Power Defense Molded Case Circuit Breakers

Contents

Product Description

Eaton's globally accepted Power Defense molded case circuit breaker (MCCB) can:

- Connect to your network or the cloud with built-in communication capability
- Generate the data to help optimize your facility's performance
- Mitigate arc flash to keep your employees, customers and end users safe

The Power Defense MCCB portfolio is globally adaptive to your footprint no matter the application or project requirement. All frames have the availability of global certifications including IEC, CCC, UL and CSA. Eaton's best-in-class support enables you to order readily available product for on-time delivery, across the globe.

Application Description

Power Xpert Release Electronic Trip Units

Simpler communications. Better protection. Easier energy metering

Embedded in the Power Defense portfolio, Power Xpert Release (PXR) electronic trip units for global low-voltage commercial and industrial applications are Eaton's latest innovation in circuit protection technology. They are designed to help you simplify your communications, enhance your protection and support your energy metering.

- Unique Eaton trip unit platform enables you to easily change set points, test and configure circuit breakers, and meter energy and power information
- Enhanced, easy-to-use interface allows you to view and adjust the trip unit settings
- Intuitive interface provides simple scroll-through visibility for critical performance metrics such as metering, battery life, zone selective interlock settings and circuit breaker health

Features and Benefits

Trip Unit Configurations

Thermal-Magnetic

- Available with adjustable magnetic settings, and for IEC markets, adjustable thermal settings. For NEMA markets, fixed magnetic and fixed thermal settings are options. Four-pole options with 0%, 60% and 100% protection are available

PXR 10

- All of the advantages of an electronic trip unit in a simpler interface, which leads to easy setup. This trip unit is available with LSI protection and includes programmable settings so that it can be tailored for the specific application

PXR 20

- A fully adjustable trip unit with LSI and LSIG protection capabilities. This trip unit offers more advanced features than ever before at this level, including current metering, programmable relays, and optional embedded communications to enable seamless integration into control and communication systems
- The PXR 20 also offers cutting-edge safety features like the Arcflash Reduction Maintenance System™ and zone selective interlocking with new testing and status indication features, and cause of trip indication

PXR 25

- Offers more functionality than ever before in a molded case circuit breaker trip unit. 1% accuracy for energy readings, coupled with the option for multiple communication protocols and embedded programmable relays, making this the ultimate example of an intelligent node in a power distribution system
- Leverage the capabilities of this product to eliminate meters and other components from the system, making the power distribution system cost-effective and smaller, with increased intelligence and connectivity

Each breaker frame section indicates the full range of trip units available for the frame. The wide range of trip unit options, coupled with field-replaceable trip units, enables compatibility with global requirements and allows upgrade from the most basic protective device to a high-end, intelligent node in a power system.

Trip Unit Features

Breaker Health Feature and Programmable Alarms

Less Costly Downtime

By enabling you to perform predictive and preventive maintenance on your power distribution system prior to component failure, the breaker health feature and programmable alarms will help you avoid costly downtime.

- Communicates circuit breaker status at customer determined levels to prompt for breaker maintenance or inspection
- Provides real-time evaluation of breaker condition by tracking and analyzing diagnostic details including breaker operations, short-circuit fault levels, operational time, internal temperature and overloads

Zone Selective Interlocking

Reduction in Arc Flash Energy

The zone selective interlocking (ZSI) feature communicates when a phase or ground fault is present.

- The breaker closest to the fault will override any customer-defined delay setting and open instantaneously to clear the fault, allowing line-side breakers to remain closed and online
- The PXR trip unit displays when the ZSI system is engaged, communicating, and helping to keep you and your employees safe—so you no longer have to just trust that the ZSI is operational, unlike with other MCCB offerings
- ZSI is also a proven solution for reducing arc flash incident energy when a fault is present

Arcflash Reduction Maintenance System

Better Safety and Productivity

For added protection, the Power Defense portfolio offers Eaton's patented Arcflash Reduction Maintenance System to reduce arc flash incident energy. This innovative safety feature can help you:

- Decrease personal protection equipment (PPE) requirements to enhance productivity
- Enhance the safety of your personnel

Enhanced Ground Fault Protection and Coordination

Easier Phase or Ground Fault Detection and Warning

Expanded protection of ground fault increases coordination capabilities and provides ability to turn protection off.

- ON/OFF feature simplifies system testing
- Ground fault trip units combine trip, alarm, and OFF in every unit, with programmable relays for alarm or pre-alarm functionality
- Expanded time profile selections include I^2t and flat response profiles for more coordination options

Industry Standard Communication

Energy monitoring and system status with onboard serial and industrial network communications available through CAM modules in the PXR 20 and 25 will offer a greater view and control into the machine or power distribution system.

Available features can offer:

- Easy connection to PLC building management systems, SCADA and cloud-based systems
- Remote monitoring and option control of breaker
- Metering and health data

Power Xpert Protection Manager

Simpler Operation, Reduced Maintenance

Once installed, your Power Xpert Release trip unit continues to provide cost savings and advanced functionality through the Power Xpert Protection Manager (PXPM) interface. This intuitive user interface allows for simple trip unit set up and programming, real-time reporting of power and energy metering, as well as the ability to check critical performance metrics, to meet your application needs while decreasing maintenance and in-field testing time. The testing features and functionality, which can be run through a personal computer, offers savings through labor hour reduction and avoiding the need for expensive proprietary testing kits.

- Ultimate control and data are at your fingertips:
  - Set point Configuration: Allows direct-to-trip unit or offline set up, including duplication of settings between units
  - Control Mode: Capture waveforms, reset TU or set the date/time
  - Test Mode: Run secondary injection and create test reports
  - Real-Time Data: Provides information regarding all status and metered data direction from the trip unit
  - Event Summaries: Stores up to 200 events, detailed information on the most recent (10) trip and (10) alarm events, and time adjustments to the real-time clock
  - Reports: Allows for the formatting and printing of real time data and of performed secondary injection tests

Breaker Frame Overview

Power Defense molded case circuit breakers include six frames, PD-1 through PD-6, providing flexibility to meet protection needs up to 2500 A.

PD-1—Compact frame covering range of 15 A through 125 A with fixed thermal-magnetic trip unit, and with current-limiting options. Additionally, motor circuit protectors covering a range from 3 A through 100 A with adjustable magnetic settings of 3x to 11x.

PD-2—Standard frame covering a range of 15 A through 225 A with trip unit options, from a fixed thermal-magnetic to the most advanced Power Xpert Release (PXR) electronic units. PD-2 also has current-limiting options available. Additionally, motor protection circuit breakers ranging from 15 A through 200 A with PXR electronic trip units, as well as motor circuit protectors ranging from 3 A through 150 A with adjustable magnetic settings from 3x to 10x.

PD-3—Covers a range of 45 A through 600 A with field-installable trip units, including fixed thermal/adjustable magnetic and all PXR electronic trip unit options in two frame options: 400 A and 600 A. PD-3 also has 100% UL ratings and current-limiting options. Additionally, motor protection circuit breakers ranging from 45 A through 600 A with PXR electronic trip units, as well as motor circuit protectors ranging from 70 A through 600 A with adjustable magnetic settings from 5x to 10x.

PD-4—Covers a range of 300 A through 800 A with field-installable trip units, including fixed thermal/adjustable magnetic, and all PXR electronic trip unit options (PXR 10, PXR 20 and PXR 25), and 100% UL rating options.

PD-5—Covers a range of 320 A through 1200 A with field-installable PXR electronic trip units, PXR 20 and PXR 25, as well as 100% UL rating options.

PD-6—Covers a range of 700 A through 2500 A with field-installable PXR electronic trip units, PXR 20 and PXR 25, as well as 100% UL rating options.

Interrupting Ratings

The Power Defense molded case circuit breaker line is a global product, with interrupting ratings across a broad range of voltages. These interrupting ratings are optimized for power distribution and meet the broadest range of application needs. See each frame for the specific interrupting levels.

Modular Accessories

The Power Defense molded case circuit breakers feature new, modular accessories that are designed to make customization of the breaker for the unique requirements of the application easier than ever before. A common line of auxiliary switch and bell alarms allow for inter-changeability between the different Power Defense breaker frames, enabling the final configuration of the breaker at the point of use and minimizing the amount of inventory required. Compact, modular shunt trips and under voltage releases have been designed to be easily installed and removed as the project or application dictates.

Some of the most common accessories and their function are described below.

Internal Accessories

Auxiliary Switches—Provide circuit breaker primary contact status information. The auxiliary switch is used for remote indication and interlock system verification. These switches mount internal to the breaker in the right side accessory cavity.

Alarm Switches—Used for remote indication of automatic trip operation. The switch automatically resets when the circuit breaker is reset. These switches mount internal to the breaker in the right side accessory cavity.

Shunt Trip—Provides capability to trip the breaker by remote control. Shunt trips are designed to be applied at specific AC or DC voltages. These devices are installed internal to the breaker in the left side accessory cavity.

Undervoltage Release (UVR)—Monitors a voltage, typically of a line voltage, and trips the circuit breaker when the voltage falls below 70% of the nominal voltage designated for the UVR. These devices are installed internal to the breaker in the left side accessory cavity.

External Accessories

Terminals—Multiple cable terminal options are available for each frame, providing alternatives to connect primary power and loads to the circuit breaker. Additionally, control wire terminals provide a means to tap off control power. Multi-wire terminals on the load side of the breaker can also be used to distribute the load from the circuit breaker to multiple devices without the use of separate distribution terminal blocks.

Terminal Shields—Provide protection against accidental contact with live terminations, as well as clearance between circuit breaker poles or adjacent circuit breakers, and are required for some terminal applications.

Interphase Barriers—Offer additional electrical clearance between circuit breaker poles for special termination applications.

Operating Mechanisms—Manually operated mechanisms designed to open, close and reset circuit breakers. These are available in three basic configurations—flange mounted, through-the-door and direct (close-coupled)—to provide a variety of options for different applications.

Remote/Electrical Operators—A motor driven, stored energy operator that enables a user to locally or remotely switch the breaker between the OFF, ON and TRIP positions, including reset switching. These operators mount on the front cover of the circuit breaker, within the trim line of the circuit breaker, and are designed to be applied at specific AC or DC voltages.

Locking Devices—Offer the capability to lock the breaker handle in the OFF or ON position (trip-free operation allows the breaker to trip when locked in the ON position). Power Defense offers three primary types, including handle blocks, padlockable hasps, and provisions for Kirk trapped key locks (Kirk lock must be purchased separately).

Walking Beam Interlock—Provides a mechanical interlock between two adjacent circuit breakers of the same frame size and pole configuration, preventing both breakers from being switched ON at the same time. To install a walking beam interlock, the circuit breakers must be ordered with the factory modification to accept the interlock.

Plug-In Adapters—Provide a rear connection and mounting base to simplify installation and front removal of circuit breakers. Plug-in adapters are available for frames PD-1, PD-2 and PD-3.

Drawout Configurations—Provide a robust system to remove or exchange breakers and is typically used in critical power operations. It provides a rear connection and cell, and provides indication of the circuit breaker position. Drawout configurations are available for frames PD-3, PD-4 and PD-5.

Standards and Certifications

Power Defense circuit breakers meet applicable:

- UL 489
- CSA, C22.2 No. 5-02
- IEC 60947-2
- GB 14048.2-2008

Catalog Numbering System Overview

Breakers

2

Power Defense breakers are configured using a 20-digit catalog number that can be divided into two sections:

- Base breaker catalog number = digits 1–14
- Factory modifications = digits 15–20

Product may be ordered using the base breaker catalog number (*14 digits*) only. However, if factory modifications are required, including installation of accessories, the full breaker catalog number plus factory modifications (*20 digits*) for a configured breaker must be used.

Note that most of the accessories for Power Defense molded case circuit breakers are field installable. When field installing accessories, the best practice to follow is to order a base breaker with the 14-digit catalog number, and order the accessories separate for field installation.

A configured breaker (*20 digits*) catalog number should only be used when it is necessary to have a factory modification of the circuit breaker.

Base Breaker Catalog Number (14 digits)

The catalog number has fixed positions for each breaker characteristic. The fixed format allows a customer to determine the performance characteristics of the product by parsing the catalog number. The format of the Power Defense breaker catalog number is as follows:

Catalog Number	PD	G	3	3	F	0400	TFA	J
Digits	**(1, 2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7–10)**	**(11–13)**	**(14)**
Meaning	Power Defense	Certifications and standards	Frame size	Poles	Interrupting rating	Continuous current rating	Trip unit type	Terminals

Certifications and Standards (Digit 3)

The certifications and standards selection (*digit 3*) denotes the global standards and certifications met by the product, and, as such, indicates the respective markings found on the product. Defined values and their meaning are as follows:

Value	Meaning	Marks on Product
G	Global ratings	UL, CSA, CE, CCC
F	Global ratings with 100% UL rating	UL, CSA, CE, CCC
D	Rated to 240 V	UL, CSA
J	UL and CSA	UL, CSA
C	IEC and GB	CE, CCC
E	IEC only	CE

Poles (Digit 5)

The poles selection (*digit 5*) is mostly self-explanatory, with the exception of four-pole breakers, which may use the values 4 (100% protected neutral pole), 0 (no protection on neutral pole), or 6 (60% protected neutral pole).

Other selections are self-explanatory, and further defined in each frame-specific section relative to the specific frame or product type.

Configured Breaker Catalog Number (20 digits)

For breakers with factory modifications, product must be ordered using the complete 20-digit configured breaker catalog number. This 20-digit number includes the base breaker catalog number plus an additional 6 digits to denote the factory modifications.

Factory modifications on Power Defense catalog numbers are also based on fixed positions within digits 15–20 of the catalog number. Digits 15–16 are always used for indicating accessories, 17–18 for tripping accessories and 19–20 for other accessories or modifications. When not used, the modification code digits default to the letter **N**.

Example

An example of a full catalog number with modification codes would be as follows:

Catalog Number	PDG33F0400TFAJ	CC	SP	WB
Digits	**(1–14)**	**(15, 16)**	**(17, 18)**	**(19, 20)**
Meaning	Base breaker catalog number	Indicating accessories (auxiliary and/or alarm switches)	Tripping accessories (shunt trip or UVR)	Other accessories or modifications

Indicating Accessories (Digits 15, 16)

The two digits used for indicating accessories (*digits 15, 16*) denote the type of accessory(-ies) installed, the type of termination of those accessories, and the configuration.

Digit 16 determines the configuration of the switches, such as Form A (normally open or NO), Form B (normally closed or NC), or Form C (change-over or CO, or NO/NC).

Digit 15 specifically designates the accessory type and termination, as shown below (note that not all frames offer all the options shown).

Type	Accessory Terminations	Digit 15 Selection
Auxiliary switch only	Pigtail (30-inch)	**A**
	Pigtail (3-meter)	**D**
	Screw terminal	**X**
	Spring cage clamp	**U**
Alarm switch only	Pigtail (30-inch)	**B**
	Pigtail (3-meter)	**E**
	Screw terminal	**Y**
	Spring cage clamp	**V**
Auxiliary and alarm	Pigtail (30-inch)	**C**
	Pigtail (3-meter)	**F**
	Screw terminal	**Z**
	Spring cage clamp	**W**

Tripping Accessories (Digits 17, 18)

The two digits used for tripping accessories (*digits 17, 18*) denote the type of accessory installed, the type of termination, and the nominal voltage rating of the accessory. Digit 17 specifically designates the type of accessory and type of termination, as shown below.

Digit 18 designates the nominal voltage rating of the shunt trip or UVR, for which options available vary by frame and are detailed in each frame section of the catalog.

Type	Accessory Terminations	Digit 17 Selection
Shunt trip	Pigtail (30-inch)	**S**
	Pigtail (3-meter)	**R**
	Screw terminal	**T**
Under voltage release	Pigtail (30-inch)	**U**
	Pigtail (3-meter)	**W**
	Screw terminal	**V**

Other Accessories (Digits 19, 20)

Other factory-installed accessories and factory modifications available (*digits 19, 20*) are detailed on a frame-by-frame basis in the respective section of the catalog.

Trip Units and Accessories for Field Installation or Replacement

Power Defense circuit breakers are designed to have field-installable accessories, and for frame sizes 3, 4, 5 and 6, field installable and replaceable trip units. As such, breaker frames, trip units and accessories may be purchased separately for field configuration. Trip units and accessories also have designated catalog numbers for identification and ordering purposes.

Breaker frames are configured using the base breaker catalog number (*14 digits*), as detailed in each section.

In general, when ordering accessory or trip unit field installation kits, the format of the catalog number begins with a description of the frame or frames for which it is applicable (e.g., PDG3), followed by a separator digit (X), and ending with a descriptive section, as follows:

Trip Units and Accessories

Catalog Number Example	PDG3	X	Descriptive Section
Meaning	Power Defense Global Standards Frame 3	Separator digit	May include voltage, functionality or other description of accessory or trip unit.

Trip Units

Trip units may be ordered installed as part of a base or configured breaker, with (*digits 11–13*) denoting the functionality and features included. Additionally, trip units may be ordered separately, using the trip unit designated catalog numbers. Below, it is explained how separate trip unit catalog numbers are set up, as well as their relationship with their designation in digits 11–13 of the breaker catalog number for the same trip unit.

Thermal-Magnetic Trip Units (TMTU)

Power Defense TMTUs are available in frame sizes 1 through 4, covering a continuous current range of 15 A through 800 A.

Thermal (overload) settings—Functionality and configurations are available based on the standard to which the breaker is certified, with all trip units carrying UL and CSA certifications (PDG, PDF, etc.) having a fixed thermal setting.

Magnetic (short circuit) settings—For frame sizes 1 and 2 that include UL and CSA certifications, magnetic settings are fixed. For frame sizes 3 and 4, the trip unit includes an adjustment for the short circuit protection setting of the trip unit, with the range dependent on the frame.

When ordered individually, thermal-magnetic trip unit catalog numbers include a Descriptive Section to denote the tripping characteristics of the unit, the pole configuration and continuous current rating.

The information in the description, TFA30400, is also used in the base breaker catalog number.

Example

An individual TMTU catalog number takes the form of:

Catalog Number	PDG3	X	TFA	3	0400
Description	Power Defense Frame Size	Separator digit	Trip unit tripping characteristics	Poles	Continuous current rating

Specific to TMTUs, the trip unit characteristics used in the base breaker catalog number denote the thermal and magnetic tripping characteristics of the unit.

Thermal-magnetic trip units (or breakers) may also be ordered calibrated to 50 °C ambient temperature by using a V in the trip unit type designator. Breakers with 50 °C calibrated trip units do not carry a UL Listing.

TM trip unit tripping characteristics options:

Configured Breaker Digit	Separate TM Trip Unit Digit	Designator	Option	Meaning
11	6	Trip unit type	**T**	Thermal-magnetic trip unit
			V	50 °C thermal-magnetic trip unit
12	7	Thermal type	**F**	Fixed
			A	Adjustable
13	8	Magnetic type	**F**	Fixed
			A	Adjustable

Note: IEC rated circuit thermal-magnetic trip units that are included with PDC or PDE breakers are typically fully adjustable (thermal and magnetic). Please consult with the product line for additional details.

Power Xpert Release (PXR) Electronic Trip Units (ETUs)

PXR ETUs are available in frame sizes 2 through 6, covering a continuous current range of 15 A through 2500 A.

When ordered individually, PXR trip unit catalog numbers also include a Descriptive Section denoting the functionality and configuration of the trip unit.

Sections of the PXR ETU catalog number are also used in the Base Breaker that is outfitted with the same trip unit.

Power Xpert Release (PXR) Electronic Trip Units (ETUs)

Catalog Number	PDG3	X	PXR	3	0400	P2M
Description	Power Defense Frame Size	Separator digit	PXR ETU	Poles	Maximum continuous current rating	Trip unit functionality

The three digit code at the end of the trip unit catalog number, or digits 11–13 for a base catalog number, denote the trip unit type, protection features and options included with the trip unit.

Example

Trip unit features and options:

Configured Breaker Digit	Separate PXR Trip Unit Digit	Designator	Option	Meaning
11	14	Trip unit type	**B**	PXR 10 Basic ETU
			E	PXR 20
			P	PXR 25
12	15	Protection type	**2**	LSI
			3	LSIG
			4	LSI with Arcflash Reduction Maintenance System™ (ALSI)
			5	LSIG with Arcflash Reduction Maintenance System (ALSIG)
			8	LSI Motor (MLSI)
			9	LSIG Motor (MLSIG)
13	16	Options included	**N**	None
			R	Programmable relays
			M	Modbus and relays
			Z	ZSI and relays
			C	CAM Link and relays
			W	Modbus, ZSI, and relays
			X	CAM Link, ZSI, and relays
			D	Modbus, CAM Link, and relays
			Y	Modbus, CAM Link, ZSI and relays

Each frame section provides details on which options are available for the frame and includes a table similar to the one below, denoting the options that may be combined by following horizontal lines and selecting one item per section, such as E2Z or P3W below.

Power Xpert Release (PXR) Trip Unit Options

Trip Unit Type (Character 11)		Protection Type (Character 12)				Available Configured Options (Character 13)								
						—	Relays	Relays Modbus	Relays	Relays	Relays Modbus	Relays	Relays Modbus	Relays Modbus
						—	—	—	ZSI	—	ZSI	ZSI	—	ZSI
PXR	ETU	LSI	LSIG	LSI ①	LSIG ①	—	—	—	—	CAM	—	CAM	CAM	CAM
PXR 10	**B**	**2**	—	—	—	**N**	—	—	—	—	—	—	—	—
PXR 20	**E**	**2**	—	—	—	**N**	**R**	**M**	**Z**	**C**	**W**	**X**	—	—
		—	**3**	**4**	**5**	—	**R**	**M**	**Z**	**C**	**W**	**X**	—	—
PXR 25	**P**	**2**	**3**	**4**	**5**	—	—	**M**	—	—	**W**	—	**D**	**Y**

Accessories

Power Defense accessory catalog numbers also follow a format with a frame description, separator digit (X) and descriptive section, similar to trip units.

Accessory catalog numbering format:

Catalog Number Example	PDG3	X	ST130ACDCS
Meaning	Power Defense Global Standards Frame 3	Separator digit	Descriptive section. May include voltage, functionality,or other description of accessory.

In cases where an accessory is used on multiple frames, multiple frames may be listed in the Frame Description, such as "PDG34" for some rotary handles. Accessory catalog numbers are listed with descriptions in each frame section.

Note

① With Arcflash Reduction Maintenance System.

Technical Data

Technical Data—Frame Sizes 1 and 2

2

Description		Unit	Frame Size 1—125 A, 1-, 2-, 3- and 4-Pole							Frame Size 2—225 A, 1-, 2-, 3- and 4-Pole					
			C	F	G	K	M	N ①	P ①	F	G	K	M	N	P
Interrupting rating / breaking capacity	50–60 Hz	kA													
NEMA UL/CSA	240 Vac		25	35	65	85	100	150	200	35	65	85	100	150	200
	480 Vac (277 Vac for 1-pole)		18	25	35	50	65	85	100	25	35	50	65	85	100
	600 Vac (347 Vac for 1-pole) ②③		10	14	18	22	25	25	25	14	18	22	25	30/25	35/25
	125 Vdc ④		10	22	22	35	42	42	42	10	10	10	10	10	10
	250 Vdc ④		10	22	22	35	42	42	42	10	10	10	22	22	22
IEC 60947-2	220–240 Vac	I_{cu}	25	35	55	85	100	150	200	35	55	85	100	150	200
		I_{cs}	25	35	55	85	100	100	150	35	55	85	100	100	150
	380–415 Vac	I_{cu}	20	25	36	50	70	70	100	25	36	50	70	70	100
		I_{cs}	20	25	36	50	50	70	100	25	36	50	53	70	70
	440 Vac	I_{cu}	—	—	—	—	—	—	—	25	30	35	50	70	100
		I_{cs}	—	—	—	—	—	—	—	20	22.5	35	40	50	65
	480 Vac	I_{cu}	—	—	—	—	—	—	—	20	25	35	50	65	65
		I_{cs}	—	—	—	—	—	—	—	20	20	22.5	30	40	40
	525 Vac ②	I_{cu}	—	—	—	—	—	—	—	18	20	30/25	30/25	30/25	35/25
		I_{cs}	—	—	—	—	—	—	—	15/13	15/13	15/13	15/13	15/13	18/13
	660–690 Vac	I_{cu}	—	—	—	—	—	—	—	—	8	10	10	10	10
		I_{cs}	—	—	—	—	—	—	—	—	4	5	5	5	5
	125 Vdc ④	I_{cu}	10	22	22	35	42	42	42	10	10	10	10	10	10
		I_{cs}	10	22	22	35	42	42	42	10	10	10	10	10	10
	250 Vdc ④	I_{cu}	10	22	22	35	42	42	42	10	10	10	22	22	22
		I_{cs}	10	22	22	35	42	42	42	10	10	10	22	22	22
Rated short circuit making capacity (Icm)	220–240 Vac		52.5	73.5	121	187	220	330	440	73.5	121	187	220	330	440
	380–415 Vac		42	53	76	105	154	154	220	52.5	75.6	105	154	154	220
	440 Vac		—	—	—	—	—	—	—	52.5	63	73.5	105	154	220
	480 Vac		—	—	—	—	—	—	—	42	52.5	73.5	105	143	143
	525 Vac		—	—	—	—	—	—	—	37.8	42	63/52.5	63/52.5	73.5	73.5
	660–690 Vac		—	—	—	—	—	—	—	—	16.8	21	21	21	21
Withstand/threshold of the frame	I_{cw}	kA	—							1.8					
Trip unit															
Interchangeable			No							No					
Thermal-magnetic (**T**)			Fixed-Fixed							Fixed-Fixed					
Motor circuit protector (**M**)			Adjustable Mag Only (3 pole)							Adjustable Mag Only (3 pole)					
Electronics															
Basic—PXR 10 (**B**)										LSI, MLSI					
Standard—PXR 20 (**E**)										LSI, LSIG					
Energy / programmable—PXR 25 (**P**)										LSI, LSIG, MLSI, MLSIG					

Notes

① N and P ratings not available for single-pole breakers.

② First listed interrupting rating applies to thermal-magnetic breakers; the second rating applies to electronic breakers.

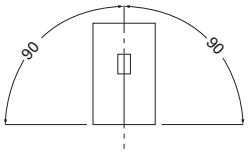
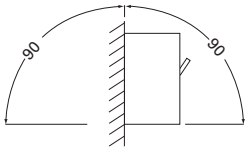
③ PDG1 breakers are rated for use in 600Y/347 Vac systems.

④ 125 Vdc ratings are for single-pole breakers. 250 Vdc require two poles in series.

Technical Data—Frame Sizes 1 and 2, continued

Description		Unit	 Frame Size 1—125 A, 1-, 2-, 3- and 4-Pole	 Frame Size 2—225 A, 1-, 2-, 3- and 4-Pole
UL File Number			E7819	E7819
UL 100% rated breaker			—	—
Amperage range	Thermal-magnetic	A	15–125	15–225 (1-pole: 15–150; 15–30 for 1-pole N and P ratings
	Electronics		—	15–225
Selectivity category			A	A
Reference standard			UL/CSA/IEC/CCC	UL/CSA/IEC/CCC
Rated insulation voltage U, according to IEC 60947–2	Main conducting paths	V	500	800 (TMTU) 690 (ETU)
	Auxiliary circuits	V	500	690
Rated impulse withstand voltage U_{imp}	Main conducting paths	kV	6	8 (TMTU) 6 (ETU)
	Auxiliary circuits		4	4
Rated operational voltage U_e (AC)	IEC/CCC	Vac	415	690
	UL/CSA	Vac	600/347	600
Rated operational voltage U_e (DC)	IEC/CCC	Vdc	250	250
	UL/CSA	Vdc	250	250
Suitable for use on single-phase AC applications up to 480 V?			No	3-pole and 4-pole
Permissible ambient temperature range (for storage and operation)		°C	–20 to +70	–20 to +70
Product complies with IEC 60068	Shock		Yes	Yes
Permissible load for various ambient temperatures close to the circuit breaker, related to the rated current of the circuit breaker				
Thermal-magnetic breakers		40 °C	100%	100%
		45 °C	98%	100%
		50 °C	96%	100%
		55 °C	93%	98%
		60 °C	91%	95%
		70 °C	86%	90%
PXR Electronic Breakers (including motor protection circuit breakers)		40 °C	—	100%
		45 °C	—	100%
		50 °C	—	100%
		55 °C	—	98%
		60 °C	—	92%
		70 °C	—	80%
Altitude derating factor			See Special Applications Section	See Special Applications Section
400 Hz derating factor			—	See Special Applications Section
Endurance (operating cycles) no-load (mechanical endurance)			10,000	20,000
Endurance (operating cycles) with load (electrical endurance) at 415 V			125 A: 4000;100 A: 6000	8,000
Maximum switching frequency (per minute)			125 A: 5; 100 A: 6	2

Technical Data—Frame Sizes 1 and 2, continued

Description		Unit	 Frame Size 1—125 A, 1-, 2-, 3- and 4-Pole	 Frame Size 2—225 A, 1-, 2-, 3- and 4-Pole
Dimensions (H x W x D)	1-pole	inch (mm)	5.5 x 1.0 x 3.0 (139.7 x 25.4 x 76.2)	6.0 x 1.4 x 3.5 (152.4 x 35.1 x 88.9)
	2-pole		5.5 x 2.0 x 3.0 (139.7 x 50.8 x 76.2)	6.0 x 2.8 x 3.5 (152.4 x 71.1 x 88.9)
	3-pole		5.5 x 3.0 x 3.0 (139.7 x 76.2 x 76.2)	6.0 x 4.1 x 3.5 (152.4 x 104.6 x 88.9)
	4-pole		5.5 x 4.0 x 3.0 (139.7 x 101.6 x 76.2)	6.0 x 5.5 x 3.5 (152.4 x 139.5 x 88.9)
Pole to pole distance		inch (mm)	1.000 (24.40)	1.375 (34.93)
Approximate weight		lb (kg)		
Breaker	3-pole / 4-pole		2.29 (1.04) / 2.84 (1.29)	4.21 (1.82) / 5.69 (2.46)
Breaker with Plug-in	3-pole / 4-pole		—	6.00 (2.72) / 8.09 (3.67)
Power loss per circuit breaker at maximum rated current In fixed breaker (3P)—for plant protection		W	31	48 (TMTU); 38 (ETU)
Suitable for reverse-feed applications			Yes (except MCP)	Yes (except MCP)
Blow out dimension		Inch (mm)	3.75 (95.3)	1.00 (25.4)
Required spacing between circuit breakers		Inch (mm)	0	0
Installation methods	Fixed		Yes	Yes
	Plug-in		Yes	Yes
	Drawout		—	—
	DIN rail		Yes	Yes ①
IP Protection	With accessories		IP30	IP2X with finger protection
Pollution degree			III	III
Overvoltage category			III	III
Annex H IT capability	at 415 V		Yes	Yes
Permissible mounting positions				

Note

① Consult with product line for availability.

Technical Data—Frame Sizes 3 and 4

Description		Unit	Frame Size 3—400 A, 2-, 3- and 4-Pole						Frame Size 3—600 A, 2-, 3- and 4-Pole						Frame Size 4—800 A, 2-, 3- and 4-Pole		
			F	G	K	M	N	P	F	G	K	M	N	P	G	K	M
Interrupting rating / breaking capacity	50–60 Hz	kA															
NEMA UL/CSA	240 Vac		35	65	85	100	150	200	35	65	85	100	150	200	65	85	100
	480 Vac		25	35	50	65	85	100	25	35	50	65	85	100	35	50	65
	600 Vac		14	18	25	35	50	65	14	18	25	35	50	65	18	25	35
	125 Vdc		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	250 Vdc ①		10	10	10	22	22	22	22	22	22	42	42	42	22	22	25
IEC 60947-2	220–240 Vac	I_{cu}	35	55	85	100	150	200	35	55	85	100	150	200	55	85	100
		I_{cs}	35	55	85	100	100	150	35	55	85	100	100	150	55	85	100
	380–415 Vac	I_{cu}	25	36	50	70	70	100	25	36	50	70	70	100	36	50	70
		I_{cs}	25	36	50	53	70	70	25	36	50	53	70	70	36	50	53
	440 Vac	I_{cu}	25	30	35	50	70	100	25	30	35	50	70	100	30	35	50
		I_{cs}	20	22.5	35	40	50	50	20	22.5	35	40	50	50	22.5	35	40
	480 Vac	I_{cu}	20	25	35	50	65	85	20	25	35	50	65	85	25	35	50
		I_{cs}	20	20	22.5	30	40	40	20	20	22.5	30	40	40	20	22.5	30
	525 Vac	I_{cu}	18	20	25	30	35	40	18	20	25	30	35	40	20	25	30
		I_{cs}	5	7.5	10	15	25	25	5	7.5	10	15	25	25	16.5	20	25
	660–690 Vac	I_{cu}	—	8	10	15	20	20	—	8	10	15	20	20	8	10	15
		I_{cs}	—	4	5	7.5	10	10	—	4	5	7.5	10	10	4	5	7.5
	125 Vdc	I_{cu}	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
		I_{cs}	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	250 Vdc ①	I_{cu}	10	10	10	22	22	22	22	22	22	42	42	42	22	22	25
		I_{cs}	10	10	10	22	22	22	22	22	22	42	42	42	22	22	25
Rated short circuit making capacity (Icm)	220–240 Vac		73.5	121	187	220	330	440	73.5	121	187	220	330	440	121	187	220
	380–415 Vac		52.5	75.6	105	154	154	220	52.5	75.6	105	154	154	220	75.6	105	154
	440 Vac		52.5	63	73.5	105	154	220	52.5	63	73.5	105	154	220	63	73.5	105
	480 Vac		42	52.5	73.5	105	143	187	42	52.5	73.5	105	143	187	52.5	73.5	105
	525 Vac		37.8	42	52.5	63	73.5	84	37.8	42	52.5	63	73.5	84	42	52.5	63
	660–690 Vac		—	16.8	21	31.5	42	42	—	16.8	21	31.5	42	42	16.8	21	31.5
Withstand/threshold of the frame	I_{cw}	kA	4						4						6		
Trip unit																	
Interchangeable			Yes						Yes						Yes		
Thermal-magnetic (**T**)			Fixed-Adjustable						Fixed-Adjustable						Fixed-Adjustable		
Motor circuit protector (**M**)			Adjustable Mag Only (3 pole)						Adjustable Mag Only (3 pole)						—		
Adjustable Magnetic only (3-pole)—PXR 10 (**B**)			LSI, MLSI						LSI, MLSI						LSI		
Standard—PXR 20 (**E**)			LSI, LSIG, ALSI, ALSIG						LSI, LSIG, ALSI, ALSIG						LSI, LSIG, ALSI, ALSIG		
Energy / programmable—PXR 25 (**P**)			LSI, LSIG, ALSI, ALSIG, MLSI, MLSIG						LSI, LSIG, ALSI, ALSIG, MLSI, MLSIG						LSI, LSIG, ALSI, ALSIG		

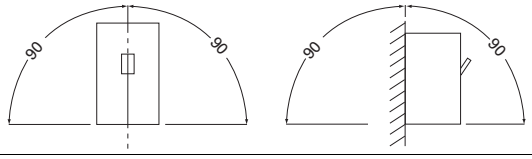
Note

① 2P in series.

Technical Data—Frame Sizes 3 and 4, continued

Description		Unit	Frame Size 3—400 A, 2-, 3- and 4-Pole	Frame Size 3—600 A, 2-, 3- and 4-Pole	Frame Size 4—800 A, 2-, 3- and 4-Pole
UL File Number			E7819	E7819	E7819
UL 100% rated breaker			Yes (ETU)	Yes (TMTU and ETU)	Yes (ETU)
Amperage range	Thermal-magnetic	A	100–400	250–600	300–800
	Electronics		45–400	90–600	320–800
Selectivity category			A	A	A
Reference standard			UL/CSA/IEC/CCC	UL/CSA/IEC/CCC	UL/CSA/IEC/CCC
Rated insulation voltage U, according to IEC 60947–2	Main conducting paths	V	800	800 (TMTU); 690 (ETU)	800 (TMTU);690 (ETU)
	Auxiliary circuits	V	690	690	690
Rated impulse withstand voltage U_{imp}	Main conducting paths	kV	8 (TMTU); 6 (ETU)	8 (TMTU); 6 (ETU)	8 (TMTU); 6 (ETU)
	Auxiliary circuits		4	4	4
Rated operational voltage U_e (AC)	IEC/CCC	Vac	690	690	690
	UL/CSA	Vac	600	600	600
Rated operational voltage U_e (DC)	IEC/CCC	Vdc	250	250	250
	UL/CSA	Vdc	250	250	250
Suitable for use on single-phase AC applications up to 480 V?			3-pole and 4-pole	3-pole and 4-pole	3-pole and 4-pole
Permissible ambient temperature range (for storage and operation)		°C	–20 to +70	–20 to +70	–20 to +70
Product complies with IEC 60068	Shock		Yes	Yes	Yes
Permissible load for various ambient temperatures close to the circuit breaker, related to the rated current of the circuit breaker					
Thermal-magnetic breakers		40 °C	100%	100%	100%
		45 °C	95.5%	95.5%	97%
		50 °C	91%	91%	94%
		55 °C	86%	86%	91%
		60 °C	82%	82%	88%
		70 °C	70%	70%	80%
PXR electronic breakers (including motor protection circuit breakers)		40 °C	100%	100%	100%
		45 °C	100%	100%	100%
		50 °C	100%	100%	100%
		55 °C	86%	86%	91%
		60 °C	82%	82%	88%
		70 °C	70%	70%	80%
Altitude derating factor			See Special Applications Section	See Special Applications Section	See Special Applications Section
400 Hz derating factor			See Special Applications Section	See Special Applications Section	See Special Applications Section
Endurance (operating cycles) no-load (mechanical endurance)			15,000	15,000	10,000
Endurance (operating cycles) with load (electrical endurance) at 415 V			5000	5000	3000
Maximum switching frequency (per minute)			1	1	1

Technical Data—Frame Sizes 3 and 4, continued

Description		Unit	 Frame Size 3—400 A, 2-, 3- and 4-Pole	 Frame Size 3—600 A, 2-, 3- and 4-Pole	 Frame Size 4—800 A, 2-, 3- and 4-Pole
Dimensions (H x W x D)	1-pole	inch (mm)	—	—	—
	2-pole		10.1 x 5.5 x 4.3 (257.1 x 138.9 x 109.1)	10.1 x 5.5 x 4.3 (257.1 x 138.9 x 109.1)	16.0 x 8.3 x 4.4 (406.4 x 209.6 x 111.2)
	3-pole		10.1 x 5.5 x 4.3 (257.1 x 138.9 x 109.1)	10.1 x 5.5 x 4.3 (257.1 x 138.9 x 109.1)	16.0 x 8.3 x 4.4 (406.4 x 209.6 x 111.2)
	4-pole		10.1 x 7.2 x 4.3 (257.1 x 182.9 x 109.1)	10.1 x 7.2 x 4.3 (257.1 x 182.9 x 109.1)	16.0 x 11.0 x 4.4 (406.4 x 279.4 x 111.2)
Pole to pole distance		inch (mm)	1.719 (43.66)	1.719 (43.66)	2.750 (69.85)
Approximate weight		lb (kg)			
Breaker	3-pole / 4-pole		11.02 (5.00) 13.77 (6.25)	12.79 (5.80) 17.42 (7.90)	30.00 (13.60) 39.90 (18.08)
Breaker with Plug-in	3-pole / 4-pole		18.07 (8.20) 20.82 (9.44)	19.84 (9.01) 26.87 (12.19)	—
Power loss per circuit breaker at maximum rated current In fixed breaker (3P)—for plant protection		W	70 (TMTU); 64 (ETU)	130 (TMTU); 110 (ETU)	291 (TMTU); 270 (ETU)
Suitable for reverse-feed applications			Yes	Yes	Yes
Blow out dimension		Inch (mm)	1.00 (25.4)	1.00 (25.4)	2.36 (60.0)
Required spacing between circuit breakers		Inch (mm)	0	0	0
Installation methods	Fixed		Yes	Yes	Yes
	Plug-in		Yes	Yes	—
	Drawout		Yes ①	Yes ①	Yes ①
	DIN rail		—	—	—
IP Protection	With accessories		IP2X with Finger Protection	IP2X with Finger Protection	IP2X Protection
Pollution degree			III	III	III
Overvoltage category			III	III	III
Annex H IT capability	at 415 V		Yes	Yes	Yes
Permissible mounting positions					

Note

① Consult with product line for availability.

Technical Data—Frame Sizes 5 and 6

Description		Unit	Frame Size 5—800, 1200, 1600 (IEC) 2-, 3- and 4-Pole					Frame Size 6—1600, 2000, 2500 2-, 3- and 4-Pole		
Interrupting rating / breaking capacity	50–60 Hz	kA	**K**	**M**	**N**	**P**	**T** ①	**M**	**N**	**P**
NEMA UL/CSA	240 Vac		85	100	150	200	200	125	150	200
	480 Vac (277 Vac for 1-pole)		50	65	85	100	125	65	85	100
	600 Vac (347 Vac for 1-pole)		25	35	50	65	85	35	50	65
	125 Vdc		—	—	—	—	—	—	—	—
	250 Vdc		—	—	—	—	—	—	—	—
IEC 60947-2	220–240 Vac	I_{cu}	85	100	150	200	—	135	150	200
		I_{cs}	85	100	100	150	—	100	100	100
	380–415 Vac	I_{cu}	50	70	70	100	—	70	70	100
		I_{cs}	50	53	50	50	—	50	50	50
	440 Vac	I_{cu}	35	50	70	100	—	50	70	100
		I_{cs}	35	40	50	50	—	40	50	50
	480 Vac	I_{cu}	35	50	65	85	—	50	65	85
		I_{cs}	22.5	30	40	40	—	30	40	40
	525 Vac	I_{cu}	25	30	35	40	—	30	35	40
		I_{cs}	20	25	25	25	—	25	25	25
	660–690 Vac	I_{cu}	10	15	20	35	—	15	20	35
		I_{cs}	5	7.5	10	18	—	7.5	13	18
	125 Vdc	I_{cu}	—	—	—	—	—	—	—	—
		I_{cs}	—	—	—	—	—	—	—	—
	250 Vdc	I_{cu}	—	—	—	—	—	—	—	—
		I_{cs}	—	—	—	—	—	—	—	—
Rated short circuit making capacity (Icm)	220–240 Vac		187	220	330	440	—	297	330	440
	380–415 Vac		105	154	154	220	—	154	154	220
	440 Vac		73.5	105	154	220	—	105	154	220
	480 Vac		73.5	105	143	187	—	105	143	187
	525 Vac		52.5	63	73.5	84	—	63	73.5	84
	660–690 Vac		21	31.5	42	73.5	—	31.5	42	73.5
Withstand/threshold of the frame	I_{cw}	kA	14					20		
Trip unit										
Interchangeable			Yes					Yes		
Thermal-magnetic (**T**)			—					—		
Motor circuit protector (**M**)			—					—		
Electronics										
Basic—PXR 10 (**B**)			—					—		
Standard—PXR 20 (**E**)			LSI, LSIG, ALSI, ALSIG					LSI, LSIG, ALSI, ALSIG		
Energy / programmable—PXR 25 (**P**)			LSI, LSIG, ALSI, ALSIG					LSI, LSIG, ALSI, ALSIG		

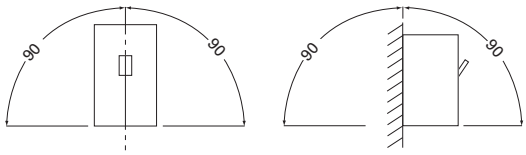
Note

① PDJ (UL/CSA only), three-pole only; 800 A.

Technical Data—Frame Sizes 5 and 6, continued

Description		Unit	Frame Size 5—800, 1200, 1600 (IEC) 2-, 3- and 4-Pole	Frame Size 6—1600, 2000, 2500 2-, 3- and 4-Pole
UL File Number			E7819	E7819
UL 100% rated breaker			Yes	Yes (up to 2000 A)
Amperage range	Thermal-magnetic	A	—	—
	Electronics		320–1200 (1600 IEC)	700–2500
Selectivity category			A	A
Reference standard			UL/CSA/IEC/CCC	UL/CSA/IEC/CCC
Rated insulation voltage U, according to IEC 60947–2	Main conducting paths	V	690 (ETU)	690 (ETU)
	Auxiliary circuits	V	690	690
Rated impulse withstand voltage U_{imp}	Main conducting paths	kV	6 (ETU)	6 (ETU)
	Auxiliary circuits		4	4
Rated operational voltage U_e (AC)	IEC/CCC	Vac	690	690
	UL/CSA	Vac	600	600
Rated operational voltage U_e (DC)	IEC/CCC	Vdc	—	—
	UL/CSA	Vdc	—	—
Suitable for use on single-phase AC circuits?			Yes	No
Permissible ambient temperature range (for storage and operation)		°C	–20 to +70	–20 to +70
Product complies with IEC 60068	Shock		Yes	Yes
Permissible load for various ambient temperatures close to the circuit breaker, related to the rated current of the circuit breaker				
Thermal-magnetic breakers		40 °C	—	—
		45 °C	—	—
		50 °C	—	—
		55 °C	—	—
		60 °C	—	—
		70 °C	—	—
PXR electronic breakers (including motor protection circuit breakers)		40 °C	100%	100%
		45 °C	95.5%	95.5%
		50 °C	91%	91%
		55 °C	85%	85%
		60 °C	81%	81%
		70 °C	70%	70%
Altitude derating factor			See Special Applications Section	See Special Applications Section
400 Hz derating factor			See Special Applications Section	See Special Applications Section
Endurance (operating cycles) no-load (mechanical endurance)			3000	3000
Endurance (operating cycles) with load (electrical endurance) at 415 V			500	500
Maximum switching frequency (per minute)			1	1

Technical Data—Frame Sizes 5 and 6, continued

Description		Unit	Frame Size 5—800, 1200, 1600 (IEC) 2-, 3- and 4-Pole	Frame Size 6—1600, 2000, 2500 2-, 3- and 4-Pole
Dimensions (H x W x D)	1-pole	inch (mm)	—	—
	2-pole		16.0 x 8.3 x 5.5 (406.4 x 209.5 x 139.7)	16.0 x 15.5 x 9.8 (406.4 x 393.7 x 247.65)
	3-pole		16.0 x 8.3 x 5.5 (406.4 x 209.5 x 139.7)	16.0 x 15.5 x 9.8 (406.4 x 393.7 x 247.65)
	4-pole		16.0 x 11.1 x 5.5 (406.4 x 282.7 x 139.7)	16.0 x 20.0 x 9.8 (406.4 x 508 x 247.65)
Pole to pole distance		inch (mm)	2.750 (69.85)	4.500 (114.30)
Approximate weight		lb (kg)		
Breaker	3-pole / 4-pole		46.80 (21.30) / 58.00 (26.31)	135.00 (61.23) / 182.00 (82.55)
Breaker with Plug-in	3-pole / 4-pole		—	—
Power loss per circuit breaker at maximum rated current In fixed breaker (3P)—for plant protection		W	87 (800 A) 195 (1200 A and 1600 A)	220 (1600 A); 270 (2000 A); 400 (2500 A)
Suitable for reverse-feed applications			Yes	Yes
Blow out dimension		Inch (mm)	13.125 (333.38)	2.625 (66.68)
Required spacing between circuit breakers		Inch (mm)	0	0
Installation methods	Fixed		Yes	Yes
	Plug-in		—	—
	Drawout		Yes ①	—
	DIN rail		—	—
IP Protection	With accessories		IP2X Protection	IP2X Protection
Pollution degree			III	III
Overvoltage category			III	III
Annex H IT capability	at 415 V		Yes	Yes
Permissible mounting positions				

Note

① Consult with product line for availability.

