Industrial Motors

Commercial & Appliance Motors

Automation

Digital & Systems

Energy

Transmission & Distribution

Coatings

PRODUCTS FOR POWER FACTOR CORRECTION

The perfect solution to **increase the energy efficiency** in production processes

Driving efficiency and sustainability

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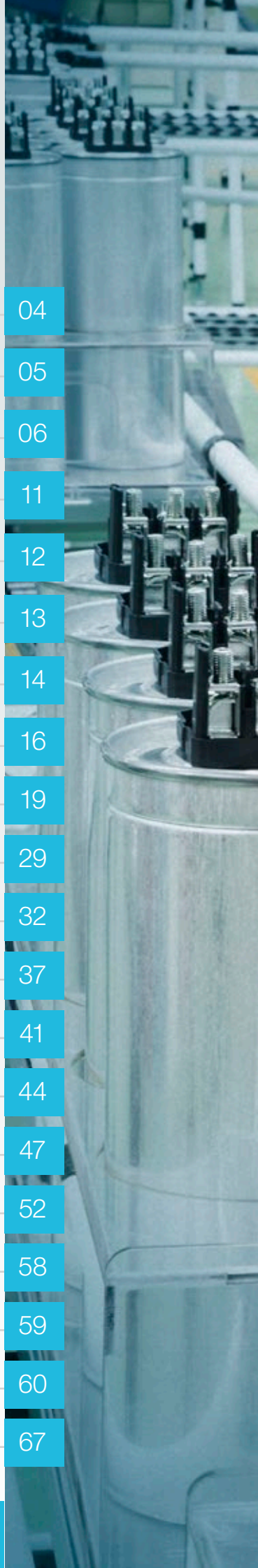
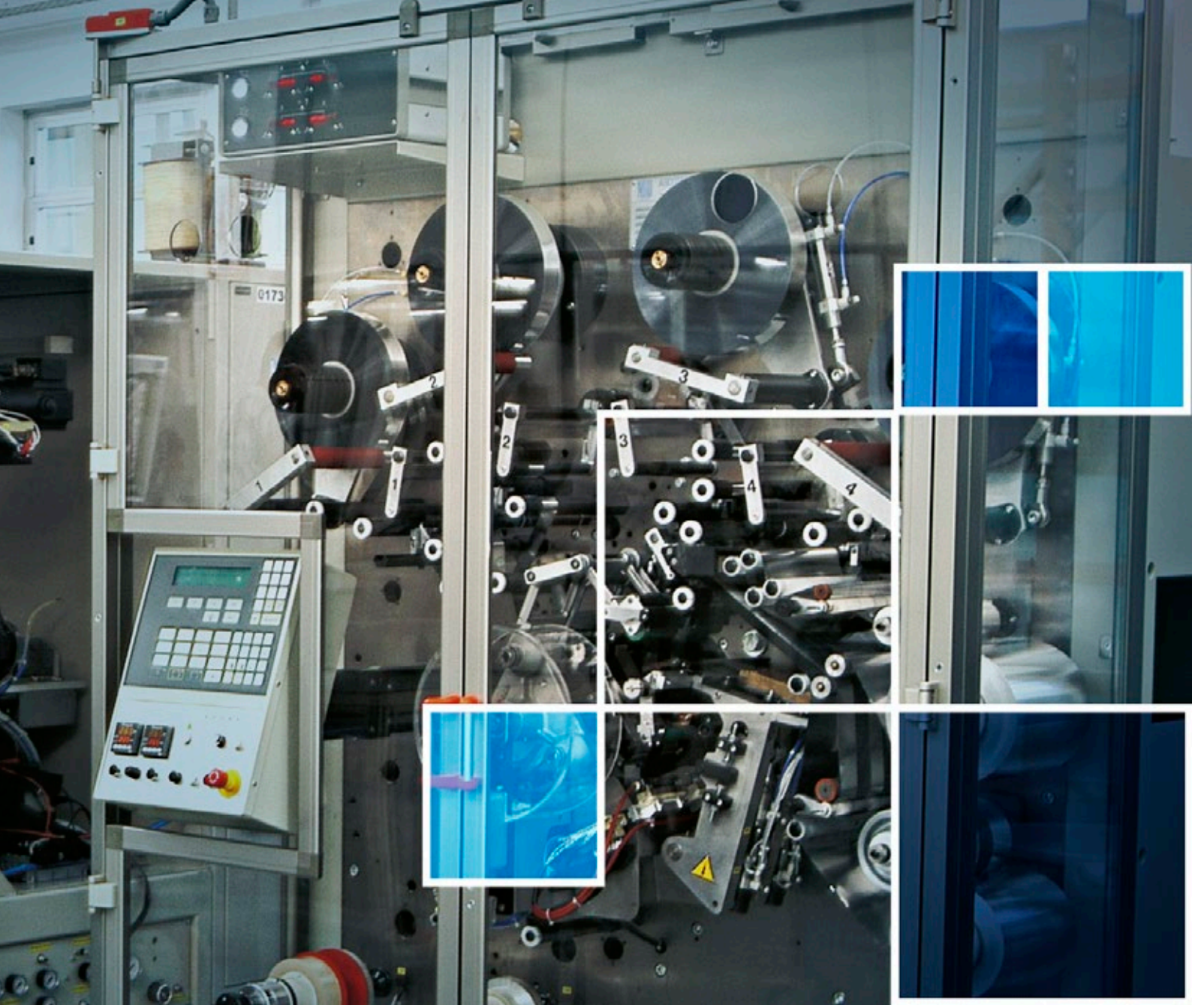


THE PERFECT SOLUTION TO INCREASE THE ENERGY EFFICIENCY IN PRODUCTION PROCESSES

It is estimated that around 10% of all electricity generated is wasted. Such percentage could be generating work and, consequently, making the system more efficient.

The effectiveness of a productive process with improved efficiency provides greater energy availability and reduces environmental impacts. The power factor is an easy and fast way to improve the performance of an installation. The application of capacitors enables the use of all the electrical power delivered by the system to produce work, reducing losses and making the production process more efficient.



Benefits

- Reduced energy bill
- Reduction in losses by the Joule effect
- Release of the full power line capacity
- Improvement in the mains voltage

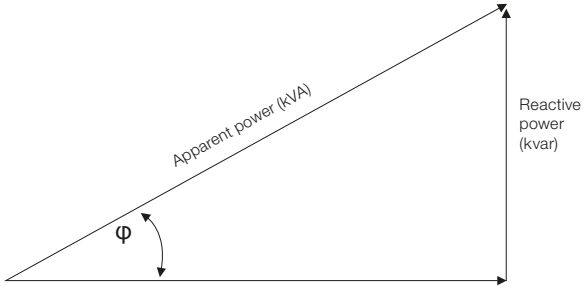
Power factor

Basic concepts

In any industrial, commercial or residential installation, all machines and devices consume some type of energy to perform work, being power the quantity that determines the amount of energy provided by a source at each unit of time.

In electrical systems, the energy supplied by a given source can be divided into:

- Active Power: power that effectively performs the work, generating heat, light, motion, etc. It is measured in kW.
- Reactive Power: power used only to create and keep the electromagnetic fields of the inductive loads. It is measured in kvar.
- Apparent Power: it is the vector sum of the active power and the reactive power, representing the total power delivered by the energy source (electric generator, utility company, etc.) or the total power consumed by a load/system. It is measured in kVA.



Power rectangle triangle

A right triangle is often used to represent the relationship between Active Power, Reactive Power and Apparent Power.

The relationship between the Active Power (the one that effectively performs work) and the Apparent Power (the total power delivered by the energy source) can be used to indicate the "efficiency" in the use of energy in an electrical system, being defined as the Power Factor.

A high Power Factor indicates a high efficiency or a better use of energy; on the other hand, a low Power Factor indicates a low efficiency or poor use of energy.

$$fp = \frac{\text{Active Power (kW)}}{\text{Apparent Power (kVA)}}$$

For purely linear loads, the Power Factor can be defined as the displacement factor cos φ, which is the time difference between voltage and current waveforms.

$$pf = \cos \varphi = \cos \left(\text{arc tg} \frac{kvar}{kW} \right) = \frac{kW}{\sqrt{kWh^2 + kvarh^2}}$$

Power factor

Consequences and causes of a low power factor

Installation losses

The electric energy losses occur as heat and are proportional to the square of the total current ($I^2.R$).
Since this current increases with the excess of reactive energy, a relationship is established between the losses and the low power factor, increasing the heating of conductors and equipment.

Voltage drop

The current increase due to the excess of reactive power results in voltage drops, which may interrupt the power supply and produce overloads in some devices. Especially when the power line is highly required. Voltage drops may also reduce the luminous intensity of lamps and increase the current in electric motors.

Low utilization of the installed capacity

When the reactive energy produces overloads on an electrical installation, it renders the full utilization of such installation impossible, demanding investments to allow the addition of new loads, which could be avoided if the power factor presented higher values. The “space” taken by the reactive energy can then be used for new loads. The investments in the expansion of installations are mainly related to the necessary transformers and conductors. The transformer must be able to provide the total power required by the machines, but due to the presence of reactive power, its capacity must be calculated based on the apparent power of the installations. The table below shows the total power that the transformer must have for a useful load of 800 kW for ascending power factors.

Useful power absorbed - kW	Power factor	Transformer power - kVA
800	0.50	1,600
	0.80	1,000
	1.00	800

Also, the cost of the command, protection and control systems of the machines rises with the increase in the reactive energy. Likewise, in order to transport the same active power without increasing the losses, the cross-section of the conductors must be increased as the power factor decreases. The table below shows the variation in the cross-section of a conductor as a function of the power factor. Note in the figure below that the required cross-section, considering a power factor of 0.70, is twice the cross-section for a power factor of 1.00.

