200 series

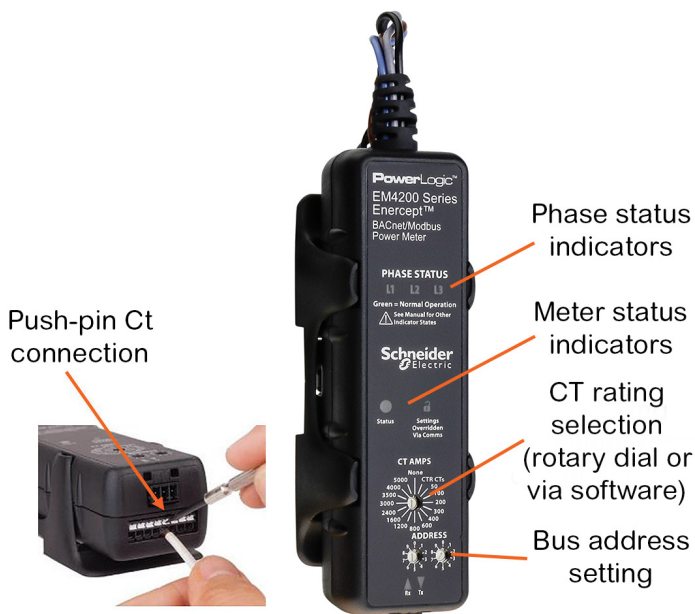
## EM4200 series selection guide

| Advantage                         | EM4200 Flex                              |  | EM4200 System Calibrated              |                                       |                                       |                                       |
|-----------------------------------|--|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
|                                   | METSEEM4235                              | METSEEM4236                              | METSEEM4235Axx                        | METSEEM4236Axx                        | METSEEM4235Bxx                        | METSEEM4236Bxx                        |
| <b>General</b>                    |  |  |                                       |                                       |                                       |                                       |
| Market                            | IEC                                      | ANSI                                     | IEC                                   | ANSI                                  | IEC                                   | ANSI                                  |
| Single part to order              |  |  | Yes                                   | Yes                                   | Yes                                   | Yes                                   |
| Factory mounted CTs/Rogowski coil |  |  | Yes                                   | Yes                                   | Yes                                   | Yes                                   |
| <b>CT</b>                         |  |  |                                       |                                       |                                       |                                       |
| Rating                            | 50 to 5000 A user choice                 | 50 to 5000 A user choice                 | Three                                 |                                       | Three 100, 200 or 400 A supplied      | Three 100, 200 or 400 A supplied      |
| Type                              | 1/3 V Solid or Split Core                | 1/3 V Solid or Split Core                |                                       |                                       | Split Core                            | Split Core                            |
| <b>Rogowski Coil</b>              |  |  |                                       |                                       |                                       |                                       |
| Rating                            | 5000 A                                   | 5000 A                                   | 5000 A supplied                       | Three 5000 A supplied                 |                                       |                                       |
| Type                              |  |  |                                       |                                       |                                       |                                       |
| Size                              | User choice                              | User choice                              | 12" or 18"                            | 12" or 18"                            |                                       |                                       |
| <b>Accuracy</b>                   |  |  |                                       |                                       |                                       |                                       |
| Meter                             | 0.2% with CTs<br>0.5% with Rogowski Coil | 0.2% with CTs<br>0.5% with Rogowski Coil |                                       |                                       |                                       |                                       |
| System                            |  |  | 1%                                    | 1%                                    | 1%                                    | 1%                                    |
| <b>Fuse pack</b>                  |  |  |                                       |                                       |                                       |                                       |
|                                   | Option sold separately                   | Option sold separately                   |                                       | Factory mounted                       |                                       | Factory mounted                       |
| <b>Communication</b>              |  |  |                                       |                                       |                                       |                                       |
|                                   | BACnet MS/TP<br>Modbus RTU over RS485    | BACnet MS/TP<br>Modbus RTU over RS485    | BACnet MS/TP<br>Modbus RTU over RS485 | BACnet MS/TP<br>Modbus RTU over RS485 | BACnet MS/TP<br>Modbus RTU over RS485 | BACnet MS/TP<br>Modbus RTU over RS485 |

## EM4200 parts descriptions and advantages

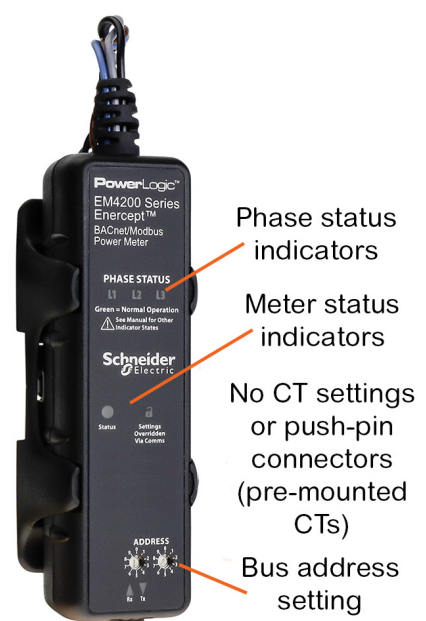
### EM4200 Flex meter

PB120811



### EM4200 System calibrated

PB120812



# EM4200 series

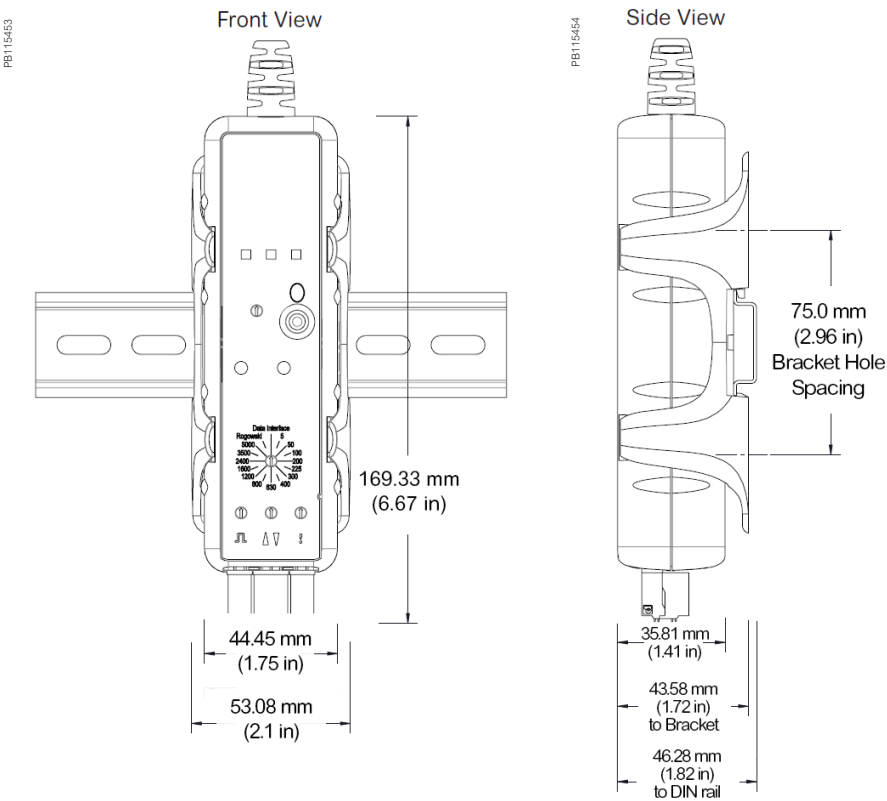
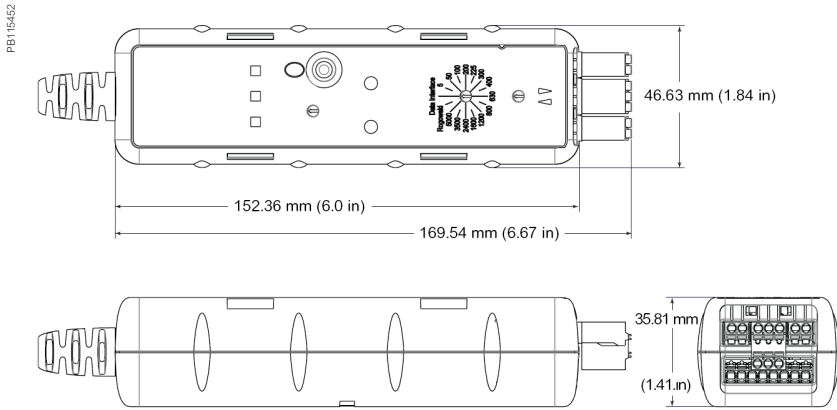
| Electrical characteristics    |                  | EM4200 Flex  | EM4200 System calibrated  |
|-------------------------------|------------------|--|---|
| Input-voltage characteristics | Inputs           | V1, V2, V3, Vn   | V1, V2, V3, Vn  |
|                               | Measured voltage | 90 - 277 V AC L-N<br>UL max 480 V L-L<br>CE max 300 V L-N  | 90 - 277 V AC L-N<br>UL max 480 V L-L<br>CE max 300 V L-N   |
|                               | Frequency range  | 50/60 Hz   | 50/60 Hz  |
| Mechanical characteristics    |                  |  |   |
| Weight                        |                  | Approx 1/0 kg (2.2 lb)   | 1.4 to 2.2 Kg (3.10 to 4.85 lb)<br>(model dependent)  |
| Dimensions                    |                  | 46.63 x 35.81 x 152.36 mm<br>(1.84 x 1.41 x 6.0 in)  | 46.63 x 35.81 x 152.36 mm (1.84 x 1.41 x 6.0 in) (Meter alone), CT/Rogowski size varies with model                                    |
| Environmental conditions      |                  |  |   |
| Operating temperature         |                  | -30 °C to 70 °C (-22 to 158 °F)  | 0 to 70 °C (32 to 158 °F)   |
| Storage temperature           |                  | -40 °C to 85 °C (-40 to 185 °F)  | With Split Core CTs: -40 to 85 °C (-40 to 185 °F)<br>With Rogowski Coils: -40 to 70 °C (-40 to 158 °F)                                |
| Humidity rating               |                  | <95 % RH non-condensing  | <95 % RH non-condensing   |
| Enclosure                     |                  | Indoor use only - not suitable for wet locations   | Indoor use only - not suitable for wet locations  |
| Altitude                      |                  | 3000 m (10,000 ft)   | 3000 m (10,000 ft)  |
| Pollution degree              |                  | 2  | 2   |
| Electromagnetic compatibility |                  |  |   |
| Compliance                    |                  |  |   |
| Certified to IEC/BTL          |                  | CAN/CSA-C22.2<br>EN 61000-6-2<br>EN 61000-6-4 Class A<br>EN 61010-1<br>EN 61326-1 Class A<br>FCC 47 CFR Part 15 Class A<br>UL 61010-1  | CAN/CSA-C22.2<br>EN 61000-6-2<br>EN 61000-6-4 Class A<br>EN 61010-1<br>EN 61326-1 Class A<br>FCC 47 CFR Part 15 Class A<br>UL 61010-1 |
| Accuracy                      |                  |  |   |
|                               |                  | ANSI C12.20-2015 Class 0.2   | ANSI C12.20-2015 Class 0.2  |
|                               |                  | IEC 62053-24 Class 1S  | IEC 62053-24 Class 1S   |
|                               |                  | ANSI C12.20 2015 Class 0.2<br>IEC 62053-24 Class 1S<br>When used with 1/3 V CT (Meter accuracy) IEC 62053-22 Class 0.2S 0.2%<br>When used with Rogowski coils (Meter accuracy) IEC 62053-22 Class 0.5S | ANSI C12.1 1%<br>IEC 62053-21 Class 1S 1%<br>IEC 62053-24 Class 1 1%  |

## Commercial Reference Numbers

| Market | Commercial Reference   | Rating                          | CTR type   | CT size        | Fuse pack | CT lead length   | System calibrated |
|--------|------------------------|---------------------------------|------------|----------------|-----------|------------------|-------------------|
| IEC    | <b>METSEEM4235</b>     | User choice                     |            |                |           |                  |                   |
| IEC    | <b>METSEEM4235A12</b>  | Up to 5000 A (3 coils supplied) | Rogowski   | 12" (304.8 mm) |           | 6 ft (1828.8 mm) | Yes               |
| IEC    | <b>METSEEM4235A18</b>  | Up to 5000 A (3 coils supplied) | Rogowski   | 18" (457.2 mm) |           | 6 ft (1828.8 mm) | Yes               |
| IEC    | <b>METSEEM4235B101</b> | 100 A (3 CTs supplied)          | Split core |                |           | 6 ft (1828.8 mm) | Yes               |
| IEC    | <b>METSEEM4235B201</b> | 200 A (3 CTs supplied)          | Split core |                |           | 6 ft (1828.8 mm) | Yes               |
| IEC    | <b>METSEEM4235B401</b> | 400 A (3 CTs supplied)          | Split core |                |           | 6 ft (1828.8 mm) | Yes               |
| ANSI   | <b>METSEEM4236</b>     | User choice                     |            |                | Option    |                  |                   |
| ANSI   | <b>METSEEM4236A12</b>  | Up to 5000 A (3 coils supplied) | Rogowski   | 12" (304.8 mm) | Yes       | 6 ft (1828.8 mm) | Yes               |
| ANSI   | <b>METSEEM4236A18</b>  | Up to 5000 A (3 coils supplied) | Rogowski   | 18" (457.2 mm) | Yes       | 6 ft (1828.8 mm) | Yes               |
| ANSI   | <b>METSEEM4236B101</b> | 100 A (3 CTs supplied)          | Split core |                | Yes       | 6 ft (1828.8 mm) | Yes               |
| ANSI   | <b>METSEEM4236B201</b> | 200 A (3 CTs supplied)          | Split core |                | Yes       | 6 ft (1828.8 mm) | Yes               |
| ANSI   | <b>METSEEM4236B401</b> | 400 A (3 CTs supplied)          | Split core |                | Yes       | 6 ft (1828.8 mm) | Yes               |

# EM4200 series

## EM4200 dimensions



# Insulation monitoring devices

An IT earthing system allows your electrical distribution system to continually operate, even in the presence of an insulation fault, without endangering people or property. Required as part of an IT earthing system, an insulation monitoring device (IMD) detects the initial fault so you can make repairs before a second fault occurs, which could trigger protective devices and halt operations.



PB118026

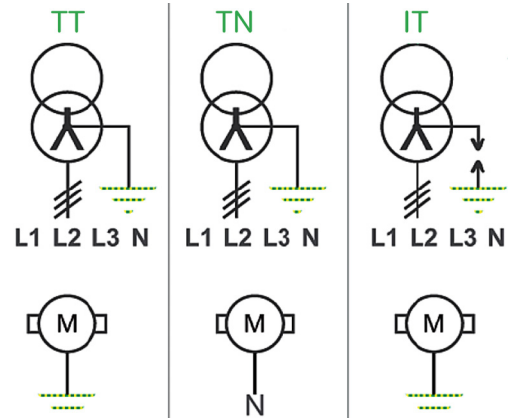
PB118027

PB118026

# Insulation Monitoring of IT / Ungrounded Networks

Unlike the TT or TN earthing systems, the neutral of the transformer is isolated from the ground for an IT earthing system (also called Ungrounded system).