Power Defense Accessories

	PDG1	PDG2	PDG3	PDG4	PDG5	PDG6
Auxiliary switches						
Rated thermal current I_{th}	5 A	4 A	4 A	4 A	6 A	6 A
Rated operational voltage (AC)	125 V / 250 V / 600 V	230 V / 500 V / 600 V	230 V / 500 V / 600 V	230 V / 500 V / 600 V	600 V	600 V
Rated operational current (AC)	5 A / 5 A / 2 A	4 A / 1 A / 0.6 A	4 A / 1 A / 0.6 A	4 A / 1 A / 0.6 A	6 A	6 A
Rated operational voltage (DC)	125 V	220 V	220 V	220 V	125 V / 250 V	125 V / 250 V
Rated operational current (DC)	1 A	0.3 A	0.3 A	0.3 A	0.5 A / 0.25 A	0.5 A / 0.25 A
Backup fuse ①	4 A	4 A	4 A	4 A	4 A	4 A
Undervoltage releases						
Response voltage						
Drop (breaker tripped) U_s	0.35~0.70	0.35~0.70	0.35~0.70	0.35~0.70	0.35~0.70	0.35~0.70
Pickup (breaker may be switched on) U_s	0.85~1.1	0.85~1.1	0.85~1.1	0.85~1.1	0.85~1.1	0.85~1.1
Power consumption in continuous operation:						
50/60 Hz 24 Vac	≤ 4.3 W	≤ 3 W	≤ 3 W	≤ 3 W	≤ 11 W	≤ 9.6 W
50/60 Hz 110–130 Vac	≤ 4.3 W	≤ 3 W	≤ 3 W	≤ 3 W	≤ 11 W	≤ 9.6 W
50/60 Hz 208–240 Vac	≤ 4.3 W	≤ 3 W	≤ 3 W	≤ 3 W	≤ 11 W	≤ 9.6 W
50/60 Hz 380–440 Vac	≤ 4.3 W	≤ 3 W	≤ 3 W	≤ 3 W	≤ 11 W	≤ 9.6 W
50/60 Hz 480–525 Vac	≤ 4.3 W	≤ 3 W	≤ 3 W	≤ 3 W	≤ 11 W	≤ 9.6 W
50/60 Hz 600 Vac	≤ 4.3 W	≤ 3 W	≤ 3 W	≤ 3 W	≤ 6.25 W	≤ 7.5 W
12 Vdc	≤ 4.3 W	≤ 3 W	≤ 3 W	≤ 3 W	≤ 6.25 W	≤ 7.5 W
24 Vdc	≤ 4.3 W	≤ 3 W	≤ 3 W	≤ 3 W	≤ 6.25 W	≤ 7.5 W
48 Vdc	≤ 4.3 W	≤ 3 W	≤ 3 W	≤ 3 W	≤ 6.25 W	≤ 7.5 W
60 Vdc	≤ 4.3 W	≤ 3 W	≤ 3 W	≤ 3 W	≤ 6.25 W	≤ 7.5 W
125 Vdc	≤ 4.3 W	≤ 3 W	≤ 3 W	≤ 3 W	≤ 6.25 W	≤ 7.5 W
250 Vdc	≤ 4.3 W	≤ 3 W	≤ 3 W	≤ 3 W	≤ 6.25 W	≤ 7.5 W
Maximum opening time (ms)	≤ 50	≤ 20	≤ 20	≤ 20	≤ 46	≤ 77
Shunt trips						
Shunt trips (“f” releases) response voltage						
Pickup (breaker tripped) U_s	0.7~1.1	0.7~1.1	0.7~1.1	0.7~1.1	0.7~1.1	0.7~1.1
Power consumption in (short time) at:						
50/60 Hz 24 Vac/24 Vdc	41 / 120	≤ 3 W	≤ 3 W	≤ 3 W	475/610	612/396
50/60 Hz 110–130 Vac/125 Vdc	572 / 121	≤ 3 W	≤ 3 W	≤ 3 W	100/150	1896/475
50/60 Hz 208–240 Vac/250 Vdc	2280 / N/A	≤ 3 W	≤ 3 W	≤ 3 W	432/55	1896/475
50/60 Hz 380–440 Vac	572	≤ 3 W	≤ 3 W	≤ 3 W	110	2156
50/60 Hz 480–525 Vac	840	≤ 3 W	≤ 3 W	≤ 3 W	32	289
50/60 Hz 600 Vac	1080	≤ 3 W	≤ 3 W	≤ 3 W	42	384
12 Vdc	201	≤ 3 W	≤ 3 W	≤ 3 W	145	—
48 Vdc	475	≤ 3 W	≤ 3 W	≤ 3 W	67	403
60 Vdc	720	≤ 3 W	≤ 3 W	≤ 3 W	102	666
Maximum load duration						
Maximum opening time (ms)	≤ 50	<20	<20	<20	<30	<62

Note

① Proper system design should size the backup fuse to the rated current going through the auxiliary switch.

Power Defense Molded Case Circuit Breakers—Frame Size 1

Contents

Power Defense Molded Case Circuit Breakers—Frame Size 1

Product Description

Frame Size 1 covers a range of 15 A through 125 A with fixed-fixed thermal-magnetic trip units. PD-1 is available in single-, two-, three- and four-pole configurations, with the four-pole configuration available with no protection on the neutral pole, or fully protected.

Application Description

Frame Size 1 can be used to meet a wide range of circuit protection and power distribution needs, including current-limiting applications. PD-1 is a cable-in / cable-out MCCB.

Features and Benefits

Frame Size 1 breakers are available in multiple ratings from 15 A through 125 A. They are of a modular design with field installable accessories and terminals, which may also be factory installed.

Standards and Certifications

Power Defense breakers are designed and tested to meet stringent requirements for:

- UL
- CSA
- IEC (CE)
- CB (CCC)

Catalog Number / Product Selection

Power Defense—Frame Size 1 (15–125 A)

Frame Size 1 covers a range of 15 A through 125 A using thermal-magnetic trip units. It is available in configurations of single-, two-, three- and four-pole.

Interrupting Ratings (Two-, Three- and Four-Pole)

Catalog Designator	C		F		G		K		M ①		N ①②		P ①②	
UL/CSA	**kA rms**		**kA rms**		**kA rms**		**kA rms**		**kA rms**		**kA rms**		**kA rms**	
240 Vac	25		35		65		85		100		150		200	
480 Vac	18		25		35		50		65		85		100	
600Y/347 Vac	10		14		18		22		25		25		25	
250 Vdc ③	10		22		22		35		42		42		42	
IEC	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}
240 Vac	25	25	35	35	55	55	85	85	100	100	150	150	200	200
380–415 Vac	20	20	25	25	36	36	50	50	70	50	70	70	100	100
250 Vdc ③	10	10	22	22	22	22	35	35	42	42	42	42	42	42

Interrupting Ratings (Single-Pole)

	C		F		G		K		M	
UL/CSA	**kA rms**		**kA rms**		**kA rms**		**kA rms**		**kA rms**	
120 Vac	35		—		100		—		200	
240 Vac	25		35		65		85		100	
277 Vac	18		25		35		50		65	
347 Vac	10		14		18		22		25	
125 Vdc	10		22		22		35		42	
IEC	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}
240 Vac	25	25	35	35	55	55	85	85	100	100
125 Vdc	10	10	22	22	22	22	35	35	35	35

Notes

① UL current limiting.
② Available in three- and four-pole configurations only.
③ Must use 2 poles in series for 250 Vdc.

Power Defense—Frame Size 1 (15–125 A)

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

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Molded Case Circuit Breakers (Single- and Two-Pole) with Thermal-Magnetic Trip Units—Globally Rated

PD G 1 3 M 0125 TFF J

Product Series
PD = Power Defense

Certifications/ Standards
G = UL/CSA/IEC/ CCC

Frame Size
1 = 1

Pole Options
1 = 1-pole
2 = 2-pole

Interrupting Ratings ①
C = 18 kA at 480 V
F = 25 kA at 480 V
G = 35 kA at 480 V
K = 50 kA at 480 V
M = 65 kA at 480 V

Interrupting Ratings ②
C = 10 kA at 600Y/347 V
F = 14 kA at 600Y/347 V
G = 18 kA at 600Y/347 V
K = 22 kA at 600Y/347 V
M = 25 kA at 600Y/347 V

Continuous Current Ratings
0015 = 15 A
0020 = 20 A
0025 = 25 A
0030 = 30 A
0035 = 35 A
0040 = 40 A
0045 = 45 A
0050 = 50 A
0060 = 60 A
0070 = 70 A
0080 = 80 A
0090 = 90 A
0100 = 100 A
0110 = 110 A
0125 = 125 A

Trip Unit Type Options
TFF = Fixed Thermal / Fixed Magnetic
VFF = 50 °C Fixed Thermal / Fixed Magnetic (non UL)

Standard Terminal Options
N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Molded Case Circuit Breakers (Three- and Four-Pole) with Thermal-Magnetic Trip Units—Globally Rated

PD

G = UL/CSA/IEC/ CCC

1 = 1

3 = 3-pole
4 = 4-pole (100% N)
0 = 4-pole (0% N)

C = 18 kA at 480 V
F = 25 kA at 480 V
G = 35 kA at 480 V
K = 50 kA at 480 V
M = 65 kA at 480 V
N = 85 kA at 480 V
P = 100 kA at 480 V

C = 10 kA at 600Y/347 V
F = 14 kA at 600Y/347 V
G = 18 kA at 600Y/347 V
K = 22 kA at 600Y/347 V
M = 25 kA at 600Y/347 V
N = 25 kA at 600Y/347 V
P = 25 kA at 600Y/347 V

0015 = 15 A
0020 = 20 A
0025 = 25 A
0030 = 30 A
0035 = 35 A
0040 = 40 A
0045 = 45 A
0050 = 50 A
0060 = 60 A
0070 = 70 A
0080 = 80 A
0090 = 90 A
0100 = 100 A
0110 = 110 A
0125 = 125 A

TFF = Fixed Thermal / Fixed Magnetic
VFF = 50 °C Fixed Thermal / Fixed Magnetic (non UL)

N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Molded Case Switches—Globally Rated ③

PD

G = UL/CSA/IEC/ CCC

1 = 1

3 = 3-pole
4 = 4-pole

G = 35 kA at 480 V
M = 65 kA at 480 V

G = 18 kA at 600Y/347 V
M = 25 kA at 600Y/347 V

0125 = 125 A

KNS = Molded Case Switch

N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

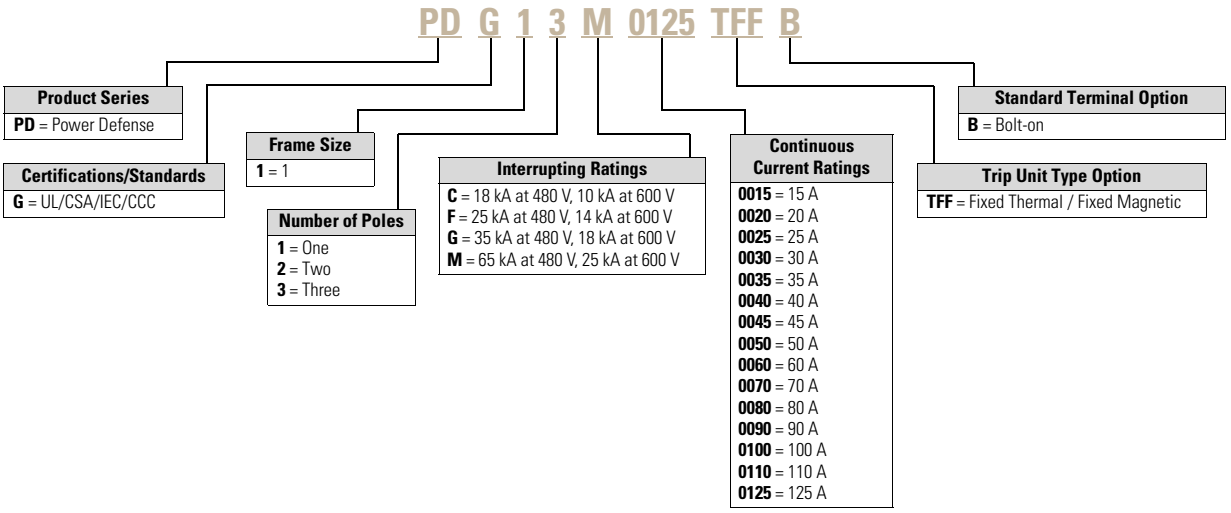
Notes

① Ratings at 277 Vac for single-pole.

② Ratings at 347 Vac for single-pole.

③ Molded case switch may open above 1250 A.

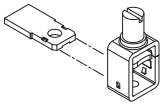
Bolt-on


PD G 1 3 M 0125 TFF B
Product Series
PD = Power Defense
Certifications/Standards
G = UL/CSA/IEC/CCC
Frame Size
1 = 1
Number of Poles
1 = One
2 = Two
3 = Three
Interrupting Ratings
C = 18 kA at 480 V, 10 kA at 600 V
F = 25 kA at 480 V, 14 kA at 600 V
G = 35 kA at 480 V, 18 kA at 600 V
M = 65 kA at 480 V, 25 kA at 600 V
Continuous Current Ratings
0015 = 15 A
0020 = 20 A
0025 = 25 A
0030 = 30 A
0035 = 35 A
0040 = 40 A
0045 = 45 A
0050 = 50 A
0060 = 60 A
0070 = 70 A
0080 = 80 A
0090 = 90 A
0100 = 100 A
0110 = 110 A
0125 = 125 A
Trip Unit Type Option
TFF = Fixed Thermal / Fixed Magnetic
Standard Terminal Option
B = Bolt-on

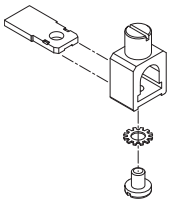
Terminals—Frame Size 1

Catalog numbers shown are for a single side of a three-pole breaker.
For two- and four-pole options, replace the **X3** with **X2** or **X4**, respectively.
Example: PDG**1X3**T125 becomes PDG**1X2**T125 for two-pole.

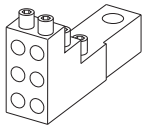
Terminal Types



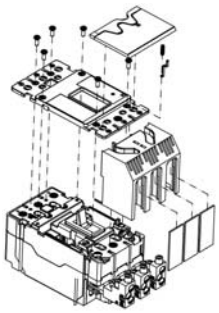
PDG1X3T125



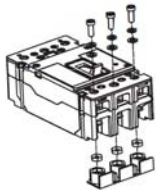
PDG1X3TA125



PDG1X3TA1256W



PDG1X3TA1253W



PDG1X3TS125

GCWTK

Note: Pictures are for reference only.

Terminals

Maximum Breaker Amperes	Terminal Body Type	Wire Type	Wire Class	Number of Conductors per Phase	AWG Range per Conductor	Metric (mm^2) Range per Conductor	3-Pole Catalog Number	Included Accessories	Digit 14 Designation			
									Line and Load	Line Only	Load Only	Standard on Amperes
Standard Terminals												
125	Steel	Al or Cu	B, C	1	14-3/0	2.08–85	**PDG1X3T125**	—	J	K	L	15–125
Alternate Terminals												
125	Aluminum	Cu/Al	B, C	1	14-1/0	2.08–53.5	**PDG1X3TA125**	—	T	U	V	15–125
Multi-wire Terminals												
125	Aluminum	Cu/Al	B, C	6	14-6	2.08–13.3	**PDG1X3TA1256W**	Terminal shield	—	—	G	15–125
125	Aluminum	Cu/Al	B, C	3	14-2	2.08–33.6	**PDG1X3TA1253W**	Terminal shield	—	—	H	15–125
End Cap Kit/Screw Terminals												
—	—	—	—	—	—	—	**PDG1X3TS125**	—	S	D	E	15–125

Note: Wire capacity is based on standard imperial wire sizes; metric sizes provided in table are a direct conversion to demonstrate maximum capacity, not to denote metric wire sizes.

Control Wire Tabs

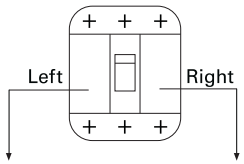
Use	Package Quantity	Catalog Number
15–125 A	12	**GCWTK**

Note: Control wire tabs can be installed with terminals listed above.

Accessories

Internal Accessory Configurations—Frame Size 1 ①

3- and 4-Pole Circuit Breakers



Tripping Accessory Options	Indicating Accessory Options
None	None
 Qty: 1	1 Make/1 Break Alarm Switch
	2 Make/2 Break Alarm Switch
	1A/1B Auxiliary Switch
	2A/2B Auxiliary Switch
	1A/1B Alarm,1A/1B Auxiliary Combination
 Qty: 1	

Alarm and Auxiliary Switches

Alarm and auxiliary switches are plug-and-play accessories designed to be field installable. However, Eaton also offers the service of field installation in our factories.

Breaker catalog numbers with alarm and auxiliary switch combinations require a complete 20-digit catalog number, adding the alarm and auxiliary switch functionality in digits 15–16 and adhering to the following conditions and tables:

- Digit 15 denotes the type of accessory(-ies) installed and the terminal types
- Digit 16 denotes number of switches installed
- If no other accessories are selected, use NNNN for the final 4 digits of the catalog number

Alarm and Auxiliary Switch—Field Installation Kits ②

	Auxiliary Switch Three-Pole	Catalog Number None	1NO/1NC (1 Form C)	2NO/2NC (2 Form C)
Alarm Switch	**None**	—	**AUX1A1BPK**	**AUX2A2BPK**
	1NO/1NC (1 Form C)	**ALM1M1BEPK**	**AUXALRMEPK**	—
	2NO/2NC (2 Form C)	**ALM2M2BEPK**	—	—

Alarm and Auxiliary Switch Factory Installation (Digits 15–16) ②

	Auxiliary Switch Three-Pole	Breaker Catalog Number (Digit 15–16 Suffix) None	1NO/1NC (1 Form C)	2NO/2NC (2 Form C)
Alarm Switch	**None**	**NN**	**AC**	**A1**
	1NO/1NC (1 Form C)	**BC**	**CC**	**—**
	2NO/2NC (2 Form C)	**B1**	—	—

Notes

① Two-pole PD-1 breakers have an accessory pocket compatible with indicating accessory options only.
② All options come with pigtail terminations.

Tripping Accessories—Frame Size 1

Shunt Trips

Pigtail (29 in / 0.75 m) Voltage	Breaker Catalog Number Digit 17-18 Suffix	Catalog Number
12 Vdc	SH	**SNT012CPK**
24 Vac/Vdc	SN	**SNT024CPK**
48–60 Vdc	—	**SNT4860CPK**
110–125 Vdc	—	**SNT125DPK**
250 Vdc	—	**SNT250DPK**
48–60 Vac	—	**SNT4860CPK**
110–240 Vac	—	**SNT120CPK**
380–600 Vac	—	**SNT480CPK**

Undervoltage Releases

Pigtail (29 in / 0.75 m) Voltage	Breaker Catalog Number Digit 17-18 Suffix	Catalog Number
24 Vdc	UG	**UVR024DPK**
48 Vdc	UJ	**UVR048DPK**
60 Vdc	UK	**UVR048DPK**
125 Vdc	—	**UVR125DPK**
250 Vdc	UM	**UVR250DPK**
24 Vac	UF	**UVR024APK**
48 Vac	—	**UVR048APK**
60 Vac	—	**UVR048APK**
125 Vac	—	**UVR120APK**
240 Vac	UB	**UVR240APK**
480 Vac	—	**UVR480APK**
525 Vac	UD	**UVR600APK**
600 Vac	UE	**UVR600APK**

Handle Mechanisms—Frame Size 1

Universal Direct Rotary Handle Mechanism

Description	NEMA 1/12 Black Handle Catalog Number	NEMA 1/12 Red Handle Catalog Number
With interlock	**EHMCCBI**	**EHMCCRI**
Without interlock	**EHMCCB**	**EHMCCR**

PDG1XHMDS

Variable Depth Rotary Handle Mechanism

Description	Catalog Number
Standard lockable handle with mechanism (black and gray) NEMA 1/3R/12/4/4X ①	**PDG1XHMDS**
Emergency lockable handle with mechanism (red and yellow) NEMA 1/3R/12/4/4X ①	**PDG1XHMDE**
Mechanism only	**EHMVDB**
12-in (307 mm) handle mechanism shaft	**PDG12XHMS307**
20-in (507 mm) handle mechanism shaft	**PDG12XHMS507**
Standard NFPA79-compliant shaft handle (black and gray)	**PDG12XHM79S**
Emergency NFPA79-compliant shaft handle (red and yellow)	**PDG12XHM79E**

Flex Shaft Handle Mechanism

Cable Length (ft)	Metal Handle, NEMA 1/3R/12 Catalog Number	High Performance Handle, NEMA 1/3R/12 Catalog Number	Metal Handle, NEMA 4/4X Catalog Number	High Performance Handle, NEMA 4/4X Catalog Number
2	**PDG1XFS02**	**PDG1XFS02HP**	**PDG1XFS02X**	**PDG1XFS02HPX**
3	**PDG1XFS03**	**PDG1XFS03HP**	**PDG1XFS03X**	**PDG1XFS03HPX**
4	**PDG1XFS04**	**PDG1XFS04HP**	**PDG1XFS04X**	**PDG1XFS04HPX**
5	**PDG1XFS05**	**PDG1XFS05HP**	**PDG1XFS05X**	**PDG1XFS05HPX**
6	**PDG1XFS06**	**PDG1XFS06HP**	**PDG1XFS06X**	**PDG1XFS06HPX**
7	**PDG1XFS07**	**PDG1XFS07HP**	**PDG1XFS07X**	**PDG1XFS07HPX**
8	**PDG1XFS08**	**PDG1XFS08HP**	**PDG1XFS08X**	**PDG1XFS08HPX**
9	**PDG1XFS09**	**PDG1XFS09HP**	**PDG1XFS09X**	**PDG1XFS09HPX**
10	**PDG1XFS10**	**PDG1XFS10HP**	**PDG1XFS10X**	**PDG1XFS10HPX**

Flex Shaft Handle Auxiliary Switch

Description	Catalog Number
1A/1B, Early Break	**AUX1EBFSEG**

Note

① Handle mechanism shaft sold separately.

Accessories—Frame Size 1

External Accessories

Description	Fit Type	Catalog Number
Padlockable handle lock, Snap-on	Center	**PDG1XPLKSNAP**
Padlockable handle lock hasp	Top	**PDG1XPLKT**
Padlockable handle lock hasp, OFF only	Top	**PDG1XPLKTOFF** ①
	Right	**PDG1XPLKROFF**
Padlockable handle block	On handle	**PDG1XPHB**
Padlockable handle block, OFF only	On handle	**PDG1XPHBOFF**
Walking beam interlock ②③	Three-pole	**PDG1XWBI3P**
	Four-pole	**PDG1XWBI4P**
Slide bar interlock	Field	**EFSBI**
Electrical operator	110–240 Vac/Vdc	**MOPEG240C**
	24/48 Vdc	**MOPEG48D**
Wohner busbar adapter	Field top	**EG-BUS-T**
	Field bottom	**EG-BUS-B**
Terminal covers	Three-pole	**PDG1XTC3P**
	Four-pole	**PDG1XTC4P**
Interphase barriers	2 barriers	**PDG1XIB3P**

DIN Rail Mounting

Description	Catalog Number
DIN rail adapter; single-pole	**PDG1XDIN1P**
Din rail adapter; two-, three- or four-pole	**PDG1XDIN234P**
DIN rail adapter; three- or four-pole	**PDG1XDIN34P**
Metal DIN rail adapter, three-pole	**PDG1XDINM3P**

Base Mounting Hardware

Description	Catalog Number
Single-pole metric	**8703C80G11**
Two-, three-, four-pole metric	**8703C80G08**
Single-pole English	**8703C80G12**
Two-, three-, four-pole English	**BMHE**

Note: Base mounting hardware is included with a circuit breaker or molded case switch.

Dimensions and Weights—Frame Size 1

Approximate Dimensions in Inches (mm)

Number of Poles	Width	Height	Depth
1	1.0 (25.4)	5.5 (139.7)	2.99 (76.0)
2	2.0 (50.8)	5.5 (139.7)	2.99 (76.0)
3	3.0 (76.2)	5.5 (139.7)	2.99 (76.0)
4	4.0 (101.6)	5.5 (139.7)	2.99 (76.0)

Approximate Shipping Weight in lb (kg)

Breaker Type	1-Pole	2-Pole	3-Pole	4-Pole
PDG1 125 A	0.85 (0.39)	1.57 (0.71)	2.3 (1.04)	2.84 (1.29)

Notes

① Cannot be used with single- or two-pole breaker.
② Breaker must be ordered with walking beam interlock ready modification from plant (factory suffix WB).
③ Requires two breakers.

2

Power Defense Molded Case Circuit Breakers—Frame Size 2

Contents

Power Defense Molded Case Circuit Breakers—Frame Size 2

Product Description

Frame Size 2 covers a range of 15 A through 225 A with a complete offering of trip units, including PXR electronic trip units and fixed-fixed thermal-magnetic trip units.

Application Description

Frame Size 2 can be used to meet a wide range of circuit protection and power distribution needs, including ground fault protection and current-limiting options. PXR trip units in PD-2 provide all levels of protection, including energy metering with multiple communication schemes, breaker health indication, and zone selective interlocking with visual indication.

Features and Benefits

Frame Size 2 breakers are available in multiple ratings from 15 A through 225 A. They are configured with a trip unit from the factory. Accessories are modular in design to allow for field installation or factory configuration. PXR trip units are available with advanced features to provide customers unparalleled situational awareness of their electrical system.

Standards and Certifications

Power Defense breakers are designed and tested to meet stringent requirements for:

- UL
- CSA
- IEC (CE)
- CB (CCC)

Catalog Number / Product Selection

Power Defense—Frame Size 2 (15–225 A)

Frame Size 2 covers a range of 15 A through 225 A using electronic trip units or thermal-magnetic trip units. It is available in configurations of single-, two-, three- and four-pole.

Interrupting Ratings (Two-, Three- and Four-Pole)

Catalog Designator	F		G		K ①		M ①		N ①		P ①	
UL/CSA	**kA rms**		**kA rms**		**kA rms**		**kA rms**		**kA rms**		**kA rms**	
240 Vac	35		65		85		100		150		200	
480 Vac	25		35		50		65		85		100	
600 Vac	14		18		22		25		30 / 25 ③		35 / 25 ③	
250 Vdc ②	10		10		10		22		22		22	
IEC	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}
240 Vac	35	35	55	55	85	85	100	100	150	100	200	150
380–415 Vac	25	25	36	36	50	50	70	53	70	70	100	70
440 Vac	25	20	30	22.5	35	35	50	40	70	50	100	65
480 Vac	20	20	25	20	35	22.5	50	30	65	40	65	40
525 Vac	18	15 / 13 ③	20	15 / 13 ③	30 / 25 ③	15 / 13 ③	30 / 25 ③	15 / 13 ③	30 / 25 ③	15 / 13 ③	35 / 25 ③	18 / 13 ③
660–690 Vac	—	—	8	4	10	5	10	5	10	5	10	5
250 Vdc ②	10	10	10	10	10	10	22	22	22	22	22	22

Interrupting Ratings (Single-Pole)

Catalog Designator	F		G		K		M		N		P	
UL/CSA	**kA rms**		**kA rms**		**kA rms**		**kA rms**		**kA rms**		**kA rms**	
277 Vac	25		35		50		65		85		100	
347 Vac	14		18		22		25		30		35	
125 Vdc	10		10		10		22		22		22	
IEC	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}
240 Vac	25	25	36	36	50	50	70	70	85	70	100	70
125 Vdc	10	10	10	10	10	10	22	22	22	22	22	22

Notes

① UL current limiting for three- and four-pole breakers.

② DC ratings available in thermal-magnetic breakers only. 250 Vdc is achieved using two poles in series.

③ First rating listed is for thermal-magnetic breakers, second rating is for breakers with PXR electronic trip units.

Power Defense—Frame Size 2 (15–225 A)

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

2

Molded Case Circuit Breakers (Single-Pole) with Thermal-Magnetic Trip Units (TMTU)—Globally Rated

PD G 2 1 M 0150 TFF J

Product Series
PD = Power Defense

Certifications/ Standards
G = UL/CSA/IEC/ CCC

Frame Size
2 = 2

Pole Options
1 = 1-pole

Interrupting Ratings
F = 25 kA at 277 V
G = 35 kA at 277 V
K = 50 kA at 277 V
M = 65 kA at 277 V
N = 85 kA at 277 V ①
P = 100 kA at 277 V ①
F = 14 kA at 347 V
G = 18 kA at 347 V
K = 22 kA at 347 V
M = 25 kA at 347 V
N = 30 kA at 347 V ①
P = 35 kA at 347 V ①

Continuous Current Ratings
0015 = 15 A ②
0020 = 20 A ②
0025 = 25 A
0030 = 30 A
0035 = 35 A
0040 = 40 A
0045 = 45 A
0050 = 50 A
0060 = 60 A
0070 = 70 A
0080 = 80 A
0090 = 90 A
0100 = 100 A
0110 = 110 A
0125 = 125 A
0150 = 150 A

Trip Unit Type Options
TFF = Fixed thermal / Fixed magnetic
VFF = 50 °C Fixed thermal / Fixed magnetic (non UL)

Standard Terminal Options
N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Molded Case Circuit Breakers (Two-, Three- and Four-Pole) with Thermal-Magnetic Trip Units—Globally Rated

PD

G = UL/CSA/IEC/ CCC

2 = 2

2 = 2-pole
3 = 3-pole
4 = 4-pole (100% N)
0 = 4-pole (0% N)
6 = 4-pole (60% N)

F = 25 kA at 480 V
G = 35 kA at 480 V
K = 50 kA at 480 V
M = 65 kA at 480 V
N = 85 kA at 480 V
P = 100 kA at 480 V
F = 14 kA at 600 V
G = 18 kA at 600 V
K = 22 kA at 600 V
M = 25 kA at 600 V
N = 30 kA at 600 V
P = 35 kA at 600 V

0015 = 15 A
0020 = 20 A
0025 = 25 A
0030 = 30 A
0035 = 35 A
0040 = 40 A
0045 = 45 A
0050 = 50 A
0060 = 60 A
0070 = 70 A
0080 = 80 A
0090 = 90 A
0100 = 100 A
0110 = 110 A
0125 = 125 A
0150 = 150 A
0175 = 175 A
0200 = 200 A
0225 = 225 A

TFF = Fixed thermal / Fixed magnetic
VFF = 50 °C Fixed thermal / Fixed magnetic (non UL)

N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Notes

① N and P ratings available for 15–30 A on single-pole breakers.

② UL listed for SWD applications, see NEC Article 240.83(d).

Power Defense—Frame Size 2 (15–225 A)

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

Molded Case Circuit Breakers with TMTU—UL/CSA Rated to 240 Vac

PD D 2 3 M 0225 TFF J

Product Series
PD = Power Defense

Certifications/ Standards
D = UL/CSA

Frame Size
2 = 2

Pole Options
2 = 2-pole
3 = 3-pole

Interrupting Ratings
F = 35 kA at 240 V
G = 65 kA at 240 V
K = 85 kA at 240 V
M = 100 kA at 240 V
N = 150 kA at 240 V
P = 200 kA at 240 V

Continuous Current Ratings
0015 = 15 A
0020 = 20 A
0025 = 25 A
0030 = 30 A
0035 = 35 A
0040 = 40 A
0045 = 45 A
0050 = 50 A
0060 = 60 A
0070 = 70 A
0080 = 80 A
0090 = 90 A
0100 = 100 A
0110 = 110 A
0125 = 125 A
0150 = 150 A
0175 = 175 A
0200 = 200 A
0225 = 225 A

Trip Unit Type Options
TFF = Fixed thermal / Fixed magnetic
VFF = 50 °C Fixed thermal / Fixed magnetic (non UL)

Standard Terminal Options
N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Molded Case Switches—Globally Rated ①

PD

G = UL/CSA/IEC/CCC

2 = 2

2 = 2-pole
3 = 3-pole
4 = 4-pole

G = 35 kA at 480 V
M = 65 kA at 480 V

G = 18 kA at 600 V
M = 35 kA at 600 V

0100 = 100 A
0150 = 150 A
0225 = 225 A

KNS = Molded Case Switch

N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Molded Case Circuit Breakers with Power Xpert Release Electronic Trip Units (ETU)—Globally Rated

PD

G = UL/CSA/IEC/CCC

2 = 2

3 = 3-pole
4 = 4-pole (programmable N)

F = 25 kA at 480 V
G = 35 kA at 480 V
K = 50 kA at 480 V
M = 65 kA at 480 V
N = 85 kA at 480 V
P = 100 kA at 480 V

F = 14 kA at 600 V
G = 18 kA at 600 V
K = 22 kA at 600 V
M = 25 kA at 600 V
N = 25 kA at 600 V
P = 25 kA at 600 V

0060 = 60 A
0100 = 100 A
0150 = 150 A
0225 = 225 A

B2N = PXR 10 LSI
E## ②=PXR 20
P## ②=PXR 25

N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Molded Case Circuit Breakers with Power Xpert Release Electronic Trip Units (ETU)—100% UL Rated

PD

F = 100% UL rated

2 = 2

3 = 3-pole
4 = 4-pole

F = 25 kA at 480 V
G = 35 kA at 480 V
K = 50 kA at 480 V
M = 65 kA at 480 V
N = 85 kA at 480 V
P = 100 kA at 480 V

F = 14 kA at 600 V
G = 18 kA at 600 V
K = 22 kA at 600 V
M = 25 kA at 600 V
N = 25 kA at 600 V
P = 25 kA at 600 V

0060 = 60 A
0100 = 100 A
0150 = 150 A
0225 = 225 A

B2N = PXR 10 LSI
E## ②=PXR 20
P## ②=PXR 25

J = Line and load terminals
W = Optional line and load terminals

Notes

① Molded case switch may open above 1800 A.

② See tables and descriptions on **Page V4-T2-34** for protection type (**#$_{(1)}$**) and available configured options (**#$_{(2)}$**).

Power Xpert Release (PXR) Trip Unit Options—Frame Size 2

Power Xpert Release (PXR) Trip Unit Options

		#(1)—Protection Type		#(2)—Available Configured Options									
				—	Relays	Relays Modbus	Relays — ZSI	Relays — CAM	Relays Modbus ZSI	Relays — ZSI CAM	Relays Modbus — CAM	Relays Modbus ZSI CAM
PXR	ETU	LSI	LSIG ①	—	—	—	—	—	—	—	—	—
PXR 10	**B**	**2**	—	**N**	—	—	—	—	—	—	—	—
PXR 20	**E**	**2**	—	**N**	**R**	**M**	**Z**	**C**	**W**	**X**	—	—
		—	**3**	—	**R**	**M**	**Z**	**C**	**W**	**X**	—	—
PXR 25	**P**	**2**	**3**	—	—	**M**	—	—	**W**	—	**D**	**Y**

Description of PXR Configured Options

Relays ②—Form A contacts (rated for 240 Vac, 1 A)

- 2 available if Modbus RTU is not used; 1 available when used in conjunction with Modbus RTU
- Interface: 3 wires (RLY1, RLY2, RLYC Common)
- Programmable to indicate breaker conditions
- Available as field-installable option if not pre-configured (catalog number **PDG2XRELAYS**) ③

Modbus ②—Modbus RTU directly from breaker

- Interface: 3 wires (RTU_D(+), RTU_D(–), RTU_GND)
- Interface: 2 wires (RLY1, RLYC Common)
- No additional modules required
- Available as field-installable option if not pre-configured (catalog number **PDG2XMODRTUREL**) ③

ZSI—Zone Selective Interlocking

- Includes ability to turn ON and OFF
- Interface: 3 wires (Zin, Zout, Zcomm)
- No additional modules required

CAM—CAM Link Connection (requires a CAM module per breaker)

- Interface: 5 wires (refer to CAM IL for details)
- Communications Adapter Modules available for Modbus TCP and PROFIBUS

Auxiliary Power

- Connection included with all PXR 20 and 25 trip units

Note: For PXR 20 units, wire harness connections for auxiliary power not included on E2N styles.

- Required for communications, relays and metering accuracy
- 24 Vdc, 0.5 A
- Interface: 2 wires (Aux +24 V, Aux 0 V)

Available Continuous Current (I_r) Settings on PXR Electronic Trip Units

		Catalog Number Selection and Maximum Setting (I_n)			
		0060	0100	0150	0225
Option	Setting	60 A	100 A	150 A	225 A
PXR 10, PXR 20	1	15 A	32 A	50 A	80 A
	2	16 A	35 A	60 A	90 A
	3	20 A	40 A	63 A	100 A
	4	25 A	50 A	70 A	110 A
	5	30 A	60 A	80 A	125 A
	6	35 A	63 A	90 A	150 A
	7	40 A	70 A	100 A	160 A
	8	45 A	80 A	110 A	175 A
	9	50 A	90 A	125 A	200 A
	10 = I_n	60 A	100 A	150 A	225 A
PXR 25		Programmable from minimum to maximum values in 1 A increments.			

Notes

① All neutral current sensors required for LSIG protection are sold separately.

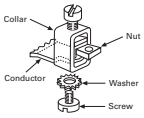
② Relays and/or Modbus RTU in PD-2 uses accessory pocket, therefore UVR and shunt trip use is not possible.

③ PD-2 can only be equipped with one field-installable communication option (PDG2XMODRTUREL or PDG2XRELAYS).

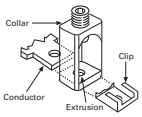
Terminals—Frame Size 2

Catalog numbers shown are for a single side of a three-pole breaker.
For two- and four-pole options, replace the **X3** with **X2** or **X4**, respectively.
Example: PDG**2X3**T100 becomes PDG**2X2**T100 for two-pole

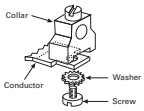
Terminal Types



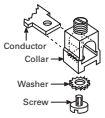
PDG2X3T100
PDG2X3T150



PDG2X3TA225
PDG2X3TA150
PDG2X3T225

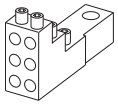


PDG2X3TA50

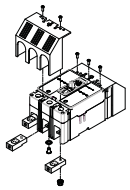


PDG2X3TA100

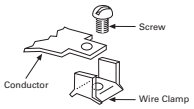
PDG2X3TA225K



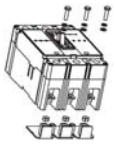
PDG2X3TA2256W
PDG2X3TA2253W



PDG2X3TA150RF
PDG2X3TA225RF



PDG2X3T20



PDG2X3TS225

Note: Pictures are for reference only.

Terminals

Maximum Breaker Amperes	Breaker Frame ①	Terminal Body Type	Wire Type	Wire Class	Number of Conductors per Phase	AWG/kcmil Range per Conductor	Metric (mm^2) Range per Conductor	3-Pole Catalog Number	Included Accessories	Digit 14 Designation: Line and Load	Line Only	Load Only	Standard on Amperes
Standard Terminals													
100	15–100	Steel	Cu/Al	B, C	1	14–1/0	2.08–53.5	**PDG2X3T100** ②		J	K	L	15–100
225	60–225	Aluminum	Cu/Al	B, C	1	4–4/0	21.2 —107	**PDG2X3TA225** ③		J	K	L	110–225
Alternate Terminals													
50	15–50	Aluminum	Cu/Al	B, C	1	14–4	2.08–21.2	**PDG2X3TA50**		T	U	V	15–50
100	60–100	Aluminum	Cu/Al	B, C	1	14–1/0	2.08–53.5	**PDG2X3TA100**		T	U	V	60–100
150	60–150	Aluminum	Cu/Al	B, C	1	14–4/0	2.08–107	**PDG2X3TA150**		T	U	V	110–150
225	175–225	Aluminum	Cu/Al	B, C	1	6–300	13.3–152	**PDG2X3TA225K** ③	Terminal shield	T	U	V	175–225
Non-standard Terminals													
100	15–100	Steel	Cu/Al	B, C	1	14–1/0	2.08–53.5	**PDG2X3T100** ②		W	Y	Z	15–100
150	60–150	Stainless Steel	Cu	B, C	1	4–4/0	21.2 —107	**PDG2X3T150**		W	Y	Z	110–150
225	60–225	Copper	Cu	B, C	1	4–4/0	21.2 —107	**PDG2X3T225**		W	Y	Z	175–225
Multi-wire Terminals													
225	150–225	Aluminum	Cu/Al	B, C	6	14–6	2.08–13.3	**PDG2X3TA2256W**		—	—	G	15–225
225	150–225	Aluminum	Cu/Al	B, C	3	14–2	2.08–33.6	**PDG2X3TA2253W**		—	—	H	15–225
Rear Fed Terminals ④													
150	60–150	Aluminum	Cu/Al	B, C	1	14–4/0	2.08–107	**PDG2X3TA150RF**	Terminal shield	—	—	—	15–150
225	60–225	Aluminum	Cu/Al	B, C	1	6–300	13.3–152	**PDG2X3TA225RF**	Terminal shield	—	—	—	175–225
Box Terminal													
20	15–20	Steel	Cu/Al	B, C	1	14–10	2.08–5.26	**PDG2X3T20**		—	—	—	15–20
Rear Connectors ④													
225	—	—	—	—	—	—	—	**PDG2X3T225RC**		R	—	—	15–25
End Cap Kits/Screw Terminals													
225	—	—	—	—	—	—	—	**PDG2X3TS225**		S	D	E	15–25

Note: Wire capacity is based on standard imperial wire sizes; metric sizes provided in table are a direct conversion to demonstrate maximum capacity, not to denote metric wire sizes.

Notes

① The "Breaker Frame" column provides information on the ampere ratings for which the terminal may be used (field installation); in some cases the range is limited by proper fit of the terminal onto the breaker conductor.
The column "Standard on Amperes" provides information on what terminal is used during factory configuration per Digit 14 of the breaker catalog number. The two may not match.

② Factory standard terminals and non-aluminum terminals for 100 A and below are the same terminals.

③ PDF2 225 A breakers with Digit 14 designation of "J" are equipped with PDG2X3TA225K terminals.
PDF2 150 A breakers with Digit 14 designation of "J" are equipped with PDG2X3TA225 terminals.

④ Breaker loses UL when fitted with rear-fed terminals or rear connectors.

Control Wire Tabs

Compatible Terminals	Package Qty.	Catalog Number
PDG2X3T100 PDG2X3T150	12	**FCWTK**
PDG2X3TA225	12	**FCWTK225**

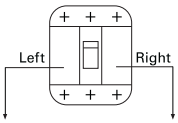
Accessories

2

Internal Accessory Configurations—Frame Size 2

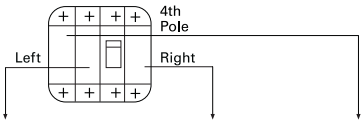
Thermal-Magnetic Circuit Breakers ①②

3-Pole Circuit Breakers



Tripping Accessory Options	Alarm (2 Spaces) Options	Aux (2 Spaces) Options
None	None	None
Shunt Trip	1NO (1 space)	1NO (1 space)
	1NC (1 space)	1NC (1 space)
	1NO/1NC (2 spaces)	1NO/1NC (2 spaces)
	2NO (2 spaces)	2NO (2 spaces)
UVR	2NC (2 spaces)	2NC (2 spaces)
		

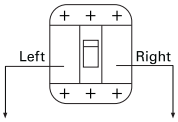
4-Pole Circuit Breakers



Tripping Accessory Options	Alarm (2 Spaces) Options	Aux (4 Spaces) Options
None	None	None
Shunt Trip	1NO (1 space)	1NO (1 space)
	1NC (1 space)	1NC (1 space)
	1NO/1NC (2 spaces)	1NO/1NC (2 spaces)
	2NO (2 spaces)	2NO (2 spaces)
UVR	2NC (2 spaces)	2NC (2 spaces)
		2CO (4 spaces)
		4NO (4 spaces)
		4NC (4 spaces)

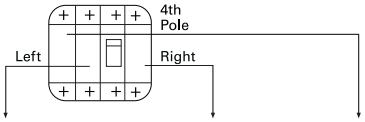
Electronic Circuit Breakers

3-Pole Circuit Breakers



Tripping Accessory Options	Alarm Options	Aux Options
None	None	1NO/1NC ③
Shunt Trip		
		
UVR		
		
Bell alarm (1NO/1NC–Form C)		
Qty: 1 Programmable relay with Modbus RTU		
Qty: 2 Programmable relays		

4-Pole Circuit Breakers



Tripping Accessory Options	Alarm Options	Aux (2 Spaces) Options
None	None	1NO/1NC ③
Shunt Trip		1NO/1NC ③ + 1NO (1 space)
		1NO/1NC ③ + 1NC (1 space)
		1NO/1NC ③ + 1NO/1NC (2 spaces)
		1NO/1NC ③ + 2NO (2 spaces)
UVR		1NO/1NC ③ + 2NC (2 spaces)
		
Bell alarm (1NO/1NC–Form C)		
Qty: 1 Programmable relay with Modbus RTU		
Qty: 2 Programmable relays		

Notes

① Two-pole PD-2 breakers have an accessory pocket compatible with indicating accessory options only.
② Single-pole PD-2 breakers may be equipped with a Form C bell alarm as a factory installation only. Use "BC" as a suffix code in digits 15–16.
③ Qty: 1 1NO/1NC (Form C) auxiliary contact is automatically factory installed for all Frame 2 Power Defense breakers with electronic trip units.

Alarm and Auxiliary Contact Blocks—Frame Size 2

Power Defense breakers have designated positions for alarm and auxiliary switches in the right-pole accessory cavity. For Frame 2, the two left-most positions are used for alarm switches, and the two right-most locations are used for auxiliary switches.

Power Defense breakers have secondary covers for ease of field installation of accessories, including alarm and auxiliary switches.

Power Defense alarm and auxiliary switches are available in contact blocks, in Form A (NO), Form B (NC) and Form C (NO-NC) types. Form A and Form B contacts take one position in the breaker accessory cavity, and Form C contacts take two positions in the cavity. Identical contact blocks are used for the alarm and auxiliary switch functions.

Frame 2 breakers with electronic trip units are automatically configured with a factory-installed Form C auxiliary contact block because the right-pole accessory cavity is not available for field modification. Trip position can also be communicated via communications and the PXR programmable relays.

Pigtail (29 in / 0.75 m) Contact Blocks for Alarm and Auxiliary Switch Functionality

Catalog Number	PDGXAA	PDGXAB	PDGXAC
Type	Form A / NO	Form B / NC	Form C / NO-NC

Screw Terminal Contact Blocks for Alarm and Auxiliary Switch Functionality

Catalog Number	PDGXXA	PDGXXB	PDGXXA + PDGXXB
Type	Form A / NO	Form B / NC	For NO-NC, use two separate contact blocks

Push-In Clamp Contact Blocks for Alarm and Auxiliary Switch Functionality

Catalog Number	PDGXUA	PDGXUB	PDGXUC
Type	Form A / NO	Form B / NC	Form C / NO-NC

Pigtail (118 in / 3.0 m) Contact Blocks for Alarm and Auxiliary Switch Functionality

Catalog Number	PDGXDA	PDGXDB	PDGXDC
Type	Form A / NO	Form B / NC	Form C / NO-NC

Contact Blocks for Alarm and Auxiliary Switch Functionality—Bulk Packs

Catalog Number	Type	Termination	Bulk Pack Quantity ①
PDGXXA-BP20	Form A / NO	Screw Terminal	20
PDGXXB-BP20	Form B / NC	Screw Terminal	20
PDGXUA-BP20	Form A / NO	Push-in Clamp	20
PDGXUB-BP20	Form B / NC	Push-in Clamp	20
PDGXUC-BP10	Form C / NO-NC	Push-in Clamp	10

Alarm Switch for Use with PXR Electronic Trip Units ②

Catalog Number	PDG2XALMBC	PDG2XALMEC
Type	Form C / NO-NC	Form C / NO-NC
Termination	0.75 m pigtail	3.0 m pigtail

Notes

① Order in multiples of quantity listed to receive bulk pack. (ex. Order qty 20 PDGXXA-BP20 to receive 1 bulk pack).

② Frame 2 breakers with electronic trip units do not allow access to the right accessory pocket but are automatically configured with a factory installed Form C / NO-NC auxiliary switch. These alarm switches can be field or factory installed in the left accessory pocket in place of a shunt trip or UVR.

2

Factory Installation of Alarm and Auxiliary Switches—Frame Size 2

Alarm and auxiliary switches are plug-and-play accessories designed to be field installable. However, Eaton also offers installation service in our factories.

Breaker catalog numbers with alarm and auxiliary switch combinations require a complete 20-digit catalog number, adding the alarm and auxiliary switch functionality in digits 15–16 and adhering to the following conditions and tables.

- Digit 15 denotes the type of accessory(-ies) installed and the terminal types
- Switches may be requested for alarm only, auxiliary only or a combination of the two
- Digit 16 denotes the number and type (NO, NC) of switches installed
- For Eaton factory installation, the same type of terminals (i.e. all pigtail 0.75 m, all screw, etc.) and same style of contact block (i.e., all 1NO/1NC, all 2NC, etc.) must be used in a factory configuration
- If no other accessories are selected, use NNNN for the final 4 digits of the catalog number
- Frame 2 breakers with electronic trip units do not allow access to the right accessory pocket but are automatically configured with a factory installed 1NO/1NC auxiliary switch. A bell alarm accessory is available for separate installation in the left accessory pocket.

Note: Though factory configuration options are limited, combinations of auxiliary switches and alarms using differing terminals and contact block styles are still available through field installation. Please see full auxiliary switch and alarm catalog numbers to order.

Pigtails—29 in / 0.75 m (A, B, C)

		Auxiliary Switch Three-Pole						Four-Pole		
		None	**1NO**	**1NC**	**1NO/1NC**	**2NO**	**2NC**	**2NO/2NC**	**4NO**	**4NC**
Alarm Switch	**None**	NN	AA	AB	AC	AD	AE	A1	A2	A3
	1NO	BA	CA	—	—	—	—	—	—	—
	1NC	BB	—	CB	—	—	—	—	—	—
	1NO/1NC ①	BC	—	—	CC	—	—	C1	—	—
	2NO	BD	—	—	—	CD	—	—	C2	—
	2NC	BE	—	—	—	—	CE	—	—	C3

Screw Terminals (X, Y, Z)

		Auxiliary Switch Three-Pole						Four-Pole		
		None	**1NO**	**1NC**	**1NO/1NC**	**2NO**	**2NC**	**2NO/2NC**	**4NO**	**4NC**
Alarm Switch	**None**	NN	XA	XB	XC	XD	XE	X1	X2	X3
	1NO	YA	ZA	—	—	—	—	—	—	—
	1NC	YB	—	ZB	—	—	—	—	—	—
	1NO/1NC	YC	—	—	ZC	—	—	Z1	—	—
	2NO	YD	—	—	—	ZD	—	—	Z2	—
	2NC	YE	—	—	—	—	ZE	—	—	Z3

Push-In Clamps (U, V, W)

		Auxiliary Switch Three-Pole						Four-Pole		
		None	**1NO**	**1NC**	**1NO/1NC**	**2NO**	**2NC**	**2NO/2NC**	**4NO**	**4NC**
Alarm Switch	**None**	NN	UA	UB	UC	UD	UE	U1	U2	U3
	1NO	VA	WA	—	—	—	—	—	—	—
	1NC	VB	—	WB	—	—	—	—	—	—
	1NO/1NC	VC	—	—	WC	—	—	W1	—	—
	2NO	VD	—	—	—	WD	—	—	W2	—
	2NC	VE	—	—	—	—	WE	—	—	W3

Note

① Single-pole breakers can be equipped with a 1NO/1NC alarm switch that must be factory installed; use suffix **BC** in digits 15–16. No other internal accessories are available for single-pole breakers.