Relative cross-section		Power factor
1.00		1.00
1.23		0.9
1.56		0.8
2.04		0.7
2.78		0.6
4.00		0.5
6.25		0.4
11.1		0.3

Power factor

Consequences and causes of a low power factor

The power-factor correction itself already releases capacity to install new equipment without requiring investments in transformers or replacement of conductors for this specific purpose, even improving the voltage levels, as shown in the following example:

E.g.: If you want to correct the power factor to 0.92 for a load of 930 kW, 380 V and PF = 0.65:

- Without power factor correction:

$$\text{Initial apparent power} = \frac{930}{0.65} = 1{,}431 \text{ kVA}$$

$$\text{Initial current} = \frac{930{,}000}{\sqrt{3} \cdot 380 \cdot 0.65} = 2{,}174 \text{ A}$$

- With power factor correction:

$$\text{Final apparent power} = \frac{930}{0.92} = 1{,}011 \text{ kVA}$$

$$\text{Final current} = \frac{930{,}000}{\sqrt{3} \cdot 380 \cdot 0.92} = 1{,}536 \text{ A}$$

RESULT

420 kVA free to add new equipment

In this case, it is clear that, after the power factor correction, the installation load may be increased up to 41% without additional investments, such as new transformers and/or lines and cables.

Main consequences of low power factor

- Increase in the energy bill due to the operation with a low power factor
- Capacity limitation in power transformers
- Voltage drops and fluctuations in the distribution circuits
- Overload on switching devices, limiting their useful life
- Increased electrical losses in the distribution line caused by the Joule effect
- Need to increase conductor cross-sections
- Need to increase the capacity of the switching and protection devices

Causes of low power factor

- Induction motors running with no load
- Oversized motors for the work requirements
- Transformers working with no load or with low load
- Low power factor reactors in the lighting system
- Arc or induction furnaces
- Heat treatment machines
- Welding machines
- Voltage level above the rated value, increasing reactive energy consumption

Power factor

Low voltage power factor correction

Types of power factor correction

The correction can be done by installing the capacitors in four different ways, aiming at conserving the energy and improving the cost-benefit relationship (see the Installation Type Diagram).

a) Correction at the input of low voltage energy: provides a significant correction, usually with automatic capacitor banks. Use this type of correction in electrical installations with a high number of loads, with different powers and uneven duty cycles. The main disadvantage is that there is no sensitive relief of the feeders of each machine.

b) Correction by load groups: the capacitor is installed to correct a sector or a set of small machines (<10 HP). It is installed next to the switchboard that feeds this equipment. Its disadvantage is that it does not lower the current in the power circuits of each machine.

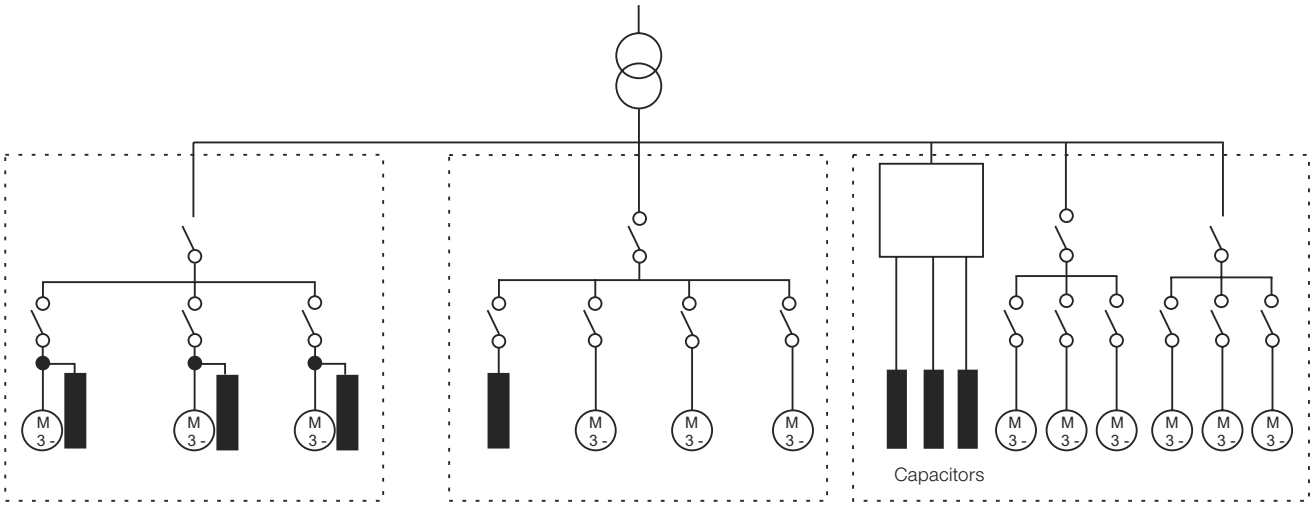
c) Localized correction: it is obtained by installing the capacitors next to the machine whose power factor you want to correct. This type of Power Factor correction represents, from the technical point of view, the best solution, providing the following advantages:

- Reduction in energy losses across the installation
- Reduction of the load on the machine supply circuits
- It can be used in a single drive system for the load and capacitor, thus saving one low power switching device
- Generation of reactive power only where needed

d) Mixed correction: from the “Energy Conservation” point of view, considering technical, practical and financial aspects, it is the best solution. Adopt the following criteria for mixed correction:

1. A fixed capacitor is installed directly on the secondary side of the transformer
2. Motors with power of approximately 10 HP or above are locally corrected (be careful with high inertia motors, as the use of contactors for switching the capacitors must not be ignored whenever their rated current is greater than 90% of the motor excitation current)
3. Motors with power below 10 HP are corrected by groups
4. Networks designed for illumination with discharge lamps using low power factor ballasts are corrected at the network input
5. At the input, an automatic low power bank is installed for final equalization

The diagram below illustrates the types of capacitor installation mentioned above:



Individual correction | Correction by load groups | General correction

Examples: correction of the power factor of a 55 kW, 4-pole, 50 Hz, 380-415 V WEG W22 motor operating on a 400 V/50 Hz network at 75% of the rated load.

Power factor

To correct the motor power factor, use the formula:

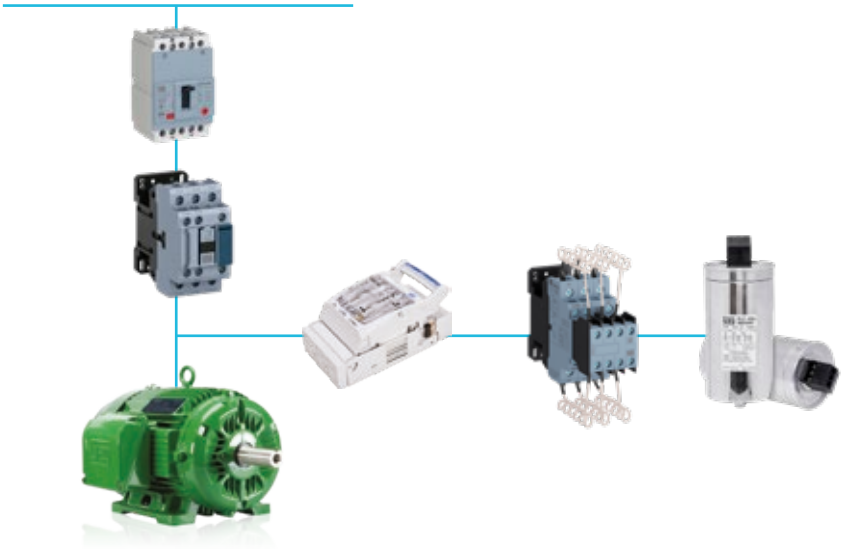
$$Q_{camp} = \frac{(\%load)xPxF}{\eta}$$

Where:

$\%_{load}$ = Factor relative to the motor working power:
$\%_{load}$ = 0.50 means the motor operating at 50% load;
$\%_{load}$ = 0.75 means the motor operating at 75% load;
$\%_{load}$ = 1.00 means the motor operating at 100% load;
P = Active Power in kW;
F = Multiplication factor, according to the table below;
η = Motor efficiency as a function of the percentage of load running;
Q_{capm} = Reactive power of the capacitor required on the motor in kvar.

Current power factor	Desired power factor (F)														
	0.85	0.86	0.87	0.88	0.89	0.90	0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99
0.50	1.112	1.139	1.165	1.192	1.220	1.248	1.276	1.306	1.337	1.369	1.403	1.440	1.481	1.529	1.589
0.52	1.023	1.050	1.076	1.103	1.131	1.159	1.187	1.217	1.248	1.280	1.314	1.351	1.392	1.440	1.500
0.54	0.939	0.966	0.992	1.019	1.047	1.075	1.103	1.133	1.164	1.196	1.230	1.267	1.308	1.356	1.416
0.56	0.860	0.887	0.913	0.940	0.968	0.996	1.024	1.054	1.085	1.117	1.151	1.188	1.229	1.277	1.337
0.58	0.785	0.812	0.838	0.865	0.893	0.921	0.949	0.979	1.010	1.042	1.076	1.113	1.154	1.202	1.262
0.60	0.713	0.740	0.766	0.793	0.821	0.849	0.877	0.907	0.938	0.970	1.004	1.041	1.082	1.130	1.190
0.62	0.646	0.673	0.699	0.726	0.754	0.782	0.810	0.840	0.871	0.903	0.937	0.974	1.015	1.063	1.123
0.64	0.581	0.608	0.634	0.661	0.689	0.717	0.745	0.775	0.806	0.838	0.872	0.909	0.950	0.998	1.068
0.66	0.518	0.545	0.571	0.598	0.626	0.654	0.682	0.712	0.743	0.775	0.809	0.846	0.887	0.935	0.995
0.68	0.458	0.485	0.511	0.538	0.566	0.594	0.622	0.652	0.683	0.715	0.749	0.786	0.827	0.875	0.935
0.70	0.400	0.427	0.453	0.480	0.508	0.536	0.564	0.594	0.625	0.657	0.691	0.728	0.769	0.817	0.877
0.72	0.344	0.371	0.397	0.424	0.452	0.480	0.508	0.538	0.569	0.601	0.635	0.672	0.713	0.761	0.821
0.74	0.289	0.316	0.342	0.369	0.397	0.425	0.453	0.483	0.514	0.546	0.580	0.617	0.658	0.706	0.766
0.76	0.235	0.262	0.288	0.315	0.343	0.371	0.399	0.429	0.460	0.492	0.526	0.563	0.604	0.652	0.712
0.78	0.182	0.209	0.235	0.262	0.290	0.318	0.346	0.376	0.407	0.439	0.473	0.510	0.551	0.599	0.659
0.80	0.130	0.157	0.183	0.210	0.238	0.266	0.294	0.324	0.355	0.387	0.421	0.458	0.499	0.547	0.609
0.82	0.078	0.105	0.131	0.158	0.186	0.214	0.242	0.272	0.303	0.335	0.369	0.406	0.447	0.495	0.555
0.84	0.026	0.053	0.079	0.106	0.134	0.162	0.190	0.220	0.251	0.283	0.317	0.354	0.395	0.443	0.503
0.86			0.026	0.053	0.081	0.109	0.137	0.167	0.198	0.230	0.264	0.301	0.342	0.390	0.450
0.88					0.028	0.056	0.084	0.114	0.145	0.177	0.211	0.248	0.289	0.337	0.397
0.90							0.028	0.058	0.089	0.121	0.155	0.192	0.233	0.281	0.341
0.92									0.031	0.063	0.097	0.134	0.175	0.223	0.283
0.94											0.034	0.071	0.112	0.160	0.229
0.96													0.041	0.089	0.149
0.98															0.060

Power factor



Current power factor (FPa) = 0.85;
Active power (P) = 55 kW;
Desired Power Factor (FPd) = 0.92;
Factor (see table above) (F) = 0.220;
$\%_{load}$ = 0.75 (75% of load);
η = 93.2%;
Q_{kvar} = (%load x D x F)/η =
(0.75 x 55 x 0.220)/0.932 = 9.73 kvar.