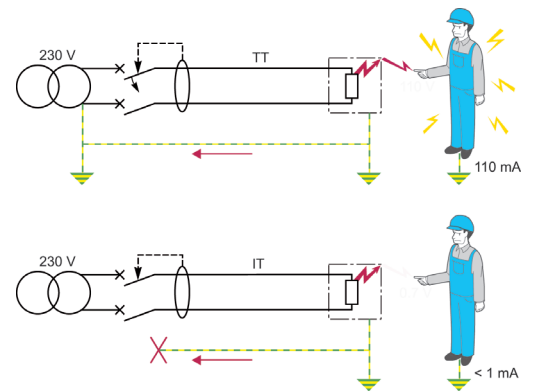
This is applicable to both Low Voltage systems ( up to 1000VAC, 1500VDC) and medium Voltage ( up to 63 kV on IMDs only)



PG118029

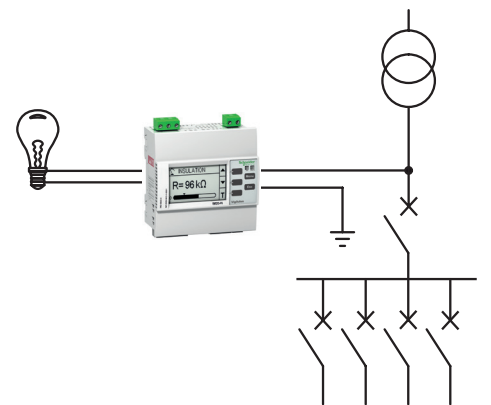
The main interest of IT systems is that in case of one insulation fault.

- Enhanced continuity of service of the network (no trip if there is one insulation fault on the network).
- Reduced risk of electric shock.
- Reduced risk of fire or explosion (low faulty current in case of insulation fault).
- Reduced stress on the network and increased equipment life (low faulty current in case of insulation fault).



PG118030

- In TT or TN systems, in a situation with an insulation fault, the faulty current will not be negligible and will cause trip of the protections.
- For this reason, Insulation Monitoring Devices are used on IT networks in order to detect a first insulation fault so that the fault can be repaired; hence avoiding situations with several insulation faults and maintaining the continuity of service on the network.
- Using an Insulation Fault Locator (IFL) allows the operator to locate the fault in multiple feeders installations.



PG118031

Example of simple insulation monitoring system






The VigiloHM catalog offers a range of products suitable for these various applications, from the simplest insulation monitoring systems to the most advanced ones, including individual insulation monitoring per feeder and communication with supervision.

# Insulation Monitoring of IT / Ungrounded Networks

IT earthing systems are used for applications requiring continuity of service, such as:

- Healthcare: critical rooms in medical premises such as operating theaters, intensive care units, recovery rooms.
- Industry: critical processes in cement, steel, aluminium, oil and gas, chemical factories, food processing, car manufacturing, (painting area, other...) water, and waste water.
- Infrastructure: control tower and take-off path in airports, railways, seaports, tunnels, and signaling networks in rail.
- Utilities: power plants and control command systems.
- Photovoltaic: solar farms.
- Marine: electrical distribution of any type of ship.
- DC applications such as electrical vehicle charging stations.
- Medium Voltage: cable monitoring, distribution in industrial sites, MV loads-transformers and motors.

## Vigilohm Range Overview for Low Voltage Networks, Except Healthcare

| Product                           |   | LV  | MV  |
|-----------------------------------|---|---|---|
| IMD                               |    | IMD-IM9<br>IMD-IM10<br>IMD-IM20<br>IMD-IM400<br>IMDIM400L *<br>IMD-IM400C **  | IMDIM400THR<br>IMDIM400LTHR *   |
| LV > 480 V AC                     |   | IM20 + IM20-1700<br>IM400 + IM400-1700<br>IM400C+ IM400-1700C<br><br>IMD with Fault Locator<br>IM400 / 400L / 400C + PHT1000<br>and IFL12MC series +<br>IFL12VA1T | 1460872 (P1N)   |
| IFL                               |  | IMDIFL12<br>IMDIFL12L *<br>IMDIFL12C ***<br>IMDIFL12MC ***<br>IMDIFL12LMC *<br>IMDIFL12MCT ****   | None  |
| TOROIDS                           |  | 50437 (TA30) 50438 (PA50)<br>50439 (IA80) 50440 (MA120)<br>50441 (SA200)<br>50442 (GA300)<br>50420 (TOA80)<br>50421 (TOA120)                                      | None  |
| HRG,<br>Cardew<br>Mobile Locators |  | 50278, (XRM)<br>50282, (XGR)<br>50494, 498, 499 (Open CTs)<br>50159 (ZX Imp -HRG)<br>50170, 171, 172, 183 (Cardew)  | Voltage Transformers<br>03811728N0 (6.6 kV)<br>03811746N0 (22 kV)<br>03811749N0 (33 kV) |

L\* Power supply 24-48 V AC/DC

C\*\* Tropicalized (conformal coated)

C\*\*\* Communication

MC\*\*\* Measurement & Communication

MCT\*\*\*\* Measurement & Communication & Tropicalized (conformal coated)

# Vigilohm Range Overview for Low Voltage Networks, Except Healthcare

**Monitoring and Control**  
Power Monitoring & SCADA system

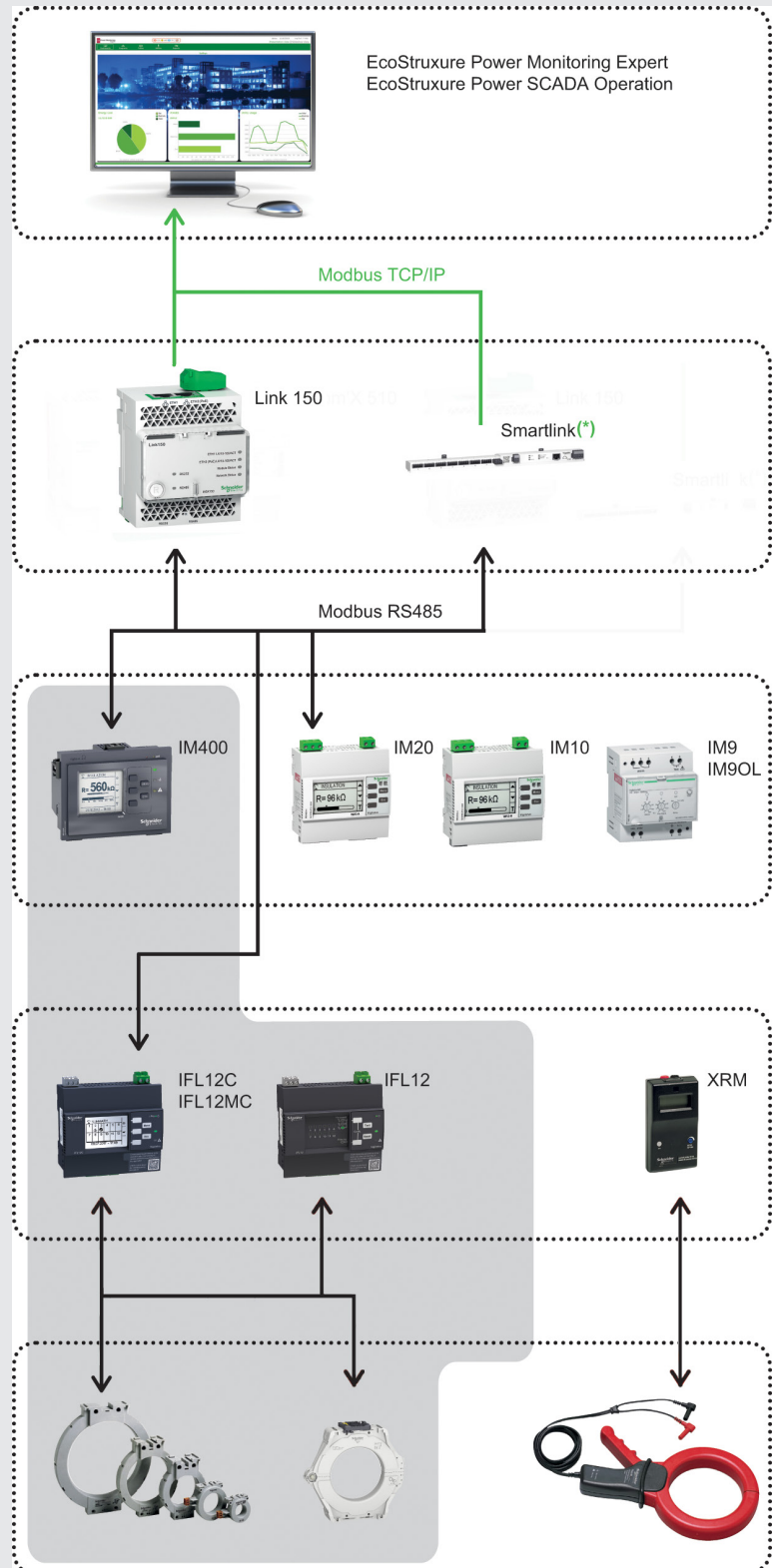
**Communication and Simple Monitoring**  
Gateway, Data logger & Web Server

**Insulation Monitoring Devices**  
Identification of a leakage to ground in the complete system

**Insulation Fault Locators**  
Identification of the faulty feeder

**Toroids**  
Used along with the Fault Locators

**A simple range to meet your needs**  
Industrial networks



# Vigilohm Range Overview for Medium Voltage Networks

**A simple range to meet your needs**  
Industrial networks

**Monitoring and Control**  
Power Monitoring & SCADA system



EcoStruxure Power Monitoring Expert  
EcoStruxure Power SCADA Operation

Modbus TCP/IP

**Communication and Simple Monitoring**  
Gateway, Data logger & Web Server



Link 150

Modbus RS485

**Insulation Monitoring Devices**  
Identification of a leakage to ground  
in the complete system



IM400THR  
IM400LTHR

**Voltage adaptor**



P1N

**Voltage transformer**



03811725N0

# Vigilohm Range Overview for Healthcare

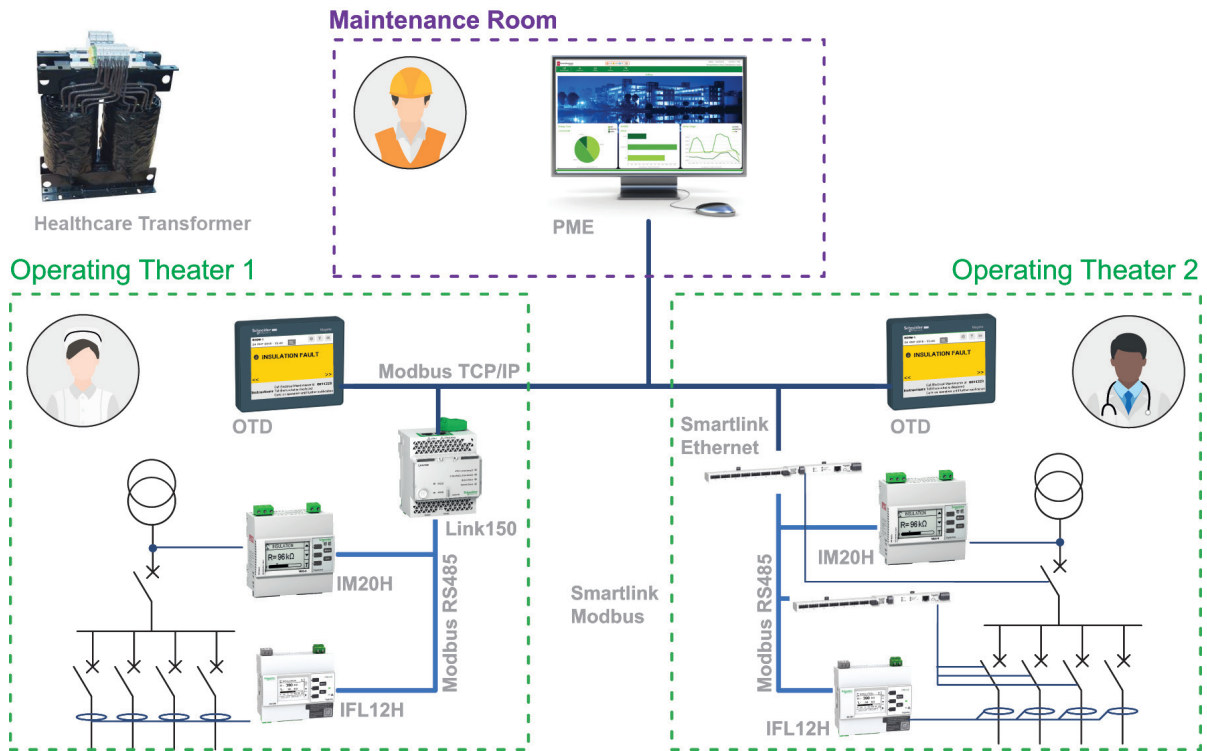
Example of Healthcare network monitored by Vigilohm Insulation Monitoring Devices in compliance with IEC 60364-7-710.

The same hospital may have differing architectures, as shown below.

**Operating Theater 1** uses Link 150 to send data to the supervision system.

**Operating Theater 2** uses Smartlink to send data to the supervision system, knowing that Smartlink can also collect data from the circuit breaker, tripped or not.

PB116032



Medical staff is informed of electrical faults in the operating theater room through the local HMI

Technical staff is informed of any fault in the various operating theaters via a supervision system such as EcoStruxure Power Monitoring Expert.

This range of products, dedicated to Medical premises, meets requirements from IEC61364-7-710.