Pigtails—118 in / 3.0 m (D, E, F)

		Auxiliary Switch Three-Pole						Four-Pole		
		None	1NO	1NC	1NO/1NC	2NO	2NC	2NO/2NC	4NO	4NC
Alarm Switch	None	NN	DA	DB	DC	DD	DE	D1	D2	D3
	1NO	EA	FA	—	—	—	—	—	—	—
	1NC	EB	—	FB	—	—	—	—	—	—
	1NO/1NC	EC	—	—	FC	—	—	F1	—	—
	2NO	ED	—	—	—	FD	—	—	F2	—
	2NC	EE	—	—	—	—	FE	—	—	F3

Factory Installation of Alarm Switch for Use with PXR Electronic Trip Units

Pigtails—29 in / 0.75 m

		Auxiliary Switch Three-Pole	
		None	1NO/1NC
Auxiliary switch	None	NN ①	AC ①
	1NO/1NC	—	CC

Pigtails—118 in / 3.0 m

		Auxiliary Switch Three-Pole	
		None	1NO/1NC
Alarm switch	None	NN ①	DC
	1NO/1NC	—	FC

Tripping Accessories—Frame Size 2

Power Defense breakers have designated positions for shunt trips and undervoltage releases (UVRs) in the left pole accessory cavity. Each breaker has space for one tripping accessory only.

Power Defense breaker have secondary covers for ease of field installation of tripping accessories.

Shunt Trips

Voltage	Screw Terminals	Pigtail (29 in / 0.75 m)	Pigtail (118 in / 3.0 m)
12 Vdc	**PDG2XST12DCT**	**PDG2XST12DCS**	**PDG2XST12DCR**
48 Vdc	**PDG2XST48DCT**	**PDG2XST48DCS**	**PDG2XST48DCR**
60 Vdc	**PDG2XST60DCT**	**PDG2XST60DCS**	**PDG2XST60DCR**
24 Vac/Vdc	**PDG2XST24ACDCT**	**PDG2XST24ACDCS**	**PDG2XST24ACDCR**
110-130 Vac/125 Vdc	**PDG2XST130ACDCT**	**PDG2XST130ACDCS**	**PDG2XST130ACDCR**
200-240 Vac/250 Vdc	**PDG2XST250ACDCT**	**PDG2XST250ACDCS**	**PDG2XST250ACDCR**
380-440 Vac	**PDG2XST440ACT**	**PDG2XST440ACS**	**PDG2XST440ACR**
480-525 Vac	**PDG2XST525ACT**	**PDG2XST525ACS**	**PDG2XST525ACR**
600 Vac	**PDG2XST600ACT**	**PDG2XST600ACS**	**PDG2XST600ACR**

Undervoltage Releases (UVRs)

Voltage	Screw Terminals	Pigtail (29 in / 0.75 m)	Pigtail (118 in / 3.0 m)
12 Vdc	**PDG2XUV12DCV**	**PDG2XUV12DCU**	**PDG2XUV12DCW**
24 Vdc	**PDG2XUV24DCV**	**PDG2XUV24DCU**	**PDG2XUV24DCW**
48 Vdc	**PDG2XUV48DCV**	**PDG2XUV48DCU**	**PDG2XUV48DCW**
60 Vdc	**PDG2XUV60DCV**	**PDG2XUV60DCU**	**PDG2XUV60DCW**
125 Vdc	**PDG2XUV125DCV**	**PDG2XUV125DCU**	**PDG2XUV125DCW**
250 Vdc	**PDG2XUV250DCV**	**PDG2XUV250DCU**	**PDG2XUV250DCW**
24 Vac	**PDG2XUV24ACV**	**PDG2XUV24ACU**	**PDG2XUV24ACW**
130 Vac	**PDG2XUV130ACV**	**PDG2XUV130ACU**	**PDG2XUV130ACW**
240 Vac	**PDG2XUV240ACV**	**PDG2XUV240ACU**	**PDG2XUV240ACW**
440 Vac	**PDG2XUV440ACV**	**PDG2XUV440ACU**	**PDG2XUV440ACW**
525 Vac	**PDG2XUV525ACV**	**PDG2XUV525ACU**	**PDG2XUV525ACW**
600 Vac	**PDG2XUV600ACV**	**PDG2XUV600ACU**	**PDG2XUV600ACW**

Note

① 1NO/1NC (AC) is always included in breakers with PXR trip units; no selection or selection of **NN** in Digits 15–16 will result in AC.

Factory Installed Tripping Accessories—Frame Size 2

Shunt trips and under voltage releases (UVRs) are plug-and-play accessories designed to be field installable. However, Eaton also offers the service of installation in our factories.

Breaker catalog numbers with shunt trips or UVRs require a complete 20-digit catalog number, adding the tripping accessory functionality in digits 17 and 18 and adhering to the following conditions and tables.

- Digit 17 denotes the type of accessory installed and the terminal type
- Digit 18 denotes the voltage of the accessory
- If no accessories are selected, use NNNN for the final 4 digits of the catalog number
- Each breaker has space for one shunt trip or UVR tripping accessory only

Shunt Trips

Voltage	Screw Terminals	Pigtail (29 in / 0.75 m)	Pigtail (118 in / 3.0 m)
12 Vdc	TH	SH	RH
48 Vdc	TJ	SJ	RJ
60 Vdc	TK	SK	RK
24 Vac/Vdc	TN	SN	RN
110–130 Vac/125 Vdc	TP	SP	RP
200–240 Vac/250 Vdc	TR	SR	RR
380–440 Vac	TC	SC	RC
480–525 Vac	TD	SD	RD
600 Vac	TE	SE	RE

Undervoltage Releases (UVRs)

Voltage	Screw Terminals	Pigtail (29 in / 0.75 m)	Pigtail (118 in / 3.0 m)
12 Vdc	VH	UH	WH
24 Vdc	VG	UG	WG
48 Vdc	VJ	UJ	WJ
60 Vdc	VK	UK	WK
125 Vdc	VL	UL	WL
250 Vdc	VM	UM	WM
24 Vac	VF	UF	WF
130 Vac	VA	UA	WA
240 Vac	VB	UB	WB
440 Vac	VC	UC	WC
525 Vac	VD	UD	WD
600 Vac	VE	UE	WE

Note: Use suffix **US** for 18 Vdc when using Time Delay UVR.

Handle Mechanisms—Frame Size 2

Direct Rotary Handle Mechanism ①

Description	NEMA 1/12 Catalog Number	Factory Installed Digits 19–20
Standard lockable handle and mechanism	**PDG2XHMCS**	HA
Standard lockable handle and mechanism with door interlock	**PDG2XHMCSN**	HB
Standard lockable handle and mechanism with mechanical padlock	**PDG2XHMCSP**	HC
Standard lockable handle and mechanism with door interlock and mechanical padlock	**PDG2XHMCSNP**	HE
Emergency lockable handle and mechanism	**PDG2XHMCE**	H1
Emergency lockable handle and mechanism with door interlock	**PDG2XHMCEN**	H2
Emergency lockable handle and mechanism with mechanical padlock	**PDG2XHMCEP**	H3
Emergency lockable handle and mechanism with door interlock and mechanical padlock	**PDG2XHMCENP**	H5

Variable Depth Rotary Handle Mechanism ①

PDG2XHMDS

Description	NEMA 1/3R/12/4/4X Catalog Number	Factory Installed Digits 19–20
Standard lockable handle and mechanism ②	**PDG2XHMDS**	DA
Standard lockable handle and mechanism with mechanical padlock ②	**PDG2XHMDSP**	DC
Emergency lockable handle and mechanism ②	**PDG2XHMDE**	D1
Emergency lockable handle and mechanism with mechanical padlock ②	**PDG2XHMDEP**	D3
12 in (307 mm) handle mechanism shaft	**PDG12XHMS307**	—
20 in (507 mm) handle mechanism shaft	**PDG12XHMS507**	—
Standard NFPA79-compliant shaft handle	**PDG12XHM79S**	—
Emergency NFPA79-compliant shaft handle	**PDG12XHM79E**	—

Metal Variable Depth Rotary Handle Mechanism ①

Description	NEMA 1/3R/12/4/4X Catalog Number
Metal standard lockable handle, mechanism, and 6-inch shaft	**PDG2XHMDS06MH**
Metal standard lockable handle, mechanism, and 12-inch shaft	**PDG2XHMDS12MH**
Metal standard lockable handle, mechanism, and 24-inch shaft	**PDG2XHMDS24MH**
Metal emergency lockable handle, mechanism, and 6-inch shaft	**PDG2XHMDE06MH**
Metal emergency lockable handle, mechanism, and 12-inch shaft	**PDG2XHMDE12MH**
Metal emergency lockable handle, mechanism, and 24-inch shaft	**PDG2XHMDE24MH**

Flex Shaft Handle Mechanism

Cable Length (ft)	Metal Handle, NEMA 1/3R/12 Catalog Number ③	High Performance Handle, NEMA 1/3R/12 Catalog Number ③	Metal Handle, NEMA 4/4X Catalog Number ④	High Performance Handle, NEMA 4/4X Catalog Number ④
2	**PDG2XFS02**	**PDG2XFS02HP**	**PDG2XFS02X**	**PDG2XFS02HPX**
3	**PDG2XFS03**	**PDG2XFS03HP**	**PDG2XFS03X**	**PDG2XFS03HPX**
4	**PDG2XFS04**	**PDG2XFS04HP**	**PDG2XFS04X**	**PDG2XFS04HPX**
5	**PDG2XFS05**	**PDG2XFS05HP**	**PDG2XFS05X**	**PDG2XFS05HPX**
6	**PDG2XFS06**	**PDG2XFS06HP**	**PDG2XFS06X**	**PDG2XFS06HPX**
7	**PDG2XFS07**	**PDG2XFS07HP**	**PDG2XFS07X**	**PDG2XFS07HPX**
8	**PDG2XFS08**	**PDG2XFS08HP**	**PDG2XFS08X**	**PDG2XFS08HPX**
9	**PDG2XFS09**	**PDG2XFS09HP**	**PDG2XFS09X**	**PDG2XFS09HPX**
10	**PDG2XFS10**	**PDG2XFS10HP**	**PDG2XFS10X**	**PDG2XFS10HPX**

Notes

① Standard handles are black and gray; Emergency handles are red and yellow.
② Handle mechanism shaft sold separately.
③ For dual flex shaft option, add D at the end for NEMA 1/3R/12.
④ For NEMA 4/4X, add D before the X (ex., PDG2XFS02HPDX).

2

Accessories—Frame Size 2

External Accessories

Description	Fit Type	Catalog Number	Factory Installed Digits 19–20
Padlockable hasp	Top	**PDG2XPLKT**	L4
	Left side	**PDG2XPLKL**	L5
	Right side	**PDG2XPLKR**	L6
	Snap on	**PDG2XPLKSNAP**	L0
Padlockable hasp OFF only	Top	**PDG2XPLKTOFF** ①	L1
	Left side	**PDG2XPLKLOFF** ①	L2
	Right side	**PDG2XPLKROFF**	L3
Padlockable handle block	On handle	**PDG2XPHB**	—
Kirk lock provision ②	Top	**PDG2XKLKPTFF**	L7
Walking beam interlock ③④	Two-, three-, and four-pole	**PDG2XWBI234P**	—
Plug-in breaker base only	Three-pole	**PDG2XPIBB3P225A**	—
	Four-pole	**PDG2XPIBB4P225A**	—
Plug-in breaker parts kit	Three-pole	**PDG2XPIBK3P225A**	—
	Four-pole	**PDG2XPIBK4P225A**	—
Terminal covers	Two-pole	**PDG2XTC2P**	—
	Three-pole	**PDG2XTC3P**	—
	Four-pole	**PDG2XTC4P**	—
Interphase barriers	Single-pole	**PDG2XIB**	—
	Three-pole	**PDG2XIB3P**	—
	Four-pole	**PDG2XIB4P**	—
Finger protection	Three-pole	**PDG2XFP3P**	—
	Four-pole	**PDG2XFP4P**	—
60–100 A residual current neutral sensor	Cable type	**PDG2XNCTD0100**	—
150–225 A residual current neutral sensor	Cable type	**PDG2XNCTD0225**	—
60–100 A residual current neutral sensor	Busbar type	**PDG2XNCTB0100**	—
150–225 A residual current neutral sensor	Busbar type	**PDG2XNCTB0225**	—
Service entrance barrier kit	Three-pole	**PRLSEBPD2**	—
Electrical operator thermal-magnetic trip unit	24 Vdc	**PDG2XROPT24DC**	—
	48–60 Vdc	**PDG2XROPT60DC**	
	125 Vdc	**PDG2XROPT125DC**	
	250 Vdc	**PDG2XROPT250DC**	
	110–130 Vac	**PDG2XROPT130AC**	
	200–240 Vac	**PDG2XROPT240AC**	
	380–440 Vac	**PDG2XROPT440AC**	
Electrical operator electronic trip unit	24 Vdc	**PDG2XROP24DC**	—
	48–60 Vdc	**PDG2XROP60DC**	
	125 Vdc	**PDG2XROP125DC**	
	250 Vdc	**PDG2XROP250DC**	
	110–130 Vac	**PDG2XROP130AC**	
	200–240 Vac	**PDG2XROP240AC**	
	380–440 Vac	**PDG2XROP440AC**	

Base Mounting Hardware

Description	Catalog Number
Single-pole metric	**4218B80G09**
Two-pole metric	**4218B80G11**
Three-, four-pole metric	**BMH1M**
Single-pole English	**624B375G01**
Two-pole English	**4218B80G01**
Three-, four-pole English	**BMH1**

Note: Base mounting hardware is included with a circuit breaker or molded case switch.

Dimensions and Weights—Frame Size 2

Approximate Dimensions in Inches (mm)

Number of Poles	Width	Height	Depth
1	1.38 (35.1)	6.00 (152.4)	3.50 (88.9)
2	2.75 (69.9)	6.00 (152.4)	3.50 (88.9)
3	4.12 (104.6)	6.00 (152.4)	3.50 (88.9)
4	5.49 (139.5)	6.00 (152.4)	3.50 (88.9)

Approximate Shipping Weight in lb (kg)

Breaker Type	1-Pole	2-Pole	3-Pole	4-Pole
PDG2 225 A	2.00 (0.91)	3.00 (1.36)	4.21 (1.82)	5.69 (2.46)

Notes

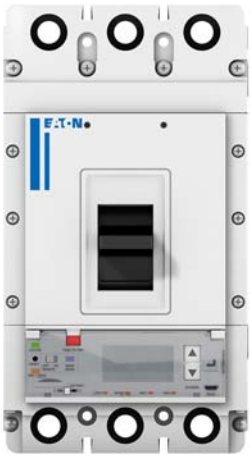
① Cannot be used with single- or two-pole breaker.

② Provision only. For use with Type FF Kirk keylock (sold separately). Bolt projection in withdrawn position is 0 in (0 mm).

③ Breaker must be ordered with walking beam interlock ready modification from plant (factory suffix **WB**).

④ Requires two breakers.

Power Defense Molded Case Circuit Breakers—Frame Size 3



Contents

Power Defense Molded Case Circuit Breakers—Frame Size 3

Product Description

Frame Size 3 covers a range of 45 A through 600 A with a complete offering of trip units, including PXR electronic trip units and fixed-adjustable thermal-magnetic trip units. PD-3 is available in two versions, with 400 A and 600 A constructions to optimize performance in multiple applications.

Application Description

Frame Size 3 can be used to meet a wide range of circuit protection and power distribution needs, including ground fault protection, current-limiting, 100% UL ratings, and high instantaneous settings for selective coordination. PXR trip units in PD-3 provide all levels of protection, including energy metering with multiple communication schemes, breaker health indication, and arc flash reduction options.

Features and Benefits

Frame Size 3 breakers are modular and available as complete breakers from the factory, or as modular components, including frames, trip units, accessories and terminals to provide flexibility for customers. PXR trip units are available with advanced features to provide customers unparalleled situational awareness of their electrical system.

Standards and Certifications

Power Defense breakers are designed and tested to meet stringent requirements for:

- UL
- CSA
- IEC (CE)
- CB (CCC)

Catalog Number / Product Selection

Power Defense—Frame Size 3 (45–600 A)

Frame Size 3 covers a range of 45 A through 600 A using electronic trip units, and 100 A through 600 A using thermal-magnetic trip units. It is available in configurations of two-, three- and four-pole, with the two-pole being in the same physical size of a three-pole variant. Frame 3 has two unique constructions: one for 400 A and a second one for 600 A. The 600 A construction provides a unique capability to be used at 400 A and below in critical coordination applications where a high level fixed instantaneous is required. This is accomplished by using a letter **H** in the *7th digit* of the catalog number, as shown below.

Interrupting Ratings

Catalog Designator	F		G		K		M ①		N ①		P ①	
UL/CSA	**kA rms**		**kA rms**		**kA rms**		**kA rms**		**kA rms**		**kA rms**	
240 Vac	35		65		85		100		150		200	
480 Vac	25		35		50		65		85		100	
600 Vac	14		18		25		35		50		65	
250 Vdc ②③	10 / 22		10 / 22		10 / 22		22 / 42		22 / 42		22 / 42	
IEC	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}
240 Vac	35	35	55	55	85	85	100	100	150	100	200	150
380–415 Vac	25	25	36	36	50	50	70	53	70	70	100	70
440 Vac	25	20	30	22.5	35	35	50	40	70	50	100	50
480 Vac	20	20	25	20	35	22.5	50	30	65	40	85	40
525 Vac	18	5	20	7.5	25	10	30	15	35	25	40	25
660–690 Vac	—	—	8	4	10	5	15	7.5	20	10	20	10
250 Vdc ②③	10 / 22	10 / 22	10 / 22	10 / 22	10 / 22	10 / 22	22 / 42	22 / 42	22 / 42	22 / 42	22 / 42	22 / 42

Notes

① UL current-limiting. M interrupting rating only current limiting for the 400 A construction breakers.

② DC ratings available in thermal-magnetic breakers only. 250 Vdc is achieved using two poles in series.

③ First rating listed is for 400 A frame, second rating is for 600 A frame.

Molded Case Circuit Breaker

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

Molded Case Circuit Breaker with Thermal-Magnetic Trip Units (TMTU)—Globally Rated

PD G 3 3 M 0400 TFA J

Product Series
PD = Power Defense

Certifications/ Standards
G = UL/CSA/IEC/ CCC

Frame Size
3 = 3

Pole Options
2 = 2-pole ①
3 = 3-pole
4 = 4-pole (100% N)
0 = 4-pole (0% N)
6 = 4-pole (60% N)

Interrupting Ratings
F = 25 kA at 480 V
G = 35 kA at 480 V
K = 50 kA at 480 V
M = 65 kA at 480 V
N = 85 kA at 480 V
P = 100 kA at 480 V
F = 14 kA at 600 V
G = 18 kA at 600 V
K = 25 kA at 600 V
M = 35 kA at 600 V
N = 50 kA at 600 V
P = 65 kA at 600 V

Continuous Current Ratings
0100 = 100 A ②
0125 = 125 A ②
0150 = 150 A
0175 = 175 A
0200 = 200 A
0225 = 225 A
0250 = 250 A
H250 = 250 A ③
0300 = 300 A
H300 = 300 A ③
0350 = 350 A
H350 = 350 A ③
0400 = 400 A
H400 = 400 A ③
0500 = 500 A
0600 = 600 A

Trip Unit Type Options
TFA = Fixed thermal / Adjustable magnetic
VFA = 50 °C Fixed thermal / Adjustable magnetic (non UL)

Standard Terminal Options
N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Molded Case Circuit Breakers with TMTU—Globally Rated (100% UL Rated)

PD

F = 100% UL/CSA rated

3 = 3

2 = 2-pole ①
3 = 3-pole
4 = 4-pole (100% N)
0 = 4-pole (0% N)
6 = 4-pole (60% N)

F = 25 kA at 480 V
G = 35 kA at 480 V
K = 50 kA at 480 V
M = 65 kA at 480 V
F = 14 kA at 600 V
G = 18 kA at 600 V
K = 25 kA at 600 V
M = 35 kA at 600 V

H250 = 250 A ③
H300 = 300 A ③
H350 = 350 A ③
H400 = 400 A ③
0500 = 500 A
0600 = 600 A

TFA = Fixed thermal / Adjustable magnetic

N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Molded Case Circuit Breakers with TMTU—UL/CSA Rated to 240 Vac

PD

D = UL/CSA

3 = 3

2 = 2-pole ①
3 = 3-pole

F = 35 kA at 240 V
G = 65 kA at 240 V
K = 85 kA at 240 V
M = 100 kA at 240 V
N = 150 kA at 240 V
P = 200 kA at 240 V

0100 = 100 A
0125 = 125 A
0150 = 150 A
0175 = 175 A
0200 = 200 A
0225 = 225 A
0250 = 250 A
0300 = 300 A
0350 = 350 A
0400 = 400 A
0500 = 500 A
0600 = 600 A

TFA = Fixed thermal / Adjustable magnetic
VFA = 50 °C Fixed thermal / Adjustable magnetic (non UL)

N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Molded Case Switches ④—Globally Rated

PD

G = UL/CSA/IEC/ CCC

3 = 3

3 = 3-pole
4 = 4-pole (100% N)

G = 35 kA at 480 V
M = 65 kA at 480 V
G = 18 kA at 600 V
M = 35 kA at 600 V

0400 = 400 A
0600 = 600 A

KNS = Molded case switch

N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Notes

① All PD-3 two-pole breakers are physically the same size as a three-pole frame with the outer poles used for electrical connections.
② Not available in four-pole 60% neutral protection.
③ High override (600 A frame).
④ Molded case switches may open above 4000 A for the 400 A frame, and above 6300 A for the 600 A frame.

Molded Case Circuit Breakers with Power Xpert Release (PXR) Electronic Trip Units (ETU)

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

2

Molded Case Circuit Breakers with PXR ETU—Globally Rated

PD G 3 3 M 0400 P2M J

Product Series
PD = Power Defense

Certifications/ Standards
G = UL/CSA/IEC/ CCC

Frame Size
3 = 3

Pole Options
2 = 2-pole ①
3 = 3-pole
4 = 4-pole (programmable N)

Interrupting Ratings
F = 25 kA at 480 V
G = 35 kA at 480 V
K = 50 kA at 480 V
M = 65 kA at 480 V
N = 85 kA at 480 V
P = 100 kA at 480 V

F = 14 kA at 600 V
G = 18 kA at 600 V
K = 25 kA at 600 V
M = 35 kA at 600 V
N = 50 kA at 600 V
P = 65 kA at 600 V

Continuous Current Ratings
0125 = 125 A
0250 = 250 A
0400 = 400 A
0600 = 600 A
H250 = 250 A High Override (600 A Frame)
H400 = 400 A High Override (600 A Frame)

Trip Unit Type Options
B2N = PXR 10 LSI
E## ②=PXR 20
P## ②=PXR 25

Standard Terminal Options
N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Molded Case Circuit Breakers with PXR ETU—Globally Rated (100% UL Rated)

PD

F = 100% UL rated

3 = 3

3 = 3-pole
4 = 4-pole (programmable N)

F = 25 kA at 480 V
G = 35 kA at 480 V
K = 50 kA at 480 V
M = 65 kA at 480 V

F = 14 kA at 600 V
G = 18 kA at 600 V
K = 25 kA at 600 V
M = 35 kA at 600 V

0125 = 125 A
0250 = 250 A
0400 = 400 A
0600 = 600 A
H250 = 250 A High Override (600 A Frame)
H400 = 400 A High Override (600 A Frame)

B2N = PXR 10 LSI
E## ②=PXR 20
P## ②=PXR 25

N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Notes

① All PD-3 two-pole breakers are physically the same size as a three-pole frame with the outer poles used for electrical connections.

② See PXR Trip Unit Options table on **Page V4-T2-49** for protection type (**#(1)**) and available configured options (**#(2)**).

Globally Rated Frame Only

PD-3 thermal-magnetic and electronic breakers may also be purchased as separate frames, trip units, terminals and accessories for field configuration of a final breaker. Each Frame Only device is marked with interrupting ratings and a maximum continuous current rating; each trip unit is also marked with a maximum continuous current rating, which must not exceed that of the frame. Additionally, 100% UL Rated frames are marked as such on the Frame Only device.

Frame Only—Globally Rated

PD G 3 3 M 0400 FNN N

Product Series	Certifications/ Standards	Frame Size	Pole Options	Interrupting Ratings	Continuous Current Ratings	Trip Unit Type Options	Standard Terminal Options
PD = Power Defense	**G** = UL/CSA/IEC/CCC	**3** = 3	**2** = 2-pole ①	**F** = 25 kA at 480 V	**0400** = 400 A	**FNN** = Frame only	**N** = No terminals
			3 = 3-pole	**G** = 35 kA at 480 V	**0600** = 600 A		
			4 = 4-pole	**K** = 50 kA at 480 V			
				M = 65 kA at 480 V			
				N = 85 kA at 480 V			
				P = 100 kA at 480 V			
				F = 14 kA at 600 V			
				G = 18 kA at 600 V			
				K = 25 kA at 600 V			
				M = 35 kA at 600 V			
				N = 50 kA at 600 V			
				P = 65 kA at 600 V			

Frame Only—Globally Rated (100% UL Rated)

PD	**F** = 100% UL/CSA rated	**3** = 3	**3** = 3-pole	**F** = 25 kA at 480 V	**0400** = 400 A	**FNN** = Frame only	**N** = No terminals
			4 = 4-pole	**G** = 35 kA at 480 V	**0600** = 600 A		
				K = 50 kA at 480 V			
				M = 65 kA at 480 V			
				F = 14 kA at 600 V			
				G = 18 kA at 600 V			
				K = 25 kA at 600 V			
				M = 35 kA at 600 V			

Note

① All PD-3 two-pole breakers are physically the same size as a three-pole frame with the outer poles used for electrical connections.

Trip Units

PD-3 thermal-magnetic and electronic breakers may also be purchased as separate frames, trip units, terminals and accessories for field configuration of a final breaker. The 400 A frame must use trip units of ratings 0100–0400, while the 600 A frame must use trip units of ratings 0500, 0600 or designated by **H**, such as *H250*. Additionally, for two-pole breakers using electronic trip units, three-pole trip units are used. PDG designated trip units are for use with PDG and PDF breaker frames. The 100% rating for PDF (100% UL Rated) is marked on the frame, not the trip unit.

Trip Units Only

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

Thermal-Magnetic Trip Units

PD G 3 X TFA 3 0600

Product Series
PD = Power Defense

Certifications/ Standards
G = UL/CSA/IEC/CCC

Frame Size
3 = 3

Separator Digit
X = Accessory

Trip Unit Type Options
TFA = Fixed Thermal / Adjustable Magnetic
VFA = 50 °C Fixed Thermal / Adjustable Magnetic (non UL)

Pole Options
2 = 2-pole
3 = 3-pole
4 = 4-pole (100% N)
0 = 4-pole (0% N)
6 = 4-pole (60% N)

Continuous Current Ratings
0100 = 100 A ①
0125 = 125 A ①
0150 = 150 A
0175 = 175 A
0200 = 200 A
0225 = 225 A
0250 = 250 A
0300 = 300 A
0350 = 350 A
0400 = 400 A
0500 = 500 A
0600 = 600 A
H250 = 250 A High Override (600 A Frame)
H300 = 300 A High Override (600 A Frame)
H350 = 350 A High Override (600 A Frame)
H400 = 400 A High Override (600 A Frame)

Power Xpert Release (PXR) Electronic Trip Units

Power Xpert Release (PXR) Electronic Trip Units

PD G 3 X PXR 3 0600 E2N

Product Series
PD = Power Defense

Certifications/ Standards
G = UL/CSA/IEC/CCC

Frame Size
3 = 3

Separator Digit
X = Accessory

Trip Unit Type Designator
PXR = Power Xpert Release Trip Unit

Pole Options
3 = 3-pole
4 = 4-pole (programmable N)

Continuous Current Ratings
0125 = 125 A
0250 = 250 A
0400 = 400 A
0600 = 600 A
H250 = 250 A High Override (for use in 600 A Frame)
H400 = 400 A High Override (for use in 600 A Frame)

Trip Unit Type and Options
B2N = PXR 10 LSI
E## ②=PXR 20
P## ②=PXR 25

Notes

① Not available in four-pole 60% neutral protection.

② See tables and descriptions on **Page V4-T2-49** for protection type (**#$_{(1)}$**) and available configured options (**#$_{(2)}$**).

Power Xpert Release (PXR) Trip Unit Options—Frame Size 3

Power Xpert Release (PXR) Trip Unit Options

		#(1)—Protection Type				#(2)—Available Configured Options								
PXR	ETU	LSI	LSIG ①	LSI with Arcflash Reduction Maintenance System	LSIG with Arcflash Reduction Maintenance System	—	Relays	Relays Modbus	Relays	Relays	Relays Modbus	Relays	Relays Modbus	Relays Modbus
						—	—	—	ZSI	—	ZSI	ZSI	—	ZSI
						—	—	—	—	CAM	—	CAM	CAM	CAM
PXR 10	**B**	**2**	—	—	—	**N**	—	—	—	—	—	—	—	—
PXR 20	**E**	**2**	—	—	—	**N**	**R**	**M**	**Z**	**C**	**W**	**X**	—	—
		—	**3**	**4**	**5**	—	**R**	**M**	**Z**	**C**	**W**	**X**	—	—
PXR 25	**P**	**2**	**3**	**4**	**5**	—	—	**M**	—	—	**W**	—	**D**	**Y**

Descriptions of PXR Configured Options

Relays—2 Form A contacts (rated for 240 Vac, 1 A)

- Interface: 3 wires (ALM1, ALM2, ALM Common)
- Programmable to indicate breaker conditions

Modbus—Modbus RTU directly from breaker

- Interface: 3 wires (MODBA, MODBB, MODBG)
- No additional modules required

ZSI—Zone Selective Interlocking

- Interface: 3 wires (Zin, Zout, Zcomm)
- Includes ability to turn ON and OFF, and indicate signals

CAM—CAM Link connection (requires a CAM module per breaker)

- Interface: 5 wires (refer to CAM IL for details)
- Communications Adapter Modules available for Modbus TCP and PROFIBUS

Arcflash Reduction Maintenance System, or Maintenance Mode

- Available as trip unit Protection Type 4 or 5
- Interface: Switch and LED on face of trip unit (self-powered) and two wires for remote switch enable option (24 Vdc required)
- A programmable relay will be factory defaulted to remote indication of Arcflash Reduction Maintenance System

Auxiliary Power

- Connection included with all PXR 20 and 25 trip units

Note: For PXR 20 units, wire harness connections for auxiliary power not included on E2N styles.

- Required for communications, relays, and metering accuracy
- 24 Vdc, 0.5 A
- Interface: 2 wires Aux +24 V, Aux 0 V)

Available Continuous Current (I_r) Settings on PXR Electronic Trip Units

		Catalog Number Selection and Maximum Setting (I_n)			
Option	Setting	0125 125 A	0250/H250 250 A	0400/H400 400 A	0600 600 A
PXR 10, PXR 20	1	45 A	90 A	160 A	250 A
	2	50 A	100 A	175 A	275 A
	3	60 A	110 A	200 A	300 A
	4	63 A	125 A	225 A	320 A
	5	70 A	150 A	250 A	350 A
	6	80 A	160 A	275 A	400 A
	7	90 A	175 A	300 A	450 A
	8	100 A	200 A	320 A	500 A
	9	110 A	225 A	350 A	550 A
	10 = I_n	125 A	250 A	400 A	600 A
PXR 25		Programmable from minimum to maximum values in 1 A increments.			

Note

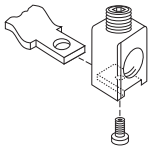
① All neutral current sensors required for LSIG protection are sold separately.

2

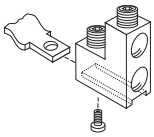
Terminals—Frame Size 3

Catalog numbers shown are for a single side of a three-pole breaker.
For two- and four-pole options, replace the **X3** with **X2** or **X4**, respectively.
Example: PDG3**X3**TA300 becomes PDG3**X2**TA300 for two-pole.

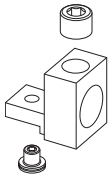
Terminal Types



PDG3X3TA300
PDG3X3TA350
PDG3X3T300
PDG3X3T350
PDG3X3TA350SW

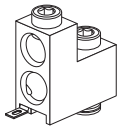


PDG3X3TA400
PDG3X3TA400SW
PDG3X3T400
PDG3X3TA400CW
PDG3X3T400CW
PDG3X3TA401CW
PDG3X3TA401

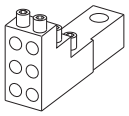


PDG3X3TA402
PDG3X3T402
PDG3X3TA401H
PDG3X3T401H
PDG3X3TA401HCW
PDG3X3T401HCW

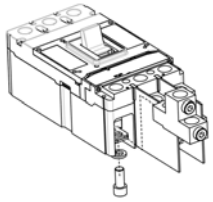
PDG3X3TA400H
PDG3X3T400H



PDG3X3TA630
PDG3X3T630
PDG3X3TA630SW
PDG3X3TA630CW
PDG3X3T630CW



PDG3X3TA4003W
PDG3X3TA4006W
PDG3X3TA6006W
PDG3X3TA6006WSW



PDG3X3TA400RF
PDG3X3TA400HRF
PDG3X3TA630RF

Note: Pictures are for reference only.

Terminals

Maximum Breaker Amperes	Breaker Frame	Terminal Body Type	Wire Type	Wire Class	Number of Conductors per Phase	AWG / kcmil Range per Conductor	Metric (mm^2) Range per Conductor	3-Pole Catalog Number	Included Accessories	Digit 14 Designation: Line and Load	Digit 14 Designation: Line Only	Digit 14 Designation: Load Only	Factory Config. Ampere Range
Standard Terminals													
300	400	Aluminum	Cu/Al	B, C	1	3–350	26.7–177	**PDG3X3TA300**	—	J	K	L	100–225
350	400	Aluminum	Cu/Al	B, C	1	250–500	127–253	**PDG3X3TA350**	—	J	K	L	250–350
400	400	Aluminum	Cu/Al	B, C	2	3/0–250	85–127	**PDG3X3TA400**	Terminal shield	J	K	L	400
400	600	Aluminum	Cu/Al	B, C	1	500–750	253–380	**PDG3X3TA401H**	Terminal shield	J	K	L	H250–H400
630	600	Aluminum	Cu/Al	B, C	2	2–500	33.6–253	**PDG3X3TA630**	Terminal shield	J	K	L	450–600
Optional Aluminum Terminals													
400	400	Aluminum	Cu/Al	B, C	1	500–750	253–380	**PDG3X3TA402**	Terminal shield	T	U	V	100–400
400	400	Aluminum	Cu/Al	B, C	2	2/0–250 (2) or 2/0–500 (1)	67.4–127 (2) or 67.4–253 (1)	**PDG3X3TA401**	Terminal shield	I	O	F	100–400
400	600	Aluminum	Cu/Al	B, C	1	3–500	26.7–253	**PDG3X3TA400H**	—	T	U	V	H250–H400
Optional Copper Terminals													
300	400	Copper	Cu	B, C	1	3–350	26.7–177	**PDG3X3T300**	—	W	Y	Z	100–225
350	400	Copper	Cu	B, C	1	250–500	127–253	**PDG3X3T350**	—	W	Y	Z	250–350
400	400	Copper	Cu	B, C	2	3/0–250	85–127	**PDG3X3T400**	Terminal shield	W	Y	Z	400
400	400	Copper	Cu/Al	B, C	1	Al: 500–750 Cu: 500 Only	—	**PDG3X3T402**	Terminal shield	—	—	—	—
400	600	Copper	Cu	B, C	1	3–500	26.7–253	**PDG3X3T400H**	—	—	—	—	—
400	600	Copper	Cu	B, C	1	500–750	253–380	**PDG3X3T401H**	Terminal shield	W	Y	Z	H250–H400
630	600	Copper	Cu	B, C	2	2–500	33.6 –253	**PDG3X3T630**	Terminal shield	W	Y	Z	450–600
StrandAble Terminals													
400	400	Aluminum	Cu/Al	B, C	2	3/0–250	85–127	**PDG3X3TA400SW**	Terminal shield	A	B	C	100–400
				D, G, H, I, K, M		3/0–4/0	85–107						
350	400	Aluminum	Cu/Al	B, C	1	250–500	127–253	**PDG3X3TA350SW**	—	—	—	—	—
				D, G, H, I, K, M		250–350	127–177						
630	600	Aluminum	Cu/Al	B, C	2	2–500	33.6–253	**PDG3X3TA630SW**	Terminal shield	A	B	C	H250–600
				D, G, H, I, K, M		2–350	33.6–177						

Terminals—Frame Size 3

Terminals, continued

Maximum Breaker Amperes	Breaker Frame	Terminal Body Type	Wire Type	Wire Class	Number of Conductors per Phase	AWG / kcmil Range per Conductor	Metric (mm^2) Range per Conductor	3-Pole Catalog Number	Included Accessories	Digit 14 Designation			Factory Config. Ampere Range
										Line and Load	Line Only	Load Only	
Control Wire Aluminum Terminals													
400	400	Aluminum	Cu/Al	B, C	2	3/0–250	85–127	**PDG3X3TA400CW**	Terminal shield	1	2	3	100–400
400	400	Aluminum	Cu/Al	B, C	2	2/0–250 (2) or 2/0–500 (1)	67.4–127 (2) or 67.4–253 (1)	**PDG3X3TA401CW**	Terminal shield	4	5	6	100–400
400	600	Aluminum	Cu/Al	B, C	1	500–750	253–380	**PDG3X3TA401HCW**	Terminal shield	1	2	3	H250–H400
630	600	Aluminum	Cu/Al	B, C	2	2–500	33.6–253	**PDG3X3TA630CW**	Terminal shield	1	2	3	450–600
Control Wire Copper Terminals													
400	400	Copper	Cu	B, C	2	3/0–250	85–127	**PDG3X3T400CW**	Terminal shield	7	8	9	100–400
400	600	Copper	Cu	B, C	1	500–750	253–380	**PDG3X3T401HCW**	Terminal shield	7	8	9	H250–H400
630	600	Copper	Cu	B, C	2	2–500	33.6–253	**PDG3X3T630CW**	Terminal shield	7	8	9	450–600
Multi-wire Terminals													
400	400	Aluminum	Cu/Al	B, C	3	12–2/0	3.31–67.4	**PDG3X3TA4003W**	Terminal shield	—	—	H	100–400
400	400	Aluminum	Cu/Al	B, C	6	14–3	2.08–26.7	**PDG3X3TA4006W**	Terminal shield	—	—	G	100–400
600	600	Aluminum	Cu/Al	B, C	6	14–1/0	2.08–53.5	**PDG3X3TA6006W**	Terminal shield	—	—	G	H250–600
StrandAble Multi-wire Terminals													
600	600	Aluminum	Cu/Al	B, C D, G, H, I, K, M	6	12–2/0 8–1/0	—	**PDG3X3TA6006WSW**	Terminal shield	—	—	—	—
Rear-fed Terminals ①													
400	400	Aluminum	Cu/Al	B, C	1	250–500	127–253	**PDG3X3TA400RF**	Interphase barriers	—	—	—	—
400	600	Aluminum	Cu/Al	B, C	1	2–500	33.6–253	**PDG3X3TA400HRF**	Interphase barriers	—	—	—	—
630	600	Aluminum	Cu/Al	B, C	2	2–500	33.6–253	**PDG3X3TA630RF**	Interphase barriers	—	—	—	—
Rear Connectors ①													
400	—	Aluminum	—	—	—	—	—	**PDG3X3T400RC**	—	R	—	—	100–400
630	—	—	—	—	—	—	—	**PDG3X3T600RC**	—	R	—	—	250–600
End Cap Kits/Screw Terminals													
400	—	—	—	—	—	—	—	**PDG3X3TS400**	—	S	D	E	100–400
600	—	—	—	—	—	—	—	**PDG3X3TS600**	—	S	D	E	250–600

Note: Wire capacity is based on standard imperial wire sizes; metric sizes provided in table are a direct conversion to demonstrate maximum capacity, not to denote metric wire sizes.

Control Wire Tabs

Use	Package Qty.	Catalog Number
100–400 A	12	**KCWTK**

Note

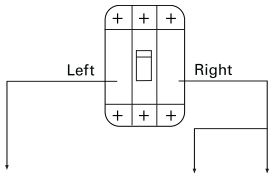
① Breaker loses UL rating when fitted with rear-fed terminals or rear connectors.

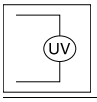
Accessories

2

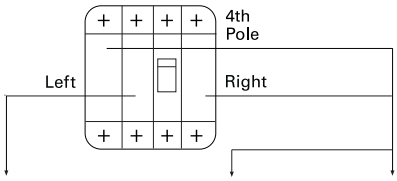
Internal Accessory Configurations—Frame Size 3

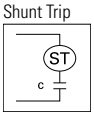
Three-Pole Circuit Breakers



Tripping Accessory Options	Alarm Options (2 Spaces) ①	Aux Options (2 Spaces)
Shunt Trip 	None	None
	1NO (1 space)	1NO (1 space)
	1NC (1 space)	1NC (1 space)
	1NO/1NC (2 spaces)	1NO/1NC (2 spaces)
UVR 	2NO (2 spaces)	2NO (2 spaces)
	2NC (2 spaces)	2NC (2 spaces)

Four-Pole Circuit Breakers



Tripping Accessory Options	Alarm Options (2 Spaces) ①	Aux Options (4 Spaces) ②
Shunt Trip 	None	None
	1NO (1 space)	1NO (1 space)
	1NC (1 space)	1NC (1 space)
	1NO/1NC (2 spaces)	1NO/1NC (2 spaces)
UVR 	2NO (2 spaces)	2NO (2 spaces)
	2NC (2 spaces)	2NC (2 spaces)
		2NO/2NC (4 spaces)
		4NO (4 spaces)
		4NC (4 spaces)

Notes

① Frame 3 Power Defense breakers with electronic trip units AND communication only have access to one alarm space. Breakers with thermal-magnetic trip units or electronic trip units without communication have access to two alarm spaces.

② Neutral pole includes two additional auxiliary spaces.

③ Order in multiples of quantity listed to receive bulk pack. (ex. Order qty 20 PDGXXA-BP20 to receive 1 bulk pack).

Alarm and Auxiliary Contact Blocks—Frame Size 3

Power Defense breakers have designated positions for alarm and auxiliary switches in the right pole accessory cavity. For Frame 3, the two left-most positions are used for alarm switches, and the two right-most locations are used for auxiliary switches.

Power Defense breakers have secondary covers for ease of field installation of accessories, including alarm and auxiliary switches.

Power Defense alarm and auxiliary switches are available in contact blocks, in Form A (NO), Form B (NC), and Form C (NO-NC) types. Form A and Form B contacts take one position in the breaker accessory cavity, and Form C contacts take two positions in the cavity. Identical contact blocks are used for the alarm and auxiliary switch functions.

Electronic breakers with communications options (Modbus RTU or CAM Link) lose one alarm switch position, but are also able to provide trip position via communications and the PXR programmable relays.

Contact Blocks

Pigtail (29 in / 0.75 m) Contact Blocks for Alarm and Auxiliary Switch Functionality

Catalog Number	PDGXAA	PDGXAB	PDGXAC
Type	Form A / NO	Form B / NC	Form C / NO-NC

Screw Terminal Contact Blocks for Alarm and Auxiliary Switch Functionality

Catalog Number	PDGXXA	PDGXXB	PDGXXA + PDGXXB
Type	Form A / NO	Form B / NC	For NO-NC, use two separate contact blocks

Push-In Clamp Contact Blocks for Alarm and Auxiliary Switch Functionality

Catalog Number	PDGXUA	PDGXUB	PDGXUC
Type	Form A / NO	Form B / NC	Form C / NO-NC

Pigtail (118 in / 3.0 m) Contact Blocks for Alarm and Auxiliary Switch Functionality

Catalog Number	PDGXDA	PDGXDB	PDGXDC
Type	Form A / NO	Form B / NC	Form C / NO-NC

Contact Blocks for Alarm and Auxiliary Switch Functionality—Bulk Packs

Catalog Number	Type	Termination	Bulk Pack Quantity ③
PDGXXA-BP20	Form A / NO	Screw Terminal	20
PDGXXB-BP20	Form B / NC	Screw Terminal	20
PDGXUA-BP20	Form A / NO	Push-in Clamp	20
PDGXUB-BP20	Form B / NC	Push-in Clamp	20
PDGXUC-BP10	Form C / NO-NC	Push-in Clamp	10

Factory Installation of Alarm and Auxiliary Switches—Frame Size 3

Alarm and auxiliary switches are plug-and-play accessories designed to be field installable. However, Eaton also offers installation service in our factories.

Breaker catalog numbers with alarm and auxiliary switch combinations require a complete 20-digit catalog number, adding the alarm and auxiliary switch functionality in digits 15–16 and adhering to the following conditions and tables.

- Digit 15 denotes the type of accessory(-ies) installed and the terminal types
- Switches may be requested for alarm only, auxiliary only or a combination of the two
- For Eaton factory installation, the same type of terminals (i.e., all pigtail 0.75 m, all screw, etc.) must be used. If a combination of alarm and auxiliary switches is selected, they must be the same type (i.e., all 1NC, all 1NO/1NC, etc.)
- Digit 16 denotes number and type (NO, NC) of switches installed
- If no other accessories are selected, use NNNN for the final 4 digits of the catalog number
- Electronic breakers with communications lose one alarm switch position in order to provide trip status via communications. They do not lose an auxiliary position for this purpose.

Pigtails—29 in / 0.75 m (A, B, C)

		Auxiliary Switch Three-Pole						Four-Pole		
		None	1NO	1NC	1NO/1NC	2NO	2NC	2NO/2NC	4NO	4NC
Alarm Switch	None	NN	AA	AB	AC	AD	AE	A1	A2	A3
	1NO	BA	CA	—	—	—	—	—	—	—
	1NC	BB	—	CB	—	—	—	—	—	—
	1NO/1NC	BC	—	—	CC	—	—	C1	—	—
	2NO	BD	—	—	—	CD	—	—	C2	—
	2NC	BE	—	—	—	—	CE	—	—	C3

Screw Terminals (X, Y, Z)

		Auxiliary Switch Three-Pole						Four-Pole		
		None	1NO	1NC	1NO/1NC	2NO	2NC	2NO/2NC	4NO	4NC
Alarm Switch	None	NN	XA	XB	XC	XD	XE	X1	X2	X3
	1NO	YA	ZA	—	—	—	—	—	—	—
	1NC	YB	—	ZB	—	—	—	—	—	—
	1NO/1NC	YC	—	—	ZC	—	—	Z1	—	—
	2NO	YD	—	—	—	ZD	—	—	Z2	—
	2NC	YE	—	—	—	—	ZE	—	—	Z3

Push-In Clamps (U, V, W)

		Auxiliary Switch Three-Pole						Four-Pole		
		None	1NO	1NC	1NO/1NC	2NO	2NC	2NO/2NC	4NO	4NC
Alarm Switch	None	NN	UA	UB	UC	UD	UE	U1	U2	U3
	1NO	VA	WA	—	—	—	—	—	—	—
	1NC	VB	—	WB	—	—	—	—	—	—
	1NO/1NC	VC	—	—	WC	—	—	W1	—	—
	2NO	VD	—	—	—	WD	—	—	W2	—
	2NC	VE	—	—	—	—	WE	—	—	W3

2

Factory Installation of Alarm and Auxiliary Switches—Frame Size 3

Pigtails—118 in / 3.0 m (D, E, F)

		Auxiliary Switch Three-Pole						Four-Pole		
		None	1NO	1NC	1NO/1NC	2NO	2NC	2NO/2NC	4NO	4NC
Alarm Switch	**None**	NN	DA	DB	DC	DD	DE	D1	D2	D3
	1NO	EA	FA	—	—	—	—	—	—	—
	1NC	EB	—	FB	—	—	—	—	—	—
	1NO/1NC	EC	—	—	FC	—	—	F1	—	—
	2NO	ED	—	—	—	FD	—	—	F2	—
	2NC	EE	—	—	—	—	FE	—	—	F3

For PXR Trip Units with Communication ①

		Auxiliary Switch Three-Pole						Four-Pole		
		None	1NO	1NC	1NO/1NC	2NO	2NC	2NO/2NC	4NO	4NC
Alarm Switch	**None**	NN	AA	AB	AC	AD	AE	A1	A2	A3
	1NO	BA	CA	—	CF	CG	—	CP	CQ	—
	1NC	BB	—	CB	CH	—	CI	CR	—	CS

Tripping Accessories—Frame Size 3

Power Defense breakers have designated positions for shunt trips and undervoltage releases (UVRs) in the left pole accessory cavity. Each breaker has space for one tripping accessory only.

Power Defense breakers have secondary covers for ease of field installation of tripping accessories.