Use:
UCWT10 V44 N20 + CWBC18-10-30

Notes: The examples mentioned above are reference values. Whenever possible, you should know the types of load present and the load curve of the installation.
If more than 20% of the loads to be corrected are non-linear (frequency inverters, soft-starters, rectifiers, electronic ballasts, etc.), they must be installed in series with the ANTI-HARMONIC INDUCTOR capacitors.
Harmonic distortion limits for capacitors: DHT voltage <5% Vrms and DHT current <15%. The use of capacitors in electrical systems with high levels of harmonic distortion may damage the capacitors internally. For detailed directions and information on sizing, installation and maintenance of our capacitors for power factor correction, see:
- Manual for power factor correction;
- Safety and application manual of alternating current capacitors.
The manuals are available for download on our website: www.weg.net.

Power factor correction in networks with voltage harmonics – DRW

When voltage harmonics are present in a plant electrical network, caused by non-linear loads (variators, rectifiers, LED lighting, induction furnaces etc.), the use of capacitors can make the electrical system vulnerable to resonances.

The use of an appropriate detuning reactor eliminates the risk of resonance and avoids the reduction of the capacitor useful life, as the reactor will work as a harmonic current block between the system and the capacitor.

Operation

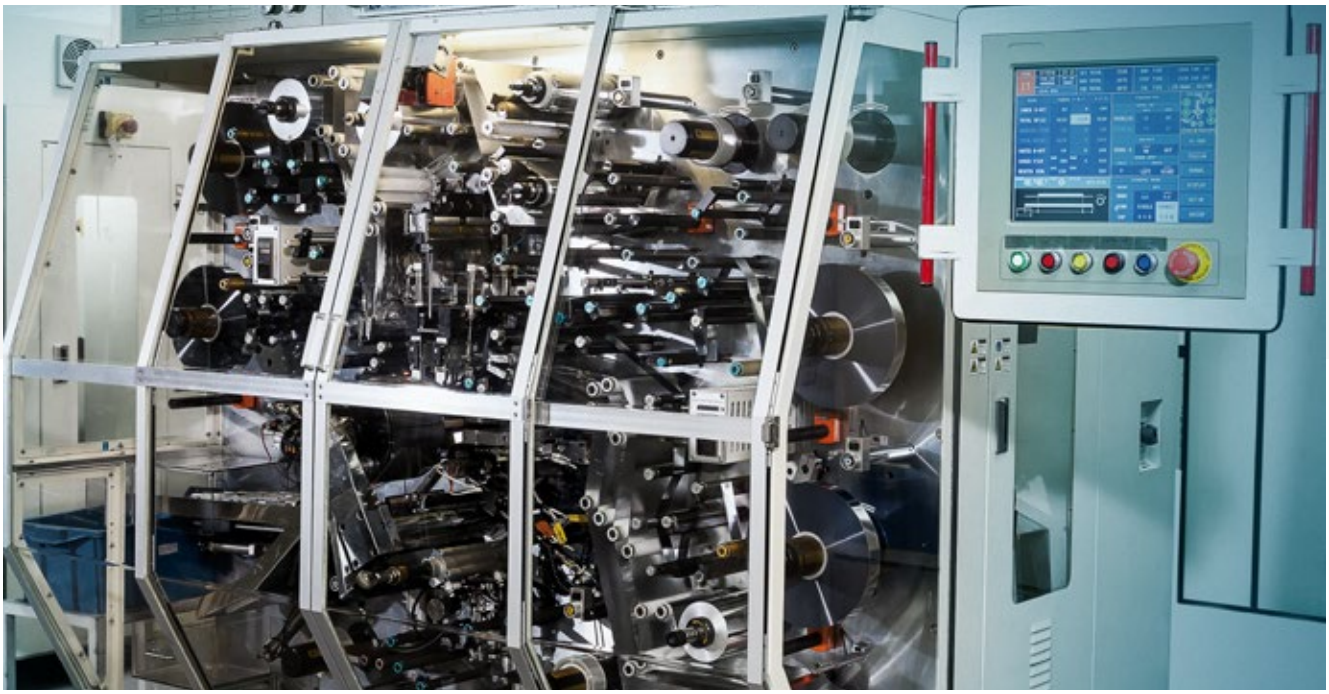
The correct association of a detuning reactor in series with a capacitor results in a resonant circuit with a lower resonance frequency than the natural resonance frequency of the electrical system. Therefore, the use of the reactor eliminates the possibility of having resonance between the capacitors and the inductances of the system, since the equivalent circuit is inductive for frequencies above the resonance frequency.

The sequence below shows how to correct the displacement factor using capacitor banks in installations where harmonic distortion occurs:

- Determine, with measurements or computer simulations, the presence of current harmonics in the main conductor of the system without capacitors under all load conditions. Calculate or directly measure the THDi and the individual values of the main harmonics;
- Measure the voltage harmonics, if possible, on the high side of the transformer. Calculate or directly measure the THDv;
- Are there THDi current harmonics >10% or THDv voltage harmonics >3% (measured or calculated) without capacitor?
  YES: use detuning filter and proceed to consideration 4
  NO: use traditional displacement factor correction (capacitors only);
- The 3rd harmonic content is between I3 >0.5xI5?
  YES: use detuning filter with DTF = 14%
  NO: use detuning filter with DTF = 7% (THDv: 3…7%) or special filter (THDv >7%).

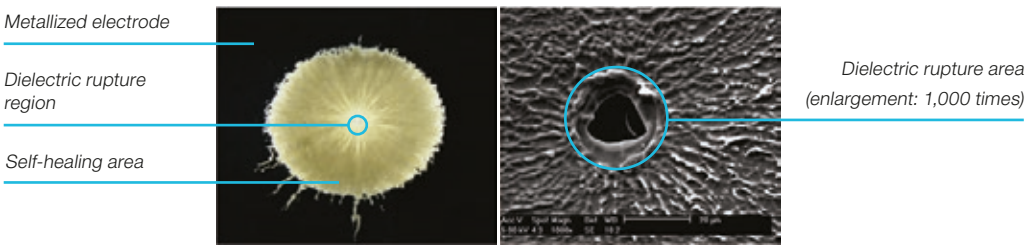
Capacitor technology

WEG capacitors for power factor correction are manufactured in accordance with NBR IEC 60831-1/2, UL 810 standards and RoHS directive. They are developed with self-healing metallized polypropylene film and a safety interrupting device against inner pressure.



The metallized polypropylene film has self-healing characteristic; therefore, the electrical properties are rapidly restored after a local perforation of the dielectric. As shown in the pictures below, at the moment the dielectric breaks, the metal layer around the perforation is vaporized and the short circuit is insulated.

The rupture of the dielectric may happen due to electrical or thermal overload, or because the capacitor has reached the end its service life. Immediately after the dielectric breaks, the capacitor will be in normal operation. The reduction in capacitance caused by self-healing is very low and can only be verified by a precision measuring instrument.



Safety device

All WEG capacitors for power factor correction have an internal overpressure safety device. This device is connected inside the capacitive unit in series with the capacitive element, and it interrupts the electric current in the capacitor in case of abnormal increase in the internal pressure. The actuation of this device occurs at the end of the product service life or in case of fault.

WEG capacitors for power factor correction are certified by UL - Underwriters Laboratories INC. with the highest short circuit current level, according to UL 810, guaranteeing the product safety, reliability and robustness.

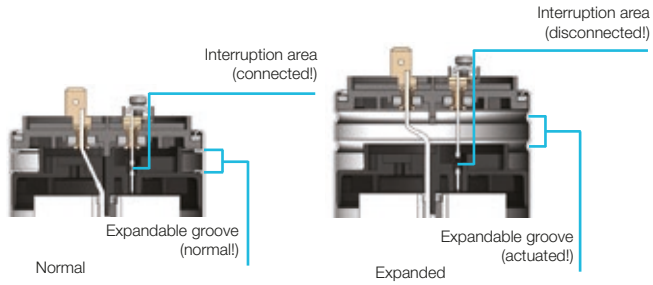
According to the end cap material, the safety device can actuate in two different ways.