IMD and IFL are also “MED” certified, as they meet their product standard:

- IEC61557-8, annex A & B for IMDs and the remote panel
- IEC61557-9, annexA for IFLs

**Commercial reference numbers required for the healthcare application:**

|                       |   |
|-----------------------|---|
| Isolation Transformer | IMD-IT-S63-H, or IMD-IT-S80-H, or IMD-IT-S100-H                       |
| IMDs                  | IMD-IM10-H, or IMD-IM15H, or IMD-IM20-H                               |
| Remote panel          | 50168 (HRP) or IMDLRDH  |
| Locator               | IMDIFL12H   |
| Toroids               | with IM20-H: METSECT5CC004 or METSECT5CC005<br>with IFL: 50437 (TA30) |
| Gateway Link150       | Link150   |

## Vigilohm Range Commercial Reference Numbers

| Commercial ref. no. | Description                           |
|---------------------|---------------------------------------|
|                     | <b>Insulation Monitoring</b>          |
|                     | <b>Vigilohm Insulation Monitoring</b> |
| 50159               | ZX impedance                          |
| 50168               | HOSPITAL REMOTE PANEL                 |
| 50169               | CARDEW Holder                         |
| 50170               | CARDEW 250V CA Surge arestor          |
| 50171               | CARDEW 440V CA Surge arestor          |
| 50172               | CARDEW 660V CA Surge arestor          |
| 50183               | CARDEW 1000V CA Surge arestor         |
| 50248               | PHT1000                               |
| 50278               | XRM                                   |
| 50281               | XGR 115-127VCA                        |
| 50282               | XGR 220-240VCA                        |
| 50283               | XGR 380-415VCA                        |
| 50420               | TOA80 open toroid                     |
| 50421               | TOA120 open toroid                    |
| 50437               | TA30 toroid                           |
| 50438               | PA50 toroid                           |
| 50439               | IA80 toroid                           |
| 50440               | MA120 toroid                          |
| 50441               | SA200 toroid                          |
| 50442               | GA300 toroid                          |
| 50494               | XP15 Open CT for XRM                  |
| 50498               | XP50 Open CT for XRM                  |
| 50499               | XP100 Open CT for XRM                 |
| 1460872             | Voltage Adaptor P1N                   |
| IMDCP100            | Current Probe 100mm                   |
| IMDCP15             | Current Probe 15mm                    |
| IMDCP50             | Current Probe 50mm                    |
| IMDIFL12            | Ins Fault locator Entry               |
| IMDIFL12C           | Ins Fault locator Entry Com           |
| IMDIFL12H           | Ins Fault locator HC                  |

| Commercial ref. no. | Description                                |
|---------------------|--|
| IMDIFL12L           | Ins Fault locator Entry 24-48VDC           |
| IMDIFL12LMC         | Ins Fault locator Adv 24-48VDC             |
| IMDIFL12MC          | Ins Fault locator Adv                      |
| IMDIFL12MCT         | Ins Fault locator Adv Tropic               |
| IMDIFL12VA1T        | Voltage Adaptor for IFL12MC series_1000V   |
| IMDIFLK1            | Mobile Ins Fault locator 1 feeder          |
| IMDIFLK12           | Mobile Ins Fault locator 12 feeders        |
| IMD-IM10            | IM10                                       |
| IMD-IM10-H          | IM10 H                                     |
| IMDIM15H            | IM15 H                                     |
| IMD-IM20            | IM20                                       |
| IMD-IM20-1700       | Voltage Adaptor for IM20                   |
| IMD-IM20-H          | IM20 H                                     |
| IMD-IM400           | IM400                                      |
| IMD-IM400-1700      | Voltage adaptor for IM400                  |
| IMD-IM400-1700C     | Voltage adaptor for IM400 Conformal coated |
| IMD-IM400C          | IM400C                                     |
| IMDIM400L           | IM400L                                     |
| IMDIM400LTHR        | IM400LTHR                                  |
| IMDIM400THR         | IM400THR                                   |
| IMD-IM400VA2        | Voltage adaptor for PV application Coated  |
| IMD-IM9             | IM9  |
| IMD-IM9-OL          | IM9OL                                      |
| IMD-IT-S63-H        | Single Phase, Isolated Transformer, 6,3KVA |
| IMD-IT-S80-H        | Single Phase, Isolated Transformer, 8KVA   |
| IMD-IT-S100-H       | Single Phase, Isolated Transformer, 10KVA  |
| IMDLRDH             | Remote Display Hospital                    |

Please see your Schneider Electric representative for complete ordering information.

# Commercial reference numbers

| Commercial ref. no. | Description  | Page      | Commercial ref. no. | Description                                   | Page      |
|---------------------|--|-----------|---------------------|---|-----------|
|                     | <b>Current Transformers</b>  | <b>15</b> |                     |   |           |
|                     | <b>CT Ip/5 A ratio</b>   | <b>15</b> |                     |   |           |
| 16550               | 44 x 66 x 37 Adapter for DIN rails Mounting plate  |           | METSECT5DB200       | CT tropicalised 2000 5 dual out. bars 38x127  |           |
| 16551               | 56 x 84 x 60 Adapter for DIN rails Mounting plate, insulated locking screw               |           | METSECT5DB250       | CT tropicalised 2500 5 dual out. bars 38x127  |           |
| 16552               | 56 x 84 x 60 Adapter for DIN rails Mounting plate Insulated locking screw sealable cover |           | METSECT5DB300       | CT tropicalised 3000 5 dual out. bars 38x127  |           |
| 16553               | 77 x 107 x 64 Adapter for DIN rails Mounting plate Insulated locking screw               |           | METSECT5DC200       | CT tropicalised 2000 5 dual out. bars 52x127  |           |
| METSECT5CC004       | CC 40 A  |           | METSECT5DC250       | CT tropicalised 2500 5 dual out. bars 52x127  |           |
| METSECT5CC005       | CC 50 A  |           | METSECT5DC300       | CT tropicalised 3000 5 dual out. bars 52x127  |           |
| METSECT5CC006       | CC 60 A  |           | METSECT5DC400       | CT tropicalised 4000 5 dual out. bars 52x127  |           |
| METSECT5CC008       | CC 75 A  |           | METSECT5DD100       | CT tropicalised 1000 5 dual out. bars 34x84   |           |
| METSECT5CC010       | CC 100 A   |           | METSECT5DD125       | CT tropicalised 1250 5 dual out. bars 34x84   |           |
| METSECT5CC013       | CC 125 A   |           | METSECT5DD150       | CT tropicalised 1500 5 dual out. bars 34x84   |           |
| METSECT5CC015       | CC 150 A   |           | METSECT5DE100       | CT tropicalised 1000 5 dual out. bars 54x102  |           |
| METSECT5CC020       | CC 200 A   |           | METSECT5DE125       | CT tropicalised 1250 5 dual out. bars 54x102  |           |
| METSECT5CC025       | CC 250 A   |           | METSECT5DE150       | CT tropicalised 1500 5 dual out. bars 54x102  |           |
| METSECT5MB025       | MB 250 A   |           | METSECT5DE200       | CT tropicalised 2000 5 dual out. bars 54x102  |           |
| METSECT5MB030       | MB 300 A   |           | METSECT5DH125       | CT tropicalised 1250 5 dual out. bars 38x102  |           |
| METSECT5MB040       | MB 400 A   |           | METSECT5DH150       | CT tropicalised 1500 5 dual out. bars 38x102  |           |
| METSECT5MA015       | MA 150 A   |           | METSECT5DH200       | CT tropicalised 2000 5 dual out. bars 38x102  |           |
| METSECT5MA020       | MA 200 A   |           |                     | <b>Split core CTs</b>                         | <b>26</b> |
| METSECT5MA025       | MA 250 A   |           |                     | <b>Busbar Type H</b>                          |           |
| METSECT5MA030       | MA 300 A   |           |                     | <b>Frame 1</b>                                |           |
| METSECT5MA040       | MA 400 A   |           | METSECT5HA015       | IEC Split Core CT Cable 150/5 A 1 VA cl.1     |           |
| METSECT5MC025       | MC 250 A   |           | METSECT5HA020       | IEC Split Core CT Cable 200/5 A 1.5 VA cl.1   |           |
| METSECT5MC030       | MC 300 A   |           | METSECT5HA025       | IEC Split Core CT Cable 250/5 A 1 VA cl.0.5   |           |
| METSECT5MC040       | MC 400 A   |           |                     | <b>Frame 2</b>                                |           |
| METSECT5MC050       | MC 500 A   |           | METSECT5HD025       | IEC Split Core CT Cable 250/5 A 1 VA cl.1     |           |
| METSECT5MC060       | MC 600 A   |           | METSECT5HD030       | IEC Split Core CT Cable 300/5 A 1.5 VA cl.1   |           |
| METSECT5MC080       | MC 800 A   |           | METSECT5HD040       | IEC Split Core CT Cable 400/5 A 2.5 VA cl.1   |           |
| METSECT5MD050       | MD 500 A   |           | METSECT5HD050       | IEC Split Core CT Cable 500/5 A 1VA cl.0.5    |           |
| METSECT5MD060       | MD 600 A   |           |                     | <b>Frame 3</b>                                |           |
| METSECT5MD080       | MD 800 A   |           | METSECT5HG010       | IEC Split Core CT Cable 100/5 A 1.5 VA cl.3   |           |
| METSECT5CYL1        | Cylinder 8.5 mm dia.   |           | METSECT5HG013       | IEC Split Core CT Cable 125/5 A 2.5 VA cl.3   |           |
| METSECT5CYL2        | Cylinder 10.5 mm dia.  |           | METSECT5HG015       | IEC Split Core CT Cable 150/5 A 3 VA cl.3     |           |
| METSECT5COVER       | sealable cover 60.5 x 22 x 23.5 mm for CT TI   |           | METSECT5HG020       | IEC Split Core CT Cable 200/5 A 3 VA cl.3     |           |
| METSECT5VV500       | CT tropicalised 5000 5 bars 55x165   |           | METSECT5HG025       | IEC Split Core CT Cable 250/5 A 3 VA cl.3     |           |
| METSECT5VV600       | CT tropicalised 6000 5 bars 55x165   |           | METSECT5HG030       | IEC Split Core CT Cable 300/5 A 2.5 VA cl.1   |           |
| METSECT5DA040       | CT tropicalised 400 5 dual out. bars 32x65   |           | METSECT5HG040       | IEC Split Core CT Cable 400/5 A 5 VA cl.1     |           |
| METSECT5DA050       | CT tropicalised 500 5 dual out. bars 32x65   |           | METSECT5HG050       | IEC Split Core CT Cable 500/5 A 5 VA cl.1     |           |
| METSECT5DA060       | CT tropicalised 600 5 dual out. bars 32x65   |           | METSECT5HG060       | IEC Split Core CT Cable 600/5 A 5 VA cl.1     |           |
| METSECT5DA080       | CT tropicalised 800 5 dual out. bars 32x65   |           |                     | <b>Frame 4</b>                                |           |
| METSECT5DA100       | CT tropicalised 1000 5 dual out. bars 32x65  |           | METSECT5HJ030       | IEC Split Core CT Cable 300/5 A 2.5 VA cl.1   |           |
| METSECT5DA125       | CT tropicalised 1250 5 dual out. bars 32x65  |           | METSECT5HJ040       | IEC Split Core CT Cable 400/5 A 5VA cl.1      |           |
| METSECT5DA150       | CT tropicalised 1500 5 dual out. bars 32x65  |           | METSECT5HJ050       | IEC Split Core CT Cable 500/5 A 5VA cl.1      |           |
| METSECT5DB100       | CT tropicalised 1000 5 dual out. bars 38x127   |           | METSECT5HJ060       | IEC Split Core CT Cable 600/5 A 2.5 VA cl.0.5 |           |
| METSECT5DB125       | CT tropicalised 1250 5 dual out. bars 38x127   |           | METSECT5HJ075       | IEC Split Core CT Cable 750/5 A 2.5 VA cl.0.5 |           |
| METSECT5DB150       | CT tropicalised 1500 5 dual out. bars 38x127   |           | METSECT5HJ080       | IEC Split Core CT Cable 800/5 A 2.5 VA cl.0.5 |           |