Shunt Trips

Voltage	Screw Terminals	Pigtail (29 in / 0.75 m)	Pigtail (118 in / 3.0 m)
12 Vdc	**PDG3XST12DCT**	**PDG3XST12DCS**	**PDG3XST12DCR**
48 Vdc	**PDG3XST48DCT**	**PDG3XST48DCS**	**PDG3XST48DCR**
60 Vdc	**PDG3XST60DCT**	**PDG3XST60DCS**	**PDG3XST60DCR**
24 Vac/Vdc	**PDG3XST24ACDCT**	**PDG3XST24ACDCS**	**PDG3XST24ACDCR**
110–130 Vac/125 Vdc	**PDG3XST130ACDCT**	**PDG3XST130ACDCS**	**PDG3XST130ACDCR**
200–240 Vac/250 Vdc	**PDG3XST250ACDCT**	**PDG3XST250ACDCS**	**PDG3XST250ACDCR**
380–440 Vac	**PDG3XST440ACT**	**PDG3XST440ACS**	**PDG3XST440ACR**
480–525 Vac	**PDG3XST525ACT**	**PDG3XST525ACS**	**PDG3XST525ACR**
600 Vac	**PDG3XST600ACT**	**PDG3XST600ACS**	**PDG3XST600ACR**

Undervoltage Releases (UVRs)

Voltage	Screw Terminals	Pigtail (29 in / 0.75 m)	Pigtail (118 in / 3.0 m)
12 Vdc	**PDG3XUV12DCV**	**PDG3XUV12DCU**	**PDG3XUV12DCW**
24 Vdc	**PDG3XUV24DCV**	**PDG3XUV24DCU**	**PDG3XUV24DCW**
48 Vdc	**PDG3XUV48DCV**	**PDG3XUV48DCU**	**PDG3XUV48DCW**
60 Vdc	**PDG3XUV60DCV**	**PDG3XUV60DCU**	**PDG3XUV60DCW**
125 Vdc	**PDG3XUV125DCV**	**PDG3XUV125DCU**	**PDG3XUV125DCW**
250 Vdc	**PDG3XUV250DCV**	**PDG3XUV250DCU**	**PDG3XUV250DCW**
24 Vac	**PDG3XUV24ACV**	**PDG3XUV24ACU**	**PDG3XUV24ACW**
130 Vac	**PDG3XUV130ACV**	**PDG3XUV130ACU**	**PDG3XUV130ACW**
240 Vac	**PDG3XUV240ACV**	**PDG3XUV240ACU**	**PDG3XUV240ACW**
440 Vac	**PDG3XUV440ACV**	**PDG3XUV440ACU**	**PDG3XUV440ACW**
525 Vac	**PDG3XUV525ACV**	**PDG3XUV525ACU**	**PDG3XUV525ACW**
600 Vac	**PDG3XUV600ACV**	**PDG3XUV600ACU**	**PDG3XUV600ACW**

Note: Use PDG3XUV18DCW when using Time Delay UVR.

Note

① All options shown have 29 in/0.75 m pigtail termination. For alternate termination options, contact the product line.

Factory Installed Tripping Accessories—Frame Size 3

Shunt trips and undervoltage releases (UVRs) are plug-and-play accessories designed to be field installable. However, Eaton also offers the service of installation in our factories.

Breaker catalog numbers with shunt trips or UVRs require a complete 20-digit catalog number, adding the tripping accessory functionality in digits 17 and 18 and adhering to the following conditions and tables.

- Digit 17 denotes the type of accessory installed and the terminal type
- Digit 18 denotes the voltage of the accessory
- If no additional accessories are selected, use NN for digits 15-16 and 19-20 of the catalog number
- Each breaker has space for one shunt trip or UVR tripping accessory only

Shunt Trips

Voltage	Screw Terminals	Pigtail (29 in / 0.75 m)	Pigtail (118 in / 3.0 m)
12 Vdc	TH	SH	RH
48 Vdc	TJ	SJ	RJ
60 Vdc	TK	SK	RK
24 Vac/Vdc	TN	SN	RN
110–130 Vac/125 Vdc	TP	SP	RP
200–240 Vac/250 Vdc	TR	SR	RR
380–440 Vac	TC	SC	RC
480–525 Vac	TD	SD	RD
600 Vac	TE	SE	RE

Undervoltage Releases (UVRs)

Voltage	Screw Terminals	Pigtail (29 in / 0.75 m)	Pigtail (118 in / 3.0 m)
12 Vdc	VH	UH	WH
24 Vdc	VG	UG	WG
48 Vdc	VJ	UJ	WJ
60 Vdc	VK	UK	WK
125 Vdc	VL	UL	WL
250 Vdc	VM	UM	WM
24 Vac	VF	UF	WF
130 Vac	VA	UA	WA
240 Vac	VB	UB	WB
440 Vac	VC	UC	WC
525 Vac	VD	UD	WD
600 Vac	VE	UE	WE

Note: Use suffix **US** for 18 Vdc when using Time Delay UVR.

Handle Mechanisms—Frame Size 3

Direct Rotary Handle Mechanism ①

Description	NEMA 1/12 Catalog Number	Factory Installed Digits 19–20
Standard lockable handle and mechanism	**PDG3XHMCS**	HA
Standard lockable handle and mechanism with door interlock	**PDG3XHMCSN**	HB
Standard lockable handle and mechanism with mechanical padlock	**PDG3XHMCSP**	HC
Standard lockable handle and mechanism with door interlock and mechanical padlock	**PDG3XHMCSNP**	HE
Emergency lockable handle and mechanism	**PDG3XHMCE**	H1
Emergency lockable handle and mechanism with door interlock	**PDG3XHMCEN**	H2
Emergency lockable handle and mechanism with mechanical padlock	**PDG3XHMCEP**	H3
Emergency lockable handle and mechanism with door interlock and mechanical padlock	**PDG3XHMCENP**	H5

Variable Depth Rotary Handle Mechanism ①

PDG3XHMDS

Description	NEMA 1/3R/12/4/4X Catalog Number	Factory Installed Digits 19–20
Standard lockable handle and mechanism ②	**PDG3XHMDS**	DA
Standard lockable handle and mechanism with mechanical padlock ②	**PDG3XHMDSP**	DC
Emergency lockable handle and mechanism ②	**PDG3XHMDE**	D1
Emergency lockable handle and mechanism with mechanical padlock ②	**PDG3XHMDEP**	D3
9 in (245 mm) handle mechanism shaft	**PDG34XHMS245**	—
17 in (445 mm) handle mechanism shaft	**PDG34XHMS445**	—
Standard NFPA79-compliant shaft handle	**PDG34XHM79S**	—
Emergency NFPA79-compliant shaft handle	**PDG34XHM79E**	—

Metal Variable Depth Rotary Handle Mechanism ①

Description	NEMA 1/3R/12/4/4X Catalog Number
Metal standard lockable handle, mechanism, and 6-inch shaft	**PDG3XHMDS06MH**
Metal standard lockable handle, mechanism, and 12-inch shaft	**PDG3XHMDS12MH**
Metal standard lockable handle, mechanism, and 24-inch shaft	**PDG3XHMDS24MH**
Metal emergency lockable handle, mechanism, and 6-inch shaft	**PDG3XHMDE06MH**
Metal emergency lockable handle, mechanism, and 12-inch shaft	**PDG3XHMDE12MH**
Metal emergency lockable handle, mechanism, and 24-inch shaft	**PDG3XHMDE24MH**

Flex Shaft Handle Mechanism

Cable Length (ft)	Metal Handle, NEMA 1/3R/12 Catalog Number	High Performance Handle, NEMA 1/3R/12 Catalog Number	Metal Handle, NEMA 4/4X Catalog Number	High Performance Handle, NEMA 4/4X Catalog Number
2	**PDG3XFS02**	**PDG3XFS02HP**	**PDG3XFS02X**	**PDG3XFS02HPX**
3	**PDG3XFS03**	**PDG3XFS03HP**	**PDG3XFS03X**	**PDG3XFS03HPX**
4	**PDG3XFS04**	**PDG3XFS04HP**	**PDG3XFS04X**	**PDG3XFS04HPX**
5	**PDG3XFS05**	**PDG3XFS05HP**	**PDG3XFS05X**	**PDG3XFS05HPX**
6	**PDG3XFS06**	**PDG3XFS06HP**	**PDG3XFS06X**	**PDG3XFS06HPX**
7	**PDG3XFS07**	**PDG3XFS07HP**	**PDG3XFS07X**	**PDG3XFS07HPX**
8	**PDG3XFS08**	**PDG3XFS08HP**	**PDG3XFS08X**	**PDG3XFS08HPX**
9	**PDG3XFS09**	**PDG3XFS09HP**	**PDG3XFS09X**	**PDG3XFS09HPX**
10	**PDG3XFS10**	**PDG3XFS10HP**	**PDG3XFS10X**	**PDG3XFS10HPX**

Notes

① Standard handles are black and gray; Emergency handles are red and yellow.

② Handle mechanism shaft sold separately.

Accessories—Frame Size 3

External Accessories

Description	Fit Type	Catalog Number	Factory Installed Digits 19–20
Padlockable hasp	Top	**PDG3XPLKT**	L4
Padlockable hasp, OFF only	Top	**PDG3XPLKTOFF**	L1
Padlockable handle block	On handle	**PDG3XPHB**	—
Kirk lock provision—left side, Type F ①	Left side	**PDG3XKLKPSF**	L8
Kirk lock provision—right side, Type F ①	Right side		L9
Kirk lock provision—left/right side, Type FF ①	Left/right side	**PDG3XKLKPSFF**	—
Walking beam interlock ②③	400 A frame, two-, three- and four-pole	**PDG3XWBI234P**	—
	600 A frame, two- and three-pole	**PDG3XWBI23P**	—
	600 A frame, four-pole	**PDG3XWBI4P**	—
Electrical operator	24 Vdc	**PDG3XROP24DC**	—
	48–60 Vdc	**PDG3XROP60DC**	—
	125 Vdc	**PDG3XROP125DC**	—
	250 Vdc	**PDG3XROP250DC**	—
	110–130 Vac	**PDG3XROP130AC**	—
	200–240 Vac	**PDG3XROP240AC**	—
	380–440 Vac	**PDG3XROP440AC**	—
Plug-in breaker base only	Three-pole	**PDG3XPIBB3P600A**	—
	Four-pole	**PDG3XPIBB4P600A**	—
Plug-in breaker parts kit	Three-pole, 400 A	**PDG3XPIBK3P400A**	—
	Three-pole, 600 A	**PDG3XPIBK3P600A**	—
	Four-pole, 400 A	**PDG3XPIBK4P400A**	—
	Four-pole, 600 A	**PDG3XPIBK4P600A**	—
Terminal covers	Three-pole (400 A frame)	**PDG3XTC3P400A**	—
	Three-pole	**PDG3XTC3P**	—
	Four-pole	**PDG3XTC4P**	—
Interphase barriers	Single-pole	**PDG3XIB**	—
	Three-pole	**PDG3XIB3P**	—
	Four-pole	**PDG3XIB4P**	—
Finger protection	Three-pole	**PDG3XFP3P**	—
	Four-pole	**PDG3XFP4P**	—
Neutral CTs for ground fault (PXR)	Busbar type	**PDG3XNCTB0600**	—
Service entrance barrier kit	Three-pole	**PRLSEBPD3**	—
Withdrawable cassettes	Three-pole, 400 A	**PDG3XWDR3P400A**	—
	Four-pole, 400 A	**PDG3XWDR4P400A**	—
	Three-pole, 600 A	**PDG3XWDR3P630A**	—
	Four-pole, 600 A	**PDG3XWDR4P630A**	—

Base Mounting Hardware

Description	Catalog Number
Two-, three-, four-pole metric	**66A4560G03**

Note: Base mounting hardware is included with a circuit breaker or molded case switch.

Dimensions and Weights—Frame Size 3

Approximate Dimensions in Inches (mm)

Number of Poles	Width	Height	Depth
2	5.47 (138.9)	10.13 (257.1)	4.30 (109.1)
3	5.47 (138.9)	10.13 (257.1)	4.30 (109.1)
4	7.22 (182.9)	10.13 (257.1)	4.30 (109.1)

Approximate Shipping Weight in lb (kg)

Breaker Type	2-Pole	3-Pole	4-Pole
PDG3 400 A	8.05 (3.65)	11.02 (5.0)	13.77 (6.25)
PDG3 600 A	10.43 (4.73)	12.36 (5.61)	16.27 (7.39)

Notes

① Provision only. Kirk keylock sold separately. Bolt projection in withdrawn position is 0.375 in (9.525 mm) for F-lock and 0 in (0 mm) for FF-lock.

② Breaker must be ordered with walking beam interlock ready modification from plant (factory suffix **WB** in digits 19-20).

③ Requires two breakers.

Power Defense Molded Case Circuit Breakers—Frame Size 4

Contents

Power Defense Molded Case Circuit Breakers—Frame Size 4

Product Description

Frame Size 4 covers a range of 300 A through 800 A with a complete offering of trip units, including PXR electronic trip units and fixed-adjustable thermal-magnetic trip units. PD-4 is available in a single 800 A frame.

Application Description

Frame Size 4 can be used to meet a wide range of circuit protection and power distribution needs, including ground fault protection and 100% UL ratings. PXR trip units in PD-4 provide all levels of protection, including energy metering with multiple communication schemes, breaker health indication and arc flash reduction options.

Features and Benefits

Frame Size 4 breakers are modular and available as complete breakers from the factory or as modular components, including frames, trip units, accessories and terminals to provide flexibility for customers. PXR trip units are available with advanced features to provide customers unparalleled situational awareness of their electrical system.

Standards and Certifications

Power Defense breakers are designed and tested to meet stringent requirements for:

- UL
- CSA
- IEC (CE)
- CB (CCC)

Catalog Number / Product Selection

Power Defense—Frame Size 4 (300–800 A)

Frame Size 4 covers a range of 320 A through 800 A using electronic trip units, and 300 A through 800 A using thermal-magnetic trip units. It is available in configurations of two-, three- and four-pole, with the two-pole being in the same physical size of a three-pole variant.

Interrupting Ratings

	G		K		M	
UL/CSA	**kA rms**		**kA rms**		**kA rms**	
240 Vac	65		85		100	
480 Vac	35		50		65	
600 Vac	18		25		35	
250 Vdc ①	22		22		25	
IEC	**I_{cu}**	**I_{cs}**	**I_{cu}**	**I_{cs}**	**I_{cu}**	**I_{cs}**
240 Vac	55	55	85	85	100	100
380–415 Vac	36	36	50	50	70	53
440 Vac	30	22.5	35	35	50	40
480 Vac	25	20	35	22.5	50	30
525 Vac	20	16.5	25	20	30	25
660–690 Vac	8	4	10	5	15	7.5
250 Vdc ①	22	22	22	22	25	25

Power Defense—Frame Size 4 (300–800 A)

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

Molded Case Circuit Breakers with Thermal-Magnetic Trip Units (TMTU)—Globally Rated

PD G 4 3 M 0800 TFA J

Product Series
PD = Power Defense

Certifications/ Standards
G = UL/CSA/IEC/CCC

Frame Size
4 = 4

Pole Options
2 = 2-pole
3 = 3-pole
4 = 4-pole (100% N)
0 = 4-pole (0% N)
6 = 4-pole (60% N)

Interrupting Ratings
G = 35 kA at 480 V
K = 50 kA at 480 V
M = 65 kA at 480 V

Canada
G = 18 kA at 600 V
K = 25 kA at 600 V
M = 35 kA at 600 V

Continuous Current Ratings
0300 = 300 A ②
0350 = 350 A ②
0400 = 400 A ②
0450 = 450 A ②
0500 = 500 A
0600 = 600 A
0700 = 700 A
0800 = 800 A

Trip Unit Type Options
TFA = Fixed thermal / Adjustable magnetic
VFA = 50 °C Fixed thermal / Adjustable magnetic (non UL)

Standard Terminal Options
N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Molded Case Switches—Globally Rated ③

PD | **G** = UL/CSA/IEC/CCC | **4** = 4 | **2** = 2-pole, **3** = 3-pole, **4** = 4-pole | **G** = 35 kA at 480 V, **M** = 65 kA at 480 V; **G** = 18 kA at 600 V, **M** = 35 kA at 600 V | **0800** = 800 A | **KNS** = Molded Case Switch | **N** = No terminals, **J** = Line and load terminals, **K** = Line only terminals, **L** = Load only terminals

Notes

① DC ratings available in thermal-magnetic breakers only. 250 Vdc is achieved using 2 poles in series.
② Not available in four-pole 60% neutral protection.
③ Molded case switch may open above 6000 A.

2

Molded Case Circuit Breakers with Power Xpert Release (PXR) Electronic Trip Units (ETU)

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

Molded Case Circuit Breakers with PXR ETU—Globally Rated

PD G 4 3 M 0800 P2M J

Product Series	Certifications/ Standards	Frame Size	Pole Options	Interrupting Ratings	Continuous Current Ratings	Trip Unit Type Options	Standard Terminal Options
PD = Power Defense	**G** = UL/CSA/IEC/CCC	**4** = 4	**2** = 2-pole **3** = 3-pole **4** = 4-pole (programmable N)	**G** = 35 kA at 480 V **K** = 50 kA at 480 V **M** = 65 kA at 480 V **G** = 18 kA at 600 V **K** = 25 kA at 600 V **M** = 35 kA at 600 V	**0800** = 800 A	**B2N** = PXR 10 LSI **E##** ①=PXR 20 **P##** ①=PXR 25	**N** = No terminals **J** = Line and load terminals **K** = Line only terminals **L** = Load only terminals

Molded Case Circuit Breakers with PXR ETU—Globally Rated (100% UL Rated)

PD	**F** = 100% UL rated	**4** =4	**3** = 3-pole **4** = 4-pole (programmable N)	**G** = 35 kA at 480 V **K** = 50 kA at 480 V **M** = 65 kA at 480 V **G** = 18 kA at 600 V **K** = 25 kA at 600 V **M** = 35 kA at 600 V	**0800** = 800 A	**B2N** = PXR 10 LSI **E##** ①=PXR 20 **P##** ①=PXR 25	**N** = No terminals **J** = Line and load terminals **K** = Line only terminals **L** = Load only terminals

Globally Rated Frame Only

PD-4 thermal-magnetic and electronic breakers may also be purchased as separate frames, trip units, terminals and accessories for field configuration of a final breaker. Each Frame Only device is marked with interrupting ratings and a maximum continuous current rating; each trip unit is also marked with a maximum continuous current rating, which must not exceed that of the frame. Additionally, 100% UL Rated frames are marked as such on the Frame Only device.

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

Frame Only—Globally Rated

PD G 4 3 M 0800 FNN J

Product Series	Certifications/ Standards	Frame Size	Pole Options	Interrupting Ratings	Continuous Current Ratings	Trip Unit Type Options	Standard Terminal Options
PD = Power Defense	**G** = UL/CSA/IEC/CCC	**4** = 4	**2** = 2-pole **3** = 3-pole **4** = 4-pole	**G** = 35 kA at 480 V **K** = 50 kA at 480 V **M** = 65 kA at 480 V **G** = 18 kA at 600 V **K** = 25 kA at 600 V **M** = 35 kA at 600 V	**0800** = 800 A	**FNN** = Frame Only	**N** = No terminals

Frame Only—Globally Rated (100% UL Rated)

PD	**F** = 100% UL/CSA rated	**4** = 4	**3** = 3-pole **4** = 4-pole	**G** = 35 kA at 480 V **K** = 50 kA at 480 V **M** = 65 kA at 480 V **G** = 18 kA at 600 V **K** = 25 kA at 600 V **M** = 35 kA at 600 V	**0800** = 800 A	**FNN** = Frame Only	**N** = No terminals

Note

① See tables and descriptions on **Page V4-T2-62** for protection type (**#(1)**) and available configured options (**#(2)**).

Trip Units

PD-4 thermal-magnetic and electronic breakers may also be purchased as separate frames, trip units, terminals and accessories for field configuration of a final breaker. For two-pole breakers using electronic trip units, three-pole trip units are used.

PDG designated trip units are for use with PDG and PDF breaker frames. The 100% rating for PDF (100% UL Rated) is marked on the frame, not the trip unit.

Trip Units Only

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

Thermal-Magnetic Trip Units

PD G 4 X TFA 3 0800

Product Series	Certifications/ Standards	Frame Size	Separator Digit	Trip Unit Type Options	Pole Options	Continuous Current Ratings
PD = Power Defense	**G** = UL/CSA/IEC/CCC	**4** = 4	**X** = Accessory	**TFA** = Fixed Thermal / Adjustable Magnetic **VFA** = 50 °C Fixed Thermal / Adjustable Magnetic (non UL)	**2** = 2-pole **3** = 3-pole **4** = 4-pole (100% N) **0** = 4-pole (0% N) **6** = 4-pole (60% N)	**0300** = 300 A ① **0350** = 350 A ① **0400** = 400 A ① **0450** = 450 A ① **0500** = 500 A **0600** = 600 A **0700** = 700 A **0800** = 800 A

Power Xpert Release (PXR) Electronic Trip Units

Power Xpert Release (PXR) Electronic Trip Units

PD G 4 X PXR 3 0800 E2N

Product Series	Certifications/ Standards	Frame Size	Separator Digit	Trip Unit Type Designator	Pole Options	Continuous Current Ratings	Trip Unit Type and Options
PD = Power Defense	**G** = UL/CSA/IEC/CCC	**4** = 4	**X** = Accessory	**PXR** = Power Xpert Release Trip Unit	**3** = 3-pole **4** = 4-pole (programmable N)	**0800** = 800 A	**B2N** = PXR 10 LSI **E##** ②=PXR 20 **P##** ②=PXR 25

Notes

① Not available in four-pole 60% neutral protection.

② See tables and descriptions on **Page V4-T2-62** for protection type (**#(1)**) and available configured options (**#(2)**).

Power Xpert Release (PXR) Trip Unit Options—Frame Size 4

Power Xpert Release (PXR) Trip Unit Options

		#(1)—Protection Type				#(2)—Available Configured Options								
PXR	ETU	LSI	LSIG ①	LSI with Arcflash Reduction Maintenance System	LSIG with Arcflash Reduction Maintenance System	—	Relays	Relays Modbus	Relays	Relays	Relays Modbus	Relays	Relays Modbus	Relays Modbus
						—	—	—	ZSI	—	ZSI	—	—	ZSI
						—	—	—	—	CAM	—	CAM	CAM	CAM
PXR 10	**B**	**2**	—	—	—	**N**	—	—	—	—	—	—	—	—
PXR 20	**E**	**2**	—	—	—	**N**	**R**	**M**	**Z**	**C**	**W**	**X**	—	—
		—	**3**	**4**	**5**	—	**R**	**M**	**Z**	**C**	**W**	**X**	—	—
PXR 25	**P**	**2**	**3**	**4**	**5**	—	—	**M**	—	—	**W**	—	**D**	**Y**

Descriptions of PXR Configured Options

Relays—2 Form A contacts (rated for 240 Vac, 1 A)

- Interface: 3 wires (ALM1, ALM2, ALM Common)
- Programmable to indicate breaker conditions

Modbus—Modbus RTU directly from breaker

- Interface: 3 wires (MODBA, MODBB, MODBG)
- No additional modules required

ZSI—Zone Selective Interlocking

- Interface: 3 wires (Zin, Zout, Zcomm)
- Includes ability to turn ON and OFF, and indicate signals

CAM—CAM Link connection (requires a CAM module per breaker)

- Interface: 5 wires (refer to CAM IL for details)
- Communications Adapter Modules available for Modbus TCP and PROFIBUS

Arcflash Reduction Maintenance System, or Maintenance Mode

- Available as trip unit Protection Type 4 or 5
- Interface: Switch and LED on face of trip unit and two wires for remote switch enable option (24 Vdc required)
- A programmable relay will be factory defaulted to remote indication of Arcflash Reduction Maintenance System

Auxiliary Power

- Connection included with all PXR 20 and 25 trip units

Note: For PXR20 units, wire harness connections for auxiliary power not included on E2N styles.

- Required for communications, relays, and metering accuracy
- 24 Vdc, 0.5 A
- Interface: 2 wires (Aux +24 V, Aux 0 V)

Available Continuous Current (I_r) Settings on PXR Electronic Trip Units

		Catalog Number Selection and Maximum Setting (I_n)
Option	Setting	800 A
PXR 10, PXR 20	1	320 A
	2	350 A
	3	400 A
	4	450 A
	5	500 A
	6	550 A
	7	600 A
	8	630 A
	9	700 A
	10 = I_n	800 A
PXR 25		Programmable from minimum to maximum values in 10 A increments.

Note

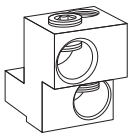
① All neutral current sensors required for LSIG protection are sold separately.

Terminals—Frame Size 4

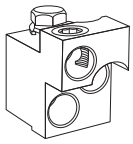
Catalog numbers shown are for a single side of a three-pole breaker. For Frame Size 4, terminals are also available in single-pole kits; these are not available in two-pole or four-pole configurations, unless otherwise noted. For single terminals, replace **X3** with **X1** on the catalog number.

Example: PDG4**X3**TA800 becomes PDG4**X1**TA800 for a single unit.

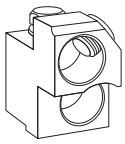
Terminal Types



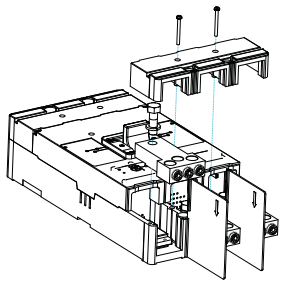
PDG4X3TA700
PDG4X1T600
PDG4X1TA700CW



PDG4X3TA800
PDG4X1TA800SW
PDG4X1TA800CW



PDG4X3TA801
PDG4X1T800
PDG4X1TA801CW



PDG4X3TA800RF

Note: Pictures are for reference only.

Terminals

Maximum Breaker Amperes	Terminal Body Type	Wire Type	Wire Class	Number of Conductors per Phase	AWG / kcmil Range per Conductor	Metric (mm^2) Range per Conductor	3-Pole Catalog Number	Included Accessories	Digit 14 Designation: Line and Load	Digit 14 Designation: Line Only	Digit 14 Designation: Load Only	Factory Config. Ampere Range
Standard Terminals												
700	Aluminum	Cu/Al	B, C	2	1–500	42.4–253	**PDG4X3TA700**	—	J	K	L	300–700
800	Aluminum	Cu/Al	B, C	3	3/0–400	85–203	**PDG4X3TA800**	—	J	K	L	800
Alternate Terminals												
800	Aluminum	Cu/Al	B, C	2	500–750	253–380	**PDG4X3TA801**	—	T	U	V	300–800
Non-Aluminum Terminals												
600	Copper	Cu	B, C	2	2/0–500	67.4–238	**PDG4X1T600**	—	W	Y	Z	300–600
800	Copper	Cu	B, C	3	3/0–300	85–152	**PDG4X1T800**	—	W	Y	Z	700–800
Strandable Terminals												
800	Aluminum	Cu/Al	B, C	3	3/0–400	85–203	**PDG4X1TA800SW**	—	A	B	C	300–800
			D, G, H, I, K, M		3/0–300	85–152						
Control Wire Terminals												
700	Aluminum	Cu/Al	B, C	2	1–500	42.4–253	**PDG4X1TA700CW**	—	1	2	3	300–700
800	Aluminum	Cu/Al	B, C	3	3/0–400	85–203	**PDG4X1TA800CW**	—	1	2	3	800
800	Aluminum	Cu/Al	B, C	2	500–750	253–380	**PDG4X1TA801CW**	—	4	5	6	300–800
Rear Fed Terminals ②												
800	Aluminum	Cu/Al	B, C	3	3/0–300	85–152	**PDG4X3TA800RF**	Interphase barriers	—	—	—	300–800
Rear Connectors ②												
800	—	—	—	—	—	—	**PDG4X3T800RC**	—	R	—	—	300–800
End Cap Kits/Screw Terminals												
800	—	—	—	—	—	—	**PDG4X3TS800** ①	—	S	D	E	300–800

Notes

Wire capacity is based on standard imperial wire sizes; metric sizes provided in table are a direct conversion to demonstrate maximum capacity, not to denote metric wire sizes.

① End cap kits are available in three-pole and four-pole configurations only. For four-pole, use catalog number **PDG4X4TS800**.

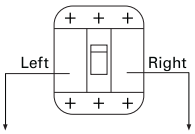
② Breaker loses UL rating when fitted with rear-fed terminals or rear connectors.

Accessories

2

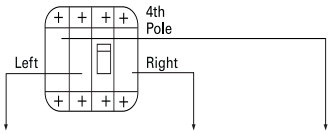
Internal Accessory Configurations—Frame Size 4

Three-Pole Circuit Breakers



Tripping Accessory Options	Alarm Options (1–2 spaces) ①	Aux Options (4 spaces)
None	None	None
Shunt Trip	1NO (1 space)	1NO (1 space)
	1NC (1 space)	1NC (1 space)
	1NO/1NC (2 spaces)	1NO/1NC (2 spaces)
	2NO (2 spaces)	2NO (2 spaces)
UVR	2NC (2 spaces)	2NC (2 spaces)
		2CO (4 spaces)
		4NO (4 spaces)
		4NC (4 spaces)

Four-Pole Circuit Breakers



Tripping Accessory Options	Alarm Options (1–2 spaces) ①	Aux Options (6 spaces)
None	None	None
Shunt Trip	1NO (1 space)	1NO (1 space)
	1NC (1 space)	1NC (1 space)
	1NO/1NC (2 spaces)	1NO/1NC (2 spaces)
	2NO (2 spaces)	2NO (2 spaces)
UVR	2NC (2 spaces)	2NC (2 spaces)
		2CO (4 spaces)
		4NO (4 spaces)
		4NC (4 spaces)
		3CO (6 spaces)
		6NO (6 spaces)
		6NC (6 spaces)

Note

① Frame 4 Power Defense breakers with electronic trip units and communication only have access to one alarm space. Breakers with thermal-magnetic trip units or electronic trip units without communication, have access to two alarm spaces.

Alarm and Auxiliary Contact Blocks—Frame Size 4

Power Defense breakers have designated positions for alarm and auxiliary switches in the right pole accessory cavity. For Frame 4, the two left-most positions are used for alarm switches, and the two right-most locations are used for auxiliary switches.

Power Defense breakers have secondary covers for ease of field installation of accessories, including alarm and auxiliary switches.

Power Defense alarm and auxiliary switches are available in contact blocks, in Form A (NO), Form B (NC), and Form C (NO-NC) types. Form A and Form B contacts take one position in the breaker accessory cavity, and Form C contacts take two positions in the cavity. Identical contact blocks are used for the alarm and auxiliary switch functions.

Electronic breakers with communications options (Modbus RTU or CAM Link) lose one alarm switch position, but are also able to provide trip position via communications and the PXR programmable relays.

Contact Blocks

Pigtail (29 in / 0.75 m) Contact Blocks for Alarm and Auxiliary Switch Functionality

Catalog Number	PDGXAA	PDGXAB	PDGXAC
Type	Form A / NO	Form B / NC	Form C / NO-NC

Screw Terminal Contact Blocks for Alarm and Auxiliary Switch Functionality

Catalog Number	PDGXXA	PDGXXB	PDGXXA + PDGXXB
Type	Form A / NO	Form B / NC	For NO-NC, use two separate contact blocks

Push-In Clamp Contact Blocks for Alarm and Auxiliary Switch Functionality

Catalog Number	PDGXUA	PDGXUB	PDGXUC
Type	Form A / NO	Form B / NC	Form C / NO-NC

Pigtail (118 in / 3.0 m) Contact Blocks for Alarm and Auxiliary Switch Functionality

Catalog Number	PDGXDA	PDGXDB	PDGXDC
Type	Form A / NO	Form B / NC	Form C / NO-NC

Contact Blocks for Alarm and Auxiliary Switch Functionality—Bulk Packs

Catalog Number	Type	Termination	Bulk Pack Quantity ①
PDGXXA-BP20	Form A / NO	Screw Terminal	20
PDGXXB-BP20	Form B / NC	Screw Terminal	20
PDGXUA-BP20	Form A / NO	Push-in Clamp	20
PDGXUB-BP20	Form B / NC	Push-in Clamp	20
PDGXUC-BP10	Form C / NO-NC	Push-in Clamp	10

Note

① Order in multiples of quantity listed to receive bulk pack. (ex. Order qty 20 PDGXXA-BP20 to receive 1 bulk pack).

Factory Installation of Alarm and Auxiliary Switches—Frame Size 4

Alarm and auxiliary switches are plug-and-play accessories designed to be field installable. However, Eaton also offers installation service in our factories.

Breaker catalog numbers with alarm and auxiliary switch combinations require a complete 20-digit catalog number, adding the alarm and auxiliary switch functionality in digits 15–16 and adhering to the following conditions and tables.

- Digit 15 denotes the type of accessory(-ies) installed and the terminal types
- Switches may be requested for alarm only, auxiliary only or a combination of the two
- For Eaton factory installation, the same type of terminals (i.e., all pigtail 0.75 m, all screw, etc.) must be used. If a combination of alarm and auxiliary switches is selected, they must be the same type (i.e., all 1NC, all 1NO/1NC, etc.)
- Digit 16 denotes number and type (NO, NC) of switches installed
- If no other accessories are selected, use NNNN for the final 4 digits of the catalog number
- Electronic breakers with communications lose one alarm switch position in order to provide trip status via communications. They do not lose an auxiliary position for this purpose

Pigtails—29 in / 0.75 m (A, B, C)

		Auxiliary Switch Three-Pole									Four-Pole		
		None	**1NO**	**1NC**	**1NO/1NC**	**2NO**	**2NC**	**2NO/2NC**	**4NO**	**4NC**	**3NO/3NC**	**6NO**	**6NC**
Alarm Switch	**None**	NN	AA	AB	AC	AD	AE	A1	A2	A3	A4	A5	A6
	1NO	BA	CA	—	—	—	—	—	—	—	—	—	—
	1NC	BB	—	CB	—	—	—	—	—	—	—	—	—
	1NO/1NC	BC	—	—	CC	—	—	C1	—	—	C4	—	—
	2NO	BD	—	—	—	CD	—	—	C2	—	—	C5	—
	2NC	BE	—	—	—	—	CE	—	—	C3	—	—	C6

Screw Terminals (X, Y, Z)

		Auxiliary Switch Three-Pole									Four-Pole		
		None	**1NO**	**1NC**	**1NO/1NC**	**2NO**	**2NC**	**2NO/2NC**	**4NO**	**4NC**	**3NO/3NC**	**6NO**	**6NC**
Alarm Switch	**None**	NN	XA	XB	XC	XD	XE	X1	X2	X3	X4	X5	X6
	1NO	YA	ZA	—	—	—	—	—	—	—	—	—	—
	1NC	YB	—	ZB	—	—	—	—	—	—	—	—	—
	1NO/1NC	YC	—	—	ZC	—	—	Z1	—	—	Z4	—	—
	2NO	YD	—	—	—	ZD	—	—	Z2	—	—	Z5	—
	2NC	YE	—	—	—	—	ZE	—	—	Z3	—	—	Z6

Push-In Clamps (U, V, W)

		Auxiliary Switch Three-Pole									Four-Pole		
		None	**1NO**	**1NC**	**1NO/1NC**	**2NO**	**2NC**	**2NO/2NC**	**4NO**	**4NC**	**3NO/3NC**	**6NO**	**6NC**
Alarm Switch	**None**	NN	DA	DB	DC	DD	DE	D1	D2	D3	D4	D5	D6
	1NO	EA	FA	—	—	—	—	—	—	—	—	—	—
	1NC	EB	—	FB	—	—	—	—	—	—	—	—	—
	1NO/1NC	EC	—	—	FC	—	—	F1	—	—	F4	—	—
	2NO	ED	—	—	—	FD	—	—	F2	—	—	F5	—
	2NC	EE	—	—	—	—	FE	—	—	F3	—	—	F6

Factory Installation of Alarm and Auxiliary Switches—Frame Size 4

Pigtails—118 in / 3.0 m (D, E, F)

		Auxiliary Switch Three-Pole									Four-Pole		
		None	1NO	1NC	1NO/1NC	2NO	2NC	2NO/2NC	4NO	4NC	3NO/3NC	6NO	6NC
Alarm Switch	None	NN	UA	UB	UC	UD	UE	U1	U2	U3	U4	U5	U6
	1NO	VA	WA	—	—	—	—	—	—	—	—	—	—
	1NC	VB	—	WB	—	—	—	—	—	—	—	—	—
	1NO/1NC	VC	—	—	WC	—	—	W1	—	—	W4	—	—
	2NO	VD	—	—	—	WD	—	—	W2	—	—	W5	—
	2NC	VE	—	—	—	—	WE	—	—	W3	—	—	W6

Pigtails—29 in / 0.75 m (A, B, C)

		Auxiliary Switch Three-Pole									Four-Pole		
		None	1NO	1NC	1NO/1NC	2NO	2NC	2NO/2NC	4NO	4NC	3NO/3NC	6NO	6NC
Alarm Switch	None	NN	AA	AB	AC	AD	AE	A1	A2	A3	A4	A5	A6
	1NO	BA	CA	—	CF	CG	—	CP	CQ	—	CT	CU	—
	1NC	BB	—	CB	CH	—	CJ	CR	—	CS	CV	—	CW

Tripping Accessories—Frame Size 4

Power Defense breakers have designated positions for shunt trips and undervoltage releases (UVRs) in the left pole accessory cavity. Each breaker has space for one tripping accessory only.

Power Defense breakers have secondary covers for ease of field installation of tripping accessories.

Shunt Trips

Voltage	Screw Terminals	Pigtail (29 in / 0.75 m)	Pigtail (118 in / 3.0 m)
12 Vdc	**PDG4XST12DCT**	**PDG4XST12DCS**	**PDG4XST12DCR**
48 Vdc	**PDG4XST48DCT**	**PDG4XST48DCS**	**PDG4XST48DCR**
60 Vdc	**PDG4XST60DCT**	**PDG4XST60DCS**	**PDG4XST60DCR**
24 Vac/Vdc	**PDG4XST24ACDCT**	**PDG4XST24ACDCS**	**PDG4XST24ACDCR**
110–130 Vac/125 Vdc	**PDG4XST130ACDCT**	**PDG4XST130ACDCS**	**PDG4XST130ACDCR**
200–240 Vac/250 Vdc	**PDG4XST250ACDCT**	**PDG4XST250ACDCS**	**PDG4XST250ACDCR**
380–440 Vac	**PDG4XST440ACT**	**PDG4XST440ACS**	**PDG4XST440ACR**
480–525 Vac	**PDG4XST525ACT**	**PDG4XST525ACS**	**PDG4XST525ACR**
600 Vac	**PDG4XST600ACT**	**PDG4XST600ACS**	**PDG4XST600ACR**

Undervoltage Releases (UVRs)

Voltage	Screw Terminals	Pigtail (29 in / 0.75 m)	Pigtail (118 in / 3.0 m)
12 Vdc	**PDG4XUV12DCV**	**PDG4XUV12DCU**	**PDG4XUV12DCW**
24 Vdc	**PDG4XUV24DCV**	**PDG4XUV24DCU**	**PDG4XUV24DCW**
48 Vdc	**PDG4XUV48DCV**	**PDG4XUV48DCU**	**PDG4XUV48DCW**
60 Vdc	**PDG4XUV60DCV**	**PDG4XUV60DCU**	**PDG4XUV60DCW**
125 Vdc	**PDG4XUV125DCV**	**PDG4XUV125DCU**	**PDG4XUV125DCW**
250 Vdc	**PDG4XUV250DCV**	**PDG4XUV250DCU**	**PDG4XUV250DCW**
24 Vac	**PDG4XUV24ACV**	**PDG4XUV24ACU**	**PDG4XUV24ACW**
130 Vac	**PDG4XUV130ACV**	**PDG4XUV130ACU**	**PDG4XUV130ACW**
240 Vac	**PDG4XUV240ACV**	**PDG4XUV240ACU**	**PDG4XUV240ACW**
440 Vac	**PDG4XUV440ACV**	**PDG4XUV440ACU**	**PDG4XUV440ACW**
525 Vac	**PDG4XUV525ACV**	**PDG4XUV525ACU**	**PDG4XUV525ACW**
600 Vac	**PDG4XUV600ACV**	**PDG4XUV600ACU**	**PDG4XUV600ACW**

Note: Use PDG4XUV18DCW when using Time Delay UVR.

Factory Installed Tripping Accessories—Frame Size 4

Shunt trips and undervoltage releases (UVRs) are plug-and-play accessories designed to be field installable. However, Eaton also offers the service of installation in our factories.

Breaker catalog numbers with shunt trips or UVRs require a complete 20-digit catalog number, adding the tripping accessory functionality in digits 17 and 18 and adhering to the following conditions and tables.

- Digit 17 denotes the type of accessory installed and the terminal type
- Digit 18 denotes the voltage of the accessory
- If no additional accessories are selected, use NN for digits 15-16 and 19-20 of the catalog number
- Each breaker has space for one shunt trip or UVR tripping accessory only

Shunt Trips

Voltage	Screw Terminals	Pigtail (29 in / 0.75 m)	Pigtail (118 in / 3.0 m)
12 Vdc	TH	SH	RH
48 Vdc	TJ	SJ	RJ
60 Vdc	TK	SK	RK
24 Vac/Vdc	TN	SN	RN
110–130 Vac/125 Vdc	TP	SP	RP
200–240 Vac/250 Vdc	TR	SR	RR
380–440 Vac	TC	SC	RC
480–525 Vac	TD	SD	RD
600 Vac	TE	SE	RE

Undervoltage Releases (UVRs)

Voltage	Screw Terminals	Pigtail (29 in / 0.75 m)	Pigtail (118 in / 3.0 m)
12 Vdc	VH	UH	WH
24 Vdc	VG	UG	WG
48 Vdc	VJ	UJ	WJ
60 Vdc	VK	UK	WK
125 Vdc	VL	UL	WL
250 Vdc	VM	UM	WM
24 Vac	VF	UF	WF
130 Vac	VA	UA	WA
240 Vac	VB	UB	WB
440 Vac	VC	UC	WC
525 Vac	VD	UD	WD
600 Vac	VE	UE	WE

Note: Use suffix **US** for 18 Vdc when using Time Delay UVR.

Handle Mechanisms—Frame Size 4

Direct Rotary Handle Mechanism ①

Description	NEMA 1/12 Catalog Number	Factory Installed Digits 19–20
Standard lockable handle and mechanism	**PDG4XHMCS**	HA
Standard lockable handle and mechanism with door interlock	**PDG4XHMCSN**	HB
Standard lockable handle and mechanism with mechanical padlock	**PDG4XHMCSP**	HC
Standard lockable handle and mechanism with door interlock and mechanical padlock	**PDG4XHMCSNP**	HE
Emergency lockable handle and mechanism	**PDG4XHMCE**	H1
Emergency lockable handle and mechanism with door interlock	**PDG4XHMCEN**	H2
Emergency lockable handle and mechanism with mechanical padlock	**PDG4XHMCEP**	H3
Emergency lockable handle and mechanism with door interlock and mechanical padlock	**PDG4XHMCENP**	H5

Variable Depth Rotary Handle Mechanism ①

Description	NEMA 1/3R/12/4/4X Catalog Number	Factory Installed Digits 19–20
Standard lockable handle and mechanism ②	**PDG4XHMDS**	DA
Standard lockable handle and mechanism with mechanical padlock ②	**PDG4XHMDSP**	DC
Emergency lockable handle and mechanism ②	**PDG4XHMDE**	D1
Emergency lockable handle and mechanism with mechanical padlock ②	**PDG4XHMDEP**	D3
9 in (245 mm) handle mechanism shaft	**PDG34XHMS245**	—
17 in (445 mm) handle mechanism shaft	**PDG34XHMS445**	—
Standard NFPA79-compliant shaft handle	**PDG34XHM79S**	—
Emergency NFPA79-compliant shaft handle	**PDG34XHM79E**	—

Metal Variable Depth Rotary Handle Mechanism ①

Description	NEMA 1/3R/12/4/4X Catalog Number
Metal standard lockable handle, mechanism, and 6-inch shaft	**PDG4XHMDS06MH**
Metal standard lockable handle, mechanism, and 12-inch shaft	**PDG4XHMDS12MH**
Metal standard lockable handle, mechanism, and 24-inch shaft	**PDG4XHMDS24MH**
Metal emergency lockable handle, mechanism, and 6-inch shaft	**PDG4XHMDE06MH**
Metal emergency lockable handle, mechanism, and 12-inch shaft	**PDG4XHMDE12MH**
Metal emergency lockable handle, mechanism, and 24-inch shaft	**PDG4XHMDE24MH**

Flex Shaft Handle Mechanism

Cable Length (ft)	Metal Handle, NEMA 1/3R/12 Catalog Number	High Performance Handle, NEMA 1/3R/12 Catalog Number	Metal Handle, NEMA 4/4X Catalog Number	High Performance Handle, NEMA 4/4X Catalog Number
4	**PDG4XFS04**	**PDG4XFS04HP**	**PDG4XFS04X**	**PDG4XFS04HPX**
5	**PDG4XFS05**	**PDG4XFS05HP**	**PDG4XFS05X**	**PDG4XFS05HPX**
6	**PDG4XFS06**	**PDG4XFS06HP**	**PDG4XFS06X**	**PDG4XFS06HPX**
10	**PDG4XFS10**	**PDG4XFS10HP**	**PDG4XFS10X**	**PDG4XFS10HPX**

Notes

① Standard handles are black and gray; Emergency handles are red and yellow.
② Handle mechanism shaft sold separately.

Accessories—Frame Size 4

External Accessories

Description	Fit Type	Catalog Number	Factory Installed Digits 19–20
Padlockable hasp	Top	**PDG4XPLKT**	L4
Padlockable hasp, OFF only	Top	**PDG4XPLKTOFF**	L1
Padlockable handle block	On handle	**PDG4XPHB**	—
Kirk lock provision—left side ①	Left side	**PDG4XKLKPSF**	L8
Kirk lock provision—right side ①	Right side		L9
Walking beam interlock ②③	Two-, three-, and four-pole	**PDG4XWBI234P**	—
Electrical operator	24 Vdc	**PDG4XROP24DC**	—
	48–60 Vdc	**PDG4XROP60DC**	—
	125 Vdc	**PDG4XROP125DC**	—
	250 Vdc	**PDG4XROP250DC**	—
	110–130 Vac	**PDG4XROP130AC**	—
	200–240 Vac	**PDG4XROP240AC**	—
	380–440 Vac	**PDG4XROP440AC**	—
Interphase barriers	Single-pole	**PDG4XIB**	—
	Three-pole	**PDG4XIB3P**	—
	Four-pole	**PDG4XIB4P**	—
Neutral CTs for ground fault (PXR)	Busbar Type	**PDG4XNCTB0800**	—
Service entrance barrier kit	Three-pole	**PRLSEBPD4**	—
Withdrawable cassettes	Three-pole, 800 A	**PDG4XWDR3P800A**	—
	Four-pole, 800 A	**PDG4XWDR4P800A**	—

Base Mounting Hardware

Description	Catalog Number
Two-, three-, four-pole metric	**BMH4M**
Two-, three-, four-pole English	**BMH4**

Note: Base mounting hardware is included with a circuit breaker or molded case switch.

Dimensions and Weights—Frame Size 4

Approximate Dimensions in Inches (mm)

Number of Poles	Width	Height	Depth
2	8.25 (209.6)	16 (406.4)	4.38 (111.2)
3	8.25 (209.6)	16 (406.4)	4.38 (111.2)
4	11.0 (279.4)	16 (406.4)	4.38 (111.2)

Approximate Shipping Weight in lb (kg)

Breaker Type	2-Pole	3-Pole	4-Pole
PDG4 800 A	30 (13.6)	30 (13.6)	39.9 (18.08)

Notes

① Provision only. For use with Type F Kirk keylock (sold separately). Bolt projection in withdrawn position is 0.375 in (9.525 mm).

② Breaker must be ordered with walking beam interlock ready modification from plant (factory suffix **WB**).

③ Requires two breakers.

Power Defense Molded Case Circuit Breakers—Frame Size 5

Contents

Power Defense Molded Case Circuit Breakers—Frame Size 5

Product Description

Frame Size 5 covers a global range of 320 A through 1200 A with a complete offering of advanced PXR electronic trip units. It includes two frame sizes of 800 A and 1200 A. Additionally, PD-5 has a 1600 A IEC (CE) and GB (CCC) frame that covers 800 A through 1600 A.

Application Description

Frame Size 5 can be used to meet a wide range of circuit protection and power distribution needs, including ground fault protection, 100% UL ratings, high interrupting capacity and high instantaneous settings for selective coordination. PXR trip units in PD-5 provide all levels of protection, including energy metering with multiple communication schemes, breaker health indication and arc flash reduction options.

Features and Benefits

Frame Size 5 breakers are modular and available as complete breakers from the factory or as modular components, including frames, trip units, accessories and terminals to provide flexibility for customers. PXR trip units are available with advanced features to provide customers unparalleled situational awareness of their electrical system.

Standards and Certifications

Power Defense breakers are designed and tested to meet stringent requirements for:

- UL
- CSA
- IEC (CE)
- CB (CCC)

Catalog Number / Product Selection

2

Power Defense—Frame Size 5 (320–1200 A) for UL/CSA and 320–1600 A for IEC/CCC)

Frame Size 5 covers a range of 320 A through 1200 A using electronic trip units. It is available in configurations of two-, three- and four-pole, with the two-pole being in the same physical size of a three-pole variant. Additionally, an IEC / CCC option is available for 1600 A, with selectable ratings from 800 A through 1600 A.