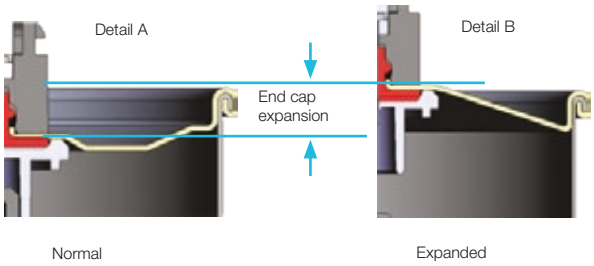
Safety device with plastic end cap

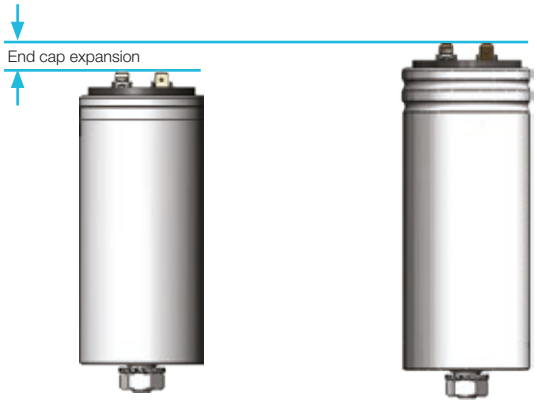
The aluminum cases used in the assembly of WEG capacitors are built with a specific aluminum alloy, ensuring greater durability, better thermal dissipation and perfect action of the explosion protection device.

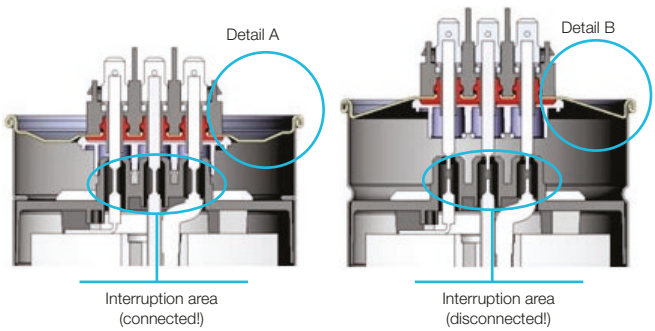
Safety device with metallic end cap

In order to protect the capacitive element from the influence of the external environment (humidity and other impurities) and ensure a longer service life of WEG capacitors, the capacitive element is mounted inside the aluminum housing and submerged in a special non-toxic oil. WEG capacitors are PCB free.









Overview

UCWT UHD series

UCWT HD series

UCWT ND series

UCW series

MCW series

Products	Ultra heavy duty three-phase capacitive unit	Heavy duty three-phase capacitive unit	Normal duty three-phase capacitive unit	Single-phase capacitive unit	Three-phase capacitive module	
Power	3.0...25 kvar	0.5...50 kvar	4.5...30 kvar	0.6...10 kvar	1.8...60 kvar	
Rated voltage	220...535 V	208...690 V	220...480 V	208...535 V	208...535 V	
Average life expectancy	300,000h	150,000h	100,000h	100,000h	100,000h	
Inrush current	400 x I_n	300 x I_n	100 x I_n	100 x I_n	100 x I_n	
Maximum current	2.5 x I_n	1.5 x I_n	1.3 x I_n	1.3 x I_n	1.3 x I_n	
Connection type	Δ (Delta)	Δ (Delta)	Δ (Delta)	-	Δ (Delta)	
Safety	Self-healing polypropylene film Three-phase over pressure switch	Self-healing polypropylene film Three-phase over pressure switch	Self-healing polypropylene film Three-phase overpressure switch	Self-healing polypropylene film Three-phase overpressure switch	Self-healing polypropylene film Three-phase overpressure switch	
Impregnation	Polyurethane resin	Polyurethane resin	Polyurethane resin	Polyurethane resin	Polyurethane resin	
Temperature class	-25 / D Minimum temperature: -25 °C Maximum temperature: 70 °C Maximum average temperature in 24h: 60 °C Maximum average temperature in 1 year: 50 °C	-25 / D Minimum temperature: -25 °C Maximum temperature: 55 °C Maximum average temperature in 24h: 45 °C Maximum average temperature in 1 year: 35 °C	-25 / D Minimum temperature: -25 °C Maximum temperature: 55 °C Maximum average temperature in 24h: 45 °C Maximum average temperature in 1 year: 35 °C	-25 / D Minimum temperature: -25 °C Maximum temperature: 55 °C Maximum average temperature in 24h: 45 °C Maximum average temperature in 1 year: 35 °C	-25 / D Minimum temperature: -25 °C Maximum temperature: 55 °C Maximum average temperature in 24h: 45 °C Maximum average temperature in 1 year: 35 °C	
Maximum humidity	95%	95%	95%	95%	95%	
Maximum altitude	2,000 m	2,000 m	2,000 m	2,000 m	2,000 m	
Reference standards	IEC 60831-1/2 UL 810	IEC 60831-1/2 UL 810	IEC 60831-1/2 UL 810	IEC 60831-1/2 UL 810	IEC 60831-1/2 UL 810	
Certifications	c UL us IRAM CE	c UL us IRAM CE	c UL us IRAM CE	c UL us IRAM CE	c UL us CE	
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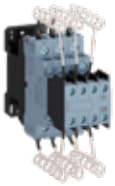
Overview

BCW

BCWP

BCWA

DRW



CWBC

PFW03

	Three-phase capacitor bank	Protected three-phase capacitor bank	Protected three-phase capacitor bank with automatic power factor controller	Detuning reactors	Contactors for capacitor switching
	8.3 ... 100 kvar	8.3 ... 100 kvar	20.0 ... 120 kvar	9.0 ... 63.2 kvar	Up to 77 kvar
	220 ... 535 V	220 ... 535 V	220...480 V	220 ... 480 V	Up to 690 V
	100,000 h	100,000 h	150,000h	-	10 million operations
	100 x I_n	100 x I_n	100 x I_n	-	-
	1.3 x I_n	1.3 x I_n	1.3 x I_n	1.5 x I_n (short periods of time)	-
	Δ (Delta)	Δ (Delta)	Δ (Delta)	See page 54	See page 58
	Metallic cabinet Self-healing polypropylene film Three-phase overpressure switch	Metallic cabinet Automatic molded case circuit breaker Self-healing polypropylene film Three-phase over-pressure switch	Metallic cabinet Automatic molded case circuit breaker Self-healing polypropylene film Three-phase over-pressure switch	Thermal protector	-
	Capacitors impregnated in polyurethane resin	Capacitors impregnated in polyurethane resin	Polyurethane resin	Vacuum impregnation	-
	-25 / D Minimum temperature: -25 °C Maximum temperature: 55 °C Maximum average temperature in 24 h: 45 °C Maximum average temperature in 1 year: 35 °C	-25 / D Minimum temperature: -25 °C Maximum temperature: 55 °C Maximum average temperature in 24 h: 45 °C Maximum average temperature in 1 year: 35 °C	-25 / D Minimum temperature: -25 °C Maximum temperature: 55 °C Maximum average temperature in 24h: 45 °C Maximum average temperature in 1 year: 35 °C	Minimum temperature: -5 °C Maximum temperature: 40 °C	Operation: -25 °C ... +70 °C Storage: -55 °C ... +80 °C
	95%	95%	95%	95%	95%
	2,000 m	2,000 m	2,000 m	2,000 m	3,000 m
	IEC 60831-1 IEC 60831-2	IEC 60831-1 IEC 60831-2	IEC 60831-1/2 IEC 61439-1/2	IEC 61558-2-20	IEC 60947-1 UL 508
	CE	CE	-	-	cULus CE
	41	44	47	52	60

General characteristics	Automatic power factor controllers
Measurement system	Single-phase and three-phase
Number of steps	8, 12 and 24
Load type	Capacitors 1Ø and 3Ø Reactors 1Ø and 3Ø
Learning function	Yes, for the 12 steps
Dynamic monitoring of capacitors - DCM	Yes, for the 12 steps
Display type	LCD
Alarm relay	Yes, 2 configurable
Temperature sensor	Yes, built-in
Communication	Modbus-RTU
Real time clock	Yes, for 12 and 24 steps
THD and harmonic distortion	Yes, up to 51st order
Direct and reverse energy measurement	Yes, for 12 and 24 steps
Certifications	EN 61010-1:2010 EN 61010-2-30:2010 EN 61326-1:2013 CE
Page	67

UCWT UHD – Ultra heavy duty three-phase capacitors

The UCWT Ultra Heavy Duty line was designed with increased ruggedness for severe Power Factor Correction applications and combined harmonic filter applications, where highest performance and long durability are required. Built with the well-known and reliable Metallized PP technology, they have a triple protection system, which eliminates the risks of damage due to failure.
The use of polypropylene as dielectric, added to the technologies of wave cutting, ramp metallization and semi-dry biodegradable flexible resin as impregnating agent, offers a high capacity in insertion currents of up to 400 times the rated current and an overcurrent of up to 2.5 times the rated current.

Characteristics

- Higher current capacity: 2.5 x I_n permanent
- Higher peak current tolerance: 400 x I_n
- Higher service life: 300,000h in temperature class -25/D
- Higher temperature resistance: 70 °C
- High current capacity, withstanding higher levels of harmonic distortion
- Safer: biodegradable flexible resin (triple protection system)
- Longer warranty: 5 years
- Altitude[1]: up to 2,000 m above sea level

Note: 1) For application at higher altitudes, contact WEG.

Guarantee of service continuity and robustness

Robustness
Permanent 2.5 x I_n
Peak 400 x I_n

Longer service life 300,000h

Longer warranty 5 years[1]

Maximum temperature 70 °C

Note: 1) 5-year warranty attributable to defects in material and workmanship after manufacturing. The warranty will not apply in case of overvoltage or incorrect product applications.