# PowerLogic Commercial Reference Numbers

| Commercial ref. no. | Description                                     | Page | Commercial ref. no. | Description                                    | Page      |
|---------------------|---|------|---------------------|--|-----------|
|                     | <b>Frame 5</b>                                  |      |                     | <b>Rogowski CTs</b>                            | <b>31</b> |
| METSECT5HM030       | IEC Split Core CT Cable 300/5 A 2.5 VA cl.1     |      | METSECTR30500       | Rogowski CT, 250 mm core length, 96 mm dia.    |           |
| METSECT5HM040       | IEC Split Core CT Cable 400/5 A 5 VA cl.1       |      | METSECTR46500       | Rogowski CT, 250 mm core length, 146 mm dia.   |           |
| METSECT5HM050       | IEC Split Core CT Cable 500/5 A 5 VA cl.1       |      | METSECTR60500       | Rogowski CT, 250 mm core length, 191 mm dia.   |           |
| METSECT5HM060       | IEC Split Core CT Cable 600/5 A 2.5 VA cl.0.5   |      | METSECTR90500       | Rogowski CT, 250 mm core length, 287 mm dia.   |           |
| METSECT5HM075       | IEC Split Core CT Cable 750/5 A 2.5 VA cl.0.5   |      |                     | <b>0.333 V 3-in-1 CTs with RJ45 for PM53xR</b> |           |
| METSECT5HM080       | IEC Split Core CT Cable 800/5 A 2.5 VA cl.0.5   |      | METSECTV25006       | LVCT SolidC 3in1 RJ45 25mmCtr 60A:1/3V         |           |
|                     | <b>Frame 6</b>                                  |      | METSECTV25010       | LVCT SolidC 3in1 RJ45 25mmCtr 100A:1/3V        |           |
| METSECT5HP025       | IEC Split Core CT Cable 250/5 A 1.5 VA cl.1     |      | METSECTV25013       | LVCT SolidC 3in1 RJ45 25mmCtr 125A:1/3V        |           |
| METSECT5HP030       | IEC Split Core CT Cable 300/5 A 2.5 VA cl.1     |      | METSECTV25016       | LVCT SolidC 3in1 RJ45 25mmCtr 160A:1/3V        |           |
| METSECT5HP040       | IEC Split Core CT Cable 400/5 A 5 VA cl.1       |      | METSECTV35006       | LVCT SolidC 3in1 RJ45 35mmCtr 60A:1/3V         |           |
| METSECT5HP050       | IEC Split Core CT Cable 500/5 A 5 VA cl.1       |      | METSECTV35010       | LVCT SolidC 3in1 RJ45 35mmCtr 100A:1/3V        |           |
| METSECT5HP060       | IEC Split Core CT Cable 600/5 A 5 VA cl.1       |      | METSECTV35012       | LVCT SolidC 3in1 RJ45 35mmCtr 120A:1/3V        |           |
| METSECT5HP075       | IEC Split Core CT Cable 750/5 A 5 VA cl.1       |      | METSECTV35013       | LVCT SolidC 3in1 RJ45 35mmCtr 125A:1/3V        |           |
| METSECT5HP080       | IEC Split Core CT Cable 800/5 A 5 VA cl.1       |      | METSECTV35015       | LVCT SolidC 3in1 RJ45 35mmCtr 150A:1/3V        |           |
| METSECT5HP100       | IEC Split Core CT Cable 1000/5 A 5 VA cl.1      |      | METSECTV35016       | LVCT SolidC 3in1 RJ45 35mmCtr 160A:1/3V        |           |
|                     | <b>Busbar Type G</b>                            |      | METSECTV35020       | LVCT SolidC 3in1 RJ45 35mmCtr 200A:1/3V        |           |
|                     | <b>Frame 7</b>                                  |      | METSECTV35025       | LVCT SolidC 3in1 RJ45 35mmCtr 250A:1/3V        |           |
| METSECT5GA010       | IEC CT Split Core Busbar 100/5 A 1.25 VA cl.3   |      | METSECTV45025       | LVCT SolidC 3in1 RJ45 45mmCtr 250A:1/3V        |           |
| METSECT5GA015       | IEC CT Split Core Busbar 150/5 A 1.5 VA cl.3    |      | METSECTV45030       | LVCT SolidC 3in1 RJ45 45mmCtr 300A:1/3V        |           |
| METSECT5GA020       | IEC CT Split Core Busbar 200/5 A 2.5 VA cl.3    |      | METSECTV45040       | LVCT SolidC 3in1 RJ45 45mmCtr 400A:1/3V        |           |
| METSECT5GA025       | IEC CT Split Core Busbar 250/5 A 1.5 VA cl.1    |      | METSECTV45050       | LVCT SolidC 3in1 RJ45 45mmCtr 500A:1/3V        |           |
| METSECT5GA030       | IEC CT Split Core Busbar 300/5 A 3.75 VA cl.1   |      | METSECTV45060       | LVCT SolidC 3in1 RJ45 45mmCtr 600A:1/3V        |           |
| METSECT5GA040       | IEC CT Split Core Busbar 400/5 A 1 VA cl.0.5    |      | METSECTV45063       | LVCT SolidC 3in1 RJ45 45mmCtr 630A:1/3V        |           |
|                     | <b>Frame 8</b>                                  |      | METSECTV29006       | LVCT SolidC 3in1 RJ45 29mmCtr 60A:1/3V         |           |
| METSECT5GD025       | IEC CT Split Core Busbar 250/5 A 1.5 VA cl.1    |      | METSECTV29010       | LVCT SolidC 3in1 RJ45 29mmCtr 100A:1/3V        |           |
| METSECT5GD030       | IEC CT Split Core Busbar 300/5 A 2.5 VA cl.1    |      | METSECTV29012       | LVCT SolidC 3in1 RJ45 29mmCtr 120A:1/3V        |           |
| METSECT5GD040       | IEC CT Split Core Busbar 400/5 A 1 VA cl.0.5    |      | METSECTV29013       | LVCT SolidC 3in1 RJ45 29mmCtr 125A:1/3V        |           |
| METSECT5GD050       | IEC CT Split Core Busbar 500/5 A 2.5 VA cl.0.5  |      | METSECTV29015       | LVCT SolidC 3in1 RJ45 29mmCtr 150A:1/3V        |           |
| METSECT5GD060       | IEC CT Split Core Busbar 600/5 A 2.5 VA cl.0.5  |      | METSECTV29016       | LVCT SolidC 3in1 RJ45 29mmCtr 160A:1/3V        |           |
| METSECT5GD075       | IEC CT Split Core Busbar 750/5 A 2.5 VA cl.0.5  |      | METSECTV29020       | LVCT SolidC 3in1 RJ45 29mmCtr 200A:1/3V        |           |
| METSECT5GD080       | IEC CT Split Core Busbar 800/5 A 2.5 VA cl.0.5  |      | METSECTV70080       | LVCT SolidC 3in1 RJ45 70mmCtr 800A:1/3V        |           |
| METSECT5GD100       | IEC CT Split Core Busbar 1000/5 A 5 VA cl.0.5   |      | METSECTV70100       | LVCT SolidC 3in1 RJ45 70mmCtr 1000A:1/3V       |           |
|                     | <b>Frame 9</b>                                  |      | METSECTV70125       | LVCT SolidC 3in1 RJ45 70mmCtr 1250A:1/3V       |           |
| METSECT5GG025       | IEC CT Split Core Busbar 250/5 A 1.5 VA cl.1    |      |                     | <b>Panel Instruments</b>                       | <b>32</b> |
| METSECT5GG030       | IEC CT Split Core Busbar 300/5 A 2.5 VA cl.1    |      |                     | <b>DIN rail analog ammeters, voltmeters</b>    | <b>32</b> |
| METSECT5GG040       | IEC CT Split Core Busbar 400/5 A 2.5 VA cl.1    |      | 16029               | 0-30 A no 8                                    |           |
| METSECT5GG050       | IEC CT Split Core Busbar 500/5 A 2.5 VA cl.0.5  |      | 16030               | X/5 8  |           |
| METSECT5GG060       | IEC CT Split Core Busbar 600/5 A 2.5 VA cl.0.5  |      | 16031               | 0-5 A  |           |
| METSECT5GG075       | IEC CT Split Core Busbar 750/5 A 2.5 VA cl.0.5  |      | 16032               | 0-50 A 50/5                                    |           |
| METSECT5GG080       | IEC CT Split Core Busbar 800/5 A 2.5 VA cl.0.5  |      | 16033               | 0-75 A 75/5                                    |           |
| METSECT5GG100       | IEC CT Split Core Busbar 1000/5 A 5 VA cl.0.5   |      | 16034               | 0-100 A 100/5                                  |           |
| METSECT5GG120       | IEC CT Split Core Busbar 1200/5 A 5 VA cl.0.5   |      | 16035               | 0-150 A 150/5                                  |           |
| METSECT5GG125       | IEC CT Split Core Busbar 1250/5 A 7.5 VA cl.0.5 |      | 16036               | 0-200 A 200/5                                  |           |
| METSECT5GG150       | IEC CT Split Core Busbar 1500/5 A 7.5 VA cl.0.5 |      | 16037               | 0-250 A 250/5                                  |           |
|                     | <b>Frame 10</b>                                 |      | 16038               | 0-300 A 300/5                                  |           |
| METSECT5GJ100       | IEC CT Split Core Busbar 1000/5 A 10 VA cl.0.5  |      | 16039               | 0-400 A 400/5                                  |           |
| METSECT5GJ120       | IEC CT Split Core Busbar 1200/5 A 10 VA cl.0.5  |      | 16040               | 0-500 A 500/5                                  |           |
| METSECT5GJ150       | IEC CT Split Core Busbar 1500/5 A 10 VA cl.0.5  |      | 16041               | 0-600 A 600/5                                  |           |
| METSECT5GJ160       | IEC CT Split Core Busbar 1600/5 A 10 VA cl.0.5  |      | 16042               | 0-800 A 800/5                                  |           |
| METSECT5GJ200       | IEC CT Split Core Busbar 2000/5 A 10 VA cl.0.5  |      | 16043               | 0-1000 A 1000/5                                |           |
| METSECT5GJ250       | IEC CT Split Core Busbar 2500/5 A 10 VA cl.0.5  |      | 16044               | 0-1500 A 1500/5                                |           |
| METSECT5GJ300       | IEC CT Split Core Busbar 3000/5 A 15 VA cl.0.5  |      | 16045               | 0-2000 A 2000/5                                |           |
| METSECT5GJ400       | IEC CT Split Core Busbar 4000/5 A 15 VA cl.0.5  |      | 16060               | 0-300 V 8                                      |           |
|                     |   |      | 16061               | 0-500 V 8                                      |           |

# PowerLogic Commercial Reference Numbers

| Commercial ref. no. | Description   | Page      | Commercial ref. no. | Description   | Page      |
|---------------------|---|-----------|---------------------|---|-----------|
|                     | <b>DIN rail digital ammeters, voltmeter, freq meter</b> | <b>34</b> | <b>A9MEM2050</b>    | iEM2050 modular single phase power meter 230 V - 45 A with Modbus   |           |
| <b>15202</b>        | Direct reading iAMP 0-10 A No 4                         |           | <b>A9MEM2055</b>    | iEM2055 modular single phase power meter 230 V - 45 A with Modbus, MID  |           |
| <b>15209</b>        | Multi-rating iAMP 0-5000 A As per rating 4              |           | <b>A9MEM2105</b>    | iEM2105 energy meter, kWh pulse output with partial meter   |           |
| <b>15201</b>        | iVLT 0-600 V 4  |           | <b>A9MEM2110</b>    | iEM2110 energy meter, kWh and kvarh pulse outputs with two tariffs, four quadrant energy measurement, MID certified |           |
| <b>15208</b>        | iFRE 20-100 Hz 4  |           | <b>A9MEM2135</b>    | iEM2135 energy meter, M-Bus communication, four quadrant energy measurement, two tariffs, MID certified             |           |
|                     | <b>72x72 analog ammeter, voltmeter</b>                  | <b>35</b> | <b>A9MEM2150</b>    | iEM2150 energy meter, Modbus communication, four quadrant energy measurement  |           |
| <b>16003</b>        | AMP for motor feeder                                    |           | <b>A9MEM2155</b>    | iEM2155 energy meter, Modbus communication, four quadrant energy measurement, two tariffs, MID certified            |           |
| <b>16004</b>        | AMP for standard feeder X/5                             |           |                     | <b>iEM3000</b>  | <b>51</b> |
| <b>16009</b>        | AMP for standard feeder 0-50 A 50/5                     |           | <b>A9MEM3100</b>    | iEM3100 basic energy meter  |           |
| <b>16010</b>        | AMP for standard feeder 0-100 A 100/5                   |           | <b>A9MEM3110</b>    | iEM3110 energy meter with pulse output  |           |
| <b>16011</b>        | AMP for standard feeder 0-200 A 200/5                   |           | <b>A9MEM3115</b>    | iEM3115 multi-tariff energy meter   |           |
| <b>16012</b>        | AMP for standard feeder 0-400 A 400/5                   |           | <b>A9MEM3135</b>    | iEM3135 advanced multi-tariff energy meter & electrical parameter plus M-Bus comm port                              |           |
| <b>16013</b>        | AMP for standard feeder 0-600 A 600/5                   |           | <b>A9MEM3150</b>    | iEM3150 energy meter & electrical parameter plus Modbus RS-485 comm port  |           |
| <b>16014</b>        | AMP for standard feeder 0-1000 A 1000/5                 |           | <b>A9MEM3155</b>    | iEM3155 advanced multi-tariff energy meter & electrical parameter plus Modbus RS-485 comm port                      |           |
| <b>16015</b>        | AMP for standard feeder 0-1250 A 1250/5                 |           | <b>A9MEM3165</b>    | iEM3165 advanced multi-tariff energy meter & electrical parameter plus BACnet MS/TP comm port                       |           |
| <b>16016</b>        | AMP for standard feeder 0-1500 A 1500/5                 |           | <b>A9MEM3175</b>    | iEM3175 advanced multi-tariff energy meter & electrical parameter plus LON TP/FT-10 comm port                       |           |
| <b>16019</b>        | AMP for standard feeder 0-2000 A 2000/5                 |           | <b>A9MEM3200</b>    | iEM3200 basic energy meter  |           |
| <b>16003</b>        | AMP for motor feeder X/5                                |           | <b>A9MEM3210</b>    | iEM3210 energy meter with pulse output  |           |
| <b>16006</b>        | AMP for motor feeder 0-30-90 A 30/5                     |           | <b>A9MEM3215</b>    | iEM3215 multi-tariff energy meter   |           |
| <b>16007</b>        | AMP for motor feeder 0-75-225 A 75/5                    |           | <b>A9MEM3235</b>    | iEM3235 advanced multi-tariff energy meter & electrical parameter plus M-Bus comm port                              |           |
| <b>16008</b>        | AMP for motor feeder 0-200-600 A 200/5                  |           | <b>A9MEM3250</b>    | iEM3250 energy meter & electrical parameter plus Modbus RS-485 comm port  |           |
| <b>16005</b>        | VLT 0-500 V   |           | <b>A9MEM3255</b>    | iEM3255 advanced multi-tariff energy meter & electrical parameter plus Modbus RS485 comm port                       |           |
|                     | <b>96x96 analog ammeter, voltmeter</b>                  | <b>36</b> | <b>A9MEM3265</b>    | iEM3265 advanced multi-tariff energy meter & electrical parameter plus BACnet MS/TP comm port                       |           |
| <b>16074</b>        | AMP for standard feeder X/5                             |           | <b>A9MEM3275</b>    | iEM3275 advanced multi-tariff energy meter & electrical parameter plus LON TP/FT-10 comm port                       |           |
| <b>16079</b>        | AMP for standard feeder 0-50 A 50/5                     |           | <b>A9MEM3300</b>    | iEM3300 basic energy meter  |           |
| <b>16080</b>        | AMP for standard feeder 0-100 A 100/5                   |           | <b>A9MEM3310</b>    | iEM3310 energy meter with pulse output  |           |
| <b>16081</b>        | AMP for standard feeder 0-200 A 200/5                   |           | <b>A9MEM3335</b>    | iEM3335 advanced multi-tariff energy meter & electrical parameter plus M-Bus comm port                              |           |
| <b>16082</b>        | AMP for standard feeder 0-400 A 400/5                   |           | <b>A9MEM3350</b>    | iEM3350 energy meter & electrical parameter plus Modbus RS-485 comm port  |           |
| <b>16083</b>        | AMP for standard feeder 0-600 A 600/5                   |           | <b>A9MEM3355</b>    | iEM3355 advanced multi-tariff energy meter & electrical parameter plus Modbus RS485 comm port                       |           |
| <b>16084</b>        | AMP for standard feeder 0-1000 A 1000/5                 |           | <b>A9MEM3365</b>    | iEM3365 advanced multi-tariff energy meter & electrical parameter plus BACnet MS/TP comm port                       |           |
| <b>16085</b>        | AMP for standard feeder 0-1250 A 1250/5                 |           | <b>A9MEM3375</b>    | iEM3375 advanced multi-tariff energy meter & electrical parameter plus LON TP/FT-10 comm port                       |           |
| <b>16086</b>        | AMP for standard feeder 0-1500 A 1500/5                 |           | <b>A9MEM3455</b>    | iEM3455 advanced multi-tariff energy meter & electrical parameter plus Modbus RS-485 comm port                      |           |
| <b>16087</b>        | AMP for standard feeder 0-2000 A 2000/5                 |           | <b>A9MEM3465</b>    | iEM3465 advanced multi-tariff energy meter & electrical parameter plus BACnet MS/TP comm port                       |           |
| <b>16088</b>        | AMP for standard feeder 0-2500 A 2500/5                 |           | <b>A9MEM3555</b>    | iEM3555 advanced multi-tariff energy meter & electrical parameter plus Modbus RS-485 comm port                      |           |
| <b>16089</b>        | AMP for standard feeder 0-3000 A 3000/5                 |           | <b>A9MEM3565</b>    | iEM3565 advanced multi-tariff energy meter & electrical parameter plus BACnet MS/TP comm port                       |           |
| <b>16090</b>        | AMP for standard feeder 0-4000 A 4000/5                 |           |                     | <b>LVCTs</b>  | <b>49</b> |
| <b>16091</b>        | AMP for standard feeder 0-5000 A 5000/5                 |           | <b>LVCT00050S</b>   | CT, split-core, Size 0, 50 A to 0.333 V   |           |
| <b>16092</b>        | AMP for standard feeder 0-6000 A 6000/5                 |           | <b>LVCT00101S</b>   | CT, split-core, Size 1, 100 A to 0.333 V  |           |
| <b>16073</b>        | AMP for motor feeder X/5                                |           | <b>LVCT00201S</b>   | CT, split-core, Size 1, 200 A to 0.333 V  |           |
| <b>16076</b>        | AMP for motor feeder 0-30-90 A 30/5                     |           | <b>LVCT00102S</b>   | CT, split-core, Size 2, 100 A to 0.333 V  |           |
| <b>16077</b>        | AMP for motor feeder 0-75-225 A 75/5                    |           | <b>LVCT00202S</b>   | CT, split-core, Size 2, 200 A to 0.333 V  |           |
| <b>16078</b>        | AMP for motor feeder 0-200-600 A 200/5                  |           | <b>LVCT00302S</b>   | CT, split-core, Size 2, 300 A to 0.333 V  |           |
| <b>16075</b>        | VLT 0-500 V   |           | <b>LVCT00403S</b>   | CT, split-core, Size 3, 400 A to 0.333 V  |           |
|                     | <b>48x48 CMA, CMV selector switches</b>                 | <b>37</b> |                     |   |           |
| <b>16017</b>        | CMA 20 4  |           |                     |   |           |
| <b>16018</b>        | CMV 500 7   |           |                     |   |           |
|                     | <b>DIN rail iCMA, iCMV selector switches</b>            | <b>38</b> |                     |   |           |
| <b>15126</b>        | iCMA 10 415 4   |           |                     |   |           |
| <b>15125</b>        | iCMV 10 415 4   |           |                     |   |           |
|                     | <b>iCH hour counter</b>                                 | <b>39</b> |                     |   |           |
| <b>15440</b>        | iCH "DIN" 230 V AC ± 10 %/50 Hz 4mm                     |           |                     |   |           |
| <b>15607</b>        | CH "48 x 48" 24 V AC ± 10 %/50 Hz                       |           |                     |   |           |
| <b>15608</b>        | CH "48 x 48" 230 V AC ± 10 %/50 Hz                      |           |                     |   |           |
| <b>15609</b>        | CH "48 x 48" 12 to 36 V DC                              |           |                     |   |           |
|                     | <b>iCI impulse counter</b>                              | <b>40</b> |                     |   |           |
| <b>15443</b>        | iCI 4mm impulse counter DIN                             |           |                     |   |           |
|                     | <b>Basic Energy Metering</b>                            | <b>43</b> |                     |   |           |
|                     | <b>iEM2000</b>  | <b>44</b> |                     |   |           |
| <b>A9MEM2000T</b>   | iEM2000T basic energy meter, no display                 |           |                     |   |           |
| <b>A9MEM2000</b>    | iEM2000 basic energy meter                              |           |                     |   |           |
| <b>A9MEM2010</b>    | iEM2010 energy meter, kWh pulse output                  |           |                     |   |           |
| <b>A9MEM2100</b>    | iEM2100 basic energy meter                              |           |                     |   |           |