Interrupting Ratings

	K		M		N		P		T	
UL/CSA	**kA rms**		**kA rms**		**kA rms**		**kA rms**		**kA rms**	
240 Vac	85		100		150		200		200	
480 Vac	50		65		85		100		125	
600 Vac	25		35		50		65		85	
IEC	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}
240 Vac	85	85	100	100	150	100	200	150	—	—
380–415 Vac	50	50	70	53	70	50	100	50	—	—
440 Vac	35	35	50	40	70	50	100	50	—	—
480 Vac	35	22.5	50	30	65	40	85	40	—	—
525 Vac	25	20	30	25	35	25	40	25	—	—
660–690 Vac	10	5	15	7.5	20	10	35	18	—	—

Molded Case Circuit Breakers with Power Xpert Release (PXR) Electronic Trip Units (ETU)

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

Molded Case Circuit Breakers with PXR ETU—Globally Rated

PD G 5 3 M 1200 P2M N

Product Series
PD = Power Defense

Certifications/ Standards
G = UL/CSA/IEC/CCC

Frame Size
5 = 5

Pole Options
2 = 2-pole
3 = 3-pole
4 = 4-pole (programmable N)

Interrupting Ratings
K = 50 kA at 480 V
M = 65 kA at 480 V
N = 85 kA at 480 V
P = 100 kA at 480 V

K = 25 kA at 600 V
M = 35 kA at 600 V
N = 50 kA at 600 V
P = 65 kA at 600 V

Continuous Current Ratings
0800 = 800 A
1200 = 1200 A

Trip Unit Type Options
E## ①=PXR 20
P## ①=PXR 25

Standard Terminal Options
N = No terminals (imperial tapped conductors)
M = No terminals (metric tapped conductors)

Molded Case Circuit Breakers with PXR ETU—Globally Rated (100% UL Rated)

PD

F = 100% UL/CSA rated

5 = 5

3 = 3-pole
4 = 4-pole (programmable N)

K = 50 kA at 480 V
M = 65 kA at 480 V
N = 85 kA at 480 V
P = 100 kA at 480 V

K = 25 kA at 600 V
M = 35 kA at 600 V
N = 50 kA at 600 V
P = 65 kA at 600 V

0800 = 800 A
1200 = 1200 A

E## ①=PXR 20
P## ①=PXR 25

N = No terminals (imperial tapped conductors)
M = No terminals (metric tapped conductors)

Molded Case Circuit Breakers with PXR ETU (125 kA at 480 V / 85 kA at 600 V)—UL/CSA Rated

PD

J = UL/CSA

5 = 5

3 = 3-pole

T = 125 kA at 480 V
T = 85 kA at 600 V

0800 = 800 A

E## ①=PXR 20
P## ①=PXR 25
KNS =Molded case switch

N = No terminals (imperial tapped conductors)

Note

① See tables and descriptions on **Page V4-T2-75** for protection type (**#(1)**) and available configured options (**#(2)**).

Molded Case Circuit Breakers with Power Xpert Release (PXR) Electronic Trip Units (ETU)

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

Molded Case Switches—Globally Rated ①

PD G 5 3 M 1200 P2M N

Product Series	Certifications/ Standards	Frame Size	Pole Options	Interrupting Ratings	Continuous Current Ratings	Trip Unit Type Options	Standard Terminal Options
PD = Power Defense	**G** = UL/CSA/IEC/CCC	**5** = 5	**3** = 3-pole **4** = 4-pole	**K** = 50 kA at 480 V **M** = 65 kA at 480 V **K** = 25 kA at 600 V **M** = 35 kA at 600 V	**0800** = 800 A **1200** = 1200 A	**KNS** = Molded Case Switch	**N** = No terminals (imperial tapped conductors) **M** = No terminals (metric tapped conductors)

Molded Case Circuit Breakers—IEC/CCC Rated (only available as a complete breaker)

PD	**C** = IEC/CCC	**5** = 5	**3** = 3-pole **4** = 4-pole	**K** = 50 kA at 415 V **M** = 70 kA at 415 V **K** = 25 kA at 600 V **M** = 35 kA at 600 V	**1600** = 1600 A	**E##** ② = PXR 20 **P##** ② = PXR 25 **KNS** = Molded Case Switch	**M** = Front connect conductor extensions included (metric) **R** = Rear connectors included

Globally Rated Frame Only

PD-5 electronic breakers may also be purchased as separate frames, trip units, terminals, and accessories for field configuration of a final breaker. Each Frame Only device is marked with interrupting ratings and a maximum continuous current rating; each trip unit is also marked with a maximum continuous current rating, which must not exceed that of the frame. Additionally, 100% UL Rated frames are marked as such on the Frame Only device.

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

Frame Only—Globally Rated

PD G 5 3 M 1200 FNN N

Product Series	Certifications/ Standards	Frame Size	Pole Options	Interrupting Ratings	Continuous Current Ratings	Trip Unit Type Options	Standard Terminal Options
PD = Power Defense	**G** = UL/CSA/IEC/CCC	**5** = 5	**2** = 2-pole **3** = 3-pole **4** = 4-pole	**K** = 50 kA at 480 V **M** = 65 kA at 480 V **N** = 85 kA at 480 V **P** = 100 kA at 480 V **K** = 25 kA at 600 V **M** = 35 kA at 600 V **N** = 50 kA at 600 V **P** = 65 kA at 600 V	**0800** = 800 A **1200** = 1200 A	**FNN** = Frame Only	**N** = No terminals (imperial tapped conductors) **M** = No terminals (metric tapped conductors)

Frame Only—Globally Rated (100% UL Rated)

PD	**F** = 100% UL rated	**5** = 5	**3** = 3-pole **4** = 4-pole	**K** = 50 kA at 480 V **M** = 65 kA at 480 V **N** = 85 kA at 480 V **P** = 100 kA at 480 V **K** = 25 kA at 600 V **M** = 35 kA at 600 V **N** = 50 kA at 600 V **P** = 65 kA at 600 V	**0800** = 800 A **1200** = 1200 A	**FNN** = Frame Only	**N** = No terminals (imperial tapped conductors) **M** = No terminals (metric tapped conductors)

Notes

① Molded case switch may open above 14,000 A.

② See tables and descriptions on **Page V4-T2-75** for protection type (**#(1)**) and available configured options (**#(2)**).

Trip Units

PD-5 electronic breakers may also be purchased as separate frames, trip units, terminals, and accessories for field configuration of a final breaker. Each frame rating (800 A, 1200 A, and 1600 A—IEC only) must use trip units of the same rating. Additionally, for two-pole breakers, three-pole trip units are used.

PDG designated trip units are for use with PDG and PDF breaker frames. The 100% rating for PDF (100% UL Rated) is marked on the frame, not the trip unit.

Trip Units Only

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

Power Xpert Release (PXR) Electronic Trip Units

Power Xpert Release (PXR) Electronic Trip Units

PD G 5 X PXR 3 1200 E2N

Product Series	Certifications/ Standards	Frame Size	Separator Digit	Trip Unit Type Designator	Pole Options	Continuous Current Ratings	Trip Unit Type and Options
PD = Power Defense	**G** = UL/CSA/IEC/CCC	**5** = 5	**X** = Accessory	**PXR** = Power Xpert Release Trip Unit	**3** = 3-pole **4** = 4-pole (programmable N)	**0800** = 800 A **1200** = 1200 A	**E##** ①=PXR 20 **P##** ①=PXR 25

Note

① See tables and descriptions on **Page V4-T2-75** for protection type (**#$_{(1)}$**) and available configured options (**#$_{(2)}$**).

Power Xpert Release (PXR) Trip Unit Options—Frame Size 5

Power Xpert Release (PXR) Trip Unit Options

		#(1)—Protection Type				#(2)—Available Configured Options								
PXR	ETU	LSI	LSIG ①	LSI with Arcflash Reduction Maintenance System	LSIG with Arcflash Reduction Maintenance System	— — — —	Relays — — —	Relays Modbus — —	Relays — ZSI —	Relays — — CAM	Relays Modbus — ZSI —	Relays — ZSI CAM	Relays Modbus — CAM	Relays Modbus ZSI CAM
PXR 20	E	2	—	—	—	N	R	M	Z	C	W	X	—	—
		—	3	4	5	—	R	M	Z	C	W	X	—	—
PXR 25	P	2	3	4	5	—	—	M	—	—	W	—	D	Y

Descriptions of PXR Configured Options

Relays—3 Form A contacts (rated for 240 Vac, 1 A)

- Interface: 4 wires (RLY1, RLY2, RLY3, RLYC Common)
- Programmable to indicate breaker conditions
- Available as field-installable option if not pre-configured (catalog number **PDG56XRELAYS**) ②

Modbus—Modbus RTU directly from breaker

- Interface: 3 wires (RTU_D(+), RTU_D(–), RTU_GND)
- No additional modules required
- Available as field-installable option if not pre-configured (catalog number **PDG56XMODRTU**) ②

ZSI—Zone Selective Interlocking

- Interface: 3 wires (Zin, Zout, Zcomm)
- Includes ability to turn ON and OFF, and indicate signals

CAM—CAM Link connection (requires a CAM module per breaker)

- Interface: 5 wires (refer to CAM IL for details)
- Communications Adapter Modules available for Modbus TCP and PROFIBUS

Arcflash Reduction Maintenance System, or Maintenance Mode

- Available as trip unit Protection Type 4 or 5
- Interface: Switch and LED on face of trip unit and two wires for remote switch enable option (24 Vdc required)
- A programmable relay will be factory defaulted to remote indication of Arcflash Reduction Maintenance System

Auxiliary Power

- Connection included with all PXR 20 and 25 trip units
- Required for communications, relays, and metering accuracy
- 24 Vdc, 0.5 A
- Interface: 2 wires (Aux + 24 V, Aux 0 V)

Available Continuous Current (I_r) Settings on PXR Electronic Trip Units

		Catalog Number Selection and Maximum Setting (I_n)		
Option	Setting	0800 800 A	1200 1200 A	1600 1600 A (IEC only)
PXR 20	1	320 A	500 A	800 A
	2	350 A	550 A	900 A
	3	400 A	600 A	1000 A
	4	450 A	630 A	1100 A
	5	500 A	700 A	1200 A
	6	550 A	800 A	1250 A
	7	600 A	900 A	1300 A
	8	630 A	1000 A	1400 A
	9	700 A	1100 A	1500 A
	10 = I_n	800 A	1200 A	1600 A
PXR 25		Programmable from minimum to maximum values in 10 A increments.		

Notes

① All neutral current sensors required for LSIG protection are sold separately.

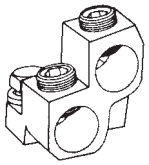
② Breaker Status Module PDG5XRCBSM is also required if breaker position Open/Close/Trip status is required.

Terminals—Frame Size 5

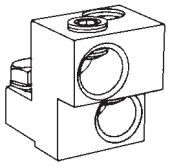
Terminals for Frame 5 are available as single terminals only, unless otherwise specified. To configure both line and load of a three-pole breaker, order quantity 6 terminals.

2

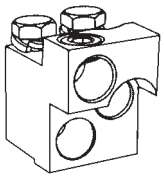
Terminal Types



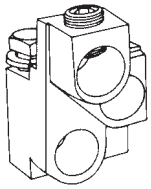
PDG5X1T700



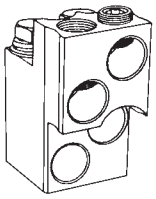
PDG5X1TA700
PDG5X1TA700CW



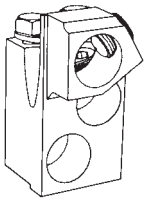
PDG5X1TA1000
PDG5X1TA1000CW



PDG5X1T1000



PDG5X1TA1200
PDG5X1TA1200CW
PDG5X1TA1200SW
PDG5X1T1200



PDG5X1TA1201
PDG5X1TA1201CW

Note: Pictures are for reference only.

Terminals

Maximum Breaker Amperes	Terminal Body Type	Wire Type	Wire Class	Number of Conductors per Phase	AWG / kcmil Range per Conductor	Metric (mm^2) Range per Conductor	3-Pole Catalog Number ①	Hardware Included
Aluminum Terminal Options								
700	Aluminum	Cu/Al	B, C	2	1–500	42.4–253	**PDG5X1TA700**	Imperial
1000	Aluminum	Cu/Al	B, C	3	3/0–400	85–203	**PDG5X1TA1000**	Imperial
1200	Aluminum	Cu/Al	B, C	4	4/0–500	107–253	**PDG5X1TA1200**	Imperial
1200	Aluminum	Cu/Al	B, C	3	500–750	253–380	**PDG5X1TA1201**	Imperial
Copper Terminal Options								
700	Copper	Cu	B, C	2	2/0–500	67.4–253	**PDG5X1T700**	Imperial
1000	Copper	Cu	B, C	3	3/0–500	85–253	**PDG5X1T1000**	Imperial
1200	Copper	Cu	B, C	4	3/0–400	85–203	**PDG5X1T1200**	Imperial
StrandAble Terminal Options								
1200	Aluminum	Cu/Al	B, C	4	4/0–500	107–253	**PDG5X1TA1200SW**	Imperial
			D, G, H, I, K, M		4/0–350	107–177		
Control Wire Terminal Options								
700	Aluminum	Cu/Al	B, C	2	1–500	42.4–253	**PDG5X1TA700CW**	Imperial
1000	Aluminum	Cu/Al	B, C	3	3/0–400	85–203	**PDG5X1TA1000CW**	Imperial
1200	Aluminum	Cu/Al	B, C	4	4/0–500	107–253	**PDG5X1TA1200CW**	Imperial
1200	Aluminum	Cu/Al	B, C	3	500–750	253–380	**PDG5X1TA1201CW**	Imperial
Conductor Extensions ②③								
1200	—	—	—	—	—	—	**5104A24G01**	Imperial two-pole
1200	—	—	—	—	—	—	**5104A24G02**	Imperial three-pole
1200	—	—	—	—	—	—	**5104A24G05**	Imperial four-pole
1200	—	—	—	—	—	—	**5104A24G03**	Metric two-pole
1200	—	—	—	—	—	—	**5104A24G04**	Metric three-pole
1200	—	—	—	—	—	—	**5104A24G06**	Metric four-pole

Note: Wire capacity is based on standard imperial wire sizes; metric sizes provided in table are a direct conversion to demonstrate maximum capacity, not to denote metric wire sizes.

Notes

① Add M at end for metric hardware.

② Included with 100% rated breaker.

③ Kits include conductors for both sides of the breaker (e.g., 6 conductors for a three-pole breaker). Order quantity 1 per breaker.

Accessories

Internal Accessory Configurations—Frame Size 5

Three- and Four-Pole Circuit Breakers

Tripping Accessory Options	Left Pole	Right Pole
None	None	Bell Alarm Options ①
Shunt Trip 	Bell Alarm Options ①	Auxiliary Switch Options ①
	Auxiliary Switch Options ①	Bell and Auxiliary Combination Options ①
	Alarm and Auxiliary Combination Options ①	
UVR 		

Indicating Accessories—Frame Size 5

Alarms and Auxiliary Switches

		Auxiliary Switch				
		None	None	1 Form C	2 Form C	3 Form C
Alarm Switch	None	Left	—	PDG5X1AC	PDG5X2AC	PDG5XL3AC
		Right	—	PDG5X1AC	PDG5X2AC	PDG5XR3AC
	1 Form C	Left	PDG5XL1BC	PDG5XL1AC1BC	PDG5XL2AC1BC	—
		Right	PDG5XR1BC	PDG5XR1AC1BC	PDG5XR2AC1BC	—
	2 Form C	Left	PDG5XL2BC	PDG5XL1AC2BC	—	—
		Right	PDG5XR2BC	PDG5XR1AC2BC	—	—

Alarm and Auxiliary Switches for Breakers with Communicating Trip Units ②

		Auxiliary Switch			
		None	None	1 Form C	2 Form C
Alarm Switch	None	Left	—	—	—
		Right	PDG5XRCBSM ③	PDG5XRC1AC	PDG5XRC2AC
	1 Form C	Left	—	—	—
		Right	PDG5XRC1BC	PDG5XRC1AC1BC	—
	2 Form C	Left	—	—	—
		Right	PDG5XRC2BC	—	—

Notes

① See Indicating Accessories tables for options.

② All electronic trip units configured with communication will automatically include a communication indicator (PDG5XRCBSM) in the right pole. Up to two additional Form C contacts are available for external indication in the right pole.

③ PDG5XRCBSM is factory installed in breakers with trip units that require breaker position Open/Close/Trip status. It must be installed in breakers not already equipped with relays or Modbus RTU when adding those features (PDG56XRELAYS or PDG56XMODRTU). Applicable to E2N trip units only.

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Factory Installed Indicating Accessories—Frame Size 5 ①

Alarms and Auxiliary Switches

		Auxiliary Switch None	None	1 Form C	2 Form C	3 Form C
Alarm Switch	**None**	Left	—	—	—	A4
		Right	NN	AC	A1	—
	1 Form C	Left	—	—	—	—
		Right	BC	CC	C1	—
	2 Form C	Left	—	—	—	—
		Right	B1	CX	—	—

Alarm and Auxiliary Switches for Breakers with Communicating Trip Units ②

		Auxiliary Switch None	None	1 Form C	2 Form C
Alarm Switch	**None**	Left	—	—	—
		Right	NN	AC	A1
	1 Form C	Left	—	—	—
		Right	BC	CC	—
	2 Form C	Left	—	—	—
		Right	B1	—	—

Tripping Accessories—Frame Size 5

Shunt Trips

Voltage	Pigtail (29 in / 0.75 m)	Factory Installed Catalog Number (Digit 17–18)
48–60 Vdc	**PDG5XST60DCS**	**SK**
110–125 Vdc	**PDG5XST125DCS**	**SL**
220–250 Vdc	**PDG5XST250DCS**	**SM**
24 Vac/Vdc	**PDG5XST24ACDCS**	**SN**
48–60 Vac	**PDG5XST60ACS**	**ST**
110–240 Vac	**PDG5XST240ACS**	**SA** or **SB**
380–440 Vac	**PDG5XST440ACS**	**SC**
480–600 Vac	**PDG5XST600ACS**	**SD** or **SE**

Undervoltage Releases (UVRs)

Voltage	Pigtail (29 in / 0.75 m)	Factory Installed Catalog Number (Digit 17–18)
12 Vdc	**PDG5XUV12DCU**	**UH**
24 Vdc	**PDG5XUV24DCU**	**UG**
48–60 Vdc	**PDG5XUV60DCU**	**UJ** or **UK**
125 Vdc	**PDG5XUV125DCU**	**UL**
250 Vdc	**PDG5XUV250DCU**	**UM**
12 Vac	**PDG5XUV12ACU**	**UU**
24 Vac	**PDG5XUV24ACU**	**UF**
48–60 Vac	**PDG5XUV60ACU**	**UT**
110–127 Vac	**PDG5XUV120ACU**	**UA**
208–240 Vac	**PDG5XUV240ACU**	**UB**
380–500 Vac	**PDG5XUV480ACU**	**UC** or **UV**

Note: Use PDG5XUV18DCU (Suffix US) when using Time Delay UVR.

Notes

① Factory installation of indicating accessories available for the right pole only. Left pole accessories may be field installed.

② All electronic trip units configured with communication will automatically include a Communication Indicator in the right pole. Up to two additional Form C contacts are available for external indication in the right pole.

Handle Mechanisms—Size 5

Variable Depth Rotary Handle Mechanism

Description	NEMA 1/3R/12/4/4X Catalog Number	Factory Installed Digits 19–20
Standard lockable handle and mechanism ①	**PDG5XHMDS**	DA
Emergency lockable handle and mechanism ①	**PDG5XHMDE**	D1
12 in (305 mm) handle mechanism shaft	**PDG56XHMDS305**	—

Metal Variable Depth Rotary Handle Mechanism

Description	NEMA 1/3R/12/4/4X Catalog Number
Metal standard lockable handle, mechanism, and 6-inch shaft	**PDG5XHMDS06MH**
Metal standard lockable handle, mechanism, and 12-inch shaft	**PDG5XHMDS12MH**
Metal standard lockable handle, mechanism, and 24-inch shaft	**PDG5XHMDS24MH**
Metal emergency lockable handle, mechanism, and 6-inch shaft	**PDG5XHMDE06MH**
Metal emergency lockable handle, mechanism, and 12-inch shaft	**PDG5XHMDE12MH**
Metal emergency lockable handle, mechanism, and 24-inch shaft	**PDG5XHMDE24MH**

Flex Shaft Handle Mechanism

Cable Length (ft)	Metal Handle, NEMA 1/3R/12 Catalog Number	High Performance Handle, NEMA 1/3R/12 Catalog Number	Metal Handle, NEMA 4/4X Catalog Number	High Performance Handle, NEMA 4/4X Catalog Number
4 ft	**PDG5XFS04**	**PDG5XFS04HP**	**PDG5XFS04X**	**PDG5XFS04HPX**
5 ft	**PDG5XFS05**	**PDG5XFS05HP**	**PDG5XFS05X**	**PDG5XFS05HPX**
6 ft	**PDG5XFS06**	**PDG5XFS06HP**	**PDG5XFS06X**	**PDG5XFS06HPX**
10 ft	**PDG5XFS10**	**PDG5XFS10HP**	**PDG5XFS10X**	**PDG5XFS10HPX**

External Accessories—Frame Size 5

External Accessories

Description	Fit Type	Catalog Number	Factory Installed Digits 19–20
Padlockable hasp	Left-side	**PDG5XPLKS**	L5
	Right-side		L6
Padlockable hasp	Top	**PDG5XPLKT**	L4
Padlockable hasp, OFF only	Top	**PDG5XPLKTOFF**	L1
Non-padlockable handle block	Field	**PDG5XHB**	—
Kirk key interlock kit ②	Left-side	**PDG5XKLKPSF**	L8
	Right-side		L9
Walking beam interlock ③④	Three- or four-pole	**PDG5XWBI34P**	WB ⑤
Electrical operator	24 Vdc	**EOP5T21**	—
	48 Vdc	**EOP5T22**	—
	125 Vdc	**EOP5T26**	—
	120 Vac	**EOP5T07**	—
	208 Vac	**EOP5T09**	—
	240 Vac	**EOP5T11**	—
	480 Vac	**EOP5T15**	—
Neutral CTs for ground fault (PXR)	Busbar type	**PDG5XNCTB1200**	—
Interphase barriers	Three-pole	**PDG5XIB3P**	—
	Four-pole	**PDG5XIB4P**	—
Terminal covers	Three-pole	**PDG5XTC3P**	—
Service entrance barrier kit	Three-pole	**PRLSEBPD5**	—

Base Mounting Hardware

Description	Catalog Number
Two-, three-, four-pole metric	**BMH5M**
Two-, three-, four-pole English	**BMH5**

Note: Base mounting hardware is included with a circuit breaker or molded case switch.

Dimensions and Weights—Frame Size 5

Approximate Dimensions in Inches (mm)

Number of Poles	Width	Height	Depth
2	8.25 (209.5)	16 (406.4)	5.50 (139.7)
3	8.25 (209.5)	16 (406.4)	5.50 (139.7)
4	11.13 (282.7)	16 (406.4)	5.50 (139.7)

Approximate Shipping Weight in lb (kg)

Breaker Type	2-Pole	3-Pole	4-Pole
PDG5 800, 1200 and 1600 A	46.8 (21.30)	46.8 (21.30)	58 (26.31)

Notes

① Handle mechanism shaft sold separately.
② Provision only. For use with Type F Kirk keylock (sold separately). Bolt projection in withdrawn position is 0.375 in (9.525 mm).
③ Breaker must be ordered with walking beam interlock ready modification from plant (factory suffix "WB").
④ Requires two breakers.
⑤ Modification code for walking beam denotes modification to the breaker; accessory must be ordered separate.

Power Defense Molded Case Circuit Breakers—Frame Size 6

Contents

Power Defense Molded Case Circuit Breakers—Frame Size 6

Product Description

Frame Size 6 covers a range of 700 A through 2500 A with a complete offering of advanced PXR electronic trip units. It includes three frame sizes of 1600 A, 2000 A and 2500 A.

Application Description

Frame Size 6 can be used to meet a wide range of circuit protection and power distribution needs, including ground fault protection and 100% UL ratings. PXR trip units in PD-6 provide all levels of protection, including energy metering with multiple communication schemes, breaker health indication and arc flash reduction options.

Features and Benefits

Frame Size 6 breakers are modular and available as complete breakers from the factory or as modular components, including frames, trip units, accessories and terminals to provide flexibility for customers. PXR trip units are available with advanced features to provide customers unparalleled situational awareness of their electrical system.

Standards and Certifications

Power Defense breakers are designed and tested to meet stringent requirements for:

- UL
- CSA
- IEC (CE)
- CB (CCC)

Catalog Number / Product Selection

Power Defense—Frame Size 6 (700–2500 A)

Frame Size 6 covers a range of 700 A through 2500 A using electronic trip units. It is available in configurations of two-, three- and four-pole, with the two-pole being in the same physical size of a three-pole variant.

Interrupting Ratings

	M		N		P	
UL/CSA	**kA rms**		**kA rms**		**kA rms**	
240 Vac	125		150		200	
480 Vac	65		85		100	
600 Vac	35		50		65	
IEC	**I_{cu}**	**I_{cs}**	**I_{cu}**	**I_{cs}**	**I_{cu}**	**I_{cs}**
240 Vac	135	100	150	100	200	100
380–415 Vac	70	53	70	53	100	53
440 Vac	50	40	70	50	100	50
480 Vac	50	30	65	40	85	40
525 Vac	30	25	35	25	40	25
660–690 Vac	15	7.5	20	13	35	18

Molded Case Circuit Breakers with Power Xpert Release (PXR) Electronic Trip Units (ETU)

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

Molded Case Circuit Breakers with PXR ETU—Globally Rated

PD G 6 3 M 2500 P2M N

Product Series
PD = Power Defense

Certifications/ Standards
G = UL/CSA/IEC/CCC

Frame Size
6 = 6

Pole Options
2 = 2-pole
3 = 3-pole
4 = 4-pole (programmable N)

Interrupting Ratings
M = 65 kA at 480 V
N = 85 kA at 480 V
P = 100 kA at 480 V

M = 35 kA at 600 V
N = 50 kA at 600 V
P = 65 kA at 600 V

Continuous Current Ratings
1600 = 1600 A
2000 = 2000 A
2500 = 2500 A

Trip Unit Type Options
E## ①=PXR 20
P## ①=PXR 25

Standard Terminal Options
N = No terminals (imperial tapped conductors)
M = No terminals (metric tapped conductors)

Molded Case Circuit Breakers with PXR ETU—Globally Rated (100% UL Rated)

PD

F = 100% UL/CSA rated

6 = 6

3 = 3-pole
4 = 4-pole (programmable N)

M = 65 kA at 480 V
N = 85 kA at 480 V
P = 100 kA at 480 V

M = 35 kA at 600 V
N = 50 kA at 600 V
P = 65 kA at 600 V

1600 = 1600 A
2000 = 2000 A

E## ①=PXR 20
P## ①=PXR 25

N = No terminals (imperial tapped conductors)
M = No terminals (metric tapped conductors)

Molded Case Switches—Globally Rated ②

PD

G = UL/CSA/IEC/CCC

6 =6

3 = 3-pole
4 = 4-pole

M = 65 kA at 480 V

M = 35 kA at 600 V

1600 = 1600 A
2000 = 2000 A

KNS = Molded Case Switch

N = No terminals (imperial tapped conductors)
M = No terminals (metric tapped conductors)

Notes

① See tables and descriptions on **Page V4-T2-83** for protection type (**#$_{(1)}$**) and available configured options (**#$_{(2)}$**).
② Molded case switch may open above 17,500 A.

Globally Rated Frame Only

PD-6 electronic breakers may also be purchased as separate frames, trip units, terminals, and accessories for field configuration of a final breaker. Each Frame Only device is marked with interrupting ratings and a maximum continuous current rating; each trip unit is also marked with a maximum continuous current rating, which must not exceed that of the frame. Additionally, 100% UL Rated frames are marked as such on the Frame Only device.

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

Frame Only—Globally Rated

PD G 6 3 M 2500 FNN N

Product Series	Certifications/ Standards	Frame Size	Pole Options	Interrupting Ratings	Continuous Current Ratings	Trip Unit Type Options	Standard Terminal Options
PD = Power Defense	**G** = UL/CSA/IEC/CCC	**6** = 6	**2** = 2-pole **3** = 3-pole **4** = 4-pole	**M** = 65 kA at 480 V **N** = 85 kA at 480 V **P** = 100 kA at 480 V **M** = 35 kA at 600 V **N** = 50 kA at 600 V **P** = 65 kA at 600 V	**1600** = 1600 A **2000** = 2000 A **2500** = 2500 A	**FNN** = Frame Only	**N** = No terminals (imperial tapped conductors) **M** = No terminals (metric tapped conductors)

Frame Only—Globally Rated (100% UL Rated)

PD	**F** = 100% UL rated	**6** = 6	**3** = 3-pole **4** = 4-pole	**M** = 65 kA at 480 V **N** = 85 kA at 480 V **P** = 100 kA at 480 V **M** = 35 kA at 600 V **N** = 50 kA at 600 V **P** = 65 kA at 600 V	**1600** = 1600 A **2000** = 2000 A	**FNN** = Frame Only	**N** = No terminals (imperial tapped conductors) **M** = No terminals (metric tapped conductors)

Trip Units

PD-6 electronic breakers may also be purchased as separate frames, trip units, terminals, and accessories for field configuration of a final breaker. Each frame rating (1600 A, 2000 A, and 2500 A) must use trip units of the same rating. Additionally, for two-pole breakers, three-pole trip units are used.

PDG designated trip units are for use with PDG and PDF breaker frames. The 100% rating for PDF (100% UL Rated) is marked on the frame, not the trip unit.

Trip Units Only

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

Power Xpert Release (PXR) Electronic Trip Units

Power Xpert Release (PXR) Electronic Trip Units

PD G 6 X PXR 3 2500 E2N

Product Series	Certifications/ Standards	Frame Size	Separator Digit	Trip Unit Type Designator	Pole Options	Continuous Current Ratings	Trip Unit Type and Options
PD = Power Defense	**G** = UL/CSA/IEC/CCC	**6** = 6	**X** = Accessory	**PXR** = Power Xpert Release Trip Unit	**3** = 3-pole **4** = 4-pole (programmable N)	**1600** = 1600 A **2000** = 2000 A **2500** = 2500 A	**E##** ① = PXR 20 **P##** ① = PXR 25

Note

① See PXR Trip Unit Options table on **Page V4-T2-83** for protection type (**#(1)**) and available configured options (**#(2)**).

Globally Rated Frame Only

Power Xpert Release (PXR) Trip Unit Options

		#(1)—Protection Type				#(2)—Available Configured Options								
PXR	ETU	LSI	LSIG ①	LSI with Arcflash Reduction Maintenance System	LSIG with Arcflash Reduction Maintenance System	— — — —	Relays — — —	Relays Modbus — —	Relays — ZSI —	Relays — — CAM	Relays Modbus ZSI —	Relays — ZSI CAM	Relays Modbus — CAM	Relays Modbus ZSI CAM
PXR 20	E	2	—	—	—	N	R	M	Z	C	W	X	—	—
		—	3	4	5	—	R	M	Z	C	W	X	—	—
PXR 25	P	2	3	4	5	—	—	M	—	—	W	—	D	Y

Descriptions of PXR Configured Options

Relays—3 Form A contacts (rated for 240 Vac, 1 A)

- Interface: 4 wires (RLY1, RLY2, RLY3, RLYC Common)
- Programmable to indicate breaker conditions
- Available as field-installable option if not pre-configured (catalog number **PDG56XRELAYS**)

Modbus—Modbus RTU directly from breaker

- Interface: 3 wires (RTU_D(+), RTU_D(–), RTU_GND)
- No additional modules required
- Available as field-installable option if not pre-configured (catalog number **PDG56XMODRTU**)

ZSI—Zone Selective Interlocking

- Interface: 3 wires (Zin, Zout, Zcomm)
- Includes ability to turn ON and OFF, and indicate signals

CAM—CAM Link connection (requires a CAM module per breaker)

- Interface: 5 wires (refer to CAM IL for details)
- Communications Adapter Modules available for Modbus TCP and PROFIBUS

Arcflash Reduction Maintenance System, or Maintenance Mode

- Available as trip unit Protection Type 4 or 5
- Interface: Switch and LED on face of trip unit and two wires for remote switch enable option (24 Vdc required)
- A programmable relay will be factory defaulted to remote indication of Arcflash Reduction Maintenance System

Auxiliary Power

- Connection included with all PXR 20 and 25 trip units
- Required for communications, relays, and metering accuracy
- 24 Vdc, 0.5 A
- Interface: 2 wires (Aux + 24 V, Aux 0 V)

Available Continuous Current (I_r) Settings on PXR Electronic Trip Units

		Catalog Number Selection and Maximum Setting (I_n)		
Option	Setting	1600 1600 A	2000 2000 A	2500 2500 A
PXR 20	1	700 A	1000 A	1600 A
	2	800 A	1100 A	1700 A
	3	900 A	1200 A	1800 A
	4	1000 A	1250 A	1900 A
	5	1100 A	1400 A	2000 A
	6	1200 A	1600 A	2100 A
	7	1250 A	1700 A	2200 A
	8	1400 A	1800 A	2300 A
	9	1500 A	1900 A	2400 A
	10 = I_n	1600 A	2000 A	2500 A
PXR 25		Programmable from minimum to maximum values in 10 A increments.		

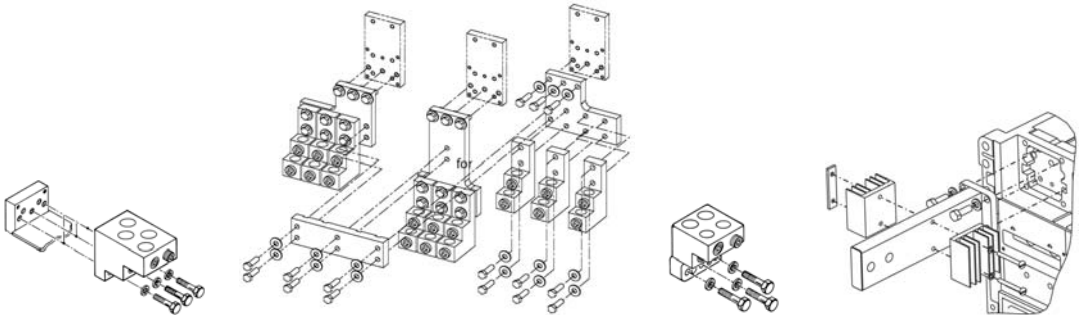
Note

① All neutral current sensors required for LSIG protection are sold separately.

Terminals—Frame Size 6

Terminals for Frame 6 are available as single terminals only, unless otherwise specified. To configure both line and load of a three-pole breaker, order quantity 6 terminals.

Terminal Types



PDG6X1TA1600 | **PDG6X3TA2000** | **PDG6X1T1600** | **PDG6X1T2000RC, PDG6X1T2500RC, PDF6X1T2000RC**

Note: Pictures are for reference only.

Terminals

Maximum Breaker Amperes	Terminal Body Type	Wire Type	Wire Class	Number of Conductors per Phase	AWG / kcmil Range per Conductor	Metric (mm^2) Range per Conductor	3-Pole Catalog Number ①	Hardware Included
Aluminum Terminal Options								
1600	Aluminum	Cu/Al	B, C	4	500–1000	253–507	**PDG6X1TA1600**	Imperial
2000	Aluminum	Cu/Al	B, C	6	2–600	33.6 –304	**PDG6X3TA2000** ②	Imperial bus connection
Copper Terminal Options								
1600	Copper	Cu	B, C	4	1–600	42.4–304	**PDG6X1T1600**	Imperial
Rear Connectors ③								
2000	Copper						**PDG6X1T2000RC**	Imperial
2000	Copper						**PDF6X1T2000RC** ④	Imperial
2500	Copper						**PDG6X1T2500RC**	Imperial

Note: Wire capacity is based on standard imperial wire sizes; metric sizes provided in table are a direct conversion to demonstrate maximum capacity, not to denote metric wire sizes.

Notes

① Add **M** at end for metric hardware.
② Only available for three-pole breaker; order quantity 1 per breaker side, or quantity 2 per breaker.
③ Kit includes one conductor and hardware; order quantity 6 for both sides of a three-pole breaker.
④ Included with 100% rated breaker.

Accessories

Internal Accessory Configurations—Frame Size 6

All Frame 6 accessories are installed in an internal pocket to the right of the breaker handle.

Internal Accessory

Accessory Slot 1 Options	Accessory Slot 2 Options
None	None
2 Form C	2 Form C

Lower Accessory Slot 1 Options	Lower Accessory Slot 2 Options	Lower Accessory Slot 3 Options
None	None	None
Shunt trip	Shunt trip	UVR
Alarm switch	UVR	Alarm switch
—	Alarm switch	—

Indicating Accessories—Frame Size 6

Indicating Accessories ①②

		Alarm Switch	Auxiliary Switch
	1 Form C	**PDG6X1BC**	—
	2 Form C	**PDG6X2BC**	**PDG6X2AC**
	4 Form C	—	**PDG6X4AC**

Factory Installed Indicating Accessories

		Auxiliary None	2 Form C	4 Form C
Alarm switch	**None**	NN	A1	A7
	1 Form C	BC	C1	C9
	2 Form C	B1	CY	CZ

Notes

① All PDG6 indicating accessories come with 29 in/0.75 m pigtails.
② All PDG6 indicating accessories are installed in the accessory pocket to the right of the breaker handle.

Tripping Accessories—Frame Size 6

Shunt Trips

Voltage	Pigtail (29 in / 0.75 m)	Factory Installed Catalog Number (Digit 17–18)
48–60 Vdc	**PDG6XST60DCS**	**SK**
110–125 Vdc	**PDG6XST125DCS**	**SL**
220–250 Vdc	**PDG6XST250DCS**	**SM**
24 Vac/ Vdc	**PDG6XST24ACDCS**	**SN**
48–60 Vac	**PDG6XST60ACS**	**ST**
110–240 Vac	**PDG6XST240ACS**	**SA** or **SB**
380–440 Vac	**PDG6XST440ACS**	**SC**
480–600 Vac	**PDG6XST600ACS**	**SD** or **SE**

Undervoltage Releases (UVRs)

Voltage	Pigtail (29 in / 0.75 m)	Factory Installed Catalog Number (Digit 17–18)
12 Vdc	**PDG6XUV12DCU**	**UH**
24 Vdc	**PDG6XUV24DCU**	**UG**
48–60 Vdc	**PDG6XUV60DCU**	**UJ** or **UK**
125 Vdc	**PDG6XUV125DCU**	**UL**
250 Vdc	**PDG6XUV250DCU**	**UM**
12 Vac	**PDG6XUV12ACU**	**UU**
24 Vac	**PDG6XUV24ACU**	**UF**
48–60 Vac	**PDG6XUV60ACU**	**UT**
110–127 Vac	**PDG6XUV120ACU**	**UA**
208–240 Vac	**PDG6XUV240ACU**	**UB**
380–500 Vac	**PDG6XUV480ACU**	**UC** or **UV**

Handle Mechanisms—Size 6

Variable Depth Rotary Handle Mechanism

Description	NEMA 1/3R/12/4/4X Catalog Number	Factory Installed Digits 19–20
Standard lockable handle and mechanism ①	**PDG6XHMDS**	**DA**
Emergency lockable handle and mechanism ①	**PDG6XHMDE**	**D1**
12 in (305 mm) handle mechanism shaft	**PDG56XHMDS305**	—

Flex Shaft Handle Mechanism

Cable Length (ft)	Metal Handle, NEMA 1/3R/12 Catalog Number	High Performance Handle, NEMA 1/3R/12 Catalog Number	Metal Handle, NEMA 4/4X Catalog Number	High Performance Handle, NEMA 4/4X Catalog Number
4 ft	**PDG6XFS04**	**PDG6XFS04HP**	**PDG6XFS04X**	**PDG6XFS04HPX**
5 ft	**PDG6XFS05**	**PDG6XFS05HP**	**PDG6XFS05X**	**PDG6XFS05HPX**
6 ft	**PDG6XFS06**	**PDG6XFS06HP**	**PDG6XFS06X**	**PDG6XFS06HPX**

External Accessories—Frame Size 6

External Accessories

Description	Fit Type	Catalog Number	Factory Installed Digits 19–20
Padlockable hasp	Right	**PDG6XPLKR**	**L6**
Padlockable hasp, OFF only	Right	**PDG6XPLKROFF**	**L3**
Kirk key interlock kit ②	Right	**PDG6XKLKPRF**	**L9**
Walking beam interlock ③④	Three-pole	**PDG6XWBI3P**	**WB** ⑤
Electrical operator	48 Vdc	**EOP6T21K**	—
	120 Vac	**EOP6T08K**	—
	240 Vac	**EOP6T11K**	—
Neutral CTs for ground fault (PXR)	Busbar type	**PDG6XNCTB2500**	—

Dimensions and Weights—Frame Size 6

Approximate Dimensions in Inches (mm)

Number of Poles	Width	Height	Depth
2	15.5 (393.7)	16 (406.4)	9.75 (247.7)
3	15.5 (393.7)	16 (406.4)	9.75 (247.7)
4	20 (508.0)	16 (406.4)	9.75 (247.7)

Approximate Shipping Weight in lb (kg)

Breaker Type	2-Pole	3-Pole	4-Pole
PDG6 1600 and 2000 A	102 (46.3)	102 (46.3)	135 (61.2)
PDG6 2500 A	135 (61.2)	135 (61.2)	182 (82.6)

Notes

① Handle mechanism shaft sold separately.
② Provision only. For use with Type F Kirk keylock (sold separately). Bolt projection in withdrawn position is 1.00 in (25.4 mm).
③ Breaker must be ordered with walking beam interlock ready modification from plant (factory suffix "WB").
④ Requires two breakers.
⑤ Modification code for Walking Beam denotes modification to the breaker; accessory must be ordered separate.

Motor Circuit Protectors (3–600 A)

Power Defense Molded Case Circuit Breakers—Motor Circuit Protectors

Product Description

Motor circuit protectors (MCPs) are instantaneous-only devices available in ratings from 3 A to 600 A. Power Defense MCPs are available in Frame Sizes 1, 2 and 3, and are designated by the trip unit digits in the catalog number (Digits 11–13), always use M as Digit 11. Digit 12 designates the calibration (S = Standard, H = High, L = Low), and always use A as Digit 13 to indicate an adjustable instantaneous setting.

Application Description

MCPs are designed to be used in combination with motor starters. Power Defense MCPs are typically used in combination with motor starters, usually NEMA sizes 0 through 6. Each MCP device is calibrated at a minimum for six trip settings to provide flexibility in its application. Typical motor full load currents and NEMA starter sizes are provided for each device and setting, only as a guide for selecting MCPs; actual motor characteristics and design parameters must be used to determine the adequate device and setting to be used in the application.

Features and Benefits

Power Defense MCPs are of a modular design, with field-installable accessories and terminals. Accessories and terminals for MCPs are common with the accessories used for the equivalent frame size molded case circuit breaker. Accessories may be field or factory installed. For factory installation, follow the same catalog numbering guidelines provided for the respective equivalent circuit breaker frame.

Standards and Certifications

MCPs are UL Recognized Components (UL File E7819) and comply with the applicable requirements of the UL 489 standard. Eaton MCPs are also UL Listed in combination with Eaton motor starters under various UL file number; reference UL's website for additional information.

MCPs are also designed to comply with CSA Standard C22.2 No. 5, IEC 60947-2 (Annex O), and GB 14048.2. As such, they carry the following markings:

- UL
- CSA
- IEC (CE)
- CB (CCC)

Frame Size 1 Product Selection

PDG1 MCPs cover a continuous current range of 3 A through 100 A, with trip calibration settings from 9 A through 1100 A. All devices are a thtree-pole configuration and have a single interrupting capacity as an IEC 60947-2 (Annex O) instantaneous trip circuit breaker.

PDG1 MCPs include six trip settings, corresponding to 3x through 11x of the continuous amperage rating of the device, and each corresponding to 13x the minimum FLA value shown in the table below.

Where a 13x setting is required for an intermediate FLA value, alternate CAM settings and/or MCP ratings should be used.

A High Calibration MCP for the 100 A device is also available for special applications where the ampere rating of the disconnecting means cannot be less than 115% of the motor full load ampere rating, and includes settings corresponding to 5x to 15x of the continuous ampere rating of the device.

All catalog numbers shown include standard line and load steel terminals (Digit 14 = J). For aluminum terminals, use T in Digit 14 of the catalog number.

Terminal catalog numbers listed in the table are for one side of the MCP; order 2 sets for line and load if ordering separate.

Ratings

Maximum Application Voltage (UL and CSA)

- 600Y/347 Vac
- 480 Vac
- 250 Vdc

Note: For DC applications, actual trip levels are approximately 40% higher than values shown.

IEC Instantaneous Circuit Breaker (ICB) Interrupting Capacity (kA)

	I_{cu}	I_{cs}
240 Vac	5	5
415 Vac	5	5
690 Vac	3	1.5

PDG1 Motor Circuit Protectors—Standard Calibration

MCP Catalog Number	Continuous Amperes	CAM Setting	MCP Trip Setting (Mult)	MCP Trip Setting (Amps)	Typical NEMA Starter Size	Typical Motor Full Load Current Amperes	Terminal Kit Catalog Numbers Included (Dig 14 = J)	Optional (Dig 14 = T)
PDG13M0003MSAJ	3	A	3x	9	0	0.69–0.91	**PDG1X3T125** (Steel)	**PDG1X3TA125** (Aluminum)
		B	5x	15		1.1–1.3		
		C	7x	21		1.6–1.7		
		D	9x	27		2.0–2.2		
		E	10x	30		2.3–2.5		
		F	11x	33		2.6–2.8		
PDG13M0007MSAJ	7	A	3x	21	0	1.5–2.0	**PDG1X3T125** (Steel)	**PDG1X3TA125** (Aluminum)
		B	5x	35		2.6–3.1		
		C	7x	49		3.7–3.9		
		D	9x	63		4.8–5.2		
		E	10x	70		5.3–5.7		
		F	11x	77		5.8–6.1		
PDG13M0015MSAJ	15	A	3x	45	0	3.4–4.5	**PDG1X3T125** (Steel)	**PDG1X3TA125** (Aluminum)
		B	5x	75		5.7–6.8		
		C	7x	105		8.0–9.1		
		D	9x	135		10.4–11.4		
		E	10x	150		11.5–12.6		
		F	11x	165		12.7–13.0		
PDG13M0030MSAJ	30	A	3x	90	1	3.9–9.1	**PDG1X3T125** (Steel)	**PDG1X3TA125** (Aluminum)
		B	5x	150		11.5–13.7		
		C	7x	210		16.1–18.3		
		D	9x	270		20.7–22.9		
		E	10x	300		23.0–25.2		
		F	11x	330		25.3–26.1		
PDG13M0050MSAJ	50	A	3x	150	2	11.5–15.2	**PDG1X3T125** (Steel)	**PDG1X3TA125** (Aluminum)
		B	5x	250		19.2–22.9		
		C	7x	350		26.9–30.6		
		D	9x	450		34.6–38.3		
		E	10x	500		38.4–42.1		
		F	11x	550		42.2–43.5		

PDG1 Motor Circuit Protectors—Standard Calibration, continued

MCP Catalog Number	Continuous Amperes	CAM Setting	MCP Trip Setting (Mult)	MCP Trip Setting (Amps)	Typical NEMA Starter Size	Typical Motor Full Load Current Amperes	Terminal Kit Catalog Numbers Included (Dig 14 = J)	Terminal Kit Catalog Numbers Optional (Dig 14 = T)
PDG13M0070MSAJ	70	A	3x	210	2	16.1–30.6	**PDG1X3T125** (Steel)	**PDG1X3TA125** (Aluminum)
		B	5x	350		26.9–32.2		
		C	7x	490		37.6–42.9		
		D	9x	630		48.4–53.7		
		E	10x	700		53.8–59.1		
		F	11x	770		59.2–60.9		
PDG13M0100MSAJ	100	A	3x	300	3	23–30.6	**PDG1X3T125** (Steel)	**PDG1X3TA125** (Aluminum)
		B	5x	500		38.4–46.0		
		C	7x	700		53.8–61.4		
		D	9x	900		69.2–76.8		
		E	10x	1000		76.9–84.5		
		F	11x	1100		84.6–87.0		

PDG1 Motor Circuit Protectors—High Calibration

MCP Catalog Number	Continuous Amperes	CAM Setting	MCP Trip Setting (Mult)	MCP Trip Setting (Amps)	Typical NEMA Starter Size	Typical Motor Full Load Current Amperes	Terminal Kit Catalog Numbers Included (Dig 14 = J)	Terminal Kit Catalog Numbers Optional (Dig 14 = T)
PDG13M0100MHAJ	100	A	5x	500	3	38.4–46.0	**PDG1X3T125** (Steel)	**PDG1X3TA125** (Aluminum)
		B	7.5x	750		57.6–65.2		
		C	10x	1000		76.9–84.5		
		D	12.5x	1250		①		
		E	13.75x	1375		①		
		F	15x	1500		①		

Note

① Settings above 85 A are for special applications. NEC Article 430.110(a) requires the ampere rating of the disconnecting means to be not less than 115% of the motor full load ampere rating

Frame Size 2 Product Selection

PDG2 MCPs cover a continuous current range of 3 A through 150 A, with trip calibration settings from 9 A through 2500 A. All devices are a three-pole configuration and have a single interrupting capacity as an IEC 60947-2 (Annex O) instantaneous circuit breaker.