UCWT UHD – Ultra heavy duty three-phase capacitors

Product line

Three-phase capacitors - UCWT UHD (Ultra Heavy Duty)													
Voltage (V)	50 Hz		60 Hz		Capacitance (uF)	Series	Reference	Dimensions Ø x H (mm)	Design[1]	Discharge resistor		Code	Weight (kg)
	Reactive power (kvar)	Rated current I_n (A)	Reactive power (kvar)	Rated current I_n (A)						Discharge resistor	Discharge time[2]		
220	2.5	6.6	3.0	7.9	54.8 x 3	UHD	UCWT3V25 N20 UHD	75 x 225	B	3 x 56 kΩ	30	16207508	1.58
	4.2	10.9	5.0	13.1	91.3 x 3	UHD	UCWT5V25 O26 UHD	85 x 230	B	3 x 56 kΩ	30	16207509	1.58
	6.3	16.4	7.5	19.7	137 x 3	UHD	UCWT7.5V25 Q26 UHD	100 x 230	B	3 x 56 kΩ	90	16207511	2.12
	8.3	21.9	10.0	26.2	182.7 x 3	UHD	UCWT10V25 S26 UHD	116 x 230	B	3 x 56 kΩ	90	16207513	2.8
	12.5	32.8	15.0	39.4	274 x 3	UHD	UCWT15V25 U26 UHD	136 x 230	B	3 x 56 kΩ	90	16207515	3.14
380	4.2	6.3	5.0	7.6	30.6 x 3	UHD	UCWT5V40 N20 UHD	75 x 225	B	3 x 82 kΩ	30	16202791	1.56
	8.3	12.7	10.0	15.2	61.2 x 3	UHD	UCWT10V40 Q26 UHD	100 x 230	B	3 x 82 kΩ	30	16202792	2.21
	12.5	19.0	15.0	22.8	91.8 x 3	UHD	UCWT15V40 S26 UHD	116 x 230	B	3 x 82 kΩ	90	16202793	2.79
	16.7	25.3	20.0	30.4	122.5 x 3	UHD	UCWT20V40 U26 UHD	136 x 230	B	3 x 82 kΩ	90	16202794	3.31
	20.8	31.7	25.0	38.0	153.1 x 3	UHD	UCWT25V40 U26 UHD	136 x 230	B	3 x 82 kΩ	90	16202795	3.03
440	4.2	5.5	5.0	6.6	22.8 x 3	UHD	UCWT5V49 N20 UHD	75 x 225	B	3 x 100 kΩ	30	16216189	1.88
	8.3	10.9	10.0	13.1	45.7 x 3	UHD	UCWT10V49 Q26 UHD	100 x 230	B	3 x 100 kΩ	30	16216190	2.85
	12.5	16.4	15.0	19.7	68.5 x 3	UHD	UCWT15V49 S26 UHD	116 x 230	B	3 x 100 kΩ	90	16216192	3.74
	16.7	21.9	20.0	26.2	91.3 x 3	UHD	UCWT20V49 U26 UHD	136 x 230	B	3 x 100 kΩ	90	16216194	4.59
	20.8	27.3	25.0	32.8	114.2 x 3	UHD	UCWT25V49 U26 UHD	136 x 230	B	3 x 100 kΩ	90	16216196	4.63
480	4.2	5.0	5.0	6.0	19.2 x 3	UHD	UCWT5V53 N20 UHD	75 x 225	B	3 x 120 kΩ	30	16218131	1.56
	8.3	10.0	10.0	12.0	38.4 x 3	UHD	UCWT10V53 Q26 UHD	100 x 230	B	3 x 120 kΩ	90	16218132	2.21
	12.5	15.0	15.0	18.0	57.6 x 3	UHD	UCWT15V53 S26 UHD	116 x 230	B	3 x 120 kΩ	90	16218133	2.8
	16.7	20.0	20.0	24.1	76.8 x 3	UHD	UCWT20V53 U26 UHD	136 x 230	B	3 x 120 kΩ	90	16218135	3.33
	20.8	25.1	25.0	30.1	95.9 x 3	UHD	UCWT25V53 U26 UHD	136 x 230	B	3 x 120 kΩ	90	16218136	3.06
535	4.2	4.5	5.0	5.4	15.4 x 3	UHD	UCWT5V57 N20 UHD	75 x 225	B	3 x 120 kΩ	30	16218955	1.53
	8.3	9.0	10.0	10.8	30.9 x 3	UHD	UCWT10V57 Q26 UHD	100 x 230	B	3 x 120 kΩ	30	16218956	2.16
	12.5	13.5	15.0	16.2	46.3 x 3	UHD	UCWT15V57 U26 UHD	136 x 230	B	3 x 120 kΩ	90	16218957	3.52
	16.7	18.0	20.0	21.6	61.8 x 3	UHD	UCWT20V57 U26 UHD	136 x 230	B	3 x 120 kΩ	90	16219118	3.23

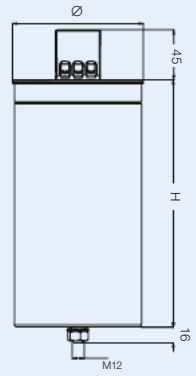
Notes: 1) Capacitors with design B are provided with external resistor.
2) Time to reduce the voltage at the capacitor terminals to 75 V or less.

UCWT UHD – Ultra heavy duty three-phase capacitors

Technical data

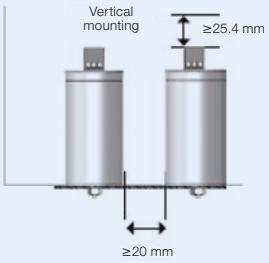
Characteristics	
Phases	Three-phase
Connection	Δ (Delta)
Reactive power	3.0 ... 25 kvar
Rated voltage	220 ... 535 V
Frequency	50 or 60 Hz
Capacitance tolerance	± 5%
Service life	300,000 hours
Safety	
Metallized polypropylene film	Self-healing properties
Mechanically safe	Overpressure switch
Maximum short-circuit capacity	10 kA

Dimensions - Design B



Maximum ratings	
Maximum current	2.5 x I_n
Maximum inrush current	400 x I_n
Maximum voltage (up to 8h daily)	1.1 x V_R

Mounting - Design B



Design data	
Impregnation	Polyurethane resin
Condenser fixation	M12 screw
Maximum fixing torque	14 N.m

Environment conditions	
Minimum temperature	-25 °C
Maximum temperature	+70 °C
Maximum average temperature in 24h	+60 °C
Maximum average temperature in 1 year	+50 °C
Maximum altitude	2,000 m[1)]
Maximum humidity	95%
Reference standards and certifications	
Reference standards	IEC 60831-1/2 UL 810
Certifications	CE IRAM cULus[2)]

Cross-section and tightening torque

Connection type	Terminal type	Cross-section (mm^2)	Torque (Nm)
		0.5...6.0	0.8...1.5
		1.5...10.0	1.5...2.5
		10.0...35.0	4.0...6.0

Notes: 1) For application at higher altitudes, contact WEG.
2) UL in progress for UCWT HD above 600 V.

UCWT HD - Heavy duty three-phase capacitors

The UCW T Heavy Duty line was designed to meet the needs of the most demanding PFC applications, where high performance and long durability are required. Built with the well-known and reliable Metallized PP technology, they have a triple protection system, which eliminates the risks of damage due to failure.

The use of polypropylene as dielectric, added to the technologies of wave cutting, ramp metallization and semi-dry biodegradable flexible resin as impregnating agent, offers a high capacity in insertion currents of up to 300 times the rated current and an overcurrent of up to 1.5 times the rated current.

Characteristics

- Higher current capacity: 1.5 x I_n permanent
- Higher peak current tolerance: 300 x I_n
- Increased service life: 150,000h
- Higher temperature resistance: 55 °C
- Safer: biodegradable flexible resin (triple protection system)
- Longer warranty: 3 years
- Altitude[1)]: up to 2,000 m above sea level

Note: 1) For application at higher altitudes, contact WEG.

Guarantee of service continuity

Longer service life 150,000h

Longer warranty 3 years[1)]

Maximum temperature 55 °C

Note: 1) 3-year warranty attributable to defects in material and workmanship after manufacturing. The warranty will not apply in case of overvoltage, harmonic problems or incorrect product applications.