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| LVCT00603S          | CT, split-core, Size 3, 600 A to 0.333 V   |            |
| LVCT00803S          | CT, split-core, Size 3, 800 A to 0.333 V   |            |
| LVCT00804S          | CT, split-core, Size 4, 800 A to 0.333 V   |            |
| LVCT01004S          | CT, split-core, Size 4, 1000 A to 0.333 V  |            |
| LVCT01204S          | CT, split-core, Size 4, 1200 A to 0.333 V  |            |
| LVCT01604S          | CT, split-core, Size 4, 1600 A to 0.333 V  |            |
| LVCT02004S          | CT, split-core, Size 4, 2000 A to 0.333 V  |            |
| LVCT02404S          | CT, split-core, Size 4, 2400 A to 0.333 V  |            |
|                     | <b>PM3000</b>  | <b>58</b>  |
| METSEPM3200         | PM3200 basic power meter   |            |
| METSEPM3210         | PM3210 power meter with pulse output   |            |
| METSEPM3250         | PM3250 power meter with RS485 port   |            |
| METSEPM3255         | PM3255 power meter plus 2 digital inputs, 2 digital outputs with RS-485 port                                   |            |
|                     | <b>PowerTag Energy</b>   | <b>64</b>  |
| A9MEM1520           | PowerTag Energy M63 1P+W   |            |
| A9MEM1521           | PowerTag Energy M63 1P+N Top   |            |
| A9MEM1522           | PowerTag Energy M63 1P+N Bottom  |            |
| A9MEM1540           | PowerTag Energy M63 3P   |            |
| A9MEM1541           | PowerTag Energy M63 3P+N Top   |            |
| A9MEM1542           | PowerTag Energy M63 3P+N Bottom  |            |
| A9MEM1543           | PowerTag Energy M63 3P 230 V LL  |            |
| A9MEM1560           | PowerTag Energy F63 1P+N   |            |
| A9MEM1561           | PowerTag Energy P63 1P+N Top   |            |
| A9MEM1562           | PowerTag Energy P63 1P+N Bottom  |            |
| A9MEM1563           | PowerTag Energy P63 1P+N B RCBO  |            |
| A9MEM1564           | PowerTag Energy F63 1P+N 110 V   |            |
| A9MEM1570           | PowerTag Energy F63 3P+N   |            |
| A9MEM1571           | PowerTag Energy P63 3P+N Top   |            |
| A9MEM1572           | PowerTag Energy P63 3P+N Bottom  |            |
| A9MEM1573           | PowerTag Energy F63 3P   |            |
| A9MEM1574           | PowerTag Energy F63 3P+N 127/220 V   |            |
| A9MEM1580           | PowerTag Energy F160 3P / 3P+N   |            |
| A9MEM1590           | PowerTag Energy R200 3P / 3P+N   |            |
| A9MEM1591           | PowerTag Energy R600 3P / 3P+N   |            |
| A9MEM1592           | PowerTag Energy R1000 3P / 3P+N  |            |
| A9MEM1593           | PowerTag Energy R2000 3P / 3P+N  |            |
| LV434020            | PowerTag Energy M250 3P  |            |
| LV434021            | PowerTag Energy M250 3P+N  |            |
| LV434022            | PowerTag Energy M630 3P  |            |
| LV434023            | PowerTag Energy M630 3P+N  |            |
| R9M20               | PowerTag Energy R9 M63 1P+W  |            |
| R9M21               | PowerTag Energy R9 M63 1P+N Top  |            |
| R9M22               | PowerTag Energy R9 M63 1P+N Bottom   |            |
| R9M40               | PowerTag Energy R9 M63 3P  |            |
| R9M41               | PowerTag Energy R9 M63 3P+N Top  |            |
| R9M42               | PowerTag Energy R9 M63 3P+N Bottom   |            |
| R9M43               | PowerTag Energy R9 M63 3P 230 V LL   |            |
| R9M60               | PowerTag Energy R9 F63 1P+N  |            |
| R9M70               | PowerTag Energy R9 F63 3P+N  |            |
|                     | <b>Wireless Products</b>   | <b>103</b> |
|                     | <b>PowerTag Control</b>  | <b>104</b> |
| A9XMC2D3            | PowerTag C 2DI 230V digital input module   |            |
|                     | <b>HeatTag</b>   | <b>108</b> |
| SMT10020            | HeatTag smart sensor cable overheating   |            |
|                     | <b>Basic Multi-Function Metering</b>   | <b>111</b> |
|                     | <b>PM5000</b>  | <b>112</b> |
| METSEPM5100         | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 15th harmonic, no communication, 1DO        |            |
| METSEPM5110         | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 15th harmonic, RS-485 Modbus, 1DO           |            |
| METSEPM5111         | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 15th harmonic, RS-485 Modbus, 1DO, MID cert |            |

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| METSEPM5310         | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, RS-485 Modbus, 2DI/2DO                                 |            |
| METSEPM5310R        | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, RJ45 LVCT, RS-485 Modbus, 2DI/2DO                      |            |
| METSEPM5320         | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, Ethernet, 2DI/2DO                                      |            |
| METSEPM5320R        | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, RJ45 LVCT, Ethernet, 2DI/2DO                           |            |
| METSEPM5330         | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, RS-485 Modbus, 2DI/2DO, 2Relay                         |            |
| METSEPM5331         | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, RS-485 Modbus, 2DI/2DO, 2Relay, MID cert               |            |
| METSEPM5340         | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, Ethernet, 2DI/2DO, 2Relay                              |            |
| METSEPM5341         | Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, Ethernet, 2DI/2DO, 2Relay, MID cert                    |            |
| METSEPM5560         | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, Modbus and Ethernet, 4DI/2DO                           |            |
| METSEPM5561         | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, Modbus and Ethernet, MID cert                          |            |
| METSEPM5562         | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, RMICAN approved, HW lockable, 4DI/2DO                  |            |
| METSEPM5562MC       | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, RMICAN approved, factory sealed, 4DI/2DO               |            |
| METSEPM5563*        | Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, DIN mount, no display, 4DI/2DO                         |            |
| METSEPM5563RD*      | PM5500 power meter, ETH-serial + 4DI-2DO out, remote display   |            |
| METSEPM5RD*         | Remote display for PM5563 power meter  |            |
|                     | <b>*METSEPM5563RD includes both METSEPM5563 and METSEPM5RD</b>   |            |
| METSEPM51HK         | Hardware kit for PM51XX (voltage, current, comms & IO connectors + moulding clips)   |            |
| METSEPM53HK         | Hardware kit for PM53XX (voltage, current, comms & IO connectors + moulding clips)   |            |
| METSEPM51_3RSK      | Revenue sealing kit for PM51XX & PM53XX (sealing covers for voltage & current connectors)  |            |
| METSEPM55HK         | Hardware kit for PM55XX (voltage, current, comms & IO connectors & moulding clips)   |            |
| METSEPM55RSK        | Revenue sealing kit for PM55XX (sealing covers for voltage & current connectors)   |            |
|                     | <b>Cables</b>  | <b>123</b> |
| METSEPM5CAB3        | Remote Display cable   |            |
| DCEPCURJX5GYM       | Category 5e, Patch Cord, UTP, 0.5 M, Grey  |            |
| DCEPCURJ01GYM       | Category 5e, Patch Cord, UTP, 1 M, Grey  |            |
| DCEPCURJ02GYM       | Category 5e, Patch Cord, UTP, 2 M, Grey  |            |
| DCEPCURJ03GYM       | Category 5e, Patch Cord, UTP, 3 M, Grey  |            |
| DCEPCURJ05GYM       | Category 5e, Patch Cord, UTP, 5 M, Grey  |            |
| DCEPCURJ10GYM       | Category 5e, Patch Cord, UTP, 10 M, Grey   |            |
|                     | <b>PM5350/PM5350IB/PM5350PB/PM5350P</b>  | <b>125</b> |
| METSEPM5320         | PM5320 Power & Energy meter with THD, alarming   |            |
| METSEPM5340         | PM5320 Power & Energy meter with THD, alarming   |            |
| METSEPM5350         | PM5350 Power & Energy meter with THD, alarming   |            |
| METSEPM5350PB/IB    | PM5350PB/IB  |            |
| METSEPM5350P        | PM5350 Power & Energy meter with THD, alarming, multi-tariff and individual harmonics  |            |
|                     | <b>Advanced Metering</b>   | <b>132</b> |
|                     | <b>PM8000</b>  | <b>133</b> |
| METSEPM8210         | 96 x 96 panel mount meter, LV DC power   |            |
| METSEPM8240         | DIN96 panel mount meter  |            |
| METSEPM8243         | DIN rail mount meter   |            |
| METSEPM8244         | DIN rail mount meter with remote display   |            |
| METSEPM89RD96       | Remote display, 3 metre cable, mounting hardware for 30mm hole (nut & centering pin), mounting hardware for DIN96 cutout (92x92mm) adapter plate |            |

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| <b>METSEPM8000SK</b>     | Terminal covers for utility sealing   |            |
| <b>METSEPMMAK</b>        | Adapters for mounting meter and remote display back to back & ANSI 4i, 0.3 metre (1 ft.) Ethernet cable |            |
| <b>METSECAB1</b>         | Display Cable, 1 metre  |            |
| <b>METSECAB3</b>         | Display Cable, 3 metres   |            |
| <b>METSECAB10</b>        | Display Cable, 10 metres  |            |
| <b>METSEPM8HWK</b>       | PM8000 hardware kit   |            |
| <b>METSEPM8RDHWK</b>     | PM8000 remote display hardware kit  |            |
| <b>METSEPM89M2600</b>    | Digital I/O module (6 digital inputs & 2 relay outputs)   |            |
| <b>METSEPM89M0024</b>    | Analog I/O module (4 analog inputs & 2 analog outputs)  |            |
|                          | <b>ION9000</b>  | <b>143</b> |
| <b>METSEION92030</b>     | ION9000 meter, DIN mount, no display, hardware kit  |            |
| <b>METSEION92040</b>     | ION9000 meter, DIN mount, 192 mm display, B2B adapter, hardware kit                                     |            |
| <b>METSEION92130</b>     | ION9000 Meter, 20-60 Vdc control input, DIN mount, no display, hardware kit                             |            |
| <b>METSEION92140</b>     | ION9000 Meter, 20-60 Vdc control input, DIN mount, 192 mm display, B2B adapter, hardware kit            |            |
| <b>METSEION93030</b>     | ION9000 meter, LVCS, DIN mount, no display, hardware kit  |            |
| <b>METSEION93040</b>     | ION9000 meter, LVCS, DIN mount, 192 mm display, B2B adapter, hardware kit                               |            |
| <b>METSEION93130</b>     | ION9000 Meter, LVCS, 20-60 Vdc control power, DIN mount, no display, hardware kit                       |            |
| <b>METSEION93140</b>     | ION9000 Meter, LVCS, 20-60 Vdc control power, DIN mount, 192 mm display, B2B adapter, hardware kit      |            |
| <b>METSEION95030</b>     | ION9000T meter, HSTC meter, DIN mount, no display, hardware kit   |            |
| <b>METSEION95040</b>     | ION9000T HSTC meter, DIN mount, 192 mm display, B2B adapter, hardware kit                               |            |
| <b>METSEPM89RD96</b>     | Remote display, color LCD, 96 x 96 mm   |            |
| <b>METSERD192</b>        | Remote display, color touchscreen, 192 x 192 mm   |            |
| <b>METSEPM89M2600</b>    | I/O module, 2 relay outputs, 6 digital inputs   |            |
| <b>METSEPM89M0024</b>    | I/O module, 2 analog outputs, 4 analog inputs   |            |
| <b>METSE9HWK</b>         | ION9000 meter hardware kit – plugs, terminal guards, spare grounding screw, DIN clips                   |            |
| <b>METSE9CTHWK</b>       | ION9000 Current Input hardware kit - terminal screws, CT covers   |            |
| <b>METSERD192HWK</b>     | RD192 remote display hardware kit   |            |
| <b>METSE9B2BMA</b>       | ION9000 B2B (back to back) mounting adapter   |            |
| <b>METSE9HWKLVCS</b>     | ION9000 hardware kit for LVCS   |            |
| <b>METSE9USBK</b>        | ION9000 USB cover hardware kit  |            |
| <b>METSE7X4MAK</b>       | ION7X50 mounting adapter kit  |            |
|                          | <b>Advanced Utility Metering</b>  | <b>155</b> |
|                          | <b>ION7400</b>  | <b>156</b> |
| <b>METSEION7400</b>      | ION7400 Panel mount meter (integrated display with optical port and 2 energy pulse LEDs)                |            |
| <b>METSEION7403</b>      | DIN rail mount - utility meter base   |            |
| <b>METSEPM89RD96</b>     | Remote display, 3 m cable, mounting hardware for 30 mm hole and DIN96 cutout (92 x 92 mm) adapter plate |            |
| <b>METSEPM89M2600</b>    | Digital I/O module (6 digital inputs (wetted) & 2 relay outputs)  |            |
| <b>METSEPM89M0024</b>    | Analog I/O module (4 analog inputs & 2 analog outputs)  |            |
| <b>METSEPM8000SK</b>     | Revenue sealing kit   |            |
| <b>METSECAB10</b>        | Display Cable, 10 m   |            |
|                          | <b>ION8650</b>  | <b>166</b> |
| <b>M8650A</b>            | ION8650A meter  |            |
| <b>M8650B</b>            | ION8650B meter  |            |
| <b>M8650C</b>            | ION8650C meter  |            |
| <b>A-BASE-ADAPTER-9</b>  | Form 9S to Form 9A adapter  |            |
| <b>A-BASE-ADAPTER-35</b> | Form 35S to Form 35A adapter  |            |
| <b>CBL-8X00BRKOUT</b>    | Break out cable 1.5 m   |            |
| <b>CBL-8X00IOE5FT</b>    | Cable para I/O expander 1.5 m   |            |
| <b>CBL-8X00IOE15FT</b>   | I/O extension cable 4.6 m   |            |
| <b>CBL-8X0-BOP-IOBOX</b> | Cat.3 25PR UTP cable 205 m reel   |            |