PDG2 MCPs include eight trip settings, corresponding to 3x through 10x of the continuous amperage rating of the device, and each corresponding to 13x the minimum FLA value shown in the table below.

Where a 13x setting is required for an intermediate FLA value, alternate dial settings and/or MCP ratings should be used.

A High Calibration MCP for the 150 A device is also available for special applications where the ampere rating of the disconnecting means cannot be less than 115% of the motor full load ampere rating.

Additionally, four Low Calibration devices are available for low magnetic protection special applications.

All catalog numbers shown include standard line and load terminals (Digit 14 = J). For optional terminals, use T, W or other options in Digit 14 as described in the Frame Size 2 circuit breaker section of the catalog.

Terminal catalog numbers listed in the table are for one side of the MCP; order 2 sets for line and load if ordering separate.

Ratings

Maximum Application Voltage (UL and CSA)

- 600 Vac
- 250 Vdc

Note: For DC applications, actual trip levels are approximately 40% higher than values shown.

IEC Instantaneous Circuit Breaker (ICB) Interrupting Capacity (kA)

	I_{cu}	I_{cs}
240 Vac	5	5
415 Vac	5	5
690 Vac	3	1.5

PDG2 Motor Circuit Protectors—Standard Calibration

MCP Catalog Number	Continuous Amperes	CAM Setting	MCP Trip Setting (Mult)	MCP Trip Setting (Amps)	Typical NEMA Starter Size	Typical Motor Full Load Current Amperes	Terminal Kit Catalog Numbers Included (Dig 14 = J)	Optional (Dig 14 = T)	Optional (Dig 14 = W)
PDG23M0003MSAJ	3	A	3.0	9	0	0.69–0.91	**PDG2X3T100** (Steel)	**PDG2X3TA50** (Aluminum)	**PDG2X3T100** (Steel) (Same as J)
		B	4.0	12		0.92–1.0			
		C	5.0	15		1.1–1.2			
		D	6.0	18		1.3–1.5			
		E	7.0	21		1.6–1.7			
		F	8.0	24		1.8–1.9			
		G	9.0	27		2.0–2.2			
		H	10.0	30		2.3–2.5			
PDG23M0007MSAJ	7	A	3.0	21	0	1.50–2	**PDG2X3T100** (Steel)	**PDG2X3TA50** (Aluminum)	**PDG2X3T100** (Steel) (Same as J)
		B	4.0	28		2.10–2.5			
		C	5.0	35		2.6–3.1			
		D	6.0	42		3.2–3.6			
		E	7.0	49		3.7–3.9			
		F	8.0	56		4.3–4.7			
		G	9.0	63		4.8–5.2			
		H	10.0	70		5.3–5.7			
PDG23M0015MSAJ	15	A	3.0	45	0	3.40–4.5	**PDG2X3T100** (Steel)	**PDG2X3TA50** (Aluminum)	**PDG2X3T100** (Steel) (Same as J)
		B	4.0	60		4.60–5.6			
		C	5.0	75		5.7–6.8			
		D	6.0	90		6.9–7.9			
		E	7.0	105		8.0–9.1			
		F	8.0	120		9.2–10.3			
		G	9.0	135		10.4–11.4			
		H	10.0	150		11.5–12.6			
PDG23M0030MSAJ	30	A	3.0	90	1	6.90–9.1	**PDG2X3T100** (Steel)	**PDG2X3TA50** (Aluminum)	**PDG2X3T100** (Steel) (Same as J)
		B	4.0	120		9.20–11.4			
		C	5.0	150		11.5–13.7			
		D	6.0	180		13.8–16.0			
		E	7.0	210		16.1–18.3			
		F	8.0	240		18.4–20.6			
		G	9.0	270		20.7–22.9			
		H	10.0	300		23.0–25.2			

PDG2 Motor Circuit Protectors—Standard Calibration, continued

MCP Catalog Number	Continuous Amperes	CAM Setting	MCP Trip Setting (Mult)	MCP Trip Setting (Amps)	Typical NEMA Starter Size	Typical Motor Full Load Current Amperes	Terminal Kit Catalog Numbers Included (Dig 14 = J)	Optional (Dig 14 = T)	Optional (Dig 14 = W)
PDG23M0050MSAJ	50	A	3.0	150	2	11.50–15.2	**PDG2X3T100** (Steel)	**PDG2X3TA50** (Aluminum)	**PDG2X3T100** (Steel) (Same as J)
		B	4.0	200		15.30–19.1			
		C	5.0	250		19.2–22.9			
		D	6.0	300		23.0–26.8			
		E	7.0	350		26.9–30.6			
		F	8.0	400		30.7–34.5			
		G	9.0	450		34.6–38.3			
		H	10.0	500		38.4–42.1			
PDG23M0100MSAJ	100	A	3.0	300	3	23.00–30.6	**PDG2X3T100** (Steel)	**PDG2X3TA100** (Aluminum)	**PDG2X3T100** (Steel) (Same as J)
		B	4.0	400		30.70–38.3			
		C	5.0	500		38.4–46.0			
		D	6.0	600		46.1–53.7			
		E	7.0	700		53.8–61.4			
		F	8.0	800		61.5–69.1			
		G	9.0	900		69.2–76.8			
		H	10.0	1000		76.9–84.5			
PDG23M0150MSAJ	150	A	3.0	450	4	34.60–46	**PDG2X3TA225** (Aluminum)	**PDG2X3TA150** (Aluminum)	**PDG2X3T150** (St. Steel)
		B	4.0	600		46.10–57.5			
		C	5.0	750		57.6–69.1			
		D	6.0	900		69.2–80.6			
		E	7.0	1050		80.7–92.2			
		F	8.0	1200		92.3–103.7			
		G	9.0	1350		103.8–115.2			
		H	10.0	1500		115.3–126.7			

PDG2 Motor Circuit Protectors—High Calibration

MCP Catalog Number	Continuous Amperes	CAM Setting	MCP Trip Setting (Mult)	MCP Trip Setting (Amps)	Typical NEMA Starter Size	Typical Motor Full Load Current Amperes	Terminal Kit Catalog Numbers Included (Dig 14 = J)	Optional (Dig 14 = T)	Optional (Dig 14 = W)
PDG23M0150MHAJ	150	A	5.0	750	4	57.0–75.0	**PDG2X3TA225** (Aluminum)	**PDG2X3TA150** (Aluminum)	**PDG2X3T150** (St. Steel)
		B	6.7	1000		76.0–95.0			
		C	8.3	1250		96.0–114.0			
		D	10.0	1500		115.0–130.7			
		E	11.7	1750		①			
		F	13.3	2000		①			
		G	15.0	2250		①			
		H	16.7	2500		①			

Note

① Settings above 130 A are for special applications. NEC Article 430.110(a) requires the ampere rating of the disconnecting means to be not less than 115% of the motor full load ampere rating

PDG2 Motor Circuit Protectors—Special Low Calibration

MCP Catalog Number	Continuous Amperes	CAM Setting	MCP Trip Setting (Mult)	MCP Trip Setting (Amps)	Terminal Kit Catalog Numbers Included (Dig 14 = J)	Optional (Dig 14 = T)	Optional (Dig 14 = W)
PDG23M0025MLAJ	25	A	1.6	40	**PDG2X3T100** (Steel)	**PDG2X3TA50** (Aluminum)	**PDG2X3T100** (Steel) (Same as J)
		B	1.7	43			
		C	1.8	46			
		D	2.0	49			
		E	2.1	52			
		F	2.2	55			
		G	2.3	58			
		H	2.4	60			
PDG23M0050MLAJ	50	A	1.6	80	**PDG2X3T100** (Steel)	**PDG2X3TA50** (Aluminum)	**PDG2X3T100** (Steel) (Same as J)
		B	1.7	87			
		C	1.9	93			
		D	2.0	98			
		E	2.1	103			
		F	2.2	109			
		G	2.3	115			
		H	2.4	120			
PDG23M0070MLAJ	70	A	1.6	115	**PDG2X3T100** (Steel)	**PDG2X3TA100** (Aluminum)	**PDG2X3T100** (Steel) (Same as J)
		B	1.7	122			
		C	1.9	130			
		D	2.0	139			
		E	2.1	145			
		F	2.2	153			
		G	2.3	160			
		H	2.4	170			
PDG23M0100MLAJ	100	A	1.6	160	**PDG2X3T100** (Steel)	**PDG2X3TA100** (Aluminum)	**PDG2X3T100** (Steel) (Same as J)
		B	1.7	174			
		C	1.9	185			
		D	2.0	196			
		E	2.1	207			
		F	2.2	218			
		G	2.3	229			
		H	2.4	240			

400 A Frame Size 3 Product Selection

PDG3 400 A Frame MCPs cover a continuous current range of 70 A through 400 A, with trip calibration settings from 350 A through 4500 A. All devices are a three-pole configuration in a 400 A frame and have a single interrupting capacity as an IEC 60947-2 (Annex O) instantaneous circuit breaker.

PDG3 MCPs include nine trip settings, corresponding to 5x through 10x of the continuous amperage rating of the device and each corresponding to 13x the minimum FLA value shown in the table below.

Where a 13x setting is required for an intermediate FLA value, alternate dial settings and/or MCP ratings should be used.

A High Calibration MCP for the 400 A frame device is also available for special applications where the ampere rating of the disconnecting means cannot be less than 115% of the motor full load ampere rating.

All catalog numbers shown include standard aluminum line and load terminals (Digit 14 = J). For optional terminals, use T (aluminum), W (copper) or other options in Digit 14 as described in the Frame Size 3 circuit breaker section of the catalog.

Terminal catalog numbers listed in the table are for one side of the MCP; order 2 sets for line and load if ordering separate.

Ratings

Maximum Application Voltage (UL and CSA)

- 600 Vac
- 250 Vdc

Note: For DC applications, actual trip levels are approximately 40% higher than values shown.

IEC Instantaneous Circuit Breaker (ICB) Interrupting Capacity (kA)

	I_{cu}	I_{cs}
240 Vac	100	100
415 Vac	70	53
690 Vac	15	7.5
250 Vdc	22	22

PDG3 400 A Frame Motor Circuit Protectors—Standard Calibration

MCP Catalog Number	Continuous Amperes	CAM Setting	MCP Trip Setting (Mult)	MCP Trip Setting (Amps)	Typical NEMA Starter Size	Typical Motor Full Load Current Amperes	Terminal Kit Catalog Numbers Included (Dig 14 = J)	Optional (Dig 14 = T)	Optional (Dig 14 = W)
PDG33M0070MSAJ	70	A	5.0	350	4	27.0–30.7	**PDG3X3TA300** (Aluminum)	**PDG3X3TA402** (Aluminum)	**PDG3X3T300** (Copper)
		B	5.7	400		30.8–33.8			
		C	6.3	440		33.9–36.9			
		D	6.9	480	5	37.0–40.3			
		E	7.5	525		40.4–43.8			
		F	8.1	570		43.9–46.9			
		G	8.7	610		47.0–50.7			
		H	9.4	660		50.8–53.8			
		I	10.0	700		53.9–57.2			
PDG33M0100MSAJ	100	A	5.0	500	5	38.5–43.4	**PDG3X3TA300** (Aluminum)	**PDG3X3TA402** (Aluminum)	**PDG3X3T300** (Copper)
		B	5.7	565		43.5–48.0			
		C	6.3	626		48.1–53.0			
		D	6.9	690		53.1–57.6			
		E	7.5	750		57.7–62.3			
		F	8.1	810		62.4–67.3			
		G	8.8	875		67.4–71.9			
		H	9.4	935		72.0–76.9			
		I	10.0	1000		77.0–81.6			
PDG33M0125MSAJ	125	A	5.0	625	5	48.1–53.8	**PDG3X3TA300** (Aluminum)	**PDG3X3TA402** (Aluminum)	**PDG3X3T300** (Copper)
		B	5.6	700		53.9–59.9			
		C	6.2	780		60.0–66.1			
		D	6.9	860		66.2–72.3			
		E	7.5	940		72.4–78.4			
		F	8.2	1020		78.5–83.8			
		G	8.7	1090		83.9–89.9			
		H	9.4	1170		90.0–96.1			
		I	10.0	1250		96.2–102.0			

PDG3 400 A Frame Motor Circuit Protectors—Standard Calibration, continued

MCP Catalog Number	Continuous Amperes	CAM Setting	MCP Trip Setting (Mult)	MCP Trip Setting (Amps)	Typical NEMA Starter Size	Typical Motor Full Load Current Amperes	Terminal Kit Catalog Numbers Included (Dig 14 = J)	Optional (Dig 14 = T)	Optional (Dig 14 = W)
PDG33M0150MSAJ	150	A	5.0	750	5	57.7–64.6	**PDG3X3TA300** (Aluminum)	**PDG3X3TA402** (Aluminum)	**PDG3X3T300** (Copper)
		B	5.6	840		64.7–71.9			
		C	6.2	935		72.0–79.2			
		D	6.9	1030		79.3–86.5			
		E	7.5	1125		86.6–93.8			
		F	8.1	1220		93.9–101.1			
		G	8.8	1315		101.2–108.4			
		H	9.4	1410		108.5–115.3			
		I	10.0	1500		115.4–122.4			
PDG33M0175MSAJ	175	A	5.0	875	5	67.4–75.3	**PDG3X3TA300** (Aluminum)	**PDG3X3TA402** (Aluminum)	**PDG3X3T300** (Copper)
		B	5.6	980		75.4–83.8			
		C	6.2	1090		83.9–92.3			
		D	6.9	1200		92.4–100.7			
		E	7.5	1310		100.8–109.2			
		F	8.1	1420		109.3–117.6			
		G	8.7	1530		117.7–126.1			
		H	9.4	1640		126.2–134.6			
		I	10.0	1750		134.7–142.8			
PDG33M0200MSAJ	200	A	5.0	1000	5	77.0–86.5	**PDG3X3TA300** (Aluminum)	**PDG3X3TA402** (Aluminum)	**PDG3X3T300** (Copper)
		B	5.6	1125		86.6–96.1			
		C	6.3	1250		96.2–105.7			
		D	6.9	1375		105.8–115.3			
		E	7.5	1500		115.4–124.9			
		F	8.1	1625		125.0–134.6			
		G	8.8	1750		134.7–144.2			
		H	9.4	1875		144.3–153.8			
		I	10.0	2000		153.9–163.3			
PDG33M0225MSAJ	225	A	5.0	1125	5	86.6–97.3	**PDG3X3TA300** (Aluminum)	**PDG3X3TA402** (Aluminum)	**PDG3X3T300** (Copper)
		B	5.6	1265		97.4–108.4			
		C	6.3	1410		108.5–118.8			
		D	6.9	1545		118.9–129.9			
		E	7.5	1690		130.0–140.7			
		F	8.1	1830		140.8–151.5			
		G	8.8	1970		151.6–162.3			
		H	9.4	2110		162.4–173.0			
		I	10.0	2250		173.1–183.6			
PDG33M0250MSAJ	250	A	5.0	1250	5	96.2–108.0	**PDG3X3TA350** (Aluminum)	**PDG3X3TA402** (Aluminum)	**PDG3X3T350** (Copper)
		B	5.6	1405		108.1–119.9			
		C	6.2	1560		120.0–132.3			
		D	6.9	1720		132.4–144.2			
		E	7.5	1875		144.3–156.1			
		F	8.1	2030		156.2–168.0			
		G	8.7	2185		168.1–179.9			
		H	9.4	2340		180.0–192.3			
		I	10.0	2500		192.4–204.0			

PDG3 400 A Frame Motor Circuit Protectors—Standard Calibration, continued

MCP Catalog Number	Continuous Amperes	CAM Setting	MCP Trip Setting (Mult)	MCP Trip Setting (Amps)	Typical NEMA Starter Size	Typical Motor Full Load Current Amperes	Terminal Kit Catalog Numbers Included (Dig 14 = J)	Optional (Dig 14 = T)	Optional (Dig 14 = W)
PDG33M0300MSAJ	300	A	5.0	1500	5	115.4–129.9	**PDG3X3TA350** (Aluminum)	**PDG3X3TA402** (Aluminum)	**PDG3X3T350** (Copper)
		B	5.6	1690		130.0–144.2			
		C	6.3	1875		144.3–158.4			
		D	6.9	2060		158.5–173.0			
		E	7.5	2250		173.1–187.6			
		F	8.1	2440		187.7–201.9			
		G	8.8	2625		202.0–216.1			
		H	9.4	2810		216.2–230.7			
		I	10.0	3000		230.8–244.9			
PDG33M0350MSAJ	350	A	5.0	1750	5	134.7–151.5	**PDG3X3TA350** (Aluminum)	**PDG3X3TA402** (Aluminum)	**PDG3X3T350** (Copper)
		B	5.6	1970		151.6–168.4			
		C	6.3	2190		168.5–185.3			
		D	6.9	2410		185.4–201.9			
		E	7.5	2625		202.0–218.8			
		F	8.1	2845		218.9–235.7			
		G	8.8	3065		235.8–252.6			
		H	9.4	3285		252.7–269.2			
		I	10.0	3500		269.3–285.7			
PDG33M0400MSAJ	400	A	5.0	2000	5	153.9–173.0	**PDG3X3TA400** (Aluminum)	**PDG3X3TA402** (Aluminum)	**PDG3X3T400** (Copper)
		B	5.6	2250		173.1–192.3			
		C	6.3	2500		192.4–211.5			
		D	6.9	2750		211.6–230.7			
		E	7.5	3000		230.8–249.9			
		F	8.1	3250		250.0–269.2			
		G	8.8	3500		269.3–288.4			
		H	9.4	3750		288.5–307.6			
		I	10.0	4000		307.7–326.9			

PDG3 400 A Frame Motor Circuit Protectors—High Calibration

MCP Catalog Number	Continuous Amperes	CAM Setting	MCP Trip Setting (Mult)	MCP Trip Setting (Amps)	Typical NEMA Starter Size	Typical Motor Full Load Current Amperes	Terminal Kit Catalog Numbers Included (Dig 14 = J)	Optional (Dig 14 = T)	Optional (Dig 14 = W)
PDG33M0400MHAJ	400	A	5.6	2250	5	173.1–194.5	**PDG3X3TA400** (Aluminum)	**PDG3X3TA402** (Aluminum)	**PDG3X3T400** (Copper)
		B	6.3	2530		194.6–216.1			
		C	7.0	2810		216.2–237.6			
		D	7.7	3090		237.7–259.5			
		E	8.4	3375		259.6–281.1			
		F	9.1	3655		281.2–302.6			
		G	9.8	3935		302.7–324.1			
		H	10.5	4215		324.2–346.1			
		I	11.3	4500		346.2–368.1			

600 A Frame Size 3 Product Selection

PDG3 600 A MCPs cover a continuous current range of 250 A through 600 A, with trip calibration settings from 1250 A through 6000 A. All devices are a three-pole configuration in a 600 A frame and have a single interrupting capacity as an IEC 60947-2 (Annex O) instantaneous circuit breaker.

PDG3 MCPs include nine trip settings, corresponding to 5x through 10x of the continuous amperage rating of the device, and each corresponding to 13x the minimum FLA value shown in the table below. Where a 13x setting is required for an intermediate FLA value alternate dial settings and/or MCP ratings should be used.

All catalog numbers shown include standard line and load terminals (Digit 14 = J). For optional terminals, use T (aluminum) W (copper) or other options in Digit 14 as described in the Frame Size 3 circuit breaker section of the catalog.

Terminal catalog numbers listed in the table are for one side of the MCP; order 2 sets for line and load if ordering separate.

Ratings

Maximum Application Voltage (UL and CSA)

- 600 Vac
- 250 Vdc

Note: For DC applications, actual trip levels are approximately 40% higher than values shown.

IEC Instantaneous Circuit Breaker (ICB) Interrupting Capacity (kA)

	I_{cu}	I_{cs}
240 Vac	100	100
415 Vac	70	53
690 Vac	25	13
250 Vdc	42	42

PDG3 600 A Frame Motor Circuit Protectors—Standard Calibration

MCP Catalog Number	Continuous Amperes	CAM Setting	MCP Trip Setting (Mult)	MCP Trip Setting (Amps)	Typical NEMA Starter Size	Typical Motor Full Load Current Amperes	Terminal Kit Catalog Numbers Included (Dig 14 = J)	Optional (Dig 14 = T)	Optional (Dig 14 = W)
PDG33MH250MSAJ	250	A	5.0	1250	6	96.2–108.0	**PDG3X3TA401H** (Aluminum)	**PDG3X3TA400H** (Aluminum)	**PDG3X3T401H** (Copper)
		B	5.6	1405		108.1–119.9			
		C	6.2	1560		120.0–132.2			
		D	6.9	1720		132.3–144.1			
		E	7.5	1875		144.2–156.1			
		F	8.1	2030		156.2–168.0			
		G	8.7	2185		168.1–179.9			
		H	9.4	2340		180.0–192.2			
		I	10.0	2500		192.3–204.0			
PDG33MH300MSAJ	300	A	5.0	1500	6	115.4–129.9	**PDG3X3TA401H** (Aluminum)	**PDG3X3TA400H** (Aluminum)	**PDG3X3T401H** (Copper)
		B	5.6	1690		130.0–144.1			
		C	6.3	1875		144.2–158.4			
		D	6.9	2060		158.5–173.0			
		E	7.5	2250		173.1–187.6			
		F	8.1	2440		187.7–201.8			
		G	8.8	2625		201.9–216.1			
		H	9.4	2810		216.2–230.7			
		I	10.0	3000		230.8–244.9			
PDG33MH350MSAJ	350	A	5.0	1750	6	134.6–151.4	**PDG3X3TA401H** (Aluminum)	**PDG3X3TA400H** (Aluminum)	**PDG3X3T401H** (Copper)
		B	5.6	1970		151.5–168.4			
		C	6.3	2190		168.5–185.3			
		D	6.9	2410		185.4–201.8			
		E	7.5	2625		201.9–218.7			
		F	8.1	2845		218.8–235.7			
		G	8.8	3065		235.8–252.6			
		H	9.4	3285		252.7–269.1			
		I	10.0	3500		269.2–285.7			
PDG33MH400MSAJ	400	A	5.0	2000	6	153.8–173.0	**PDG3X3TA401H** (Aluminum)	**PDG3X3TA400H** (Aluminum)	**PDG3X3T401H** (Copper)
		B	5.6	2250		173.1–192.2			
		C	6.3	2500		192.3–211.4			
		D	6.9	2750		211.5–230.7			
		E	7.5	3000		230.8–249.9			
		F	8.1	3250		250.0–269.1			
		G	8.8	3500		269.2–288.4			
		H	9.4	3750		288.5–307.6			
		I	10.0	4000		307.7–326.9			

PDG3 600 A Frame Motor Circuit Protectors—Standard Calibration, continued

MCP Catalog Number	Continuous Amperes	CAM Setting	MCP Trip Setting (Mult)	MCP Trip Setting (Amps)	Typical NEMA Starter Size	Typical Motor Full Load Current Amperes	Terminal Kit Catalog Numbers Included (Dig 14 = J)	Optional (Dig 14 = T)	Optional (Dig 14 = W)
PDG33M0450MSAJ	450	A	5.0	2250	6	173.1–194.5	**PDG3X3TA630** (Aluminum)	—	**PDG3X3T630** (Copper)
		B	5.6	2530		194.6–216.1			
		C	6.2	2810		216.2–237.6			
		D	6.9	3090		237.7–259.5			
		E	7.5	3375		259.6–281.4			
		F	8.1	3660		281.5–303.0			
		G	8.8	3940		303.1–324.5			
		H	9.4	4220		324.6–346.1			
		I	10.0	4500		346.2–368.1			
PDG33M0500MSAJ	500	A	5.0	2500	6	192.3–216.1	**PDG3X3TA630** (Aluminum)	—	**PDG3X3T630** (Copper)
		B	5.6	2810		216.2–240.3			
		C	6.3	3125		240.4–264.5			
		D	6.9	3440		264.6–288.4			
		E	7.5	3750		288.5–313.7			
		F	8.2	4080		313.8–336.4			
		G	8.8	4375		336.5–359.1			
		H	9.3	4670		359.2–384.5			
		I	10.0	5000		384.6–408.2			
PDG33M0600MSAJ	600	A	5.0	3000	6	230.8–259.5	**PDG3X3TA630** (Aluminum)	—	**PDG3X3T630** (Copper)
		B	5.6	3375		259.6–289.1			
		C	6.3	3760		289.2–316.8			
		D	6.9	4120		316.9–346.1			
		E	7.5	4500		346.2–375.3			
		F	8.1	4880		375.4–403.7			
		G	8.8	5250		403.8–433.0			
		H	9.4	5630		433.1–461.4			
		I	10.0	6000		461.5–507.7			

Note: 800 and 1200 A, 600 Vac maximum motor circuit protectors are available as Series C HMCP product.

Additional Information

Terminals

Available terminal configuration for MCPs follow the same guidelines as presented for each circuit breaker frame. Additional terminals, including control wire, StrandAble and other options are presented in each Power Defense circuit breaker frame size section.

Accessories

MCPs and MCCBs for each frame use a common set of accessories. Available accessories are presented in each corresponding Power Defense circuit breaker frame section (i.e., PDG1 accessories are found in the Frame Size 1 section, PDG2 accessories in the Frame Size 2 section and PDG3 in the Frame Size 3 section).

Weights and Dimensions

MCPs have the same dimensions and weight as the three-pole version of the respective circuit breaker, shown in each frame section.

Motor Protection Circuit Breakers (15–600 A)

Power Defense Molded Case Circuit Breakers—Motor Protection Circuit Breakers

Product Description

Power Defense motor protection circuit breakers (MPCBs) use Power Xpert Release (PXR) electronic trip units to provide branch protection and motor protection in a combined device, eliminating the need for a separate overload relay. Motor protection PXR units build upon the features available in standard PXR trip units and add motor protection application specific functionality and features. MPCBs are available in Power Defense Frame Sizes 2 and 3, and share accessories and catalog numbering convention with the respective molded case circuit breaker frames.

Application Description

MPCBs meet requirements for motor branch protection, including disconnecting means, branch circuit short-circuit protection and overload protection. MPCBs can be used with a contactor to eliminate the need for overload relay and still create manual motor control. Typical branch motor starter applications are protected by three components consisting of: breaker, contactor and overload relay, or fuse, contactor and overload relay. The MPCB application-specific protection eliminates the need for motor overload relay and reduces the traditional three-component starter assembly down to two elements—the MPCB and the contactor.

Features and Benefits

PXR motor protection electronic trip units provide motor protection basic and advanced functionality in PXR 10 and PXR 25, respectively. Features include phase unbalance protection, phase loss protection, over/under voltage protection, cold/hot start (thermal memory) protection, programmable high load alarms, programmable relays for multiple functions to include pre-detection trip relay, Class 5/10/15/20/30 protection, energy metering, communications, cause-of-trip indication, events logging, breaker health monitoring, harmonics, ground fault alarm and protection, and more.

ZSI allows the MPCB to interface with upstream feeder or branch circuit breakers for coordination and reduction of arc flash for some applications.

Standards and Certifications

MPCBs provide:

- UL 489 branch circuit protection
- UL 508 and CSA C22.2 No. 14 motor protection, and meet IEC 60947-2 and 50947-4 requirements

Power Defense MPCBs meet:

- UL 489
- CSA
- C22.2 No. 5-02
- IEC 60947-2
- GB 14048.2-2008

Power Defense MPCB—Frame Size 2 (15–200 A)

Frame Size 2 covers a range of 15 A through 200 A using PXR 10 and PXR 25 electronic trip units. In is available in three-pole configurations.

Interrupting Ratings

Catalog Designator	F		G		K		M		N		P	
UL/CSA	**kA rms**		**kA rms**		**kA rms**		**kA rms**		**kA rms**		**kA rms**	
240 Vac	35		65		85		100		150		200	
480 Vac	25		35		50		65		85		100	
600 Vac	14		18		22		25		25		25	
250 Vdc	—		—		—		—		—		—	
IEC	**I_{cu}**	**I_{cs}**	**I_{cu}**	**I_{cs}**	**I_{cu}**	**I_{cs}**	**I_{cu}**	**I_{cs}**	**I_{cu}**	**I_{cs}**	**I_{cu}**	**I_{cs}**
240 Vac	35	35	55	55	85	85	100	100	150	100	200	150
380–415 Vac	25	25	36	36	50	50	70	53	70	70	100	70
440 Vac	25	20	30	22.5	35	35	50	40	70	50	100	65
480 Vac	20	20	25	20	35	22.5	50	30	65	40	65	40
525 Vac	18	13	20	13	25	13	25	13	25	13	25	13
660–690 Vac	—	—	8	4	10	5	10	5	10	5	10	5
250 Vdc	—	—	—	—	—	—	—	—	—	—	—	—

Power Defense MPCB—Frame Size 3 (45–600 A)

Frame Size 3 covers a range of 45 A through 600 A using PXR 10 and PXR 25 electronic trip units. In is available in three-pole configurations. Frame 3 has two specific constructions, one each for 400 A and 600 A. The 600 A construction provides a unique capability to be used at 400 A and below in applications requiring higher fixed instantaneous levels. This is accomplished by using a letter H in the 7th digit of the catalog number.

Interrupting Ratings

Catalog Designator	F		G		K		M		N		P	
UL/CSA	**kA rms**		**kA rms**		**kA rms**		**kA rms**		**kA rms**		**kA rms**	
240 Vac	35		65		85		100		150		200	
480 Vac	25		35		50		65		85		100	
600 Vac	14		18		25		35		50		65	
125/250 Vdc	—		—		—		—		—		—	
IEC	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}
240 Vac	35	35	55	55	85	85	100	100	150	100	200	150
380–415 Vac	25	25	36	36	50	50	70	53	70	70	100	70
440 Vac	25	20	30	22.5	35	35	50	40	70	50	100	50
480 Vac	20	20	25	20	35	22.5	50	30	65	40	85	40
525 Vac	18	5	20	7.5	25	10	30	15	35	25	40	25
660–690 Vac	—	—	8	4	10	5	15	7.5	20	10	20	10
125/250 Vdc	—	—	—	—	—	—	—	—	—	—	—	—

MPCB with Power Xpert (PXR) Electronic Trip Units (ETU)

This information is presented as a tool to develop catalog numbers for selecting Power Defense circuit breakers and trip units.

Frame Size 2 MPCB with PXR ETU—Globally Rated

PD G 2 3 M 0200 P8M J

Product Series
PD = Power Defense

Certifications/ Standards
G = UL/CSA/IEC/CCC

Frame Size
2 = 2

Pole Options
3 = 3-pole

Interrupting Ratings
F = 25 kA at 480 V
G = 35 kA at 480 V
K = 50 kA at 480 V
M = 65 kA at 480 V
N = 85 kA at 480 V
P = 100 kA at 480 V

F = 14 kA at 600 V
G = 18 kA at 600 V
K = 22 kA at 600 V
M = 25 kA at 600 V
N = 25 kA at 600 V
P = 25 kA at 600 V

Continuous Current Ratings
0060 = 60 A
0100 = 100 A
0150 = 150 A
0200 = 200 A

Trip Unit Type Options
B8N = PXR 10 MLSI
P8# = PXR 25 MLSI ①
P9# = PXR 25 MLSIG ①

Standard Terminal Options
N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Frame Size 2 MPCB with PXR ETU—Globally Rated (100% UL Rated)

F = 100% UL/CSA rated

2 = 2

3 = 3-pole
4 = 4-pole

F = 25 kA at 480 V
G = 35 kA at 480 V
K = 50 kA at 480 V
M = 65 kA at 480 V
N = 85 kA at 480 V
P = 100 kA at 480 V

F = 14 kA at 600 V
G = 18 kA at 600 V
K = 22 kA at 600 V
M = 25 kA at 600 V
N = 25 kA at 600 V
P = 25 kA at 600 V

0060 = 60 A
0100 = 100 A
0150 = 150 A
0200 = 200 A

B8N = PXR 10 MLSI
P8# = PXR 25 MLSI ①
P9# = PXR 25 MLSIG ①

J = Line and load terminals
W = Optional line and load terminals

Note

① See "Power Xpert Release (PXR) Trip Unit Options" table on **Page V4-T2-102** for # (Available Configured Options).

Frame Size 3 MPCB with PXR ETU—Globally Rated

PD G 3 3 M 0200 P8M J

Product Series
PD = Power Defense

Certifications/ Standards
G = UL/CSA/IEC/CCC

Frame Size
3 = 3

Pole Options
3 = 3-pole

Interrupting Ratings
F = 25 kA at 480 V
G = 35 kA at 480 V
K = 50 kA at 480 V
M = 65 kA at 480 V
N = 85 kA at 480 V
P = 100 kA at 480 V

Interrupting Ratings
F = 14 kA at 600 V
G = 18 kA at 600 V
K = 25 kA at 600 V
M = 35 kA at 600 V
N = 50 kA at 600 V
P = 65 kA at 600 V

Continuous Current Ratings
0125 = 125 A
0250 = 250 A
0400 = 400 A
0600 = 600 A
H250 = 250 A High Override (600 A Frame)
H400 = 400 A High Override (600 A Frame)

Trip Unit Type Options
B8N = PXR 10 MLSI
P8# = PXR 25 MLSI ①
P9# = PXR 25 MLSIG ①

Standard Terminal Options
N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Frame Size 3 MPCB with PXR ETU—Globally Rated (100% UL Rated)

F = 100% UL/CSA rated

3 = 3

3 = 3-pole

F = 25 kA at 480 V
G = 35 kA at 480 V
K = 50 kA at 480 V
M = 65 kA at 480 V

F = 14 kA at 600 V
G = 18 kA at 600 V
K = 25 kA at 600 V
M = 35 kA at 600 V

0125 = 125 A
0250 = 250 A
0400 = 400 A
0600 = 600 A
H250 = 250 A High Override (600 A Frame)
H400 = 400 A High Override (600 A Frame)

B8N = PXR 10 MLSI
P8# = PXR 25 MLSI ①
P9# = PXR 25 MLSIG ①

N = No terminals
J = Line and load terminals
K = Line only terminals
L = Load only terminals

Note

① See "Power Xpert Release (PXR) Trip Unit Options" table on the next page for # (Available Configured Options).

Power Xpert Release (PXR) Trip Unit Options

		#(1)—Protection Type		#(2)—Available Configured Options				
				—	Relays	Relays	Relays	Relays
				—	Modbus	Modbus	Modbus	Modbus
				—	—	ZSI	—	ZSI
PXR	ETU	LSI	LSIG	—	—	—	CAM	CAM
PXR 10	**B**	**8**	—	**N**	—	—	—	—
PXR 25	**P**	**8**	**9**	—	**M**	**W**	**D**	**Y**

Descriptions of PXR Configured Options

Relays—2 Form A contacts (rated for 240 Vac, 1 A)

- Interface: 3 wires (ALM1, ALM2, ALM Common)
- Programmable to indicate breaker conditions
- Field installable for PD-2

Note: PD-2 includes 1 relay when used in conjunction with Modbus RTU.

Modbus—Modbus RTU directly from the breaker

- Interface: 3 wires (MODBA, MODBB, MODBG)
- No additional modules required
- Field installable for PD-2

ZSI—Zone Selective Interlocking output

- Interface: 2 wires (Zout, Zcomm)
- Includes ability to turn ON and OFF, and indicate signals

CAM—CAM Link connection (requires a CAM module per breaker)

- Interface: 5 wires (refer to CAM IL for details)
- Communications Adapter Modules available for Modbus TCP and PROFIBUS

Auxiliary Power

- Connection included with all PXR 25 trip units
- Required for communications, relays, and metering accuracy
- 24 Vdc, 0.5 A
- Interface: 2 wires Aux +24 V, Aux 0 V)

Available Settings and Features on PXR Motor Protection Electronic Trip Units

		Full Load Amperes (I_e) Current Settings PD-2				Full Load Amperes (I_e) Current Settings PD-3			
		0060	0100	0150	0200	0125	0250/H250	0400/H400	0600
Option	Setting	60 A	100 A	150 A	200 A	125 A	250 A	400 A	600 A
PXR 10	1	15 A	32 A	50 A	70 A	45 A	90 A	160 A	250 A
	2	16 A	35 A	60 A	80 A	50 A	100 A	175 A	275 A
	3	20 A	40 A	63 A	90 A	60 A	110 A	200 A	300 A
	4	25 A	50 A	70 A	100 A	63 A	125 A	225 A	320 A
	5	30 A	60 A	80 A	110 A	70 A	150 A	250 A	350 A
	6	35 A	63 A	90 A	125 A	80 A	160 A	275 A	400 A
	7	40 A	70 A	100 A	150 A	90 A	175 A	300 A	450 A
	8	45 A	80 A	110 A	160 A	100 A	200 A	320 A	500 A
	9	50 A	90 A	125 A	175 A	110 A	225 A	350 A	550 A
	10	60 A	100 A	150 A	200 A	125 A	250 A	400 A	600 A
PXR 25		Programmable from minimum to maximum values in 1 A increments.							

Trip Profile (Trip Class and Phase Unbalance)

PXR 10—Dial 2

Setting	Dial Label	Trip Class	Phase Unbalance
1	A	5	OFF
2	B	10	OFF
3	C	15	OFF
4	D	20	OFF
5	E	30	OFF
6	F	5	ON
7	G	10	ON
8	H	15	ON
9	J	20	ON
10	K	30	ON

PXR 10—Phase Unbalance Settings Programmable by PXPM

- Pickup Level:
  5 to 35% of load
- Trip Time:
  1 to 300 seconds
- Action taken: MPCB will trip at selected protection settings

PXR 25—Programmable

Trip Class

- Trip Class:
  5–30 in increments of 0.1

Phase Unbalance

- Pickup Level:
  5 to 35% of load
- Trip Time:
  1 to 300 seconds
- Action taken: MPCB will trip at selected protection settings

Phase Loss

- Pickup Level:
  Fixed at 75% of load
- Trip Time:
  1 to 240 seconds
- Action taken: May be set to trip or alarm

Short Delay/ Instantaneous Settings

MPCBs with PXR 10 include a combined Short Delay and Instantaneous trip dial. The short delay time may be programmed to trip instantaneously or with a delay for coordination or to avoid nuisance tripping. Breakers with PXR 25 trip units include independent adjustments for short delay and instantaneous settings.

PXR 10—Dial 3 Programmable

Setting	I_{sd} (x I_e)	t_{sd} (sec)
1	3	Default to INST; programmable via USB and PXPM to INST, 0.150 or 0.300. INST / 0.150 / 0.300
2	4	
3	5	
4	6	
5	7	
6	8	
7	10	
8	11 ①	
9	12 ①	
10	13 ①	

Note

① If setting value exceeds the fixed magnetic override of the device, the setting defaults to the magnetic override value (please verify these values in the time current curves or PXR user manual.

PXR 25—Programmable

Short delay pickup—I_{sd} (x I_e)

- 3x–13x: Programmable in increments of 0.1x

Short delay time—t_{sd} (sec)

- 0.05–0.50: Programmable in increments of 0.01 sec
- Fixed (flat) response

Instantaneous pickup—I_i (x I_n)

- 3x–Maximum: Programmable in increments of 0.1x
- Maximum is determined by frame fixed magnetic override level

Ground Fault Protection Settings

MPCBs with PXR 25 include an option to add ground fault protection. Ground fault protection includes the ability to trip and/or alarm on a determined ground fault condition.

Phase Unbalance

- Pickup Level:
  5 to 35% of load
- Trip Time:
  1 to 300 seconds
- Action taken: May be set to trip or alarm

Phase Loss

- Pickup Level:
  Fixed at 75% of load
- Trip Time:
  1 to 240 seconds
- Action taken: May be set to trip or alarm

Metering and Communications Capabilities

PXR 25 motor protection trip units include the same advanced metering functions as the MCCB PXR 25, including:

- Energy metering to 1% accuracy
- Current metering to 0.5% accuracy
- Multiple communications options, including standard Modbus RTU
- Load alarm at two programmable levels between 50% to 120%
- Programmable relays for remote indication

Advanced Motor Protection Settings

MPCBs with PXR 25 trip units also include additional application specific motor protection features. These features may be set to trip the breaker, alarm (indication via programmable relays), or disabled.

Over Voltage

- Pickup Level:
  180 to 720 V
- Trip Time:
  1 to 300 seconds

Under Voltage

- Pickup Level:
  60 to 670 V
- Trip Time:
  1 to 300 seconds

Voltage Unbalance (between phase-to-phase readings)

- Pickup Level:
  5% to 25% difference
- Trip Time:
  1 to 300 seconds

Phase Rotation

- Configuration:
  ABC or CBA sequence
- Time: Fixed at 200 ms

Reverse Power

- Pickup Level:
  1–65,500 kW
- Trip Time:
  1 to 300 seconds

Total Harmonic Distortion

- Line-to-line and line-to-neutral voltage
- Each phase and neutral current
- 1st through 29th at 60 Hz/ 1st through 35th at 50 Hz

Additional Information

Terminals

Available terminal configuration for MPCBs follow the same guidelines as presented for each circuit breaker frame. Additional terminals, including control wire, StrandAble and other options are presented in each Power Defense circuit breaker frame size section.

Accessories

MPCBs and MCCBs for each frame use a common set of accessories. Available accessories are presented in each corresponding Power Defense circuit breaker frame section (i.e., PDG2 accessories are found in the Frame Size 2 section and PDG3 in the Frame Size 3 section). All Frame Size 2 MPCBs are automatically configured with 1 Form C auxiliary switch.

Weights and Dimensions

MPCBs have the same dimensions and weight as the three-pole version of the respective circuit breaker, shown in each frame section.

30 mA Ground Fault (Earth Leakage) Modules

Contents

30 mA Ground Fault (Earth Leakage) Modules

Product Description

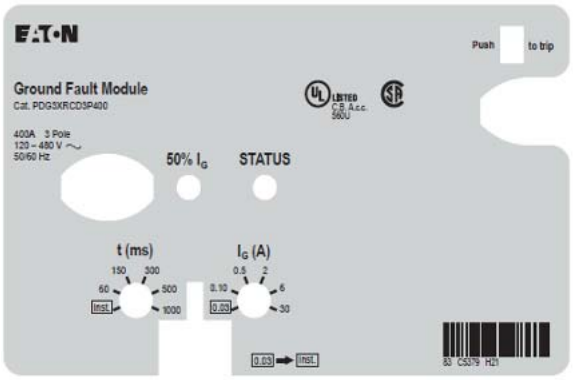
Eaton offers three- and four pole 30 mA ground fault (earth leakage) protection modules, also know as residual current device for Power Defense frame 1, 2, and 3 molded case circuit breakers (MCCBs). Separate UL/CSA, IEC, and IEC/CCC listed rated devices are available. The modules are bottom mounted and are available for each frame circuits up to:

- PD1: 125 amperes (UL/CSA or IEC)
- PD2: 225 amperes (UL/CSA)
- PD3: 400, 600 (UL/CSA) or 630 (IEC/CCC) amperes

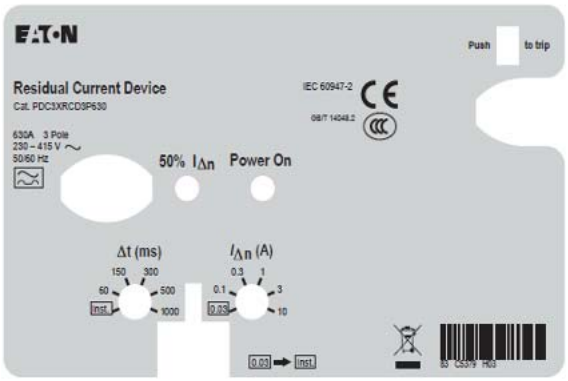
The module is completely self contained, including a current sensor, relay and power supply inside the device. Current pickup settings are selectable from 0.03 to 10 amperes for all devices, except for the UL/CSA listed module, for which settings are selectable from 0.03 to 30 amperes. Time delays are also selectable from Instantaneous to 1.0 second for pickup settings of 0.10 amperes and above. The current pickup setting of 0.03 amperes defaults to an Instantaneous time setting regardless of the time dial's position. Two alarm contacts are included with each device, which can be wired externally for remote indication. Both of these are also indicated by an LED on the front of the device:

- 50% pre-trip: alarms when the earth leakage current reaches 50% of the set pickup setting value
- 100% after trip: alarms when the breaker reaches the set pickup setting value and the breaker trips.

UL/CSA—Rated PD3 Frame Ground Fault Module Faceplate



IEC/CCC—Rated PD3 Frame Residual Current Device Faceplate



Product Selection

2

PD1-Frame

PD1-Frame Ground Fault Modules, UL/CSA-Rated (Bottom Mounted, 120–480 Vac, 50/60 Hz) ①

Ampere Rating	Number of Poles	Catalog Number
125	3	**ELEBN3125G**
	4	**ELEBN4125G**

PD1-Frame Earth Leakage Modules, IEC-Rated (Bottom Mounted, 230–415 Vac, 50/60 Hz) ①

Ampere Rating	Number of Poles	Catalog Number
125	**3**	**ELEBE3125G**
	4	**ELEBE4125G**

PD2-Frame

PD2-Frame Ground Fault Modules, UL/CSA-Rated (Bottom Mounted, 120–480 Vac, 50/60 Hz) ②

Ampere Rating	Number of Poles	Catalog Number
225	3	**PDG2XRCD3P225**
	4	**PDG2XRCD4P225**

PD3-Frame

PD3-Frame Ground Fault Modules, UL/CSA-Rated (Bottom Mounted, 120–480 Vac, 50/60 Hz)

Ampere Rating	Number of Poles	Catalog Number
400	3	**PDG3XRCD3P400**
	4	**PDG3XRCD4P400**
600	3	**PDG3XRCD3P600**
	4	**PDG3XRCD4P600**

PD3-Frame Earth Leakage Modules, IEC-Rated (Bottom Mounted, 230–415 Vac, 50/60 Hz)

Ampere Rating	Number of Poles	Catalog Number
630	**3**	**PDE3XRCD3P630**
	4	**PDE3XRCD4P630**

PD3-Frame Earth Leakage Modules, IEC/CCC-Rated (Bottom Mounted, 230–415 Vac, 50/60 Hz)

Ampere Rating	Number of Poles	Catalog Number
630	**3**	**PDC3XRCD3P630**
	4	**PDC3XRCD4P630**

Notes

① Shunt trip and undervoltage release cannot be used in a PD1 breaker connected to an earth leakage module.

② Includes shunt trip to reset breaker

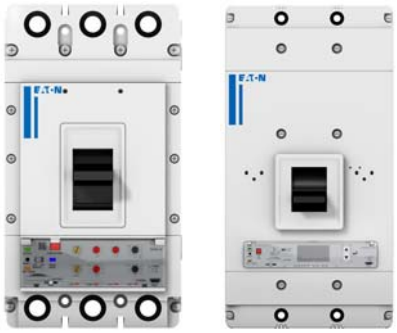
Dimensions and Weights

Approximate Dimensions in Inches (mm)

Assembled Breaker and Earth Leakage Module

Frame	Height	Width	Depth
Three-Pole			
PD1	10.25 (260.3)	3.00 (76.2)	2.98 (75.8)
PD2	9.75 (247.65)	2.80 (71.1)	3.50 (88.9)
PD3	15.35 (389.89)	5.50 (138.9)	4.30 (109.1)
Four-Pole			
PD1	10.25 (260.3)	4.00 (101.6)	2.98 (75.8)
PD2	9.75 (247.65)	5.50 (139.5)	3.50 (88.9)
PD3	15.35 (389.89)	7.2 (182.9)	4.30 (109.1)

Power Defense Molded Case Circuit Breakers



Contents

High Instantaneous Power Defense Circuit Breakers for Selective Coordination

High Instantaneous Power Defense Frame 3 (H250–H400)

Product Description

Eaton's Power Defense Frame 3 molded case circuit breakers are available with ***standard*** and ***high instantaneous*** constructions for the nominal amperages of 250–400. The high instantaneous construction offers a wider range of instantaneous adjustability and can be adjusted up to 7200 A for higher current levels of selective coordination.

Standards and Certifications

- UL
- CSA
- IEC (CE)
- CB (CCC)

Product Selection

PXR Electronic Trip Unit

Power Defense Frame 3 molded case circuit breakers from 250 A to 400 A can be configured with high instantaneous construction with all PXR electronic trip unit options. To configure, use H as the 7th digit in the 14-digit complete catalog number. For additional selection details and product information, ***refer to the Power Defense Frame 3 section within this catalog***.

Thermal-Magnetic Trip Unit

Power Defense Frame 3 ***high-magnetic*** molded case circuit breakers from 250 A to 400 A can be configured by purchasing 600 A frame and high-magnetic (250 A–400 A) trip unit separately. For a complete list of available thermal-magnetic trip unit options, ***see the selection tables to the right***.