UCWT HD - Heavy duty three-phase capacitors

Product line

Three-phase capacitor - UCWT HD (Heavy Duty)													
Voltage (V)	50 Hz		60 Hz		Capacitance (uF)	Series	Reference	Dimensions Ø x H (mm)	Design[1)]	Discharge resistor		Code	Weight (kg)
	Reactive power (kvar)	Rated current I_n (A)	Reactive power (kvar)	Rated current I_n (A)						Discharge resistor	Discharge time		
208	0.4	1.0	0.4	1.2	9.1 x 3	HD	UCWT0.5V25 L10 HD	60 x 156	A	Internal resistor	30	10045998	0.51
	0.6	1.6	0.7	1.9	13.7 x 3	HD	UCWT0.75V25 L10 HD	60 x 156	A	Internal resistor	30	10045999	0.52
	0.7	2.1	0.9	2.5	18.3 x 3	HD	UCWT1V25 L10 HD	60 x 156	A	Internal resistor	30	10046000	0.54
	1.1	3.1	1.3	3.7	27.4 x 3	HD	UCWT1.5V25 L10 HD	60 x 156	A	Internal resistor	30	10046001	0.57
	1.5	4.1	1.8	5.0	36.5 x 3	HD	UCWT2V25 L10 HD	60 x 156	A	Internal resistor	30	10046002	0.59
	1.9	5.2	2.2	6.2	45.7 x 3	HD	UCWT2.5V25 L16 HD	60 x 204	A	Internal resistor	30	10046003	0.73
	2.2	6.2	2.7	7.4	54.8 x 3	HD	UCWT3V25 L16 HD	60 x 204	A	Internal resistor	30	10046004	0.76
	3.7	10.3	4.5	12.4	91.3 x 3	HD	UCWT5V25 N20 HD	75 x 225	B	3 x 82 kΩ / Delta	30	11313760	1.51
	5.6	15.5	6.7	18.6	137 x 3	HD	UCWT7.5V25 N22 HD	75 x 285	B	3 x 82 kΩ / Delta	30	11313783	1.81
	7.4	20.7	8.9	24.8	182.7 x 3	HD	UCWT10V25 N22 HD	75 x 285	B	3 x 82 kΩ / Delta	30	11313782	1.81
	7.4	20.7	8.9	24.8	182.7 x 3	HD	UCWT10V25 Q26 HD	100 x 230	B	3 x 82 kΩ / Delta	30	11914849	2.17
	9.3	25.8	11.2	31.0	228.4 x 3	HD	UCWT12.5V25 Q26 HD	100 x 230	B	3 x 82 kΩ / Delta	30	11914851	2.17
	11.2	31.0	13.4	37.2	274 x 3	HD	UCWT15V25 S26 HD	116 x 230	B	3 x 82 kΩ / Delta	30	11914853	2.69
	13.0	36.2	15.6	43.4	319.7 x 3	HD	UCWT17.5V25 S28 HD	116 x 290	B	3 x 82 kΩ / Delta	30	12271622	3.50
	14.9	41.4	17.9	49.6	365.4 x 3	HD	UCWT20V25 S28 HD	116 x 290	B	3 x 82 kΩ / Delta	30	12271626	3.50
	18.6	51.7	22.3	62.0	456.7 x 3	HD	UCWT25V25 U28 HD	136 x 290	B	3 x 82 kΩ / Delta	90	13365111	4.43
	22.3	62.0	26.8	74.4	548.1 x 3	HD	UCWT30V25 U28 HD	136 x 290	B	3 x 82 kΩ / Delta	90	13365631	4.43
220	0.4	1.1	0.5	1.3	9.1 x 3	HD	UCWT0.5V25 L10 HD	60 x 156	A	Internal resistor	30	10045998	0.51
	0.6	1.6	0.8	2.0	13.7 x 3	HD	UCWT0.75V25 L10 HD	60 x 156	A	Internal resistor	30	10045999	0.52
	0.8	2.2	1.0	2.6	18.3 x 3	HD	UCWT1V25 L10 HD	60 x 156	A	Internal resistor	30	10046000	0.54
	1.3	3.3	1.5	3.9	27.4 x 3	HD	UCWT1.5V25 L10 HD	60 x 156	A	Internal resistor	30	10046001	0.57
	1.7	4.4	2.0	5.2	36.5 x 3	HD	UCWT2V25 L10 HD	60 x 156	A	Internal resistor	30	10046002	0.59
	2.1	5.5	2.5	6.6	45.7 x 3	HD	UCWT2.5V25 L16 HD	60 x 204	A	Internal resistor	30	10046003	0.73
	2.5	6.6	3.0	7.9	54.8 x 3	HD	UCWT3V25 L16 HD	60 x 204	A	Internal resistor	30	10046004	0.76
	4.2	10.9	5.0	13.1	91.3 x 3	HD	UCWT5V25 N20 HD	75 x 225	A	3 x 82 kΩ / Delta	30	11313760	1.51
	6.3	16.4	7.5	19.7	137 x 3	HD	UCWT7.5V25 N22 HD	75 x 285	A	3 x 82 kΩ / Delta	30	11313783	1.81
	8.3	21.9	10.0	26.2	182.7 x 3	HD	UCWT10V25 N22 HD	75 x 285	A	3 x 82 kΩ / Delta	30	11313782	1.81
	8.3	21.9	10.0	26.2	182.7 x 3	HD	UCWT10V25 Q26 HD	100 x 230	B	3 x 82 kΩ / Delta	30	11914849	2.17
	10.4	27.3	12.5	32.8	228.4 x 3	HD	UCWT12.5V25 Q26 HD	100 x 230	B	3 x 82 kΩ / Delta	30	11914851	2.17
	12.5	32.8	15.0	39.4	274 x 3	HD	UCWT15V25 S26 HD	116 x 230	B	3 x 82 kΩ / Delta	30	11914853	2.69
	14.6	38.3	17.5	45.9	319.7 x 3	HD	UCWT17.5V25 S28 HD	116 x 290	B	3 x 82 kΩ / Delta	30	12271622	3.50
	16.7	43.7	20.0	52.5	365.4 x 3	HD	UCWT20V25 S28 HD	116 x 290	B	3 x 82 kΩ / Delta	90	12271626	3.50
	20.8	54.7	25.0	65.6	456.7 x 3	HD	UCWT25V25 U28 HD	136 x 290	B	3 x 82 kΩ / Delta	90	13365111	4.43
	25.0	65.6	30.0	78.7	548.1 x 3	HD	UCWT30V25 U28 HD	136 x 290	B	3 x 82 kΩ / Delta	90	13365631	4.43

Note: 1) Capacitors with design A are provided with internal resistor. Capacitors with design B are provided with external resistor.

UCWT HD - Heavy duty three-phase capacitors

Product line

Three-phase capacitor - UCWT HD (Heavy Duty)													
Voltage (V)	50 Hz		60 Hz		Capacitance (uF)	Series	Reference	Dimensions Ø x H (mm)	Design[1)]	Discharge resistor		Code	Weight (kg)
	Reactive power (kvar)	Rated current I_n (A)	Reactive power (kvar)	Rated current I_n (A)						Discharge resistor	Discharge time		
230	0.5	1.3	0.6	1.5	10 x 3	HD	UCWT0.5V34 L10 HD	60 x 156	A	Internal resistor	30	10862201	0.46
	0.8	1.9	0.9	2.3	15 x 3	HD	UCWT0.75V34 L10 HD	60 x 156	A	Internal resistor	30	10072544	0.53
	1.0	2.5	1.2	3.0	20.1 x 3	HD	UCWT1V34 L10 HD	60 x 156	A	Internal resistor	30	10074467	0.55
	1.5	3.8	1.8	4.5	30.1 x 3	HD	UCWT1.5V34 L10 HD	60 x 156	A	Internal resistor	30	10862180	0.42
	2.0	5.0	2.4	6.0	40.1 x 3	HD	UCWT2V34 L10 HD	60 x 156	A	Internal resistor	30	10862184	0.54
	2.5	6.3	3.0	7.5	50.1 x 3	HD	UCWT2.5V34 L16 HD	60 x 204	A	Internal resistor	30	10072346	0.74
	3.0	7.5	-	-	60.2 x 3	HD	UCWT3V34 L16 HD	60 x 204	A	Internal resistor	30	10046055	0.76
	5.0	12.6	6.0	15.1	100.3 x 3	HD	UCWT5V34 N20 HD	75 x 225	A	3 x 82 kΩ / Delta	30	11871789	1.56
	7.5	18.8	9.0	22.6	150.4 x 3	HD	UCWT7.5V34 N22 HD	75 x 285	A	3 x 82 kΩ / Delta	30	11758922	1.80
	10.0	25.1	12.0	30.1	200.6 x 3	HD	UCWT10V34 Q26 HD	100 x 230	B	3 x 82 kΩ / Delta	30	11914855	2.18
	12.5	31.4	15.0	37.7	250.7 x 3	HD	UCWT12.5V34 Q26 HD	100 x 230	B	3 x 82 kΩ / Delta	30	11914856	2.18
	15.0	37.7	-	-	300.9 x 3	HD	UCWT15V34 S26 HD	116 x 230	B	3 x 82 kΩ / Delta	30	11914888	2.70
	17.5	43.9	-	-	351 x 3	HD	UCWT17.5V34 S28 HD	116 x 290	B	3 x 82 kΩ / Delta	90	12271566	3.50
	20.0	50.2	-	-	401.1 x 3	HD	UCWT20V34 S28 HD	116 x 290	B	3 x 82 kΩ / Delta	90	12271567	3.50
240	0.4	1.0	0.5	1.2	7.7 x 3	HD	UCWT0.5V29 L10 HD	60 x 156	A	Internal resistor	30	10072607	0.50
	0.6	1.5	0.8	1.8	11.5 x 3	HD	UCWT0.75V29 L10 HD	60 x 156	A	Internal resistor	30	10072608	0.51
	0.8	2.0	1.0	2.4	15.4 x 3	HD	UCWT1V29 L10 HD	60 x 156	A	Internal resistor	30	10046265	0.52
	1.3	3.0	1.5	3.6	23 x 3	HD	UCWT1.5V29 L10 HD	60 x 156	A	Internal resistor	30	10072303	0.56
	1.7	4.0	2.0	4.8	30.7 x 3	HD	UCWT2V29 L10 HD	60 x 156	A	Internal resistor	30	10046266	0.56
	2.1	5.0	2.5	6.0	38.4 x 3	HD	UCWT2.5V29 L16 HD	60 x 204	A	Internal resistor	30	10748190	0.73
	2.5	6.0	3.0	7.2	46.1 x 3	HD	UCWT3V29 L16 HD	60 x 204	A	Internal resistor	30	10748194	0.74
	4.2	10.0	5.0	12.0	76.8 x 3	HD	UCWT5V29 N20 HD	75 x 225	A	3 x 82 kΩ / Delta	30	11983248	1.62
	6.3	15.0	7.5	18.0	115.1 x 3	HD	UCWT7.5V29 N22 HD	75 x 285	A	3 x 82 kΩ / Delta	30	11758813	1.87
	8.3	20.0	10.0	24.1	153.5 x 3	HD	UCWT10V29 N22 HD	75 x 285	A	3 x 82 kΩ / Delta	30	11758287	1.80
	8.3	20.0	10.0	24.1	153.5 x 3	HD	UCWT10V29 Q26 HD	100 x 230	B	3 x 82 kΩ / Delta	30	12029202	2.17
	10.4	25.1	12.5	30.1	191.9 x 3	HD	UCWT12.5V29 Q26 HD	100 x 230	B	3 x 82 kΩ / Delta	30	12029203	2.17
	12.5	30.1	15.0	36.1	230.3 x 3	HD	UCWT15V29 S26 HD	116 x 230	B	3 x 82 kΩ / Delta	30	12029204	2.72
	14.6	35.1	17.5	42.1	268.6 x 3	HD	UCWT17.5V29 S28 HD	116 x 290	B	3 x 82 kΩ / Delta	30	12271869	3.51
	16.7	40.1	20.0	48.1	307 x 3	HD	UCWT20V29 S28 HD	116 x 290	B	3 x 82 kΩ / Delta	30	12272006	3.50
260	4.2	9.3	5.0	11.1	65.4 x 3	HD	UCWT5VD3 N20 HD	75 x 225	B	3 x 82 kΩ / Delta	30	15045926	1.56
	8.3	18.5	10.0	22.2	130.8 x 3	HD	UCWT10VD3 Q26 HD	100 x 230	B	3 x 82 kΩ / Delta	30	14828930	1.82
	12.5	27.8	15.0	33.3	196.2 x 3	HD	UCWT15VD3 S26 HD	116 x 230	B	3 x 82 kΩ / Delta	30	14200219	2.43
	16.7	37.0	20.0	44.4	261.6 x 3	HD	UCWT20VD3 U26 HD	136 x 230	B	3 x 82 kΩ / Delta	30	15045927	3.50
	20.8	46.3	25.0	55.5	327 x 3	HD	UCWT25VD3 U28 HD	136 x 290	B	3 x 82 kΩ / Delta	90	15046148	4.45
	25.0	55.5	30.0	66.6	392.4 x 3	HD	UCWT30VD3 U28 HD	136 x 290	B	3 x 82 kΩ / Delta	90	15046149	4.45

Note: 1) Capacitors with design A are provided with internal resistor. Capacitors with design B are provided with external resistor.