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|                          | <b>ION8800</b>   | <b>176</b> |
| <b>M8800A</b>            | ION8800A meter   |            |
| <b>M8800B</b>            | ION8800B meter   |            |
| <b>M8800C</b>            | ION8800C meter   |            |
| <b>OPTICAL-PROBE</b>     | ION8800 optical probe with DB9 connector                   |            |
| <b>OPTICAL-PROBE-USB</b> | ION8800 optical probe with USB connector                   |            |
|                          | <b>Multi-Circuit Metering</b>                              | <b>185</b> |
|                          | <b>HDPM6000</b>  | <b>186</b> |
| <b>METSEHDPM6R24LC</b>   | HDPM6000R 24 Ckt Bundle 60Hz 208v                          |            |
| <b>METSEHDPM6R24WLC</b>  | HDPM6000R 24 Ckt W/ Wave Form Bundle 60Hz 208v             |            |
| <b>METSEHDPM6R42LC</b>   | HDPM6000R 42 Ckt Bundle 60Hz 208v                          |            |
| <b>METSEHDPM6R42WLC</b>  | HDPM6000R 42 Ckt W/ Wave Form Bundle 60Hz 208v             |            |
| <b>METSEHDPM6R84LC</b>   | HDPM6000R 84 Ckt Bundle 60Hz 208v                          |            |
| <b>METSEHDPM6R84WLC</b>  | HDPM6000R 84 Ckt W/ Wave Form Bundle 60Hz 208v             |            |
| <b>METSEHDPM6B84LC</b>   | HDPM6000R 84 Ckt (2 x 42ckt) Bundle 60Hz 208v              |            |
| <b>METSEHDPM6B84WLC</b>  | HDPM6000R 84 Ckt (2 x 42ckt) W/ Wave Form Bundle 60Hz 208v |            |
| <b>METSEHDPM6108LC</b>   | HDPM6000R 108 Ckt Bundle 60Hz 208v                         |            |
| <b>METSEHDPM6108WLC</b>  | HDPM6000R 108 Ckt W/ Wave Form Bundle 60Hz 208v            |            |
| <b>METSEHDPM6126LC</b>   | HDPM6000R 126 Ckt Bundle 60Hz 208v                         |            |
| <b>METSEHDPM6126WLC</b>  | HDPM6000R 126 Ckt W/ Wave Form Bundle 60Hz 208v            |            |
| <b>METSEHDPM6168LC</b>   | HDPM6000R 168 Ckt Bundle 60Hz 208v                         |            |
| <b>METSEHDPM6168WLC</b>  | HDPM6000R 168 Ckt W/ Wave Form Bundle 60Hz 208v            |            |
| <b>METSEHDPM6192LC</b>   | HDPM6000R 192 Ckt Bundle 60Hz 208v                         |            |
| <b>METSEHDPM6192WLC</b>  | HDPM6000R 192 Ckt W/ Wave Form Bundle 60Hz 208v            |            |
| <b>METSEHDPM6R24MC</b>   | HDPM6000R 24 Ckt Bundle 60Hz 480v                          |            |
| <b>METSEHDPM6R24WMC</b>  | HDPM6000R 24 Ckt W/ Wave Form Bundle 60Hz 480v             |            |
| <b>METSEHDPM6R42MC</b>   | HDPM6000R 42 Ckt Bundle 60Hz 480v                          |            |
| <b>METSEHDPM6R42WMC</b>  | HDPM6000R 42 Ckt W/ Wave Form Bundle 60Hz 480v             |            |
| <b>METSEHDPM6R84MC</b>   | HDPM6000R 84 Ckt Bundle 60Hz 480v                          |            |
| <b>METSEHDPM6R84WMC</b>  | HDPM6000R 84 Ckt W/ Wave Form Bundle 60Hz 480v             |            |
| <b>METSEHDPM6B84MC</b>   | HDPM6000R 84 Ckt (2 x 42ckt) Bundle 60Hz 480v              |            |
| <b>METSEHDPM6B84WMC</b>  | HDPM6000R 84 Ckt (2 x 42ckt) W/ Wave Form Bundle 60Hz 480v |            |
| <b>METSEHDPM6108MC</b>   | HDPM6000R 108 Ckt Bundle 60Hz 480v                         |            |
| <b>METSEHDPM6108WMC</b>  | HDPM6000R 108 Ckt W/ Wave Form Bundle 60Hz 480v            |            |
| <b>METSEHDPM6126MC</b>   | HDPM6000R 126 Ckt Bundle 60Hz 480v                         |            |
| <b>METSEHDPM6126WMC</b>  | HDPM6000R 126 Ckt W/ Wave Form Bundle 60Hz 480v            |            |
| <b>METSEHDPM6168MC</b>   | HDPM6000R 168 Ckt Bundle 60Hz 480v                         |            |
| <b>METSEHDPM6168WMC</b>  | HDPM6000R 168 Ckt W/ Wave Form Bundle 60Hz 480v            |            |
| <b>METSEHDPM6192MC</b>   | HDPM6000R 192 Ckt Bundle 60Hz 480v                         |            |
| <b>METSEHDPM6192WMC</b>  | HDPM6000R 192 Ckt W/ Wave Form Bundle 60Hz 480v            |            |
| <b>METSEHDPM6R24LD</b>   | HDPM6000R 24 Ckt Bundle 50Hz 208v                          |            |
| <b>METSEHDPM6R24WLD</b>  | HDPM6000R 24 Ckt W/ Wave Form Bundle 50Hz 208v             |            |
| <b>METSEHDPM6R42LD</b>   | HDPM6000R 42 Ckt Bundle 50Hz 208v                          |            |
| <b>METSEHDPM6R42WLD</b>  | HDPM6000R 42 Ckt W/ Wave Form Bundle 50Hz 208v             |            |
| <b>METSEHDPM6R84LD</b>   | HDPM6000R 84 Ckt Bundle 50Hz 208v                          |            |
| <b>METSEHDPM6R84WLD</b>  | HDPM6000R 84 Ckt W/ Wave Form Bundle 50Hz 208v             |            |
| <b>METSEHDPM6B84LD</b>   | HDPM6000R 84 Ckt (2 x 42ckt) Bundle 50Hz 208v              |            |
| <b>METSEHDPM6B84WLD</b>  | HDPM6000R 84 Ckt (2 x 42ckt) W/ Wave Form Bundle 50Hz 208v |            |
| <b>METSEHDPM6108LD</b>   | HDPM6000R 108 Ckt Bundle 50Hz 208v                         |            |
| <b>METSEHDPM6108WLD</b>  | HDPM6000R 108 Ckt W/ Wave Form Bundle 50Hz 208v            |            |
| <b>METSEHDPM6126LD</b>   | HDPM6000R 126 Ckt Bundle 50Hz 208v                         |            |
| <b>METSEHDPM6126WLD</b>  | HDPM6000R 126 Ckt W/ Wave Form Bundle 50Hz 208v            |            |
| <b>METSEHDPM6168LD</b>   | HDPM6000R 168 Ckt Bundle 50Hz 208v                         |            |
| <b>METSEHDPM6168WLD</b>  | HDPM6000R 168 Ckt W/ Wave Form Bundle 50Hz 208v            |            |
| <b>METSEHDPM6192LD</b>   | HDPM6000R 192 Ckt Bundle 50Hz 208v                         |            |
| <b>METSEHDPM6192WLD</b>  | HDPM6000R 192 Ckt W/ Wave Form Bundle 50Hz 208v            |            |
| <b>METSEHDPM6R24MD</b>   | HDPM6000R 24 Ckt Bundle 50Hz 480v                          |            |
| <b>METSEHDPM6R24WMD</b>  | HDPM6000R 24 Ckt W/ Wave Form Bundle 50Hz 480v             |            |

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| METSEHDPM6R42MD                                      | HDPM6000R 42 Ckt Bundle 50Hz 480v                          |      |
| METSEHDPM6R42WMD                                     | HDPM6000R 42 Ckt W/ Wave Form Bundle 50Hz 480v             |      |
| METSEHDPM6R84MD                                      | HDPM6000R 84 Ckt Bundle 50Hz 480v                          |      |
| METSEHDPM6R84WMD                                     | HDPM6000R 84 Ckt W/ Wave Form Bundle 50Hz 480v             |      |
| METSEHDPM6B84MD                                      | HDPM6000R 84 Ckt (2 x 42ckt) Bundle 50Hz 480v              |      |
| METSEHDPM6B84WMD                                     | HDPM6000R 84 Ckt (2 x 42ckt) W/ Wave Form Bundle 50Hz 480v |      |
| METSEHDPM6108MD                                      | HDPM6000R 108 Ckt Bundle 50Hz 480v                         |      |
| METSEHDPM6108WMD                                     | HDPM6000R 108 Ckt W/ Wave Form Bundle 50Hz 480v            |      |
| METSEHDPM6126MD                                      | HDPM6000R 126 Ckt Bundle 50Hz 480v                         |      |
| METSEHDPM6126WMD                                     | HDPM6000R 126 Ckt W/ Wave Form Bundle 50Hz 480v            |      |
| METSEHDPM6168MD                                      | HDPM6000R 168 Ckt Bundle 50Hz 480v                         |      |
| METSEHDPM6168WMD                                     | HDPM6000R 168 Ckt W/ Wave Form Bundle 50Hz 480v            |      |
| METSEHDPM6192MD                                      | HDPM6000R 192 Ckt Bundle 50Hz 480v                         |      |
| METSEHDPM6192WMD                                     | HDPM6000R 192 Ckt W/ Wave Form Bundle 50Hz 480v            |      |
| METSEHDPM6S42LC                                      | HDPM6000 Strip 42 Ckt Bundle 60Hz 208v                     |      |
| METSEHDPM6S42WLC                                     | HDPM6000 Strip 42 Ckt W/ Wave Form Bundle 60Hz 208v        |      |
| METSEHDPM6S84LC                                      | HDPM6000 Strip 84 Ckt Bundle 60Hz 208v                     |      |
| METSEHDPM6S84WLC                                     | HDPM6000 Strip 84 Ckt W/ Wave Form Bundle 60Hz 208v        |      |
| METSEHDPM6S126LC                                     | HDPM6000 Strip 126 Ckt Bundle 60Hz 208v                    |      |
| METSEHDPM6S126WLC                                    | HDPM6000 Strip 126 Ckt W/ Wave Form Bundle 60Hz 208v       |      |
| METSEHDPM6S168LC                                     | HDPM6000 Strip 168 Ckt Bundle 60Hz 208v                    |      |
| METSEHDPM6S168WLC                                    | HDPM6000 Strip 168 Ckt W/ Wave Form Bundle 60Hz 208v       |      |
| METSEHDPM6S42MC                                      | HDPM6000 Strip 42 Ckt Bundle 60Hz 480v                     |      |
| METSEHDPM6S42WMC                                     | HDPM6000 Strip 42 Ckt W/ Wave Form Bundle 60Hz 480v        |      |
| METSEHDPM6S84MC                                      | HDPM6000 Strip 84 Ckt Bundle 60Hz 480v                     |      |
| METSEHDPM6S84WMC                                     | HDPM6000 Strip 84 Ckt W/ Wave Form Bundle 60Hz 480v        |      |
| METSEHDPM6S126MC                                     | HDPM6000 Strip 126 Ckt Bundle 60Hz 480v                    |      |
| METSEHDPM6S126WMC                                    | HDPM6000 Strip 126 Ckt W/ Wave Form Bundle 60Hz 480v       |      |
| METSEHDPM6S168MC                                     | HDPM6000 Strip 168 Ckt Bundle 60Hz 480v                    |      |
| METSEHDPM6S168WMC                                    | HDPM6000 Strip 168 Ckt W/ Wave Form Bundle 60Hz 480v       |      |
| METSEHDPM6S42LD                                      | HDPM6000 Strip 42 Ckt Bundle 50Hz 208v                     |      |
| METSEHDPM6S42WLD                                     | HDPM6000 Strip 42 Ckt W/ Wave Form Bundle 50Hz 208v        |      |
| METSEHDPM6S84LD                                      | HDPM6000 Strip 84 Ckt Bundle 50Hz 208v                     |      |
| METSEHDPM6S84WLD                                     | HDPM6000 Strip 84 Ckt W/ Wave Form Bundle 50Hz 208v        |      |
| METSEHDPM6S126LD                                     | HDPM6000 Strip 126 Ckt Bundle 50Hz 208v                    |      |
| METSEHDPM6S126WLD                                    | HDPM6000 Strip 126 Ckt W/ Wave Form Bundle 50Hz 208v       |      |
| METSEHDPM6S168LD                                     | HDPM6000 Strip 168 Ckt Bundle 50Hz 208v                    |      |
| METSEHDPM6S168WLD                                    | HDPM6000 Strip 168 Ckt W/ Wave Form Bundle 50Hz 208v       |      |
| METSEHDPM6S42MD                                      | HDPM6000 Strip 42 Ckt Bundle 50Hz 480v                     |      |
| METSEHDPM6S42WMD                                     | HDPM6000 Strip 42 Ckt W/ Wave Form Bundle 50Hz 480v        |      |
| METSEHDPM6S84MD                                      | HDPM6000 Strip 84 Ckt Bundle 50Hz 480v                     |      |
| METSEHDPM6S84WMD                                     | HDPM6000 Strip 84 Ckt W/ Wave Form Bundle 50Hz 480v        |      |
| METSEHDPM6S126MD                                     | HDPM6000 Strip 126 Ckt Bundle 50Hz 480v                    |      |
| METSEHDPM6S126WMD                                    | HDPM6000 Strip 126 Ckt W/ Wave Form Bundle 50Hz 480v       |      |
| METSEHDPM6S168MD                                     | HDPM6000 Strip 168 Ckt Bundle 50Hz 480v                    |      |
| METSEHDPM6S168WMD                                    | HDPM6000 Strip 168 Ckt W/ Wave Form Bundle 50Hz 480v       |      |
| <b>HDPM6000 Head Unit</b>                            |  |      |
| METSEHDPM6S208VC                                     | HDPM6000, 60Hz, 208v                                       |      |
| METSEHDPM6S480VC                                     | HDPM6000, 60Hz, 480v                                       |      |
| METSEHDPM6S208VD                                     | HDPM6000, 50Hz, 208v                                       |      |
| METSEHDPM6S480VD                                     | HDPM6000, 50Hz, 480v                                       |      |
| <b>HDPM6000S High Density Power meter 6000 Strip</b> |  |      |
| METSEHDPM6S42W                                       | HDPM6000 Strip Left & Right Set for 42ckts w/ wave form    |      |
| METSEHDPM6S42  | HDPM6000 Strip Left & Right Set for 42ckts                 |      |
| METSEHDPM6S21WF                                      | HDPM6000 Strip 21ckt Right with wave form                  |      |
| METSEHDPM6S21R                                       | HDPM6000 Strip 21ckt Right                                 |      |
| METSEHDPM6S21WH                                      | HDPM6000 Strip 21ckt Left with wave form                   |      |
| METSEHDPM6S21L                                       | HDPM6000 Strip 21ckt Left                                  |      |