Product Selection 600 A Frame

600 A Frame Only Catalog Number

Three-Pole	Four-Pole
PDG33F0600FNNN	PDG34F0600FNNN
PDG33G0600FNNN	PDG34G0600FNNN
PDG33K0600FNNN	PDG34K0600FNNN
PDG33M0600FNNN	PDG34M0600FNNN
PDG33N0600FNNN	PDG34N0600FNNN
PDG33P0600FNNN	PDG34P0600FNNN

Product Selection High-Magnetic TMTU

High-Magnetic Trip Unit Catalog Number

Three-Pole	Four-Pole ①
PDG3XTFA3H250	PDG3XTFA4H250
PDG3XTFA3H300	PDG3XTFA4H300
PDG3XTFA3H350	PDG3XTFA4H350
PDG3XTFA3H400	PDG3XTFA4H400

Product Selection High-Magnetic Electronic TU

High-Magnetic Trip Unit Catalog Number ②

Three-Pole	Four-Pole
PDG3XPXRH250###	PDG3XPXRH250###
PDG3XPXRH300###	PDG3XPXRH300###
PDG3XPXRH350###	PDG3XPXRH350###
PDG3XPXRH400###	PDG3XPXRH400###

Notes

① For four-pole trip units, neutral protection is specified using the 9th digit of the catalog number. Available options: 0 = 0%, 4 = 100%, 6 = 60% (example: PDG3XTFAH20 = 0% protected neutral)

② The last three digits of the catalog number specify the trip unit type, protection and features. See **PXR Trip Unit Options table on V4-T2-48** for reference.

Instantaneous Settings PXR Electronic Trip Unit

	H250	H400
Minimum	2x (I_n)	2x (I_n)
Maximum	28x (I_n)	18x (I_n)
Instantaneous override—7200 A		

Magnetic Adjustments Thermal-Magnetic Trip Unit

	H250–H400
Minimum	5x (I_r)
Maximum	28x (I_r)
Magnetic threshold—6000 A	

High Instantaneous Power Defense Frame 5 (400 A)

Product Description

Eaton's Power Defense Frame 5 molded case circuit breakers with high-instantaneous withstand are specifically designed for critical operations and selective coordination requirements. The high-instantaneous withstand **PDJ5** frame is available at 400 A and includes Eaton's state-of-the art PXR electronic trip unit. This design enables the breaker to withstand up to 90 times rated current before opening under short-circuit conditions.

Application Description

The PDJ5 circuit breaker incorporates a higher level of instantaneous pickup, thus allowing for higher current levels of selective coordination. Standard molded case circuit breakers typically are furnished with a magnetic pickup or electronic instantaneous adjustment set at ten times (10x) maximum the continuous trip rating. For details on ratings and adjustment capability of the PDJ5 circuit breakers, please consult the ratings table at the end of this catalog section. These higher levels of electronic instantaneous values in turn allow the system designer to obtain selective coordination at fault current levels up to these higher ratings. Greater values of selective coordination are available based on manufacturer tested combinations using the PDJ5 as line-side breaker and standard breakers as load-side devices. Refer to IA01200002E to determine the maximum fault levels that selective coordination achieves.

When the line-side and load-side molded case circuit breaker trip ratings are chosen to coordinate in the overload range, they also can be selectively coordinated in the fault range up to the values listed in the table at the end of this section or IA01200002E. For overcurrents protected by circuit breakers on the load-side of the PDJ5, only the effected load-side circuit breaker will open, while the line-side circuit breaker remains closed, thus providing continuity of power to the other critical loads supplied by the PDJ5 circuit breakers.

Innovative Technology and Reliable Performance

The PDJ5 is based on the Power Defense Frame 5 circuit breaker and shares the same footprint and accessories. Complete with PXR electronic trip unit technology, the PDJ5 circuit breaker can be configured with PXR 25 trip units with standard LSI functionality or ALSI to include Eaton's Arcflash Reduction Maintenance System.

Standards and Certifications

- UL 489
- CSA, C22.2 No. 5-02

Product Selection

PDJ5 Molded Case Circuit Breakers
Available Catalog Numbers—400 A Rating

PXR 25 ETU
PDJ53MH400P2DN
PDJ53MH400P2DN
PDJ53MH400P2WN
PDJ53MH400P2YN
PDJ53MH400P4DN
PDJ53MH400P4MN
PDJ53MH400P4WN
PDJ53MH400P4YN

Power Xpert Release Trip Unit Options—PDJ5 (Digits 11–13)

Protection Type				Available Configured Options			
PXR	**ETU**	**LSI**	**LSI with Arcflash Reduction Maintenance System**	**Relays Modbus**	**Relays Modbus ZSI**	**Relays Modbus CAM**	**Relays Modbus ZSI CAM**
PXR 25	P	2	4	M	W	D	Y

PDJ5 PXR 25 Protection Settings

Frame			400 A		
Setting	**Pickup (I_r)**	**Time at 6x (I_r)**	**Short Delay Pickup (I_{sd})**	**Short Delay Time (t_{sd})**	**Instantaneous Pickup**
Minimum	150 A	0.5 s	1.5x (I_r)	0.050 s	2x (I_n)
Maximum	400 A	14.0 s	8.0x (I_r)	0.500 s	36x (I_n) ①
Step	10 A	0.10 s	0.10	0.01 s	0.10
Additional Setting			OFF		

Short-Circuit Current Ratings (kA rms) AC 50–60 Hz

Description	PDJ5
Maximum rated current (amperes)	400 A
UL/CSA	
240 V	100
480 V	65
600 V	35

Note

① 36x (I_n) = Instantaneous Override value of 14,400 A.

Power Defense Direct Current Circuit Breakers

Contents

Power Defense Direct Current Circuit Breakers

Product Description

Direct current (DC) systems and applications are becoming commonplace as alternative energy sources have expanded and the number of DC devices and data centers using DC power has swelled. Eaton offers molded case circuit breakers to meet circuit protection and switching requirements for a host of different DC end-user requirements.

Application Description

Applications include UPS battery supply circuits, solar systems and electric vehicle charging, as well as commercial and industrial distribution.

Features and Benefits

Current ratings are available from 25 to 3000 A, with a full scale of voltage up to 600 Vdc and interrupting ratings to address needs ranging from standard to the highest performance. Optional internal accessories provide remote tripping and indication of breaker status.

All DC breakers use the same internal and external accessories as their corresponding, standard Power Defense equivalents. The standard Power Defense molded case circuit breakers carry a maximum 250 Vdc ratings for ungrounded systems. Refer to the following page for interrupting ratings.

Standards and Certifications

The DC breaker family is both CSA and UL 489 listed. Eaton breakers may be applied in both ungrounded and select grounded applications, with poles connected in series to operate at the maximum voltages shown on **Page V4-T2-12** through **V4-T2-20**. To use DC circuit breakers on 600 V (500 V for Power Defense frame 1) grounded systems, three poles in series must be connected on the ungrounded leg.

2

Catalog Number / Product Selection

- Frame size 1 covers a range of 25 A through 100 A, three-pole only option
- Frame size 2 covers a range of 15 A through 150 A for single-pole options and 15 A through 225 A for two- and three-pole options
- Frame size 3 covers a range of 100 A through 600 A, three-pole only option
- Frame size 4 covers a range of 300 A through 800 A, three-pole only option
- Frame size 6 covers a range of 1600 A through 3000 A, three-pole only option

Interrupting Ratings (Single- and Two-Pole)

Catalog Designator UL	F kA rms	K kA rms	M kA rms
125 Vdc ①	10	35	42
250 Vdc ②	35	42	50

Interrupting Ratings (Three-Pole)

Catalog Designator UL	F kA rms	K kA rms	M kA rms
125 Vdc	10	35	42/50 ③
250 Vdc	35	42	50
600 Vdc PD1 at 500 Vdc	35	50	65

Molded Case Circuit Breakers (Three-Pole) with Thermal-Magnetic Trip Units—Frame Size 1 (25–100 A)

PD K 1 3 M 0100 TFF J

Product Series
PD = Power Defense

Certifications/ Standards
K = UL/CSA DC rated

Frame Size
1 = 1

Pole Options
3 = 3-pole

Interrupting Ratings
F = 10 kA at 125 Vdc
K = 35 kA at 125 Vdc
M = 42 kA at 125 Vdc

F = 35 kA at 250 Vdc
K = 42 kA at 250 Vdc
M = 50 kA at 250 Vdc

F = 35 kA at 500 Vdc
K = 50 kA at 500 Vdc
M = 65 kA at 500 Vdc

Continuous Current Ratings
0025 = 25 A
0030 = 30 A
0035 = 35 A
0040 = 40 A
0045 = 45 A
0050 = 50 A
0060 = 60 A
0070 = 70 A
0080 = 80 A
0090 = 90 A
0100 = 100 A

Trip Unit Type Options
TFF = Fixed thermal/ fixed magnetic

Standard Terminal Options
N = No terminals
J = Line and load terminals

Molded Case Circuit Breakers (Single-, Two- and Three-Pole) with Thermal-Magnetic Trip Units—Frame Size 2 (15–225 A)

PD K 2 3 M 0225 TFF J

Product Series
PD = Power Defense

Certifications/Standards
K = UL/CSA DC rated

Frame Size
2 = 2

Pole Options
1 = 1-pole
2 = 2-pole
3 = 3-pole

Interrupting Ratings
F = 10 kA at 125 Vdc
K = 35 kA at 125 Vdc
M = 42 kA at 125 Vdc

F = 35 kA at 250 Vdc
K = 42 kA at 250 Vdc
M = 50 kA at 250 Vdc

F = 35 kA at 600 Vdc
K = 50 kA at 600 Vdc
M = 65 kA at 600 Vdc

Continuous Current Ratings
0015 = 15 A
0020 = 20 A
0025 = 25 A
0030 = 30 A
0035 = 35 A
0040 = 40 A
0045 = 45 A
0050 = 50 A
0060 = 60 A
0070 = 70 A
0080 = 80 A
0090 = 90 A
0100 = 100 A
0125 = 125 A
0150 = 150 A ④
0175 = 175 A
0200 = 200 A
0225 = 225 A

Trip Unit Type Options
TFF = Fixed thermal/ fixed magnetic

Standard Terminal Options
N = No terminals
J = Line and load terminals

Notes

① Single-pole option is rated at 125 Vdc only.
② Two-pole option is rated at 125 Vdc and 250 Vdc.
③ First value for frames 1, 2, 3, 4. Second value for frame 6.
④ Single-pole option has a maximum current rating of 150 A.

Molded Case Circuit Breakers (Three-Pole) with Thermal-Magnetic Trip Units—Frame Size 3 (100–600 A)

PD K 3 3 M 0600 TFA J

Product Series	Certifications/ Standards	Frame Size	Pole Options	Interrupting Ratings	Continuous Current Ratings	Trip Unit Type Options	Standard Terminal Options
PD = Power Defense	**K** = UL/CSA DC rated	**3** = 3	**3** = 3-pole	**F** = 10 kA at 125 Vdc **K** = 35 kA at 125 Vdc **M** = 42 kA at 125 Vdc **F** = 35 kA at 250 Vdc **K** = 42 kA at 250 Vdc **M** = 50 kA at 250 Vdc **F** = 35 kA at 600 Vdc **K** = 50 kA at 600 Vdc **M** = 65 kA at 600 Vdc	**0100** = 100 A **0125** = 125 A **0150** = 150 A **0175** = 175 A **0200** = 200 A **0225** = 225 A **0250** = 250 A **H250** = 250 A ① **0300** = 300 A **H300** = 300 A ① **0350** = 350 A **H350** = 350 A ① **0400** = 400 A **H400** = 400 A ① **0500** = 500 A **0600** = 600 A	**TFA** = Fixed thermal/ adjustable magnetic **LFA** = Low amperage/ adjustable magnetic ②	**N** = No terminals **J** = Line and load terminals

Frame 3 PDK DC Frame Only

PD K 3 3 M 0600 FNN N

Product Series	Certifications/ Standards	Frame Size	Pole Options	Interrupting Ratings	Continuous Current Ratings	Trip Unit Type Options	Standard Terminal Options
PD = Power Defense	**K** = UL/CSA DC rated	**3** = 3	**3** = 3-pole	**F** = 10 kA at 125 Vdc **K** = 35 kA at 125 Vdc **M** = 42 kA at 125 Vdc **F** = 35 kA at 250 Vdc **K** = 42 kA at 250 Vdc **M** = 50 kA at 250 Vdc **F** = 35 kA at 600 Vdc **K** = 50 kA at 600 Vdc **M** = 65 kA at 600 Vdc	**0600** = 600 A	**FNN** = Frame only	**N** = No terminals

Frame 3 LFA Low Magnetic DC Trip Unit

PD K 3 X LFA 0600

Product Series	Certifications/ Standards	Frame Size	Accessory	Trip Unit Type Options	Continuous Current Ratings
PD = Power Defense	**K** = UL/CSA DC rated	**3** = 3	**X** = Accessory	**LFA** = Low amperage/ adjustable magnetic	**0600** = 600 A

Notes

① High override (600 A frame). When ordering frame only, select interrupting rating digit and select highest nominal current (400 or 600 A). Frame only option does not come with terminals, ex., PDK33F0400FNN.

② Only available in the high override (600 A frame).

2

Molded Case Circuit Breakers (Three-Pole) with Thermal-Magnetic Trip Unit—Frame Size 4 (300–800 A)

PD K 4 3 M 0800 TFA J

Product Series
PD = Power Defense

Certifications/ Standards
K = UL/CSA DC rated

Frame Size
4 = 4

Pole Options
3 = 3-pole

Interrupting Ratings
F = 10 kA at 125 Vdc
K = 35 kA at 125 Vdc
M = 42 kA at 125 Vdc

F = 35 kA at 250 Vdc
K = 42 kA at 250 Vdc
M = 50 kA at 250 Vdc

F = 35 kA at 600 Vdc
K = 50 kA at 600 Vdc
M = 65 kA at 600 Vdc

Continuous Current Ratings
0300 = 300 A
0350 = 350 A
0400 = 400 A
0450 = 450 A
0500 = 500 A
0600 = 600 A
0700 = 700 A
0800 = 800 A

Trip Unit Type Options
TFA = Fixed thermal/ adjustable magnetic

Standard Terminal Options
N = No terminals
J = Line and load terminals

Molded Case Circuit Breakers (Three-Pole) with Thermal-Magnetic Trip Unit—Frame Size 6 (1600–3000 A)

PD K 6 3 M 3000 TFN N

Product Series
PD = Power Defense

Certifications/ Standards
K = UL/CSA DC rated

Frame Size
6 = 6

Pole Options
3 = 3-pole

Interrupting Ratings
F = 10 kA at 125 Vdc
K = 35 kA at 125 Vdc
M = 42 kA at 125 Vdc

F = 35 kA at 250 Vdc
K = 42 kA at 250 Vdc
M = 50 kA at 250 Vdc

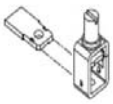
F = 35 kA at 600 Vdc
K = 50 kA at 600 Vdc
M = 65 kA at 600 Vdc

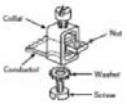
Continuous Current Ratings
1600 = 1600 A
2000 = 2000 A
2500 = 2500 A
3000 = 3000 A

Trip Unit Type Options
TFN = Fixed magnetic

Standard Terminal Options
N = No terminals (imperial tapped conductors)
M = No terminals (metric tapped conductors)

Terminal Types


PDG1X3T125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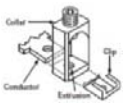

PDG2X3TA225


PDG3X3TA300
PDG2X3TA350


PDG3X3TA400


PDG3X3TA400H


PDG3X3TA630


PDG4X3TA700


PDG4X3TA800

Note: Pictures are for reference only.

Terminals

Frame Size	Maximum Breaker Amperes	Terminal Body Type	Wire Type	Wire Class	Number of Conductors per Phase	AWG Range per Conductor	Metric (mm^2) Range per Conductor	Catalog Number	Included Accessories	Standard on Amperes
1	125	Steel	Cu/Al	B, C	1	14–3/0	2.08–85	**PDG1X3T125**		15–125
2	100	Steel	Cu/Al	B, C	1	14–1/0	2.08–53.5	**PDG2X3T100** ①		15–100
	225	Aluminum	Cu/Al	B, C	1	4–4/0	21.2–107	**PDG2X3TA225** ①		110–225
3	300	Aluminum	Cu/Al	B, C	1	3–350	26.7–177	**PDG3X3TA300**		100–225
	350	Aluminum	Cu/Al	B, C	1	250–500	127–253	**PDG3X3TA350**		250–350
	400	Aluminum	Cu/Al	B, C	2	3/0–250	85–127	**PDG3X3TA400**	Terminal shield	400
	400	Aluminum	Cu/Al	B, C	1	3–5200	26.7–253	**PDG3X3TA400H**		H250–H400
	630	Aluminum	Cu/Al	B, C	2	2–500	33.6–253	**PDG3X3TA630**	Terminal shield	450–600
4	700	Aluminum	Cu/Al	B, C	2	1–500	42.4–253	**PDG4X3TA700**		300–700
	800	Aluminum	Cu/Al	B, C	3	3/0–400	85–203	**PDG4X3TA800**		800

Note

① Catalog numbers shown are for a single side of a three-pole breaker. For single- and two-pole options, replace the X3 with X1 or X2, respectively. Example: PDG2X3T100 becomes PDG2X2T100 for two-pole.

Accessories

All DC breakers use the same internal and external accessories as their corresponding, standard Power Defense equivalents.

- Frame 1: Refer to **Pages V4-T2-26** through **V4-T2-28**
- Frame 2: Refer to **Pages V4-T2-35** through **V4-T2-41**
- Frame 3: Refer to **Pages V4-T2-51** through **V4-T2-56**
- Frame 4: Refer to **Pages V4-T2-63** through **V4-T2-69**
- Frame 6: Refer to **Pages V4-T2-84** through **V4-T2-86**

Power Defense Mechanical Current-Limiting Circuit Breaker Module

Contents

Power Defense Mechanical Current-Limiting Circuit Breaker Module

Product Overview

Power demand continues to grow in new and existing facilities. To meet increased demand, larger utility supplies, spot networks and large facility transformers are installed. The increased capacity of the electrical source results in increased fault currents in excess of 100 kA short-circuit protection. Eaton manufactures non-fused current-limiting modules with interrupting capacities up to 200 kA at 600 Vac or 70 kA at 690 Vac. Unlike fused current limiters with a one-time use, a current-limiting module provides an automatic reset of the module after a short-circuit event. Resetting the molded case circuit breaker is the only action required to restore critical power to the system; there is no time wasted with sourcing the correct replacement fuses or module to bring the system back online.

Product Description

The current-limiting breaker modules use a unique contact design to enhance the system protection, similar to that of the circuit breaker. When high short-circuit current is flowing through the contacts of these modules, the design results in very high interrupting capacities and improved current-limiting characteristics.

Application Description

High-performance breakers are most commonly applied when very high fault levels are available and with applications where the current-limiting capability is used upstream of the final load to limit current. Typical loads include lighting, power distribution and motor control applications.

Features and Benefits

Superior system protection:

- **Auto reset** improves system uptime and eliminates the need for finding replacement parts
- **No fuses** to replace, reducing the overall cost of ownership and the waste created by fuses
- **Overloads**, by using inverse time current tripping characteristics of the molded case circuit breaker
- **Low-level short circuits**, by using instantaneous and/or short time delay tripping characteristics of the molded case circuit breaker
- **High-level short circuits**, by using ultra-high-speed, blow-apart contacts of the current-limiting module in series with the circuit breaker contacts
- **Let-through currents**, by improved opening speed of the contacts, the resultant rapid rise of arc voltage introduces impedance into the system

Standards and Certifications

- UL 489
- CSA C22.2

Catalog Number / Product Selection

Interrupting Ratings (Three-Pole)

Type	Product	Amperes	480 Vac (UL)	600 Vac (UL)	415 Vac (IEC)		690 Vac (IEC)	
					I_{CU}	I_{CS}	I_{CU}	I_{CS}
PDG13(P) thermal-magnetic	Breaker only	15–125	100	35 ①	100	100	-	-
	With limiter	15–100	150	100 ①	150	150	-	-
PDG23(P) thermal-magnetic	Breaker only	15–225	100	35	100	70	10	5
	With limiter	40–200	200	200	—	—	—	—
PDG23(P) PXR electronic	Breaker only	15–225	100	35	100	70	10	5
	With limiter	—	—	—	—	—	—	—

Current-Limiting Module

PD G 2 X CL 035 K

Product Series
PD = Power Defense

Certifications/ Standards
G = UL/CSA

Frame Size
2 = 2

Accessory Designation
X = Accessory

Accessory Type
CL = Current limiter

Maximum Amperage
035 = 15–35 A
200 = 40–200 A

Standard Terminal Options
K = Line only terminals
L = Load only terminals

Terminals

Terminal Body Type	Wire Type	Wire Class	Number of Conductors per Phase	AWG/kcmil Range per Conductor	Metric (mm^2) Range per Conductor	Three-Pole Catalog Number	Digit 12 Designation	
							Line Only	Load Only
Aluminum	Cu/Al	B, C	1	#8–350	10–185	TA250FJ	K	L

Dimensions and Weights

Approximate dimensions in inches (mm)

Height	Width	Depth	Weight in lb (kg)
6.06 (153)	4.13 (104.9)	3.39 (86.1)	8.50 (3.86)

Note

① 600Y/347 V

Type ELC Current Limiter Attachment

Contents

Power Defense Current-Limiting Circuit Breaker—Fused Current-Limiting Module

Type ELC Current Limiter Attachment

Product Overview

Eaton's type ELC current limiter attachment for the PDG2 motor circuit protector (MCP) is designed to provide increased interrupting capacity. The combination may be used for the application up to 200 kA symmetrical at 600 Vac, making the MCP suitable for use in network distribution systems or other applications where unusually high fault currents are available. The current limiter connects to the load end of the MCP and is provided with terminals suitable for copper or aluminum conductors (see table at the right).

Product Description

ELC type current limiters are coordinated with the MCP so that normal fault currents are interrupted automatically by the MCP without any damage to the limiter. Only the rare high fault is opened by the current limiter attachment. Faults that are interrupted by the current limiter also magnetically trip the MCP, opening all three poles, preventing single-phase operation.

Each of the three poles of the ELC current limiter are equipped with an indicator that extends when a fault is interrupted by the current limiter attachment.

Product Selection

Type ELC Current Limiter Attachment

ELC Current Limiter Attachment

MCP Rating (Amperes)	Catalog Number
3	**ELC3003R**
7	**ELC3007R**
15	**ELC3015R**
30	**ELC3030R**
50	**ELC3050R**
100	**ELC3100R**
150	**ELC3150R**

Technical Data and Specifications

Type ELC Current Limiter Terminal Wire Sizes ①

Type ELC Current Limiter Maximum Amperes	Wire Range AWG	Metric (mm^2)
Standard Aluminum Terminals		
50	14–2	2.5–35
100	1–4/0	50–95
150	1–4/0	50–95
Non-Standard Terminals (Steel)		
50	14–2 ②	2.5–35
100	—	—
150	—	—

Notes

① Terminal wire connectors are UL listed for standard stranded wire sizes as defined in UL 486A or UL 486B.

② Optional on special order for copper cable only.

All HMCP 800 A and 1200 A come without terminals. For terminals, see **Page V4-T2-337.**

Type LFD Current Limiter Attachment

Product Overview

The LFD current limiter is an accessory that bolts to the load end of a Power Defense Frame 2 thermal-magnetic or PXR electronic circuit breaker, providing 200 kA interrupting capacity at up to 600 Vac. LFD current limiters for thermal-magnetic circuit breakers are UL listed under File E47239.

Standards and Certifications

- UL 489
- CSA C22.2

Product Selection

Type LFD Current Limiter

Type LFD Current Limiter

Circuit Breaker Rating Amperes	Catalog Number
15–70	**LFD3070R**
80–160	**LFD3150R**

Terminals, Lugs, Connectors and Enclosures

Contents

Terminals, Lugs, Connectors and Enclosures

Product Description

Standard Terminals

Eaton's Power Defense molded case circuit breakers (MCCB) can be configured with line and load terminals factory installed or shipped separately for field installation. Each terminal provides wire connecting capabilities for specific ranges of continuous current ratings and wire types. Wire connecting terminals are typically secured to the breaker using slotted or hex head screws and use various hardware types for securing connection to the wire.
For proper terminal-breaker or terminal-wire torque requirements, please consult the detailed selection tables in this catalog or the specific markings on the terminal.

Application Description

Terminal Ratings

Cu/Al, Cu, or Al

Each terminal is marked with information specific to the wire material type that it is rated for use with. In most electrical applications, the conductor material is comprised of copper or aluminum busbar or stranded wire. Each is considered effective material for conducting electricity a nd both have different advantages. Copper has higher conductivity as well as superior tensile strength, which is considered an advantage in the event of a high current fault. Aluminum is a lighter material with greater pliability and is also generally more cost-effective. Each terminal is labeled to indicate which material it is rated for use with as outlined on **Page V4-T2-121**.

Terminal Ratings

75 °C vs. 90 °C Terminal Rating

Terminals are marked to indicate the maximum wire temperature rating that is approved for use. In relation to molded case circuit breaker application, the temperature rating is typically 90 °C or 75 °C. Although the terminal is marked with applicable wire temperature rating, it is important to note UL 489, the standard to which MCCBs adhere, only recognizes 60 °C and 75 °C wire for testing purposes and rated use. If 90 °C wire is used to connect to an MCCB, the wire must be applied at its 75 °C rated ampacity.

As an example, 90 °C wire is often required for use in 100% continuous current rated MCCB applications. When this is the case, the 90 °C wire must be applied at its 75 °C rated ampacity, which often results in the wire being selected one size larger than typical. An example of the terminal markings and corresponding designations is on **Page V4-T2-121**.

Standards and Certifications

All terminals comply with UL Standards 486A and 486B and CSA Standard C22.2 No. 65M.

Terminal Marking Example ①

Legend

AL	— Aluminum conductors
CU	— Copper conductors
9	— 90 °C wire
7	— 75 °C wire

Example: AL9CU—Rated for use with aluminum and copper and is 90 °C rated.

Note

① If the terminal is not marked to indicate maximum wire temperature rating, it should be assumed that 75 °C is the maximum wire rating.

Cable Sizing/Selection

When sizing and selecting cable for use with a molded case circuit breaker, the temperature rating of both the breaker terminals and the electrical equipment connectors must be considered to ensure proper size and insulation rating can be chosen. The equipment labeling or installation guidelines must be reviewed to determine the proper cable size and insulation required, regardless of the ratings listed on the terminal. For general selection guidelines, NEC Article 310 (NEC 2017) outlines the use of "Conductors for General Wiring" and can be a resource for determining appropriate cable size based on the temperature rating, wire type and amperage requirement.

Special Application Terminals

Multi-Wire Terminals

The use of load-side multi-wire terminals provides an alternative to power distribution blocks by distributing the electrical load directly from the circuit breaker to multiple downstream devices. These terminals can be installed in the field or specified for factory installation. Kits typically include terminal shields, mounting hardware, insulators and tin-plated connectors. Multi-wire terminals connect directly to the circuit breaker and eliminate the need for additional short-circuit combination ratings, as required by separate power distribution blocks. Direct connection to the breaker also saves space in the panel and eliminates wiring. Multi-wire terminals are UL listed for use on the load side of the circuit breaker.

StrandAble Terminals

StrandAble *Standard*

Standard molded case circuit breaker terminals are listed for Class B and C rigid wire by default in accordance with UL 489 & 486 standards. Eaton's StrandAble terminals allow for direct connection to the circuit breaker with nearly any class of rigid or fine strand wire. This eliminates the need for any additional fittings and ensures UL compliance with all components connected to the breaker. Rated for use with the eight most common wire classes, StrandAble terminals offer a breaker integrated solution that can eliminate time and save cost in an electrical assembly.

Rear Fed Terminals

Rear fed terminals allow the ability to connect cable from the back of the breaker instead of the top or bottom. This allows for easier connection when the breaker is more accessible from the back. A kit of three terminals typically includes terminal shields or interphase barriers.

End Cap/Screw Terminal Kits

An end cap kit slides onto the line or load side of the circuit breaker and acts as a threaded adapter for the conductor to accept a ring terminal (compression lug) or other bolt-on connector. The kit is designed to meet any requirements for clearance and is capped to provide finger protection once installed. Each kit includes a threaded base and the required hardware for securing the connector.

Note: As standard, Power Defense frame sizes 4, 5 and 6 include imperial threaded conductors (optional metric threading). No additional components are required to connect a compression lug or other bolted connection to these frames.

Control Wire Terminals

Control wire terminals and control wire kits are offered to provide means to tap off control power from the circuit breaker using the male end of a quick disconnect. Varying for each frame size, the tabs can be ordered separately for field installation or factory installed onto the terminal.

Catalog Numbering System Overview

Breakers

Power Defense breakers are configured using a 20-digit catalog number that can be divided into two sections:

- Base breaker catalog number = digits 1–14
- Factory modifications = digits 15–20

Product may be ordered using the base breaker catalog number (14 digits) only. However, if factory modifications are required, including installation of accessories, the full breaker catalog number plus factory modifications (20 digits) for a configured breaker must be used.

Note that most of the accessories and terminals for Power Defense molded case circuit breakers are field installable.

When field installing accessories, the best practice to follow is to order a base breaker with the 14-digit catalog number and order the accessories or special terminals separate for field installation.

Base Breaker Catalog Number (14 digits with standard terminal configuration)

The catalog number has fixed positions for each breaker characteristic. The fixed format allows a customer to determine the performance characteristics of the product by parsing the catalog number. The format of the Power Defense breaker catalog number is as follows:

Catalog Number	PD	G	3	3	F	0400	TFA	J
Digits	**(1, 2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7–10)**	**(11–13)**	**(14)**
Meaning	Power Defense	Certifications and Standards	Frame Size	Poles	Interrupting rating	Continuous current rating	Trip unit type	Terminals

Terminal Catalog Number (if ordered separately)

Each terminal catalog number has consistent nomenclature that can be used for deciphering specific terminal characteristic. The consistent format allows the customer to determine the applicable breaker frame, quantity included in each kit and base terminal type.

Catalog Number	PD	G	3	X	3	TA400
Digits	**(1, 2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7–end)**
Meaning	Power Defense	Certifications and Standards	Frame Size	Denotes accessory	Quantity included in kit	Base terminal (marked on each component)

Specifying Terminals on a Breaker (Digits 14 / 19–20)

The 14th digit of each base breaker catalog number indicates the terminal configuration. For breakers that require terminals on the line side only, load side only, or use the same terminals for line and load side, the 14th digit can be used to specify the terminal requirement.

For breakers that require special terminal configurations, such as different terminals on line and load side, a configured 20-digit catalog number must be utilized. When different terminals are required on each side, the Power Defense catalog number structure will maintain consistency.

In cases where a 20-digit catalog number is required, digit 14 will always be utilized to specify the line side terminal requirement. Digits 19–20 will be utilized to specify the load side configuration. This can be accomplished by using the letter "Z" in digit 19 and specifying the load terminal using digit 20.

Example: 20-Digit Catalog Number—Frames 1–4 with Different Line and Load Terminals

PD	G	2	3	F	0225	TFF	K	NN	NN	ZG
(1, 2)	(3)	(4)	(5)	(6)	(7–10)	(11–13)	(14)	(15–16)	(17–18)	(19–20)
Power Defense	Certifications and Standards	Frame Size	Poles	Interrupting rating	Continuous current rating	Trip unit type	Line side terminals	Indicating accessory	Tripping accessory	Load side terminals

The example above illustrates a Power Defense Frame 2 circuit breaker configured with different terminals on the line and load side. Digit 14 (K) indicates standard terminals, PDG2X3TA225, on the line side. Digits 19–20 (ZG) indicate special multi-wire terminals, PDG2X3TA2256W, on the load side.

Specifying Terminals on a Breaker (Frames 5 and 6)

Power Defense frames 5 and 6 are most commonly ordered without terminals installed at the factory. These frames include tapped conductors that can be specified for imperial or metric threading. This allows for increased flexibility when making field connections to the breaker conductors.

For frames 5 and 6, standard 14-digit catalog numbers will not include terminals. The 14th digit of the catalog number will indicate imperial or metric threaded conductors.

If factory-installed terminals are required for frames 5 or 6, they can be specified using a complete 20-digit catalog number. In these cases, the 14th digit will indicate the conductor threading and digits 19–20 will specify the terminal type.

Example: 20-Digit Catalog Number—Frames 5 and 6 with Factory-Installed Terminals

PD	G	5	3	M	1200	P5D	M	NN	NN	ZJ
(1, 2)	(3)	(4)	(5)	(6)	(7–10)	(11–13)	(14)	(15–16)	(17–18)	(19–20)
Power Defense	Certifications and Standards	Frame Size	Poles	Interrupting rating	Continuous current rating	Trip unit type	Threading type	Indicating accessory	Tripping accessory	Terminals

The example above illustrates a Power Defense frame 5 circuit breaker configured with factory-installed terminals. Digit 14 (M) indicates metric threaded conductors on the line and load side. Digits 19–20 (ZJ) indicate terminal, PDG5X1TA1200, installed on the line and load side.

Product Selection

Terminals—Frame Size 1 (15–125 A)

Standard Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG1X2T125 PDG1X3T125 PDG1X4T125	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	J K L/ZL
Breaker Max Amps	**125 A**	Terminal Body Type	**Steel**	Wire Torque (in-lb)	**See listed chart**
Standard Amp Range	**15–125 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**See listed chart**
# Conductors per Phase	**1**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Slotted—Imperial**
Wire Range AWG	**#14–3/0**	Wire Classes	**B, C**	Terminal Torque (in-lb)	—
Wire Range Metric (mm^2)	**2.08–85**	Included Parts	—	Terminal Hardware Type	**Slotted—Imperial**

Alternate Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG1X2TA125 PDG1X3TA125 PDG1X4TA125	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	T U V/ZL
Breaker Max Amps	**125 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**See listed chart**
Standard Amp Range	**15–125 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**See listed chart**
# Conductors per Phase	**1**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Slotted—Imperial**
Wire Range AWG	**#14–1/0**	Wire Classes	**B, C**	Terminal Torque (in-lb)	—
Wire Range Metric (mm^2)	**2.08–53.5**	Included Parts	—	Terminal Hardware Type	**Slotted—Imperial**

Multi-Wire Terminals

Catalog Number	2-pole 3-pole 4-pole	— PDG1X3TA1253W PDG1X4TA1253W	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — H/ZH
Breaker Max Amps	**125 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**70**
Standard Amp Range	**15–125 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**7.9**
# Conductors per Phase	**3**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (5/32 in) Imperial**
Wire Range AWG	**#14–2**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**35**
Wire Range Metric (mm^2)	**2.08–33.6**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (5/32 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	— PDG1X3TA1256W PDG1X4TA1256W	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — G/ZG
Breaker Max Amps	**125 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**25**
Standard Amp Range	**15–125 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**2.82**
# Conductors per Phase	**6**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (3/32 in) Imperial**
Wire Range AWG	**#14–6**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**35**
Wire Range Metric (mm^2)	**2.08–13.3**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (5/32 in) Imperial**

Terminals—Frame Size 1 (15–125 A), continued

End Cap Kit/Screw Terminals

Catalog Number	2-pole 3-pole 4-pole	— PDG1X3TS125 PDG1X4TS125	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	S D E/ZE
Breaker Max Amps	**125 A**	Terminal Body Type	—	Wire Torque (in-lb)	**34–38**
Breaker Frame	**15–125 A**	Wire Type	—	Wire Torque (Nm)	**4–4.4**
# Conductors per Phase	—	Wire Temperature Rating	—	Wire Hardware Type	—
Wire Range AWG	—	Wire Classes	—	Terminal Torque (in-lb)	**34–38**
Wire Range Metric (mm^2)	—	Included Parts	**End Cap/Hardware**	Terminal Screw Size	**Hex Cap (10/32 x 0.875)**

Control Wire Tabs

Catalog Number	GCWTK	For Use With …
Breaker Max Amps	**125 A**	PDG1X3TA125, PDG1X3T125
Breaker Frame	**15–125 A**	
Quick Connect Tab Size	**1/4-in**	
Package Qty	**12**	

Terminal Shields and Barriers

Catalog Number	2-pole 3-pole 4-pole	— PDG1XTC3P PDG1XTC4P
Breaker Max Amps	**125 A**	—
Breaker Frame	**15–125 A**	—
Included Parts	**Terminal Shield, Terminal Shield Cover, Barriers**	—

Catalog Number	PDG1XIB3P
Breaker Max Amps	**125 A**
Breaker Frame	**15–125 A**
Included Parts	**Qty 2 Barriers**

Frame Size 1 Wire Torque (if chart is referenced)

For Sizes …	Torque (in-lb)
14–10 AWG	35
8 AWG	40
6–4 AWG	45
3–1/0 AWG	50

For Sizes …	Torque (Nm)
2.5–6 mm^2	3.95 Nm
10 mm^2	4.52 Nm
16–25 mm^2	5.08 Nm
25–50 mm^2	5.65 Nm

Terminals—Frame Size 2 (15–225 A)

Standard Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG2X2T100 PDG2X3T100 PDG2X4T100	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	J K L/ZL
Breaker Max Amps		**100 A**	Terminal Body Type	**Steel**	Wire Torque (in-lb)	**See listed chart**
Standard Amp Range		**15–100 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**See listed chart**
# Conductors per Phase		**1**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Slotted—Imperial**
Wire Range AWG		**#14–1/0**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**20**
Wire Range Metric (mm^2)		**2.08–53.5**	Included Parts	—	Terminal Hardware Type	**Slotted—Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG2X2TA225 PDG2X3TA225 PDG2X4TA225	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	J K L/ZL
Breaker Max Amps		**225 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**120**
Standard Amp Range		**110–225 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**13.55**
# Conductors per Phase		**1**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Hex (3/16 in) Imperial**
Wire Range AWG		**#4–4/0**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**N/A**
Wire Range Metric (mm^2)		**21.2–107**	Included Parts	—	Terminal Hardware Type	**Clip-in Mount**

Alternate Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG2X2TA50 PDG2X3TA50 PDG2X4TA50	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	T U V/ZV
Breaker Max Amps		**50 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**See listed chart**
Amp Range		**15–50 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**See listed chart**
# Conductors per Phase		**1**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Slotted—Imperial**
Wire Range AWG		**#14–4**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**20**
Wire Range Metric (mm^2)		**2.08–21.2**	Included Parts	—	Terminal Hardware Type	**Slotted—Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG2X2TA100 PDG2X3TA100 PDG2X4TA100	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	T U V/ZV
Breaker Max Amps		**100 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**See listed chart**
Amp Range		**60–100 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**See listed chart**
# Conductors per Phase		**1**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Slotted—Imperial**
Wire Range AWG		**#14–1/0**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**20**
Wire Range Metric (mm^2)		**2.08–53.5**	Included Parts	—	Terminal Hardware Type	**Slotted—Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG2X2TA150 PDG2X3TA150 PDG2X4TA150	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	T U V/ZV
Breaker Max Amps		**150 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**120**
Amp Range		**60–150 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**13.55**
# Conductors per Phase		**1**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Hex (3/16 in) Imperial**
Wire Range AWG		**#14–4/0**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**N/A**
Wire Range Metric (mm^2)		**2.08–107**	Included Parts	—	Terminal Hardware Type	**Clip-in Mount**

Catalog Number	2-pole 3-pole 4-pole	PDG2X2TA225K PDG2X3TA225K PDG2X4TA225K	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	T U V/ZV
Breaker Max Amps		**225 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**275**
Amp Range		**60–225 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**31.07**
# Conductors per Phase		**1**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (5/16 in) Imperial**
Wire Range AWG		**#6–300 kcmil**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**100**
Wire Range Metric (mm^2)		**13.3–152**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (5/32 in) Imperial**

Terminals—Frame Size 2 (15–225 A), continued

Non-standard Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG2X2T150 PDG2X3T150 PDG2X4T150	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	W Y Z/ZZ
Breaker Max Amps	150 A	Terminal Body Type	Stainless Steel	Wire Torque (in-lb)	See listed chart
Amp Range	60–150 A	Wire Type	Cu	Wire Torque (Nm)	See listed chart
# Conductors per Phase	1	Wire Temperature Rating	75 °C	Wire Hardware Type	Slotted—Imperial
Wire Range AWG	#4–4/0	Wire Classes	B, C	Terminal Torque (in-lb)	20
Wire Range Metric (mm^2)	21.2–107	Included Parts	—	Terminal Hardware Type	Slotted—Imperial

Catalog Number	2-pole 3-pole 4-pole	PDG2X2T225 PDG2X3T225 PDG2X4T225	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	W Y Z/ZZ
Breaker Max Amps	225 A	Terminal Body Type	Copper	Wire Torque (in-lb)	120
Amp Range	60–225 A	Wire Type	Cu	Wire Torque (Nm)	13.55
# Conductors per Phase	1	Wire Temperature Rating	75 °C	Wire Hardware Type	Hex (3/16 in) Imperial
Wire Range AWG	#4–4/0	Wire Classes	B, C	Terminal Torque (in-lb)	N/A
Wire Range Metric (mm^2)	21.2–107	Included Parts	—	Terminal Hardware Type	Clip–in Mount

Multi-Wire Terminals

Catalog Number	2-pole 3-pole 4-pole	— PDG2X3TA2256W —	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — G/ZG
Breaker Max Amps	225 A	Terminal Body Type	Aluminum	Wire Torque (in-lb)	25
Amp Range	15–225 A	Wire Type	Cu/Al	Wire Torque (Nm)	2.82
# Conductors per Phase	6	Wire Temperature Rating	90 °C	Wire Hardware Type	Hex (3/32 in) Imperial
Wire Range AWG	#14–6	Wire Classes	B, C	Terminal Torque (in-lb)	35
Wire Range Metric (mm^2)	2.08–13.3	Included Parts	—	Terminal Hardware Type	Hex (5/32 in) Imperial

Catalog Number	2-pole 3-pole 4-pole	— PDG2X3TA2253W —	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — H/ZH
Breaker Max Amps	225 A	Terminal Body Type	Aluminum	Wire Torque (in-lb)	70
Amp Range	15–225 A	Wire Type	Cu/Al	Wire Torque (Nm)	7.9
# Conductors per Phase	3	Wire Temperature Rating	90 °C	Wire Hardware Type	Hex (5/32 in) Imperial
Wire Range AWG	#14–2	Wire Classes	B, C	Terminal Torque (in-lb)	35
Wire Range Metric (mm^2)	2.08–33.6	Included Parts	—	Terminal Hardware Type	Hex (5/32 in) Imperial

Rear Fed Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG2X2TA150RF PDG2X3TA150RF PDG2X4TA150RF	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — —
Breaker Max Amps	225 A	Terminal Body Type	Aluminum	Wire Torque (in-lb)	120
Amp Range	15–150 A	Wire Type	Cu/Al	Wire Torque (Nm)	13.55
# Conductors per Phase	1	Wire Temperature Rating	75 °C	Wire Hardware Type	Hex (3/16 in) Imperial
Wire Range AWG	#14–4/0	Wire Classes	B, C	Terminal Torque (in-lb)	60
Wire Range Metric (mm^2)	2.08–107	Included Parts	Terminal Shield	Terminal Hardware Type	Hex (5/32 in) Imperial

Catalog Number	2-pole 3-pole 4-pole	PDG2X2TA225RF PDG2X3TA225RF PDG2X4TA225RF	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — —
Breaker Max Amps	225 A	Terminal Body Type	Aluminum	Wire Torque (in-lb)	275
Amp Range	60–225 A	Wire Type	Cu/Al	Wire Torque (Nm)	31.07
# Conductors per Phase	1	Wire Temperature Rating	75 °C	Wire Hardware Type	Hex (3/16 in) Imperial
Wire Range AWG	#6–300 kcmil	Wire Classes	B, C	Terminal Torque (in-lb)	60
Wire Range Metric (mm^2)	13.3–152	Included Parts	Terminal Shield	Terminal Hardware Type	Hex (5/32 in) Imperial

Terminals—Frame Size 2 (15–225 A), continued

Box Terminals

Catalog Number	2-pole 3-pole 4-pole	— PDG2X3T20 —	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — —
Breaker Max Amps	**20 A**	Terminal Body Type	**Steel**	Wire Torque (in-lb)	**20**
Amp Range	**15–20 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**2.26**
# Conductors per Phase	**1**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Slotted—Imperial**
Wire Range AWG	**#14–10**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**20**
Wire Range Metric (mm^2)	**2.08–5.26**	Included Parts	—	Terminal Hardware Type	**Slotted—Imperial**

End Cap Kit/Screw Terminals

Catalog Number	2-pole 3-pole 4-pole	– PDG2X3TS225 PDG2X4TS225	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	S D E/ZE
Breaker Max Amps	**225 A**	Terminal Body Type	—	Wire Torque (in-lb)	**34–38**
Breaker Frame	**15–225 A**	Wire Type	—	Wire Torque (Nm)	**4–4.4**
# Conductors per Phase	—	Wire Temperature Rating	—	Wire Hardware Type	—
Wire Range AWG	—	Wire Classes	—	Terminal Torque (in-lb)	**34–38**
Wire Range Metric (mm^2)	—	Included Parts	**End Cap/Hardware**	—	**Hex Cap (10/32 x 0.75)**

Control Wire Tabs

Catalog Number	FCWTK	For Use With …
Breaker Max Amps	**150 A**	PDG2X3T100, PDG2X3T150
Breaker Frame	**15–150 A**	
Quick Connect Tab Size	**1/4-in**	
Package Qty	**12**	

Catalog Number	FCWTK225	For Use With …
Breaker Max Amps	**225 A**	PDG2X3T225
Breaker Frame	**175–225 A**	
Quick Connect Tab Size	**1/4-in**	
Package Qty	**12**	

Terminal Shields and Barriers

Catalog Number	2-pole 3-pole 4-pole	PDG2XTC2P PDG2XTC3P PDG2XTC4P
Breaker Max Amps	**225 A**	—
Breaker Frame	**15–225 A**	—
Included Parts	**Terminal Shield & Hardware**	—

Catalog Number	2-pole 3-pole 4-pole	PDG2XIB PDG2XIB3P PDG2XIB4P
Breaker Max Amps	**225 A**	—
Breaker Frame	**15–225 A**	—
Included Parts	**Interphase Barriers**	—

Frame Size 2 Wire Torque (if chart is referenced)

For Sizes …	Torque (in-lb)	For Sizes …	Torque (Nm)
14–10 AWG	35	2.5–6 mm^2	3.95 Nm
8 AWG	40	10 mm^2	4.52 Nm
6–4 AWG	45	16–25 mm^2	5.08 Nm
3–1/0 AWG	50	25–50 mm^2	5.65 Nm

Terminals—Frame Size 3 (45–600 A)

Standard Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA300 PDG3X3TA300 PDG3X4TA300	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	J K L/ZL
Breaker Max Amps	**300 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**275**
Breaker Frame	**400 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**31**
Standard Amp Range	**100–225 A**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (5/16 in)**
# Conductors per Phase	**1**	—	**—**	—	**—**
Wire Range AWG	**#3–350 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**6–8**
Wire Range Metric (mm^2)	**26.7–177**	Included Parts	**—**	Terminal Hardware Type	**Hex (7/32 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA350 PDG3X3TA350 PDG3X4TA350	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	J K L/ZL
Breaker Max Amps	**350 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Breaker Frame	**400 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
Standard Amp Range	**250–350 A**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (3/8 in)**
# Conductors per Phase	**1**	—	**—**	—	**—**
Wire Range AWG	**250–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**6–8**
Wire Range Metric (mm^2)	**127–253**	Included Parts	**—**	Terminal Hardware Type	**Hex (7/32 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA400 PDG3X3TA400 PDG3X4TA400	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	J K L/ZL
Breaker Max Amps	**400 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**275**
Breaker Frame	**400 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**31**
Standard Amp Range	**400 A**	—	**—**	—	**—**
# Conductors per Phase	**2**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (5/16 in)**
Wire Range AWG	**3/0–250 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**6–8**
Wire Range Metric (mm^2)	**85–127**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (7/32 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA401H PDG3X3TA401H PDG3X4TA401H	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	J K L/ZL
Breaker Max Amps	**400 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**550**
Breaker Frame	**600 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**62.14**
Standard Amp Range	**H250–H400 A**	—	**—**	—	**—**
# Conductors per Phase	**1**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (5/16 in)**
Wire Range AWG	**500–750 kcmil**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**200**
Wire Range Metric (mm^2)	**253–380**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (5/16 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA630 PDG3X3TA630 PDG3X4TA630	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	J K L/ZL
Breaker Max Amps	**600 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Breaker Frame	**600 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
Standard Amp Range	**450–600 A**	—	**—**	—	**—**
# Conductors per Phase	**2**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (5/16 in)**
Wire Range AWG	**#2–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**200**
Wire Range Metric (mm^2)	**33.6–253**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (7/32 in) Imperial**

Terminals—Frame Size 3 (45–600 A), continued

Optional Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA402 PDG3X3TA402 PDG3X4TA402	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	T U V/ZV
Breaker Max Amps	**400 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Breaker Frame	**400 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**1**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (3/8 in)**
Wire Range AWG	**500–750 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**6–8**
Wire Range Metric (mm^2)	**253–380**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (7/32 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA401 PDG3X3TA401 PDG3X4TA401	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — —
Breaker Max Amps	**400 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**(2) 275 or (1) 375**
Breaker Frame	**400 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**(2) 31.0 or (1) 42.37**
# Conductors per Phase	**2**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (5/16 in)**
Wire Range AWG	**(2) 2/0–250 kcmil; (1) 2/0–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**6–8**
Wire Range Metric (mm^2)	**(1) 67.4–127; (1) 67.4–253**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (7/32 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA400H PDG3X3TA400H PDG3X4TA400H	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	T U V/ZV
Breaker Max Amps	**400 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Breaker Frame	**600 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**1**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Hex (3/8 in)**
Wire Range AWG	**#3–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**200**
Wire Range Metric (mm^2)	**26.7–253**	Included Parts	—	Terminal Hardware Type	**Hex (5/16 in) Imperial**