UCWT HD - Heavy duty three-phase capacitors

Product line

Three-phase capacitor - UCWT HD (Heavy Duty)													
Voltage (V)	50 Hz		60 Hz		Capacitance (uF)	Series	Reference	Dimensions Ø x H (mm)	Design[1)]	Discharge resistor		Code	Weight (kg)
	Reactive power (kvar)	Rated current I_n (A)	Reactive power (kvar)	Rated current I_n (A)						Discharge resistor	Discharge time		
380	0.4	0.6	0.5	0.8	3.1 x 3	HD	UCWT0.5V40 L10 HD	60 x 156	A	Internal resistor	30	10046005	0.50
	0.6	0.9	0.8	1.1	4.6 x 3	HD	UCWT0.75V40 L10 HD	60 x 156	A	Internal resistor	30	10046006	0.51
	0.8	1.3	1.0	1.5	6.1 x 3	HD	UCWT1V40 L10 HD	60 x 156	A	Internal resistor	30	10046007	0.51
	1.3	1.9	1.5	2.3	9.2 x 3	HD	UCWT1.5V40 L10 HD	60 x 156	A	Internal resistor	30	10046008	0.53
	1.7	2.5	2.0	3.0	12.2 x 3	HD	UCWT2V40 L10 HD	60 x 156	A	Internal resistor	30	10046009	0.55
	2.1	3.2	2.5	3.8	15.3 x 3	HD	UCWT2.5V40 L10 HD	60 x 156	A	Internal resistor	30	10046010	0.61
	2.5	3.8	3.0	4.6	18.4 x 3	HD	UCWT3V40 L10 HD	60 x 156	A	Internal resistor	30	10046011	0.56
	4.2	6.3	5.0	7.6	30.6 x 3	HD	UCWT5V40 L16 HD	60 x 204	A	Internal resistor	30	10046012	0.74
	6.3	9.5	7.5	11.4	45.9 x 3	HD	UCWT7.5V40 N20 HD	75 x 225	B	3 x 120 kΩ / Delta	30	11313784	1.50
	8.3	12.7	10.0	15.2	61.2 x 3	HD	UCWT10V40 N20 HD	75 x 225	B	3 x 120 kΩ / Delta	30	11313787	1.55
	10.4	15.8	12.5	19.0	76.5 x 3	HD	UCWT12.5V40 N22 HD	75 x 285	B	3 x 120 kΩ / Delta	30	11313820	1.80
	12.5	19.0	15.0	22.8	91.8 x 3	HD	UCWT15V40 N22 HD	75 x 285	B	3 x 120 kΩ / Delta	30	11313821	1.81
	12.5	19.0	15.0	22.8	91.8 x 3	HD	UCWT15V40 Q26 HD	100 x 230	B	3 x 120 kΩ / Delta	30	11916878	2.17
	14.6	22.2	17.5	26.6	107.2 x 3	HD	UCWT17.5V40 Q26 HD	100 x 230	B	3 x 120 kΩ / Delta	30	11916880	2.18
	16.7	25.3	20.0	30.4	122.5 x 3	HD	UCWT20V40 Q26 HD	100 x 230	B	3 x 120 kΩ / Delta	30	11916901	2.18
	18.8	28.5	22.5	34.2	137.8 x 3	HD	UCWT22.5V40 S26 HD	116 x 230	B	3 x 120 kΩ / Delta	30	11916903	2.69
	20.8	31.7	25.0	38.0	153.1 x 3	HD	UCWT25V40 S26 HD	116 x 230	B	3 x 120 kΩ / Delta	30	11916924	2.70
	25.0	38.0	30.0	45.6	183.7 x 3	HD	UCWT30V40 S28 HD	116 x 290	B	3 x 120 kΩ / Delta	90	12272194	3.50
	29.2	44.3	35.0	53.2	214.3 x 3	HD	UCWT35V40 S28 HD	116 x 290	B	3 x 120 kΩ / Delta	90	12267042	3.50
	33.3	50.6	40.0	60.8	244.9 x 3	HD	UCWT40V40 U28 HD	136 x 290	B	3 x 120 kΩ / Delta	90	13365634	4.45
	37.5	57.0	45.0	68.4	275.5 x 3	HD	UCWT45V40 U28 HD	136 x 290	B	3 x 120 kΩ / Delta	90	13365636	4.45
	41.7	63.3	50.0	76.0	306.2 x 3	HD	UCWT50V40 U28 HD	136 x 290	B	3 x 120 kΩ / Delta	90	13365637	4.45
400	0.5	0.7	0.6	0.9	3.3 x 3	HD	UCWT0.5V44 L10 HD	60 x 156	A	Internal resistor	30	10046056	0.50
	0.8	1.1	0.9	1.3	5 x 3	HD	UCWT0.75V44 L10 HD	60 x 156	A	Internal resistor	30	10046057	0.51
	1.0	1.4	1.2	1.7	6.6 x 3	HD	UCWT1V44 L10 HD	60 x 156	A	Internal resistor	30	10046058	0.52
	1.5	2.2	1.8	2.6	9.9 x 3	HD	UCWT1.5V44 L10 HD	60 x 156	A	Internal resistor	30	10046059	0.53
	2.0	2.9	2.4	3.5	13.3 x 3	HD	UCWT2V44 L10 HD	60 x 156	A	Internal resistor	30	10046060	0.49
	2.5	3.6	3.0	4.3	16.6 x 3	HD	UCWT2.5V44 L10 HD	60 x 156	A	Internal resistor	30	10046061	0.57
	3.0	4.3	3.6	5.2	19.9 x 3	HD	UCWT3V44 L10 HD	60 x 156	A	Internal resistor	30	10046062	0.59
	5.0	7.2	-	-	33.2 x 3	HD	UCWT5V44 L16 HD	60 x 204	A	Internal resistor	30	10046063	0.69
	7.5	10.8	9.0	13.0	49.7 x 3	HD	UCWT7.5V44 N20 HD	75 x 225	B	3 x 120 kΩ / Delta	30	11313822	1.51
	10.0	14.4	12.0	17.3	66.3 x 3	HD	UCWT10V44 N20 HD	75 x 225	B	3 x 120 kΩ / Delta	30	11313824	1.53
	12.5	18.0	15.0	21.7	82.9 x 3	HD	UCWT12.5V44 N22 HD	75 x 285	B	3 x 120 kΩ / Delta	30	11314662	1.81
	15.0	21.7	-	-	99.5 x 3	HD	UCWT15V44 N22 HD	75 x 285	B	3 x 120 kΩ / Delta	30	11758282	1.78
	15.0	21.7	18.0	26.0	99.5 x 3	HD	UCWT15V44 Q26 HD	100 x 230	B	3 x 120 kΩ / Delta	30	11894312	2.18
	17.5	25.3	-	-	116.1 x 3	HD	UCWT17.5V44 Q26 HD	100 x 230	B	3 x 120 kΩ / Delta	30	11916969	2.18
	20.0	28.9	-	-	132.6 x 3	HD	UCWT20V44 Q26 HD	100 x 230	B	3 x 120 kΩ / Delta	30	11916999	2.18
	22.5	32.5	-	-	149.2 x 3	HD	UCWT22.5V44 S26 HD	116 x 230	B	3 x 120 kΩ / Delta	30	11917000	2.70
	25.0	36.1	-	-	165.8 x 3	HD	UCWT25V44 S26 HD	116 x 230	B	3 x 120 kΩ / Delta	90	11894313	2.70
	30.0	43.3	-	-	198.9 x 3	HD	UCWT30V44 S28 HD	116 x 290	B	3 x 120 kΩ / Delta	90	12272688	3.50
	35.0	50.5	-	-	232.1 x 3	HD	UCWT35V44 S28 HD	116 x 290	B	3 x 120 kΩ / Delta	90	12272697	3.50
	40.0	57.7	48.0	69.3	265.3 x 3	HD	UCWT40V44 U28 HD	136 x 290	B	3 x 120 kΩ / Delta	90	13365669	4.45
	45.0	65.0	-	-	298.4 x 3	HD	UCWT45V44 U28 HD	136 x 290	B	3 x 120 kΩ / Delta	90	13365670	4.45

Note: 1) Capacitors with design A are provided with internal resistor. Capacitors with design B are provided with external resistor.