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| <b>HDPM6000R High Density Power Meter 6000 Retrofit</b> |   |      |
| METSEHDPM6R24   | HDPM6000R 24 Ckt Module                           |      |
| METSEHDPM6R24WF   | HDPM6000R 24 Ckt Module W/ Wave Form              |      |
| METSEHDPM6R42   | HDPM6000R 42 Ckt Module                           |      |
| METSEHDPM6R42WF   | HDPM6000R 42 Ckt Module W/ Wave Form              |      |
| METSEHDPM6R84   | HDPM6000R 84 Ckt Module                           |      |
| METSEHDPM6R84WF   | HDPM6000R 84 Ckt Module W/ Wave Form              |      |
| <b>HDPM6000B High Density Power Meter 6000 Busway</b>   |   |      |
| METSEHDPM6BT4   | HDPM6000 4ckt Bus Tap Card                        |      |
| METSEHDPM6BT8   | HDPM6000 8ckt Bus Tap Card                        |      |
| <b>HDPM6000 Accessories</b>                             |   |      |
| METSEHDPM6IO  | HDPM6000 I/O Module                               |      |
| METSEHDPM6HMI4  | HDPM6000 4.3" Color Touchscreen HMI Display       |      |
| METSEHDPM6HMI7  | HDPM6000 7" Color Touchscreen HMI Display         |      |
| METSEHDPM6PSV240  | HDPM6000 Power Supply 100-240VAC to 24VDC 60 watt |      |
| METSEHDPM6PSV500  | HDPM6000 Power Supply 400-500VAC to 24VDC 90 watt |      |
| <b>HDPM6000, HDPM6000R &amp; I/O Module CTs</b>         |   |      |
| METSEHD1000A12  | CTSF-1000-0400-0400-12                            |      |
| METSEHD1000A30  | CTSF-1000-0400-0400-30                            |      |
| METSEHD1200A12  | CTSF-1200-0400-0600-12                            |      |
| METSEHD1200A30  | CTSF-1200-0400-0600-30                            |      |
| METSEHD150A12   | CTSF-0150-0100-0100-12                            |      |
| METSEHD150A30   | CTSF-0150-0100-0100-30                            |      |
| METSEHD150A60   | CTSF-0150-0100-0100-60                            |      |
| METSEHD1600A12  | CTSF-1600-0400-0600-12                            |      |
| METSEHD1600A12L   | CTSF-1600-0450-0450-12                            |      |
| METSEHD1600A30  | CTSF-1600-0400-0600-30                            |      |
| METSEHD1600A30L   | CTSF-1600-0450-0450-30                            |      |
| METSEHD2000A12  | CTSF-2000-0400-0600-12                            |      |
| METSEHD2000A12L   | CTSF-2000-0600-0300-12                            |      |
| METSEHD2000A30  | CTSF-2000-0400-0600-30                            |      |
| METSEHD2000A30L   | CTSF-2000-0600-0300-30                            |      |
| METSEHD3000A12  | CTSF-3000-0400-0400-12                            |      |
| METSEHD3000A12L   | CTSF-3000-0400-0600-12                            |      |
| METSEHD3000A12XL  | CTSF-3000-0500-1200-12                            |      |
| METSEHD3000A30  | CTSF-3000-0400-0400-30                            |      |
| METSEHD3000A30L   | CTSF-3000-0400-0600-30                            |      |
| METSEHD3000A30XL  | CTSF-3000-0500-1200-30                            |      |
| METSEHD300A12   | CTSF-0300-0100-0100-12                            |      |
| METSEHD300A12L  | CTSF-0300-0200-0200-12                            |      |
| METSEHD300A30   | CTSF-0300-0100-0100-30                            |      |
| METSEHD300A30L  | CTSF-0300-0200-0200-30                            |      |
| METSEHD300A60   | CTSF-0300-0100-0100-60                            |      |
| METSEHD300A60L  | CTSF-0300-0200-0200-60                            |      |
| METSEHD4000A12  | CTSF-4000-0500-1200-12                            |      |
| METSEHD4000A30  | CTSF-4000-0500-1200-30                            |      |
| METSEHD400A12   | CTSF-0400-0125-0125-12                            |      |
| METSEHD400A12L  | CTSF-0400-0250-0250-12                            |      |
| METSEHD400A30   | CTSF-0400-0125-0125-30                            |      |
| METSEHD400A30L  | CTSF-0400-0250-0250-30                            |      |
| METSEHD400A60   | CTSF-0400-0125-0125-60                            |      |
| METSEHD400A60L  | CTSF-0400-0250-0250-60                            |      |
| METSEHD600A12   | CTSF-0600-0300-0300-12                            |      |
| METSEHD600A30   | CTSF-0600-0300-0300-30                            |      |
| METSEHD600A60   | CTSF-0600-0300-0300-60                            |      |
| METSEHD800A12   | CTSF-0800-0400-0400-12                            |      |
| METSEHD800A30   | CTSF-0800-0400-0400-30                            |      |
| METSEHD800A60   | CTSF-0800-0400-0400-60                            |      |
| METSEHD150A12H  | CTN3-0150-0070-0070-12                            |      |
| METSEHD150A30H  | CTN3-0150-0070-0070-30                            |      |

For any CT rating not available in the reference list, please contact the Schneider Electric sales representative.

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| METSEHDP300A12H     | CTN4-0300-0125-0125-12  |      | BCPMB142S           | 42-circuit solid-core branch current, mains power meter, 100 A CTs (2 strips), 25.4 mm spacing |      |
| METSEHDP125A12      | CTTG-0125-C039-C039-012   |      | BCPMB224S           | 24-circuit solid-core branch current, mains power meter, 100 A CTs (2 strips), 18 mm spacing   |      |
| METSEHDP125A30      | CTTG-0125-C039-C039-030   |      | BCPMB236S           | 36-circuit solid-core branch current, mains power meter, 100 A CTs (2 strips), 18 mm spacing   |      |
| METSEHDP150A12      | CTS4-0150-0125-125-012  |      | BCPMB242S           | 42-circuit solid-core branch current, mains power meter, 100 A CTs (2 strips), 18 mm spacing   |      |
| METSEHDP150A30      | CTS4-0150-0125-125-030  |      | BCPMB248S           | 48-circuit solid-core branch current, mains power meter, 100 A CTs (4 strips), 18 mm spacing   |      |
| METSEHDP150A60      | CTS4-0150-0125-125-060  |      | BCPMB272S           | 72-circuit solid-core branch current, mains power meter, 100 A CTs (4 strips), 18 mm spacing   |      |
| METSEHDP20A12H      | CTN2-0020-0040-0040-012   |      | BCPMB284S           | 84-circuit solid-core branch current, mains power meter, 100 A CTs (4 strips), 18 mm spacing   |      |
| METSEHDP20A30H      | CTN2-0020-0040-0040-030   |      | BCPMC084S           | 84-circuit solid-core branch current meter, 100 A CTs (4 strips), 19.05 mm spacing             |      |
| METSEHDP300A12      | CTS4-0300-0125-125-012  |      | BCPMC184S           | 84-circuit solid-core branch current meter, 100 A CTs (4 strips), 25.4 mm spacing              |      |
| METSEHDP300A30      | CTS4-0300-0125-125-030  |      | BCPMC042S           | 42-circuit solid-core branch current meter, 100 A CTs (2 strips), 19.05 mm spacing             |      |
| METSEHDP300A30H     | CTN4-0300-0125-0125-30  |      | BCPMC142S           | 42-circuit solid-core branch current meter, 100 A CTs (2 strips), 25.4 mm spacing              |      |
| METSEHDP300A60      | CTS4-0300-0125-125-060  |      | BCPMC224S           | 24-circuit solid-core branch current meter, 100 A CTs (2 strips), 18 mm spacing                |      |
| METSEHDP400A12      | CTS4-0400-0125-125-012  |      | BCPMC236S           | 36-circuit solid-core branch current meter, 100 A CTs (2 strips), 18 mm spacing                |      |
| METSEHDP400A12H     | CTN4-0400-0125-0125-12  |      | BCPMC242S           | 42-circuit solid-core branch current meter, 100 A CTs (2 strips), 18 mm spacing                |      |
| METSEHDP400A30      | CTS4-0400-0125-125-030  |      | BCPMC248S           | 48-circuit solid-core branch current meter, 100 A CTs (4 strips), 18 mm spacing                |      |
| METSEHDP400A30H     | CTN4-0400-0125-0125-30  |      | BCPMC272S           | 72-circuit solid-core branch current meter, 100 A CTs (4 strips), 18 mm spacing                |      |
| METSEHDP400A60      | CTS4-0400-0125-125-060  |      | BCPMC284S           | 84-circuit solid-core branch current meter, 100 A CTs (4 strips), 18 mm spacing                |      |
| METSEHDP600A12      | CTS4-0600-0125-125-012  |      | BCPME042S           | 42-circuit solid-core power & energy meter w/ Ethernet, 100 A CTs (2 strips), 19.05 mm spacing |      |
| METSEHDP600A30      | CTS4-0600-0125-125-030  |      | BCPME084S           | 84-circuit solid-core power & energy meter w/ Ethernet, 100 A CTs (4 strips), 19.05 mm spacing |      |
| METSEHDP600A60      | CTS4-0600-0125-125-060  |      | BCPME142S           | 42-circuit solid-core power & energy meter w/ Ethernet, 100 A CTs (2 strips), 25.4 mm spacing  |      |
| METSEHDP75A12       | CTMF-0075-0040-0040-12  |      | BCPME184S           | 84-circuit solid-core power & energy meter w/ Ethernet, 100 A CTs (4 strips), 25.4 mm spacing  |      |
| METSEHDP75A12H      | CTN3-0075-0070-0070-12  |      | BCPME224S           | 24-circuit solid-core power & energy meter w/ Ethernet, 100 A CTs (2 strips), 18 mm spacing    |      |
| METSEHDP75A30       | CTMF-0075-0040-0040-30  |      | BCPME236S           | 36-circuit solid-core power & energy meter w/ Ethernet, 100 A CTs (2 strips), 18 mm spacing    |      |
| METSEHDP75A30H      | CTN3-0075-0070-0070-30  |      | BCPME242S           | 42-circuit solid-core power & energy meter w/ Ethernet, 100 A CTs (2 strips), 18 mm spacing    |      |
| METSEHDP75A60       | CTMF-0075-0040-0040-60  |      | BCPME248S           | 48-circuit solid-core power & energy meter w/ Ethernet, 100 A CTs (4 strips), 18 mm spacing    |      |
|                     | <b>HDP6000S CTs</b>   |      | BCPMSCA1S           | 42-circuit split-core power and energy meter, CTs and cables sold separately                   |      |
| METSEHDP125A4       | CTTG-125-C039-C039-i04A   |      | BCPMSCA2S           | 84-circuit split-core power and energy meter, CTs and cables sold separately                   |      |
| METSEHDP125A10      | CTTG-0125-C039-C039-i10A  |      | BCPMSCA30S          | 30-circuit split-core power and energy meter, (30) 50 A CTs & (2) 1.21 m cables                |      |
| METSEHDP75A4        | CTMF-0075-0040-0040-i04A  |      | BCPMSCA42S          | 42-circuit split-core power and energy meter, (42) 50 A CTs & (2) 1.21 m cables                |      |
| METSEHDP150A5       | CTS4-0150-0125-125-i05A   |      | BCPMSCA60S          | 60-circuit split-core power and energy meter, (60) 50 A CTs & (4) 1.21 m cables                |      |
| METSEHDP300A5       | CTS4-0300-0125-125-i05A   |      | BCPMSCA84S          | 84-circuit split-core power and energy meter, with (84) 50 A CTs & (4) 1.21 m cables           |      |
| METSEHDP400A5       | CTS4-0400-0125-125-i05A   |      | BCPMSCB1S           | 42-circuit split-core branch current, mains power meter, CTs and cables sold separately        |      |
| METSEHDP600A5       | CTS4-0600-0125-125-i05A   |      | BCPMSCB2S           | 84-circuit split-core branch current, mains power meter, CTs and cables sold separately        |      |
|                     | <b>HDP6000B CTs</b>   |      | BCPMSCB30S          | 30-circuit split-core branch current, mains power meter, (30) 50 A CTs & (2) 1.21 m cables     |      |
| METSEHDP125A16      | CTTG-0125-C039-C039-i16   |      | BCPMSCB42S          | 42-circuit split-core branch current, mains power meter, (42) 50 A CTs & (2) 1.21 m cables     |      |
| METSEHDP75A16       | CTMF-0075-0040-0040-i16   |      |                     |  |      |
| METSEHDP150A16      | CTS4-0150-0125-125-i16  |      |                     |  |      |
| METSEHDP300A16      | CTS4-0300-0125-125-i16  |      |                     |  |      |
| METSEHDP400A16      | CTS4-0400-0125-125-i16  |      |                     |  |      |
| METSEHDP600A16      | CTS4-0600-0125-125-i16  |      |                     |  |      |
|                     | <b>BCPM (Branch Circuit Power Meter)</b>  | 190  |                     |  |      |
| BCPMA084S           | 84-circuit solid-core power & energy meter, 100 A CTs (4 strips), 19.05 mm spacing              |      |                     |  |      |
| BCPMA184S           | 84-circuit solid-core power & energy meter, 100 A CTs (4 strips), 25.4 mm spacing               |      |                     |  |      |
| BCPMA042S           | 42-circuit solid-core power & energy meter, 100 A CTs (2 strips), 19.05 mm spacing              |      |                     |  |      |
| BCPMA142S           | 42-circuit solid-core power & energy meter, 100 A CTs (2 strips), 25.4 mm spacing               |      |                     |  |      |
| BCPMA224S           | 24-circuit solid-core power & energy meter, 100 A CTs (2 strips), 18 mm spacing                 |      |                     |  |      |
| BCPMA236S           | 36-circuit solid-core power & energy meter, 100 A CTs (2 strips), 18 mm spacing                 |      |                     |  |      |
| BCPMA242S           | 42-circuit solid-iEM2000core power & energy meter, 100 A CTs (2 strips), 18 mm spacing          |      |                     |  |      |
| BCPMA248S           | 48-circuit solid-core power & energy meter, 100 A CTs (4 strips), 18 mm spacing                 |      |                     |  |      |
| BCPMA272S           | 72-circuit solid-core power & energy meter, 100 A CTs (4 strips), 18 mm spacing                 |      |                     |  |      |
| BCPMA284S           | 84-circuit solid-core power & energy meter, 100 A CTs (4 strips), 18 mm spacing                 |      |                     |  |      |
| BCPMB084S           | 84-circuit solid-core branch current, mains power meter, 100 A CTs (4 strips), 19.05 mm spacing |      |                     |  |      |
| BCPMB184S           | 84-circuit solid-core branch current, mains power meter, 100 A CTs (4 strips), 25.4 mm spacing  |      |                     |  |      |
| BCPMB042S           | 42-circuit solid-core branch current, mains power meter, 100 A CTs (2 strips), 19.05 mm spacing |      |                     |  |      |