Optional Copper Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG3X2T300 PDG3X3T300 PDG3X4T300	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	W Y Z/ZZ
Breaker Max Amps	**300 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**275**
Breaker Frame	**400 A**	Wire Type	**Cu**	Wire Torque (Nm)	**31**
# Conductors per Phase	**1**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Hex (5/16 in) Imperial**
Wire Range AWG	**#3–350 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**6–8**
Wire Range Metric (mm^2)	**26.7–177**	Included Parts	—	Terminal Hardware Type	**Hex (7/32 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2T350 PDG3X3T350 PDG3X4T350	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	W Y Z/ZZ
Breaker Max Amps	**350 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**375**
Breaker Frame	**400 A**	Wire Type	**Cu**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**1**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**250–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**6–8**
Wire Range Metric (mm^2)	**127–253**	Included Parts	—	Terminal Hardware Type	**Hex (7/32 in) Imperial**

Terminals—Frame Size 3 (45–600 A), continued

Optional Copper Terminals, continued

Catalog Number	2-pole 3-pole 4-pole	PDG3X2T400 PDG3X3T400 PDG3X4T400	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	W Y Z/ZZ
Breaker Max Amps	**400 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**275**
Breaker Frame	**400 A**	Wire Type	**Cu**	Wire Torque (Nm)	**31**
# Conductors per Phase	**2**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Hex (5/16 in) Imperial**
Wire Range AWG	**3/0–250 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**6–8**
Wire Range Metric (mm^2)	**85–127**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (7/32 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2T402 PDG3X3T402 PDG3X4T402	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — —
Breaker Max Amps	**400 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**550**
Breaker Frame	**400 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**62.14**
# Conductors per Phase	**1**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**Al: 500–750 kcmil Cu: 500 kcmil**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**200**
Wire Range Metric (mm^2)	**85–127**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (5/16 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2T400H PDG3X3T400H PDG3X4T400H	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — —
Breaker Max Amps	**400 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**550**
Breaker Frame	**600 A**	Wire Type	**Cu**	Wire Torque (Nm)	**62.14**
# Conductors per Phase	**1**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**#3–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**200**
Wire Range Metric (mm^2)	**26.7–253**	Included Parts	—	Terminal Hardware Type	**Hex (5/16 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2T401H PDG3X3T401H PDG3X4T401H	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	W Y Z/ZZ
Breaker Max Amps	**400 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**500**
Breaker Frame	**600 A**	Wire Type	**Cu**	Wire Torque (Nm)	**56.49**
# Conductors per Phase	**1**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Hex (5/16 in) Imperial**
Wire Range AWG	**500–750 kcmil**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**200**
Wire Range Metric (mm^2)	**253–380**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (5/16 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2T630 PDG3X3T630 PDG3X4T630	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	W Y Z/ZZ
Breaker Max Amps	**630 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**375**
Breaker Frame	**600 A**	Wire Type	**Cu**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**2**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Hex (5/16 in) Imperial**
Wire Range AWG	**#2–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**200**
Wire Range Metric (mm^2)	**33.6–253**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (5/16 in) Imperial**

Terminals—Frame Size 3 (45–600 A), continued

StrandAble Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA400SW PDG3X3TA400SW PDG3X4TA400SW	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	A B C/ZC
Breaker Max Amps	**400 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**275**
Breaker Frame	**400 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**31**
# Conductors per Phase	**2**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (5/16 in) Imperial**
Wire Range AWG	**3/0–250 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**6–8**
	3/0–4/0	Wire Classes	**D, G, H, I, K, M**	Terminal Torque (ft-lb)	**6–8**
Wire Range Metric (mm^2)	**85–127**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (7/32 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA350SW PDG3X3TA350SW PDG3X4TA350SW	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — —
Breaker Max Amps	**350 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Breaker Frame	**400 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**1**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (5/16 in) Imperial**
Wire Range AWG	**250–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**6–8**
	250–350 kcmil	Wire Classes	**D, G, H, I, K, M**	Terminal Torque (ft-lb)	**6–8**
Wire Range Metric (mm^2)	**127–253**	Included Parts	—	Terminal Hardware Type	**Hex (5/16 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA630SW PDG3X3TA630SW PDG3X4TA630SW	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	A B C/ZC
Breaker Max Amps	**630 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Breaker Frame	**600 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**2**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (5/16 in) Imperial**
Wire Range AWG	**#2–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**200**
	#2–350 kcmil	Wire Classes	**D, G, H, I, K, M**	Terminal Torque (in-lb)	**200**
Wire Range Metric (mm^2)	**127–253**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (5/16 in) Imperial**

Terminals with Control Wire

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA400CW PDG3X3TA400CW PDG3X4TA400CW	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	1 2 3/Z3
Breaker Max Amps	**400 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**275**
Breaker Frame	**400 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**31**
# Conductors per Phase	**2**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (5/16 in)**
Wire Range AWG	**3/0–250 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**6–8**
Wire Range Metric (mm^2)	**85–127**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (7/32 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA401CW PDG3X3TA401CW PDG3X4TA401CW	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	4 5 6/Z6
Breaker Max Amps	**400 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**(2) 275 or (1) 375**
Breaker Frame	**400 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**(2) 31.0 or (1) 42.37**
# Conductors per Phase	**2**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (5/16 in)**
Wire Range AWG	**(2) 2/0–250 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**6–8**
	(1) 2/0–500 kcmil	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**6–8**
Wire Range Metric (mm^2)	**(2) 67.4–127**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (7/32 in) Imperial**
	(1) 67.4–253	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (7/32 in) Imperial**

Terminals—Frame Size 3 (45–600 A), continued

Aluminum Terminals with Control Wire, continued

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA630CW PDG3X3TA630CW PDG3X4TA630CW	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	1 2 3/Z3
Breaker Max Amps	**630 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Breaker Frame	**600 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**2**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (5/16 in)**
Wire Range AWG	**#2–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**200**
Wire Range Metric (mm^2)	**33.6–253**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (5/16 in) Imperial**

Copper Terminals with Control Wire

Catalog Number	2-pole 3-pole 4-pole	PDG3X2T400CW PDG3X3T400CW PDG3X4T400CW	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	7 8 9/Z9
Breaker Max Amps	**400 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**275**
Breaker Frame	**400 A**	Wire Type	**Cu**	Wire Torque (Nm)	**31**
# Conductors per Phase	**2**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Hex (5/16 in) Imperial**
Wire Range AWG	**3/0–250 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**6–8**
Wire Range Metric (mm^2)	**85–127**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (7/32 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2T630CW PDG3X3T630CW PDG3X4T630CW	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	7 8 9/Z9
Breaker Max Amps	**630 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**375**
Breaker Frame	**600 A**	Wire Type	**Cu**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**2**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Hex (5/16 in) Imperial**
Wire Range AWG	**#2–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**200**
Wire Range Metric (mm^2)	**33.6–253**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (5/16 in) Imperial**

Multi-Wire Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA4003W PDG3X3TA4003W PDG3X4TA4003W	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — H/ZH
Breaker Max Amps	**400 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**120**
Breaker Frame	**400 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**13.55**
# Conductors per Phase	**3**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (3/16 in) Imperial**
Wire Range AWG	**#12–2/0**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**35**
Wire Range Metric (mm^2)	**3.31–67.4**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (5/32 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA4006W PDG3X3TA4006W PDG3X4TA4006W	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — G/ZG
Breaker Max Amps	**400 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**25**
Breaker Frame	**400 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**2.82**
# Conductors per Phase	**6**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (3/32 in) Imperial**
Wire Range AWG	**#14–3**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**35**
Wire Range Metric (mm^2)	**2.08–26.7**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (5/32 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA6006W PDG3X3TA6006W PDG3X4TA6006W	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — G/ZG
Breaker Max Amps	**600 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**See listed chart**
Breaker Frame	**600 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**See listed chart**
# Conductors per Phase	**6**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Slotted Imperial**
Wire Range AWG	**#14–1/0**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**200**
Wire Range Metric (mm^2)	**2.08–53.5**	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (5/16 in) Imperial**

Terminals—Frame Size 3 (45–600 A), continued

StrandAble Multi–Wire Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA6006WSW PDG3X3TA6006WSW PDG3X4TA6006WSW	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — —
Breaker Max Amps	**600 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**See listed chart**
Breaker Frame	**600 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**See listed chart**
# Conductors per Phase	**6**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Slotted Imperial**
Wire Range AWG	**#12–2/0**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**200**
	#8–1/0	Wire Classes	**D, G, H, I, K, M**	—	—
Wire Range Metric (mm^2)	—	Included Parts	**Terminal Shield**	Terminal Hardware Type	**Hex (5/16 in) Imperial**

Rear-Fed Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA400RF PDG3X3TA400RF PDG3X4TA400RF	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — —
Breaker Max Amps	**400 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Breaker Frame	**400 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.36**
# Conductors per Phase	**1**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Hex (3/8 in)**
Wire Range AWG	**250–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**6–8**
Wire Range Metric (mm^2)	**127–253**	Included Parts	**Interphase Barriers**	Terminal Hardware Type	**Hex (7/32 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA400HRF PDG3X3TA400HRF PDG3X4TA400HRF	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — —
Breaker Max Amps	**400 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Breaker Frame	**600 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.36**
# Conductors per Phase	**1**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Hex (3/8 in)**
Wire Range AWG	**#2–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**200**
Wire Range Metric (mm^2)	**33.6–253**	Included Parts	**Interphase Barriers**	Terminal Hardware Type	**Hex (5/16 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG3X2TA630RF PDG3X3TA630RF PDG3X4TA630RF	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — —
Breaker Max Amps	**600 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Breaker Frame	**600 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.36**
# Conductors per Phase	**2**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Hex (5/16 in) Imperial**
Wire Range AWG	**#2–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (in-lb)	**200**
Wire Range Metric (mm^2)	**33.6–253**	Included Parts	**Interphase Barriers**	Terminal Hardware Type	**Hex (1/2 in) Imperial**

Terminals—Frame Size 3 (45–600 A), continued

End Cap Kit/Screw Terminals

Catalog Number	2-pole 3-pole 4-pole	— PDG3X3TS400 PDG3X4TS400	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	S D E/ZE
Breaker Max Amps	**400 A**	Terminal Body Type	—	Wire Torque (in-lb)	**120–144**
Breaker Frame	**400 A**	Wire Type	—	Wire Torque (Nm)	**14–16**
# Conductors per Phase	—	Wire Temperature Rating	—	Wire Hardware Type	—
Wire Range AWG	—	Wire Classes	—	Terminal Torque (in-lb)	**120–144**
Wire Range Metric (mm^2)	—	Included Parts	**End Cap/Hardware**	Terminal Screw Size	**Hex Cap (M8–1.25 x 25)**

Catalog Number	2-pole 3-pole 4-pole	— PDG3X3TS600 PDG3X4TS600	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	S D E/ZE
Breaker Max Amps	**600 A**	Terminal Body Type	—	Wire Torque (in-lb)	**354**
Breaker Frame	**600 A**	Wire Type	—	Wire Torque (Nm)	**40**
# Conductors per Phase	—	Wire Temperature Rating	—	Wire Hardware Type	—
Wire Range AWG	—	Wire Classes	—	Terminal Torque (in-lb)	**354**
Wire Range Metric (mm^2)	—	Included Parts	**End Cap/Hardware**	Terminal Screw Size	**Hex Cap (M12 x 30)**

Control Wire Tabs

Catalog Number	KCWTK	For Use With …
Breaker Max Amps	**400 A**	PDG3X3TA300, PDG3X3T300, PDG3X3TA350, PDG3X3T350
Breaker Frame	**100–400 A**	
Quick Connect Tab Size	**1/4-in**	
Package Qty	**12**	

Terminal Shields and Barriers

Catalog Number	2-pole 3-pole 4-pole	— PDG3XTC3P PDG3XTC4P
Breaker Max Amps	**600 A**	—
Breaker Frame	**70–600 A**	—
Included Parts	**Terminal Shield & Hardware**	—

Catalog Number	2-pole 3-pole 4-pole	PDG3XIB PDG3XIB3P PDG3XIB4P
Breaker Max Amps	**600 A**	—
Breaker Frame	**70–600 A**	—
Included Parts	**Interphase Barriers**	—

Frame Size 3 Wire Torque (if chart is referenced)

For Sizes …	Torque (in-lb)
14–10	35 in-lb
8	40 in-lb
6–4	45 in-lb
2–1/0	50 in-lb

For Sizes …	Torque (Nm)
2.5–6	3.95 Nm
10	4.51 Nm
16–25	5.08 Nm
35–50	5.65 Nm

Terminals—Frame Size 4 (300–800 A)

Standard Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG4X1TA700 PDG4X3TA700 —	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	J K L/ZL
Breaker Max Amps	**700 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Standard Amp Range	**300–700 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**2**	Wire Temperature Rating	—	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**1–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**42.4–253**	Included Parts	—	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG4X1TA800 PDG4X3TA800 —	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	J K L/ZL
Breaker Max Amps	**800 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Standard Amp Range	**800 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**3**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**3/0–400 kcmil**	Wire Classes	**B,C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**85–203**	Included Parts	—	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Alternate Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG4X1TA801 PDG4X3TA801 —	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	T U V/ZV
Breaker Max Amps	**800 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**500**
Amp Range	**300–800 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**56.49**
# Conductors per Phase	**2**	Wire Temperature Rating	—	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**500–750 kcmil**	Wire Classes	**B,C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**253–380**	Included Parts	—	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Alternate Copper Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG4X1T600 PDG4X3T600 —	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	W Y Z/ZZ
Breaker Max Amps	**600 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**300**
Amp Range	**300–600 A**	Wire Type	**Cu**	Wire Torque (Nm)	**33.9**
# Conductors per Phase	**2**	Wire Temperature Rating	—	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**2/0–500 kcmil**	Wire Classes	**B,C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**67.4–238**	Included Parts	—	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG4X1T800 PDG4X3T800 —	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	W Y Z/ZZ
Breaker Max Amps	**800 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**275**
Amp Range	**700–800 A**	Wire Type	**Cu**	Wire Torque (Nm)	**31.07**
# Conductors per Phase	**3**	Wire Temperature Rating	—	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**3/0–300 kcmil**	Wire Classes	**B,C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**85–152**	Included Parts	—	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Terminals—Frame Size 4 (300–800 A), continued

StrandAble Terminals

Catalog Number	2-pole 3-pole 4-pole	— PDG4X3TA800SW —	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	A B C/ZC
Breaker Max Amps	**800 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**—**
Amp Range	**300–800 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**—**
# Conductors per Phase	**3**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (5/16 in) Imperial**
Wire Range AWG	**3/0–400 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**—**
	3/0–300 kcmil	Wire Classes	**D, G, H, I, K, M**	—	**—**
Wire Range Metric (mm^2)	**85–203**	Included Parts	**—**	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Control Wire Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG4X1TA700CW PDG4X3TA700CW —	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	1 2 3/Z3
Breaker Max Amps	**700 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Amp Range	**300–700 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**2**	Wire Temperature Rating	**—**	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**#1–500 kcmil**	Wire Classes	**B,C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**42.4–253**	Control Tab Size	**1/4-in**	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG4X1TA800CW PDG4X3TA800CW —	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	1 2 3/Z3
Breaker Max Amps	**800 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Amp Range	**300–800 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**3**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**3/0–400 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**85–203**	Control Tab Size	**1/4-in**	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Catalog Number	2-pole 3-pole 4-pole	PDG4X1TA801CW PDG4X3TA801CW —	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	4 5 6/Z6
Breaker Max Amps	**800 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**500**
Amp Range	**300–800 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**56.49**
# Conductors per Phase	**2**	Wire Temperature Rating	**—**	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**500–750 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**253–380**	Control Tab Size	**1/4-in**	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Terminals—Frame Size 4 (300–800 A), continued

Rear Fed Terminals

Catalog Number	2-pole 3-pole 4-pole	PDG4X1TA800RF PDG4X3TA800RF —	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	— — —
Breaker Max Amps	**800 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**275**
Amp Range	**300–800 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**31.07**
# Conductors per Phase	**3**	Wire Temperature Rating	—	Wire Hardware Type	**Hex (5/16 in) Imperial**
Wire Range AWG	**3/0–300 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**85–152**	Included Parts	**Interphase Barriers**	Terminal Hardware Type	**Hex (3/4 in) Imperial**

End Cap Kit/Screw Terminals

Catalog Number	2-pole 3-pole 4-pole	— PDG4X3TS800 PDG4X4TS800	Breaker Catalog Number Digit 14 Designation	Line and Load Line Only Load Only (Digit 14/19–20)	S D E/ZE
Breaker Max Amps	**800 A**	Terminal Body Type	—	Wire Torque (ft-lb)	**35**
Breaker Frame	**300–800 A**	Wire Type	—	Wire Torque (Nm)	**47.45**
# Conductors per Phase	—	Wire Temperature Rating	—	Wire Hardware Type	—
Wire Range AWG	—	Wire Classes	—	Terminal Torque (ft-lb)	**35**
Wire Range Metric (mm^2)	—	Included Parts	**End Cap/Hardware**	Terminal Screw Size	**Hex Cap (1/2–13 x 1.25 in)**

Terminals—Frame Size 5 (320–1200 A)

Terminal Options

Catalog Number	1-pole — —	PDG5X1TA700 — —	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	ZJ ZK ZL
Breaker Max Amps	**700 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Amp Range	**320–700 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**2**	Wire Temperature Rating	—	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**1–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**42.4–253**	Included Parts	—	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Catalog Number	1-pole — —	PDG5X1TA1000 — —	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	ZJ ZK ZL
Breaker Max Amps	**1000 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Amp Range	**320–1000 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**3**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**3/0–400 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**85–203**	Included Parts	—	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Catalog Number	1-pole — —	PDG5X1TA1200 — —	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	ZJ ZK ZL
Breaker Max Amps	**1200 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Amp Range	**320–1200 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**4**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**4/0–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**107–253**	Included Parts	—	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Catalog Number	1-pole — —	PDG5X1TA1201 — —	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	ZT ZU ZV
Breaker Max Amps	**1200 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**450**
Amp Range	**320–1200 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**50.84**
# Conductors per Phase	**3**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**500–750 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**107–253**	Included Parts	—	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Terminals—Frame Size 5 (320–1200 A), continued

Copper Terminal Options

Catalog Number	1-pole — —	PDG5X1T700	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	ZW ZY ZZ
Breaker Max Amps	**700 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**300**
Amp Range	**320–700 A**	Wire Type	**Cu**	Wire Torque (Nm)	**33.9**
# Conductors per Phase	**2**	Wire Temperature Rating	—	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**2/0–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**67.4–253**	Included Parts	—	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Catalog Number	1-pole — —	PDG5X1T1000	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	ZW ZY ZZ
Breaker Max Amps	**1000 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**300**
Amp Range	**320–1000 A**	Wire Type	**Cu**	Wire Torque (Nm)	**33.9**
# Conductors per Phase	**3**	Wire Temperature Rating	—	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**3/0–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**85–253**	Included Parts	—	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Catalog Number	1-pole — —	PDG5X1T1200	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	ZW ZY ZZ
Breaker Max Amps	**1200 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**275**
Amp Range	**320–1200 A**	Wire Type	**Cu**	Wire Torque (Nm)	**31.07**
# Conductors per Phase	**4**	Wire Temperature Rating	—	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**4/0–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**107–253**	Included Parts	—	Terminal Hardware Type	**Hex (3/4 in) Imperial**

StrandAble Terminals

Catalog Number	1-pole — —	PDG5X1TA1200SW	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	ZA ZB ZC
Breaker Max Amps	**1200 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Amp Range	**320–1200 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**4**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**4/0–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**30–35**
	4/0–350 kcmil	Wire Classes	**D, G, H, I, K, M**		
Wire Range Metric (mm^2)	**107–253**	Included Parts	—	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Control Wire Terminals

Catalog Number	1-pole — —	PDG5X1TA700CW	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	Z1 Z2 Z3
Breaker Max Amps	**700 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Amp Range	**320–700 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**2**	Wire Temperature Rating	—	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**1–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**42.4–253**	Control Tab Size	**1/4-in**	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Catalog Number	1-pole — —	PDG5X1TA1000CW	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	Z1 Z2 Z3
Breaker Max Amps	**1000 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Amp Range	**320–1000 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**3**	Wire Temperature Rating	—	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**3/0–400 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**85–203**	Control Tab Size	**1/4-in**	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Terminals—Frame Size 5 (320–1200 A), continued

Control Wire Terminals, continued

Catalog Number	1-pole — —	PDG5X1TA1200CW — —	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	Z1 Z2 Z3
Breaker Max Amps	**1200 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Amp Range	**320–1200 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**4**	Wire Temperature Rating	—	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**4/0–500 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**107–253**	Control Tab Size	**1/4-in**	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Catalog Number	1-pole — —	PDG5X1TA1201CW — —	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	Z4 Z5 Z6
Breaker Max Amps	**1200 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**450**
Amp Range	**320–1200 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**50.84**
# Conductors per Phase	**3**	Wire Temperature Rating	—	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**500–750 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	**107–253**	Control Tab Size	**1/4-in**	Terminal Hardware Type	**Hex (3/4 in) Imperial**

Conductor Extensions

Catalog Number (Imperial)	2-pole 3-pole 4-pole	5104A24G01 5104A24G02 5104A24G05	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	— — —
Breaker Max Amps	**1200 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**See terminal/conductor**
Amp Range	**320–1200 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**See terminal/conductor**
# Conductors per Phase	—	Wire Temperature Rating	—	Wire Hardware Type	**See terminal/conductor**
Wire Range AWG	—	Wire Classes	—	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	—	Included Parts	**Interphase Barriers**	Terminal Hardware Type	**Hex (1/2 in) Imperial**

Catalog Number (Metric)	2-pole 3-pole 4-pole	5104A24G03 5104A24G04 5104A24G06	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	— — —
Breaker Max Amps	**1200 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**See terminal/conductor**
Amp Range	**320–1200 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**See terminal/conductor**
# Conductors per Phase	—	Wire Temperature Rating	—	Wire Hardware Type	**See terminal/conductor**
Wire Range AWG	—	Wire Classes	—	Terminal Torque (ft-lb)	**30–35**
Wire Range Metric (mm^2)	—	Included Parts	**Interphase Barriers**	Terminal Hardware Type	**Hex (M12) Metric**

Terminals—Frame Size 6 (700–2500 A)

2

Terminal Options

Catalog Number	1-pole — —	PDG6X1TA1600 — —	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	ZJ ZK ZL
Breaker Max Amps	**1600 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**550**
Amp Range	**700–1600 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**62.14**
# Conductors per Phase	**4**	Wire Temperature Rating	**75 °C**	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**500–1000 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**20**
Wire Range Metric (mm^2)	**253–507**	Included Parts	—	Terminal Hardware Type	**Hex (9/16 in) Imperial**

Catalog Number	— 3-pole —	— PDG6X3TA2000 —	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	ZJ ZK ZL
Breaker Max Amps	**2000 A**	Terminal Body Type	**Aluminum**	Wire Torque (in-lb)	**375**
Amp Range	**700–2000 A**	Wire Type	**Cu/Al**	Wire Torque (Nm)	**62.14**
# Conductors per Phase	**6**	Wire Temperature Rating	**90 °C**	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**#2–600**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**25**
Wire Range Metric (mm^2)	**33.6–304**	Included Parts	**Extended Connectors**	Terminal Hardware Type	**Hex (9/16 in) Imperial**

Copper Terminal Options

Catalog Number	1-pole — —	PDG6X1T1600 — —	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	ZW ZY ZZ
Breaker Max Amps	**1600 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**375**
Amp Range	**700–1600 A**	Wire Type	**Cu**	Wire Torque (Nm)	**42.37**
# Conductors per Phase	**4**	Wire Temperature Rating	—	Wire Hardware Type	**Hex (3/8 in) Imperial**
Wire Range AWG	**#1–600 kcmil**	Wire Classes	**B, C**	Terminal Torque (ft-lb)	**20**
Wire Range Metric (mm^2)	**42.4–304**	Included Parts	—	Terminal Hardware Type	**Hex (9/16 in) Imperial**

Rear Connectors

Catalog Number	1-pole — —	PDG6X1T2000RC — —	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	— — —
Breaker Max Amps	**2000 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**See terminal/conductor**
Amp Range	**700–2000 A**	Wire Type	**Cu**	Wire Torque (Nm)	**See terminal/conductor**
# Conductors per Phase	—	Wire Temperature Rating	—	Connector Tap Size	**2 x 0.45-in Opening**
Wire Range AWG	—	Wire Classes	**B, C**	Terminal Torque (in-lb)	**120**
Wire Range Metric (mm^2)	—	Included Parts	—	Terminal Hardware Type	**Hex (5/16-in) Imperial**

Catalog Number	1-pole — —	PDF6X1T2000RC — —	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	— — —
Breaker Max Amps	**2000 A**	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**See terminal/conductor**
Amp Range	**700–2000 A**	Wire Type	**Cu**	Wire Torque (Nm)	**See terminal/conductor**
# Conductors per Phase	—	Wire Temperature Rating	—	Connector Tap Size	**2 x 0.45-in Opening**
Wire Range AWG	—	Wire Classes	**B, C**	Terminal Torque (in-lb)	**120**
Wire Range Metric (mm^2)	—	Included Parts	—	Terminal Hardware Type	**Hex (5/16 in) Imperial**

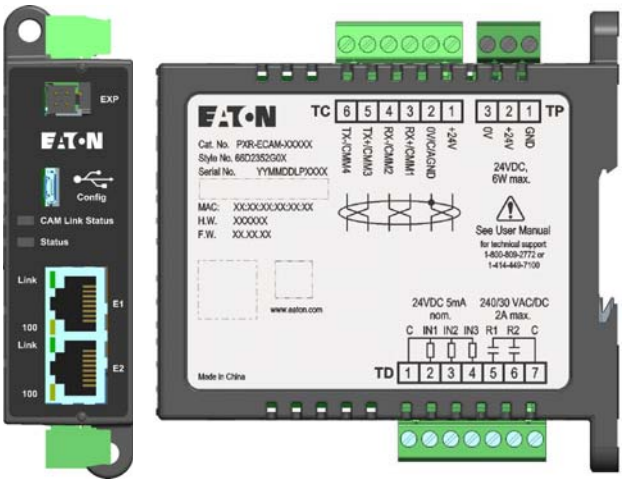
Catalog Number	1-pole — —	PDG6X1T2500RC — —	Breaker Catalog Number Digit 19/20 Designation	Line and Load Line Only Load Only	— — —
Breaker Max Amps	2000 A	Terminal Body Type	**Copper**	Wire Torque (in-lb)	**See terminal/conductor**
Amp Range	700–2000 A	Wire Type	**Cu**	Wire Torque (Nm)	**See terminal/conductor**
# Conductors per Phase	—	Wire Temperature Rating	—	Connector Tap Size	**2 x 0.45-in Opening**
Wire Range AWG	—	Wire Classes	**B, C**	Terminal Torque (in-lb)	**120**
Wire Range Metric (mm^2)	—	Included Parts	—	Terminal Hardware Type	**Hex (5/16-in) Imperial**

Power Defense Breaker Enclosures

Breaker Frame	Maximum Breaker Amperes	Number of Poles	NEMA Rating	Catalog Number
PD1	125	2P/3P	NEMA 1	**SPD1K0125**
			NEMA 1 Flush	**FPD1K0125**
			NEMA 3R	**RPD1K0125**
			NEMA 12	**DPD1K0125**
			NEMA 4X	**WPD1K0125**
PD2	225	2P	NEMA 1	**SPD2J0225**
			NEMA 1 Flush	**FPD2J0225**
		3P	NEMA 1	**SPD2K0225**
			NEMA 1 Flush	**FPD2K0225**
		2P/3P	NEMA 3R	**RPD2K0225**
			NEMA 12	**DPD2K0225**
			NEMA 4X	**WPD2K0225**
PD3 (400 A)	400	2P/3P	NEMA 1	**SPD3K0400**
			NEMA 1 Flush	**FPD3K0400**
			NEMA 3R	**RPD3K0400**
			NEMA 12	**DPD3K0400**
			NEMA 4X	**WPD3K0400**
PD3 (600 A)	600	2P/3P	NEMA 1	**SPD3K0600**
			NEMA 3R	**RPD3K0600**
			NEMA 12	**DPD3K0600**
			NEMA 4X	**WPD3K0600**
PD4	800	2P/3P	NEMA 1	**SPD4K0800**
			NEMA 3R	**RPD4K0800**
			NEMA 12	**DPD4K0800**
			NEMA 4X	**WPD4K0800**
PD5	1200	2P/3P	NEMA 1	**SPD5K1200**
			NEMA 3R	**RPD5K1200**
			NEMA 12	**DPD5K1200**
			NEMA 4X	**WPD5K1200**

Note: These enclosures are approved for use with Power Defense breakers equipped with thermal-magnetic PXR 10 or PXR 20 trip units. For enclosed breakers using PXR 25 trip units, please contact the enclosed circuit breaker product line.

Power Defense Molded Case Circuit Breakers—Communications and Software



Contents

Communications and Software

Communication Adapter Modules

Product Description

Designed for Power Defense circuit breakers, the Power Xpert Release (PXR) communications adapter module (CAM) expands the communication capabilities of the PXR 20 and PXR 25 electronic trip units. When used in conjunction with an IoT-based system, the PXR-CAMs allow for greater visibility into the facility, process or machine, thus adhering to the design principles of Industry 4.0.

Application Description

- Improve safety with remote breaker control via programmable discrete I/O
- Perform at-a-glance troubleshooting with front-facing LEDs that communicate status and alarms
- Simplify configuration and monitoring with intuitive HTML5 web interface (ECAM only)

Features and Benefits

- Compact, DIN rail mounted design with removable terminal blocks offers space savings, fast installation and accessibility for maintenance
- Dimensions:
  4.30 in (110 mm) H
  1.20 in (30 mm) W
  4.30 in (110 mm) D

Supported Protocols

- Modbus TCP/IP CAM for PXR 20, 25
  Catalog number:
  PXR-ECAM-MTCP
- PROFIBUS DP CAM for PXR 20, 25
  Catalog number:
  PXR-PCAM

Modbus RTU RS-485

Product Description

Power Xpert Release (PXR) trip units have optional integral Modbus RTU communication on the PXR 20. Modbus RTU comes standard on the PXR 25.

Application Description

With this industry standard protocol, the PXR trip units can supply real-time data such as voltage, current, power, health and status to any Modbus RTU client without any additional external device.

Field Installation

Field-installable options are available on the PXR 20 for Power Defense frames 2, 5 and 6. See catalog numbers below:

- Field installable Modbus RTU with Relay for PD-2: **PDG2XMODRTUREL**
- Field installable Modbus RTU for PD-5 and 6: **PDG56XMODRTU**

Power Xpert Protection Manager

Product Description

Eaton's Power Xpert Protection Manager (PXPM) software provides a clean, intuitive user interface enabling unmatched control, testing and troubleshooting.

The software is free to download and can run all standard features on any PC. Licenses can be purchased to unlock premium features: secondary injection testing and trip/alarm waveform.

Communication between PXPM and PXR trip units is made via USB or through connected networks.

Features and Benefits

- *Set point configuration*: allows direct-to-trip unit or offline setup, including duplication of settings between units
- *Control mode*: capture waveforms, reset trip unit or set the date/time
- Real-time data: provides information regarding all status and metered data direction from the trip unit
- *Event summaries*: stores up to 200 events, detailed information on the most recent (10 trip and 10 alarm) events, and time adjustments to the real-time clock
- *Reports*: allows for the formatting and printing of real-time data of performed secondary injection tests

Secondary Injection Testing

The secondary injection test function utilizes a separate circuit that injects a signal in parallel with and representative of the output of the current sensor. All the built-in protection circuitry and routines respond per the settings in the breaker. The PXPM software can initiate testing of long delay trip, short delay trip, instantaneous trip, maintenance mode and ground (earth) fault trip via the USB communication.

The current sensor test utilizes a separate circuit to create a signal that is directed though the Rogowski coil. This signal will verify continuity and functionality of the Rogowski coil.

Trip/Alarm Waveform

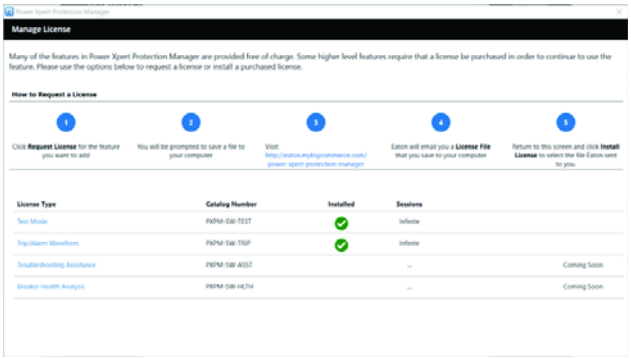
PXPM's trip/alarm waveform feature allows PXR trip units to capture and display the breaker state leading up to the last trip or alarm event, provided that auxiliary power is connected.

Available waveform data includes minimum and maximum phase current, voltage and frequency. Using this information increases uptime by identifying issues causing an event and minimized breaker wear by identifying potential tripping issues faster, without the need for expensive standalone testing equipment.

Advanced Feature Licenses

Description	Part Number
PXPM Advanced Testing License 10 Sessions	**PXPM-SW-TEST-10**
PXPM Advanced Testing License 30 Sessions	**PXPM-SW-TEST-30**
PXPM Advanced Testing License 120 Sessions	**PXPM-SW-TEST-120**
PXPM Advanced Testing License Infinite Sessions	**PXPM-SW-TEST**
PXPM Trip/Alarm Waveform License 10 Sessions	**PXPM-SW-WAVE-10**
PXPM Trip/Alarm Waveform License 30 Sessions	**PXPM-SW-WAVE-30**
PXPM Trip/Alarm Waveform License 120 Sessions	**PXPM-SW-WAVE-10**
PXPM Trip/Alarm Waveform License Infinite Sessions	**PXPM-SW-WAVE**

Licenses are also available online at **www.Eaton.com/BuyPXPM**.



Special Applications

Extreme Temperature Applications

The Technical Data section of this catalog (**Pages V4-T2-12 –V4-T2-20**) presents permissible loads for each breaker type at ambient temperatures ranging from 40 °C through 70 °C. The tables are presented as an aid in selecting breakers appropriate for the application.

Per industry standards, breakers are calibrated to perform at an ambient temperature of 40 °C. Thermal-magnetic breakers are temperature sensitive, and at temperatures above 40 °C will carry less current than their continuous current rating.This high temperature condition promotes nuisance tripping and can create unacceptable temperature conditions inside the breaker and at the terminals. To prevent these issues, the ambient temperature load derating values presented in the technical data section must be followed. Additionally, special 50 °C calibrated breakers are available—note that these do not carry a UL Listing.

Electronic breakers are insensitive to ambient temperature within a certain range and are not likely to nuisance trip. However, if the ambient temperature significantly exceeds 40 °C the electronic circuitry or other internal components could become damaged. Power Defense electronic breakers are designed with circuitry to initiate a tripping operation to provide self-protection to the electronic components in the event the internal temperature reaches to an unsafe level.

In addition to ambient temperature, other factors must be taken into account in the application of circuit breakers in system designs. These include altitude, power factor, cable size and type, load types, and others. Additional details on these can be found in Eaton's *Consulting Application Guide*.

100% Rated Breakers

Molded case circuit breakers are designed to carry rated current in open air at the calibrated temperature for an indefinite period of time without tripping. Molded case circuit breakers are typically applied in an enclosure, therefore the National Electrical Code (Article 220.10b) requires that all overcurrent protection devices be loaded to a maximum of 80% of their continuous current rating, unless specifically listed for 100% applications. Breakers listed for 100% applications specifically outline, on the nameplates, a minimum size enclosure, the minimum ventilation (if needed), and the minimum conductor size for application at 100% rating.

Power Defense circuit breakers are available in 100% rated configurations, as presented in each section of the catalog. Power Defense breakers rated for 100% use the designator PDF in Digits 1–3 of the catalog number.

It is important to understand that using 100% rated breakers is not always the best choice for every system design. Consideration should be given to any present or future factors that could affect the overall system design, and an understanding of NEC Article 210.20a in application of these products.

50 °C Calibrated Breakers

Special non-UL listed calibrations are available for 50 °C ambient temperatures for breakers equipped with thermal-magnetic trip units, and for separate thermal-magnetic trip units. Breakers equipped with electronic trip units can operate reliably in ambient temperatures of 50 °C, and do not require specific calibration.

For this application on thermal-magnetic breakers, the trip unit digits (11–13) of the Power Defense circuit breaker catalog number are changed, from TFF and TFA to VFF and VFA, respectively. Details for these are provided within each frame section.

Freeze-Tested Circuit Breakers

Power Defense circuit breakers may be ordered with freeze testing for applications in extreme cold conditions. This option uses special lubrication and mechanical operation is verified at –40 °C.

For this application, add suffix **J2** to digits 19–20 on a Power Defense catalog number to order.

Fungus/Moisture Treated Breakers

Molded case circuit breakers are suited for operation in 0% to 95% noncondensing humidity environments. As is the case with all electrical equipment, application in a condition or environment above this humidity level should be avoided. Breakers applied in these environments should be protected by the proper NEMA rated enclosure (or of appropriate IP rating), and maintained dry. If such operating conditions cannot be met, special treatment of the circuit breaker should be considered to minimize the possibility of operational problems.

All Eaton circuit breaker cases are molded from a glass-polyester material, which does not support the growth of fungus. Any parts that are susceptible to the growth of fungus will require special treatment for application in these types of conditions.

For this application, add suffix **J1** to digits 19–20 on a Power Defense catalog number to order.

High Altitude Applications

Low-voltage circuit breakers must be progressively de-rated for voltage and current carrying capacity at altitudes above approximately 6000 ft. The thinner air at higher altitudes reduces cooling and dielectric characteristics compared to denser air found at lower altitudes.

Derate voltage, interruption and current-carrying capacity for every increase of 1000 ft over 6000 ft.

Voltage and interruption capacity: 2.5% derate every 1000 ft over. For example, a 480 V at 65 kA circuit breaker applied at 7000 ft elevation would be derated to 468 V at 63 kA.

Current-carrying capacity: apply 3 °C ambient temperature rise every 1000 ft over.

Frame/trip unit specific temperature derating tables can be found in the technical data section.

Reverse Fed Applications

All Power Defense molded case circuit breakers shipped complete from Eaton's factory are capable of being reverse fed, with the power source feeding the lower side (typically considered the load side) of the circuit breaker. UL specifies parameters for circuit breakers to be applied in reverse-feed applications, which are met by Power Defense circuit breakers. This typically includes a factory seal and no "Line" or "Load" markings. All Frame Sizes 1 and 2 (PDG1 and PDG2) circuit breakers are always shipped in this configuration.

Breakers that ship as frames only (available in Frame Sizes 3–6), for field installation of trip units, are marked for standard application, with the line side marked at the top and the load side at the bottom, and meet UL requirement for standard applications.

An Eaton facility authorized to modify MCCBs under UL File E7819 may convert a standard circuit breaker of this type to a reverse-feed capable device per UL parameters following specific procedures.

Frame Sizes 1 and 2 always ship complete from the factory and are always reverse-feed capable. Frame Sizes 3, 4, 5 and 6 may ship as complete circuit breakers, or as separate frames and trip units if ordered separately.

Motor Circuit Protector devices are not capable of being reverse fed.

Application of Power Defense Molded Case Circuit Breakers in 400–415 Hz Systems

Some specialty equipment requires 400–415 Hz power systems. Due to the increased resistance in these systems, circuit breakers typically require derating. Additionally, cable and bus sizes used at 400–415 Hz are not based on standard National Electrical Code tables for 60 Hz applications, and larger cross sections are necessary.

Eaton's Power Defense molded case circuit breakers can be applied for overcurrent protection on 400–415 Hz systems. Commonly used to power computer installations, 400–415 Hz systems are also employed in conjunction with certain aircraft, military and other specialty equipment.

The following application tables contain derating guidelines for applying Eaton molded case circuit breakers on 400–415 Hz systems.

The Continuous Current table on the next page lists the maximum continuous current carrying capacity at 400 Hz.

The Interrupting Capacities table on **V4-T2-149** lists the estimated interrupting capacities at 400–415 Hz.

Due to the increased resistance of the copper sections resulting from the skin effect produced by eddy currents at 400–415 Hz, circuit breakers in many cases require derating.

The thermal derating on these devices is based upon 100%, three-phase application in open air in a maximum of 40 °C (104 °F) with 4 feet (1.2 m) of the specified cable 75 °C (167 °F) of bus at the line and load side.

Additional derating of not less than 20% will be required if the circuit breaker is to be used in an enclosure.

Further derating may be required if the enclosure contains other heat generating devices or if the ambient temperatures exceed 40 °C (104 °F).

Cable and Bus Sizing

The cable and bus sizes to be used at 400–415 Hz are not based on standard National Electrical Code tables for 60 Hz application. Larger cross sections are necessary at 400–415 Hz to avoid exceeding component temperature limits. All busbars specified are based upon mounting the bars in the vertical plane to allow maximum air flow. All busbars are spaced at a minimum of 1/4-inch (6.35 mm) apart. Mounting of busbars in the horizontal plane will necessitate additional drafting. Edgewise orientation of the bus may change the maximum ratings indicated.

Application Recommendations

It is recommended that thermal indicating devices such as "tempiplates" be placed on the line and load terminals or T-connectors of the center pole. These are usually the hottest terminals with a balanced load. A maximum temperature of 90 °C (50 °C over a maximum ambient of 40 °C) would verify the maximum rating for the application. Temperature profiles taken on these breakers can be correlated to ensure that the hottest points within the breaker are within the required temperature limits. A thermal cutoff switch can also be used to actuate a shunt trip to open the breaker if the thermal limits are exceeded. Consult the Eaton Technical Resource Center for further information on special applications.

Continuous Current of 400 Hz Breakers

Breaker Frame	Maximum Continuous Current (Amps at 60 Hz)	400–415 Hz Application Maximum Continuous (Amps)	Cable/ Busbar (per phase)	Terminals (Fixed Front) Catalog Number
PDG1	15	15	1–#12 Cu	**PDG1X3T125**
	20	20	1–#12 Cu	**PDG1X3T125**
	25	25	1–#12 Cu	**PDG1X3T125**
	30	30	1–#10 Cu	**PDG1X3T125**
	35	35	1–#10 Cu	**PDG1X3T125**
	40	40	1–#8 Cu	**PDG1X3T125**
	45	45	1–#8 Cu	**PDG1X3T125**
	50	50	1–#6 Cu	**PDG1X3T125**
	60	60	1–#6 Cu	**PDG1X3T125**
	80	70	1–#4 Cu	**PDG1X3T125**
	90	80	1–#2 Cu	**PDG1X3T125**
	100	90	1–#1 Cu	**PDG1X3T125**
	110	100	1–1/0 Cu	**PDG1X3T125**
	125	110	1–1/0 Cu	**PDG1X3T125**
PDG2 ①	15	15	1–#12 Cu	**PDG2X3T100**
	20	20	1–#12 Cu	**PDG2X3T100**
	25	25	1–#12 Cu	**PDG2X3T100**
	30	30	1–#10 Cu	**PDG2X3T100**
	35	35	1–#10 Cu	**PDG2X3T100**
	40	40	1–#8 Cu	**PDG2X3T100**
	50	45	1–#6 Cu	**PDG2X3T100**
	70	65	1–#4 Cu	**PDG2X3T100**
	90	85	1–#2 Cu	**PDG2X3T100**
	100	95	1–#1 Cu	**PDG2X3TA150**
	125	115	1–1/0 Cu	**PDG2X3TA150**
	150	135	1–1/0 Cu	**PDG2X3TA150**
PDG3 (400 A Frame) ①	125	100	1–1/0 Cu	**PDG3X3T300**
	150	125	1–1/0 Cu	**PDG3X3T300**
	170	150	1–2/0 Cu	**PDG3X3T300**
	200	160	1–3/0 Cu	**PDG3X3T300**
	225	180	1–4/0 Cu	**PDG3X3T300**
	250	200	1–250 kcmil Cu	**PDG3X3T300**
	300	225	1–350 kcmil Cu	**PDG3X3T300**
	350	275	1–500 kcmil Cu	**PDG3X3T350**
	400	300	2–3/0 Cu	**PDG3X3T400**
PDG3 (600 A Frame) ①	250	200	1–250 kcmil Cu	**PDG3X3TA400H**
	300	250	1–350 kcmil Cu	**PDG3X3TA400H**
	350	275	1–500 kcmil Cu	**PDG3X3TA400H**
	400	300	1–500 kcmil Cu	**PDG3X3TA400H**
	500	400	2–500 kcmil Cu	**PDG3X3TA630**
	600	400	2–500 kcmil Cu	**PDG3X3TA630**
PDG4 ①	400	340	2–3/0 Cu	**PDG4X3T600**
	500	405	2–300 kcmil Cu	**PDG4X3T600**
	600	470	2–350 kcmil Cu	**PDG4X3T600**
	700	355	2–4/0 Cu	**PDG4X3T800**
	800	400	2–300 kcmil Cu	**PDG4X3T800**
PDG5 ①	1200	700	3–300 kcmil Cu	**PDG5X1T1000**
		750	3–350 kcmil Cu	**PDG5X1T1000**
		850	4–350 kcmil Cu	**PDG5X1T1200**
PDG6 ①	2000	1500	4–1/2 x 4 Cu	②

Notes

① PXR metering accuracy is ±5% in 400 Hz application.

② Rear connected Cu T-Bar.

Interrupting Capacities of 400 Hz Breakers

	Estimated 400–415 Hz Interrupting Capacities ①② (rms Symmetrical Amperes)		
Breaker Frame	**240 V**	**480 V**	**600 V**
PDG1_C	5,000	3,600	—
PDG1_F	7,000	5,000	3,600
PDG1_G	17,000	7,000	4,400
PDG1_H	20,000	13,000	5,000
PDG1_P	40,000	20,000	7,000
PDG2_F	3,600	2,800	2,800
PDG2_G, PDG2_M	13,000	5,000	3,600
PDG3_F, PDG3_G, PDG3_M (400 A Frame)	21,000	11,000	8,000
PDG3_G (600 A Frame)	13,000	7,000	3,600
PDG3_K (600 A Frame)	17,000	10,000	5,000
PDG3_M (600 A Frame)	20,000	13,000	7,000
PDG3_P (600 A Frame)	40,000	20,000	10,000
PDG4_K	14,000	10,000	7,000
PDG4_M	21,000	11,000	8,000
PDG5	21,000	16,000	8,000
PDG6	40,000	33,000	33,000

Notes

① The above interrupting ratings are estimates based on the design parameters and operating characteristics of each breaker as well as on the limited amount of test data thus far available for circuit breakers applied to 400-415 Hz systems.

② Not UL Listed.

Special Modification Ordering and Pricing

The pricing schedule below outlines the available Power Defense modifications, ordering instructions and associated fees. The fees only cover the cost of the installation or modification. Any additional hardware required such as shunt trips, auxiliary switches, terminals, and so forth are in addition to the fees listed below.

Installation of Internal Accessories ①

Internal accessories included are alarm switches, auxiliary switches, shunt trips and undervoltage releases.

Fee: $200 list price addition per breaker.

Ordering: Reference frame catalog section for modification suffixes.

Note: Single fee per breaker regardless of number of internal accessories installed.

Installation of External Accessories ①

External accessories included are lock offs, locking provisions (Kirk Key™), handle mechanisms, plug-in blocks and motor operators.

Fee: $200 list price additional per accessory.

Ordering: Reference frame catalog section for modification suffixes

Installation of Terminals ①

There is no fee for the installation of standard or non-standard terminals on any frames except PD5 and PD6.

Fee: $300 list price addition per PD5/PD6 breaker.

Ordering: Reference terminals, lugs and connectors section for modification suffixes.

Walking Beam Modification

Modify rear of breaker for walking beam installation.

Fee: $325 list price addition per breaker. Requires two breakers.

Ordering: Add suffix WB to digits 19–20 on a Power Defense catalog string.

Freeze Tested

This option uses special lubrication and mechanical operation is verified at –40 °C. Additional information can be found in the special applications section of the catalog.

Fee: 20% addition to total breaker list price.

Ordering: Add suffix J2 to digits 19–20 on a Power Defense catalog string.

Note: Modification removes UL listing per UL 489.

Fungus/Moisture Treated

This option provides additional protection against fungus growth in application above 95% noncondensing humidity.

Fee: 20% addition to total breaker list price.

Ordering: Add suffix J1 to digits 19–20 on a Power Defense catalog string.

Note: Modification removes UL listing per UL 489.

Special Calibrations

Ambient temperature calibrations other than 40 °C and 50 °C or special magnetic calibrations where applicable.

Fee: 20% addition to total breaker list price.

Ordering: Contact Eaton's Technical Resource Center.

Note: Modification removes UL listing per UL 489.

Certified Test Report

Available on demand via Eaton Asset Manager mobile phone application.

Fee: Varies.

Certificate of Compliance or Origin

Available from Eaton's Technical Resource Center.

Fee: No charge.

Marine Certification

Power Defense frames 1–5 are available with marine certification. This includes ABS, Lloyd's and UL 489SA certifications.

Fee: 10% additional to total breaker list price.

Ordering: Add suffix M1 to digits 19–20 on the Power Defense catalog string.

Note

① May also be field installed for reduced cost and leadtime.