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| BCPMSCB60S          | 60-circuit split-core branch current, mains power meter, (60) 50 A CTs & (4) 1.21 m cables           |      | LVCT00803S               | 800 A 62 mm x 73 mm  |            |
| BCPMSCBY63S         | 42-circuit split-core branch current, mains, all boards on backplate, CTs and cables sold separately |      | LVCT00804S               | 800 A 62 mm x 139 mm   |            |
| BCPMSCB84S          | 84-circuit split-core branch current, mains power meter, (84) 50 A CTs & (4) 1.21 m cables           |      | LVCT01004S               | 1000 A 62 mm x 139 mm  |            |
| BCPMSCC1S           | 42-circuit split-core current meter, CTs and cables sold separately                                  |      | LVCT01204S               | 1200 A 62 mm x 139 mm  |            |
| BCPMSCC2S           | 84-circuit split-core current meter, CTs and cables sold separately                                  |      | LVCT01604S               | 1600 A 62 mm x 139 mm  |            |
| BCPMSCC30S          | 30-circuit split-core current meter, (30) 50 A CTs & (2) 1.21 m cables                               |      | LVCT02004S               | 2000 A 62 mm x 139 mm  |            |
| BCPMSCC42S          | 42 circuit split-core current meter, (42) 50 A CTs & (2) 1.21 m cables                               |      | LVCT02404S               | 2400 A 62 mm x 139 mm  |            |
| BCPMSCC60S          | 60-circuit split-core current meter, (60) 50 A CTs & (4) 1.21 m cables                               |      | LVCT20050S               | 50 A 10 mm   |            |
| BCPMSCCY63S         | 42-circuit split-core current meter, all boards on backplate, CTs and cables sold separately         |      | LVCT20100S               | 100 A 10 mm  |            |
| BCPMSCC84S          | 84-circuit split-core current meter, (84) 50 A CTs & (4) 1.21 m cables                               |      | LVCT20202S               | 200 A 25 mm  |            |
| BCPMSCE1S           | 42-circuit split-core power and energy meter w/ Ethernet, CTs and cables sold separately             |      | <b>EM4000</b>            |  | <b>204</b> |
| BCPMSCE2S           | 84-circuit split-core power and energy meter w/ Ethernet, CTs and cables sold separately             |      | METSEEM403316            | 24 x 333 mV inputs, 120V control power 60 Hz                             |            |
| BCPMSCE30S          | 30-circuit split-core power and energy meter w/ Ethernet, (30) 50A CTs & (2) 1.21 m cables           |      | METSEEM403336            | 24 x 333 mV inputs, 277V control power 60 Hz                             |            |
| BCPMSCE42S          | 42-circuit split-core power and energy meter w/ Ethernet, (42) 50 A CTs & (2) 1.21 m cables          |      | METSEEM408016            | 24 x 80 mA inputs, 120V control power 60 Hz                              |            |
| BCPMSCE60S          | 60-circuit split-core power and energy meter w/ Ethernet, (60) 50 A CTs & (4) 1.21 m cables          |      | METSEEM408036            | 24 x 80 mA inputs, 277V control power 60 Hz                              |            |
| BCPMSCE84S          | 84-circuit split-core power and energy meter w/ Ethernet, (84) 50 A CTs & (4) 1.21 m cables          |      | METSECONV580             | EM4000 5 A : 80 mA converter   |            |
| BCPMSCADPBS         | BCPM adapter boards, quantity 2, for split core BCPM   |      | METSEPTMOD480            | 480 V PT Module for EM4X00 meter   |            |
| BCPMSCT0            | BCPM 50 A split core CTs, Quantity 6, 1.8 m lead lengths   |      | METSEPTMOD347600         | 347 V/600 V PT Module for EM4X00 meter                                   |            |
| BCPMSCT0R20         | BCPM 50 A split core CTs, quantity 6, 6 m lead lengths   |      | METSECTTERM              | EM4000 CT termination module   |            |
| BCPMSCT1            | BCPM 100 A split core CTs, Quantity 6, 1.8 m lead lengths  |      | METSECTSHORT             | EM4000 CT shorting module  |            |
| BCPMSCT1R20         | BCPM 100 A split core CTs, Quantity 6, 6 m lead lengths  |      | METSECT80200             | EM4000 solid-core CT 200 A / 80 mA secondary                             |            |
| BCPMSCT3            | BCPM 200 A split core CTs, Quantity 1, 1.8 m lead lengths  |      | METSECT80400             | EM4000 solid-core CT 400 A / 80 mA secondary                             |            |
| BCPMSCT3R20         | BCPM 200 A split core CTs, Quantity 1, 6 m lead lengths  |      | METSECT80600             | EM4000 solid-core CT 600 A / 80 mA secondary                             |            |
| BCPMCOVERS          | BCPM circuit board cover   |      | <b>EM4800</b>            |  | <b>213</b> |
| BCPMREPAIR          | CT repair kit for solid core BCPM (includes one CT)  |      | METSEEM480525            | 24 x 5 A inputs, 230/240 V control power, 50 Hz                          |            |
| H6803R-0100         | H6803R-0100 Additional 100A split core CT for use with solid core repair kit                         |      | METSEEM480516            | 24 x 5 A inputs, 120 V control power, 60 Hz                              |            |
| E8951               | Modbus to BACnet protocol converter  |      | METSEEM483325            | 24 x 333 mV inputs, 230/240 V control power, 50 Hz                       |            |
| CBL008              | Flat Ribbon cable for BCPM, length = 0.45 m  |      | METSEEM483316            | 24 x 333 mV inputs, 120 V control power, 60 Hz                           |            |
| CBL016              | Flat Ribbon cable for BCPM, length = 1.2 m   |      | METSEEM488016            | 24 x 80 mA inputs, 120 V control power, 60 Hz                            |            |
| CBL017              | Flat Ribbon cable for BCPM, length = 1.5 m   |      | METSEEM488026            | 24 x 80 mA inputs, 230/240 V control power, 50 Hz                        |            |
| CBL018              | Flat Ribbon cable for BCPM, length = 1.8 m   |      | METSECONV580             | EM4000 5 A : 80 mA converter   |            |
| CBL019              | Flat Ribbon cable for BCPM, length = 2.4 m   |      | METSEPTMOD480            | 480 V PT Module for EM4X00 meter   |            |
| CBL020              | Flat Ribbon cable for BCPM, length = 3.0 m   |      | METSEPTMOD347600         | 347 V/600 V PT Module for EM4X00 meter                                   |            |
| CBL021              | Flat Ribbon cable for BCPM, length = 6.1 m   |      | METSECTTERM              | EM4000 CT termination module   |            |
| CBL022              | Round Ribbon cable for BCPM, length = 1.2 m  |      | METSECTSHORT             | EM4000 CT shorting module  |            |
| CBL023              | Round Ribbon cable for BCPM, length = 3 m  |      | METSECT80200             | EM4000 solid-core CT 200 A / 80 mA secondary                             |            |
| CBL024              | Round Ribbon cable for BCPM, length = 6.1 m  |      | METSECT80400             | EM4000 solid-core CT 400 A / 80 mA secondary                             |            |
| CBL031              | Round Ribbon cable for BCPM, length = 0.5 m  |      | METSECT80600             | EM4000 solid-core CT 600 A / 80 mA secondary                             |            |
| CBL033              | Round Ribbon cable for BCPM, length = 0.8 m  |      | <b>EM4900</b>            |  | <b>218</b> |
| LVCT00050S          | 50 A 10 mm x 11 mm   |      | METSEEM4904A             | EM4900 (4) 3-phase meters - Modbus RTU only                              |            |
| LVCT00101S          | 100 A 16 mm x 20 mm  |      | METSEEM4908A             | EM4900 (8) 3-phase meters - Modbus RTU only                              |            |
| LVCT00102S          | 100 A 30 mm x 31 mm  |      | METSEEM4914A             | EM4900 (14) 3-phase meters - Modbus RTU only                             |            |
| LVCT00202S          | 200 A 30 mm x 31 mm  |      | METSEEM4928A             | EM4900 (28) 3-phase meters - Modbus RTU only                             |            |
| LVCT00302S          | 300 A 30 mm x 31 mm  |      | METSEEM4904E             | EM4900 (4) 3-phase meters - Ethernet and Serial (Modbus, BACnet & SNMP)  |            |
| LVCT00403S          | 400 A 62 mm x 73 mm  |      | METSEEM4908E             | EM4900 (8) 3-phase meters - Ethernet and Serial (Modbus, BACnet & SNMP)  |            |
| LVCT00603S          | 600 A 62 mm x 73 mm  |      | METSEEM4914E             | EM4900 (14) 3-phase meters - Ethernet and Serial (Modbus, BACnet & SNMP) |            |
|                     |  |      | METSEEM4928E             | EM4900 (28) 3-phase meters - Ethernet and Serial (Modbus, BACnet & SNMP) |            |
|                     |  |      | <b>Retrofit Products</b> |  | <b>227</b> |
|                     |  |      | <b>EM3500</b>            |  | <b>228</b> |
|                     |  |      | METSEEM3502              | EM3502 Pulse out only  |            |
|                     |  |      | METSEEM3550              | EM3550 Modbus - 2 quadrant   |            |
|                     |  |      | METSEEM3555              | EM3555 Modbus - 4 quadrant with logging                                  |            |
|                     |  |      | METSEEM3560              | EM3560 BACnet with logging   |            |
|                     |  |      | METSEEM3502A             | EM3502A Pulse Rope CT model  |            |
|                     |  |      | METSEEM3550A             | EM3550A Modbus Rope CT Model   |            |
|                     |  |      | METSEEM3560A             | EM3560A BACnet w/ logging Rope CT Model                                  |            |
|                     |  |      | METSEEM3561              | EM3561 BACnet without logging  |            |
|                     |  |      | METSEEM3561A             | EM3561A BACnet without loggingRope CT Model                              |            |
|                     |  |      | <b>EM4200</b>            |  | <b>234</b> |

# PowerLogic Commercial Reference Numbers

| Commercial ref. no.    | Description  | Page       | Commercial ref. no.  | Description                                | Page |
|------------------------|--|------------|--|--|------|
| <b>METSEEM4235</b>     | Enercept, Class 0.2S meter, Modbus/BACnet communication, Uni-Directional/Bi-Directional, RS-485, IEC wire code, single circuit, Modbus/BACnet  |            | <b>IMDIM400THRN</b>  | IM400THRN                                  |      |
| <b>METSEEM4236</b>     | Enercept, Class 0.2S meter, Modbus/BACnet communication, Uni-Directional/Bi-Directional, RS-485, ANSI wire code, single circuit, Modbus/BACnet |            | <b>IMD-IM400VA2</b>  | Voltage adaptor for PV application Coated  |      |
|                        | <b>Insulation Monitoring Devices</b>   | <b>240</b> | <b>IMD-IM9</b>   | IM9  |      |
|                        | <b>Vigilohm Insulation Monitoring</b>  | <b>240</b> | <b>IMD-IM9-OL</b>  | IM9OL                                      |      |
| <b>50159</b>           | ZX impedance   |            | <b>IMD-IT-S63-H</b>  | Single Phase, Isolated Transformer, 6,3KVA |      |
| <b>50168</b>           | HOSPITAL REMOTE PANEL  |            | <b>IMD-IT-S80-H</b>  | Single Phase, Isolated Transformer, 8KVA   |      |
| <b>50169</b>           | CARDEW Holder  |            | <b>IMD-IT-S100-H</b>   | Single Phase, Isolated Transformer, 10KVA  |      |
| <b>50170</b>           | CARDEW 250V CA Surge arestor   |            | <b>IMDLRDH</b>   | Remote Display Hospital                    |      |
| <b>50171</b>           | CARDEW 440V CA Surge arestor   |            | <b>For any enclosure or product configuration not listed, please see your Schneider Electric Representative for complete ordering information.</b> |  |      |
| <b>50172</b>           | CARDEW 660V CA Surge arestor   |            |  |  |      |
| <b>50183</b>           | CARDEW 1000V CA Surge arestor  |            |  |  |      |
| <b>50248</b>           | PHT1000  |            |  |  |      |
| <b>50278</b>           | XRM  |            |  |  |      |
| <b>50281</b>           | XGR 115-127VCA   |            |  |  |      |
| <b>50282</b>           | XGR 220-240VCA   |            |  |  |      |
| <b>50283</b>           | XGR 380-415VCA   |            |  |  |      |
| <b>50420</b>           | TOA80 open toroid  |            |  |  |      |
| <b>50421</b>           | TOA120 open toroid   |            |  |  |      |
| <b>50437</b>           | TA30 toroid  |            |  |  |      |
| <b>50438</b>           | PA50 toroid  |            |  |  |      |
| <b>50439</b>           | IA80 toroid  |            |  |  |      |
| <b>50440</b>           | MA120 toroid   |            |  |  |      |
| <b>50441</b>           | SA200 toroid   |            |  |  |      |
| <b>50442</b>           | GA300 toroid   |            |  |  |      |
| <b>50494</b>           | XP15 Open CT for XRM   |            |  |  |      |
| <b>50498</b>           | XP50 Open CT for XRM   |            |  |  |      |
| <b>50499</b>           | XP100 Open CT for XRM  |            |  |  |      |
| <b>1460872</b>         | Voltage Adaptor P1N  |            |  |  |      |
| <b>IMDCP100</b>        | Current Probe 100mm  |            |  |  |      |
| <b>IMDCP15</b>         | Current Probe 15mm   |            |  |  |      |
| <b>IMDCP50</b>         | Current Probe 50mm   |            |  |  |      |
| <b>IMDIFL12</b>        | Ins Fault locator Entry  |            |  |  |      |
| <b>IMDIFL12C</b>       | Ins Fault locator Entry Com  |            |  |  |      |
| <b>IMDIFL12H</b>       | Ins Fault locator HC   |            |  |  |      |
| <b>IMDIFL12L</b>       | Ins Fault locator Entry 24-48VDC   |            |  |  |      |
| <b>IMDIFL12LMC</b>     | Ins Fault locator Adv 24-48VDC   |            |  |  |      |
| <b>IMDIFL12MC</b>      | Ins Fault locator Adv  |            |  |  |      |
| <b>IMDIFL12MCN</b>     | Ins Fault locator Adv  |            |  |  |      |
| <b>IMDIFL12MCT</b>     | Ins Fault locator Adv Tropic   |            |  |  |      |
| <b>IMDIFL12VA1T</b>    | Voltage Adaptor for IFL12MC series_1000V   |            |  |  |      |
| <b>IMDIFLK1</b>        | Mobile Ins Fault locator 1 feeder  |            |  |  |      |
| <b>IMDIFLK12</b>       | Mobile Ins Fault locator 12 feeders  |            |  |  |      |
| <b>IMD-IM10</b>        | IM10   |            |  |  |      |
| <b>IMD-IM10-H</b>      | IM10 H   |            |  |  |      |
| <b>IMDIM15H</b>        | IM15 H   |            |  |  |      |
| <b>IMD-IM20</b>        | IM20   |            |  |  |      |
| <b>IMD-IM20-1700</b>   | Voltage Adaptor for IM20   |            |  |  |      |
| <b>IMD-IM20-H</b>      | IM20 H   |            |  |  |      |
| <b>IMD-IM400</b>       | IM400  |            |  |  |      |
| <b>IMD-IM400-1700</b>  | Voltage adaptor for IM400  |            |  |  |      |
| <b>IMD-IM400-1700C</b> | Voltage adaptor for IM400 Conformal coated   |            |  |  |      |
| <b>IMD-IM400C</b>      | IM400C   |            |  |  |      |
| <b>IMDIM400L</b>       | IM400L   |            |  |  |      |
| <b>IMDIM400N</b>       | IM400N   |            |  |  |      |
| <b>IMDIM400LTHR</b>    | IM400LTHR  |            |  |  |      |
| <b>IMDIM400THR</b>     | IM400THR   |            |  |  |      |



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