UCWT HD - Heavy duty three-phase capacitors

Product line

Three-phase capacitor - UCWT HD (Heavy Duty)													
Voltage (V)	50 Hz		60 Hz		Capacitance (uF)	Series	Reference	Dimensions Ø x H (mm)	Design[1)]	Discharge resistor		Code	Weight (kg)
	Reactive power (kvar)	Rated current I_n (A)	Reactive power (kvar)	Rated current I_n (A)						Discharge resistor	Discharge time		
415	0.4	0.5	0.4	0.6	2.3 x 3	HD	UCWT0.5V49 L10 HD	60 x 156	A	Internal resistor	30	10046013	0.50
	0.4	0.6	0.5	0.7	2.7 x 3	HD	UCWT0.5V48 L10 HD	60 x 156	A	Internal resistor	30	10072545	0.50
	0.6	0.8	0.7	0.9	3.4 x 3	HD	UCWT0.75V49 L10 HD	60 x 156	A	Internal resistor	30	10046014	0.50
	0.7	0.9	0.8	1.1	4.1 x 3	HD	UCWT0.75V48 L10 HD	60 x 156	A	Internal resistor	30	10072546	0.51
	0.7	1.0	0.9	1.2	4.6 x 3	HD	UCWT1V49 L10 HD	60 x 156	A	Internal resistor	30	10046015	0.51
	0.9	1.2	1.1	1.5	5.5 x 3	HD	UCWT1V48 L10 HD	60 x 156	A	Internal resistor	30	10072547	0.52
	1.1	1.5	1.3	1.9	6.9 x 3	HD	UCWT1.5V49 L10 HD	60 x 156	A	Internal resistor	30	10046016	0.53
	1.3	1.9	1.6	2.2	8.2 x 3	HD	UCWT1.5V48 L10 HD	60 x 156	A	Internal resistor	30	10046254	0.54
	1.5	2.1	1.8	2.5	9.1 x 3	HD	UCWT2V49 L10 HD	60 x 156	A	Internal resistor	30	10046017	0.55
	1.8	2.5	2.1	3.0	11 x 3	HD	UCWT2V48 L10 HD	60 x 156	A	Internal resistor	30	10072548	0.57
	1.9	2.6	2.2	3.1	11.4 x 3	HD	UCWT2.5V49 L10 HD	60 x 156	A	Internal resistor	30	10046018	0.56
	2.2	3.1	2.7	3.7	13.7 x 3	HD	UCWT3V49 L10 HD	60 x 156	A	Internal resistor	30	10046019	0.55
	2.7	3.7	3.2	4.5	16.4 x 3	HD	UCWT3V48 L16 HD	60 x 204	A	Internal resistor	30	10072549	0.66
	3.7	5.2	4.4	6.2	22.8 x 3	HD	UCWT5V49 L16 HD	60 x 204	A	Internal resistor	30	10046020	0.75
	4.4	6.2	-	-	27.4 x 3	HD	UCWT5V48 L16 HD	60 x 204	A	Internal resistor	30	10046258	0.76
	5.6	7.7	6.7	9.3	34.3 x 3	HD	UCWT7.5V49 N20 HD	75 x 225	B	3 x 150 kΩ / Delta	30	11314663	1.51
	6.7	9.3	8.0	11.1	41.1 x 3	HD	UCWT7.5V48 N20 HD	75 x 225	B	3 x 150 kΩ / Delta	30	11758619	1.51
	7.4	10.3	8.9	12.4	45.7 x 3	HD	UCWT10V49 N20 HD	75 x 225	B	3 x 150 kΩ / Delta	30	11758279	1.52
	8.9	12.4	10.7	14.9	54.8 x 3	HD	UCWT10V48 N22 HD	75 x 285	B	3 x 150 kΩ / Delta	30	11758624	1.98
	9.3	12.9	11.1	15.5	57.1 x 3	HD	UCWT12.5V49 N22 HD	75 x 285	B	3 x 150 kΩ / Delta	30	11314665	1.80
	11.1	15.5	13.3	18.6	68.5 x 3	HD	UCWT12.5V48 N22 HD	75 x 285	B	3 x 150 kΩ / Delta	30	11758675	1.82
	11.1	15.5	13.3	18.6	68.5 x 3	HD	UCWT15V49 N22 HD	75 x 285	B	3 x 150 kΩ / Delta	30	11314666	1.82
	11.1	15.5	13.3	18.6	68.5 x 3	HD	UCWT15V49 Q26 HD	100 x 230	B	3 x 150 kΩ / Delta	30	11917005	2.17
	13.0	18.0	15.6	21.7	79.9 x 3	HD	UCWT17.5V49 Q26 HD	100 x 230	B	3 x 150 kΩ / Delta	30	11917006	2.18
	13.3	18.6	16.0	22.3	82.2 x 3	HD	UCWT15V48 Q26 HD	100 x 230	B	3 x 150 kΩ / Delta	30	11917040	2.18
	14.8	20.6	17.8	24.8	91.3 x 3	HD	UCWT20V49 Q26 HD	100 x 230	B	3 x 150 kΩ / Delta	30	11917007	2.18
	15.6	21.7	18.7	26.0	95.9 x 3	HD	UCWT17.5V48 Q26 HD	100 x 230	B	3 x 150 kΩ / Delta	30	11917041	2.07
	16.7	23.2	20.0	27.8	102.8 x 3	HD	UCWT22.5V49 S26 HD	116 x 230	B	3 x 150 kΩ / Delta	30	11917018	2.70
	17.8	24.8	21.4	29.7	109.6 x 3	HD	UCWT20V48 S26 HD	116 x 230	B	3 x 150 kΩ / Delta	30	11917043	2.70
	18.5	25.8	22.2	30.9	114.2 x 3	HD	UCWT25V49 S26 HD	116 x 230	B	3 x 150 kΩ / Delta	30	11917021	3.26
	20.0	27.8	24.0	33.4	123.3 x 3	HD	UCWT22.5V48 S26 HD	116 x 230	B	3 x 150 kΩ / Delta	90	11917045	2.70
	25.0	34.8	-	-	154 x 3	HD	UCWT25V48 S26 HD	116 x 230	B	3 x 150 kΩ / Delta	90	11917058	2.71
	22.2	30.9	26.7	37.1	137 x 3	HD	UCWT30V49 S28 HD	116 x 290	B	3 x 150 kΩ / Delta	90	12272719	3.50
	25.9	36.1	31.1	43.3	159.8 x 3	HD	UCWT35V49 S28 HD	116 x 290	B	3 x 150 kΩ / Delta	90	12272780	3.50
	29.7	41.3	35.6	49.5	182.7 x 3	HD	UCWT40V49 U28 HD	136 x 290	B	3 x 150 kΩ / Delta	90	13365671	4.45
	33.4	46.4	40.0	55.7	205.5 x 3	HD	UCWT45V49 U28 HD	136 x 290	B	3 x 150 kΩ / Delta	90	13365672	4.45
	37.1	51.6	44.5	61.9	228.4 x 3	HD	UCWT50V49 U28 HD	136 x 290	B	3 x 150 kΩ / Delta	90	13365673	4.45

Note: 1) Capacitors with design A are provided with internal resistor. Capacitors with design B are provided with external resistor.

UCWT HD - Heavy duty three-phase capacitors

Product line

Three-phase capacitor - UCWT HD (Heavy Duty)													
Voltage (V)	50 Hz		60 Hz		Capacitance (uF)	Series	Reference	Dimensions Ø x H (mm)	Design[1)]	Discharge resistor		Code	Weight (kg)
	Reactive power (kvar)	Rated current I_n (A)	Reactive power (kvar)	Rated current I_n (A)						Discharge resistor	Discharge time		
440	0.4	0.5	0.5	0.7	2.3 x 3	HD	UCWT0.5V49 L10 HD	60 x 156	A	Internal resistor	30	10046013	0.50
	0.5	0.7	0.6	0.8	2.7 x 3	HD	UCWT0.5V48 L10 HD	60 x 156	A	Internal resistor	30	10072545	0.50
	0.6	0.8	0.8	1.0	3.4 x 3	HD	UCWT0.75V49 L10 HD	60 x 156	A	Internal resistor	30	10046014	0.50
	0.8	1.0	0.9	1.2	4.1 x 3	HD	UCWT0.75V48 L10 HD	60 x 156	A	Internal resistor	30	10072546	0.51
	0.8	1.1	1.0	1.3	4.6 x 3	HD	UCWT1V49 L10 HD	60 x 156	A	Internal resistor	30	10046015	0.51
	1.0	1.3	1.2	1.6	5.5 x 3	HD	UCWT1V48 L10 HD	60 x 156	A	Internal resistor	30	10072547	0.52
	1.3	1.6	1.5	2.0	6.9 x 3	HD	UCWT1.5V49 L10 HD	60 x 156	A	Internal resistor	30	10046016	0.53
	1.5	2.0	1.8	2.4	8.2 x 3	HD	UCWT1.5V48 L10 HD	60 x 156	A	Internal resistor	30	10046254	0.54
	1.7	2.2	2.0	2.6	9.1 x 3	HD	UCWT2V49 L10 HD	60 x 156	A	Internal resistor	30	10046017	0.55
	2.0	2.6	2.4	3.1	11 x 3	HD	UCWT2V48 L10 HD	60 x 156	A	Internal resistor	30	10072548	0.57
	2.1	2.7	2.5	3.3	11.4 x 3	HD	UCWT2.5V49 L10 HD	60 x 156	A	Internal resistor	30	10046018	0.56
	2.5	3.3	3.0	3.9	13.7 x 3	HD	UCWT3V49 L10 HD	60 x 156	A	Internal resistor	30	10046019	0.55
	3.0	3.9	3.6	4.7	16.4 x 3	HD	UCWT3V48 L16 HD	60 x 204	A	Internal resistor	30	10072549	0.66
	4.2	5.5	5.0	6.6	22.8 x 3	HD	UCWT5V49 L16 HD	60 x 204	A	Internal resistor	30	10046020	0.75
	5.0	6.6	-	-	27.4 x 3	HD	UCWT5V48 L16 HD	60 x 204	A	Internal resistor	30	10046258	0.76
	6.3	8.2	7.5	9.8	34.3 x 3	HD	UCWT7.5V49 N20 HD	75 x 225	B	3 x 150 kΩ / Delta	30	11314663	1.51
	7.5	9.8	9.0	11.8	41.1 x 3	HD	UCWT7.5V48 N20 HD	75 x 225	B	3 x 150 kΩ / Delta	30	11758619	1.51
	8.3	10.9	10.0	13.1	45.7 x 3	HD	UCWT10V49 N20 HD	75 x 225	B	3 x 150 kΩ / Delta	30	11758279	1.52
	10.0	13.1	12.0	15.7	54.8 x 3	HD	UCWT10V48 N22 HD	75 x 285	B	3 x 150 kΩ / Delta	30	11758624	1.98
	10.4	13.7	12.5	16.4	57.1 x 3	HD	UCWT12.5V49 N22 HD	75 x 285	B	3 x 150 kΩ / Delta	30	11314665	1.80
	12.5	16.4	15.0	19.7	68.5 x 3	HD	UCWT12.5V48 N22 HD	75 x 285	B	3 x 150 kΩ / Delta	30	11758675	1.82
	12.5	16.4	15.0	19.7	68.5 x 3	HD	UCWT15V49 N22 HD	75 x 285	B	3 x 150 kΩ / Delta	30	11314666	1.82
	12.5	16.4	15.0	19.7	68.5 x 3	HD	UCWT15V49 Q26 HD	100 x 230	B	3 x 150 kΩ / Delta	30	11917005	2.17
	14.6	19.1	17.5	23.0	79.9 x 3	HD	UCWT17.5V49 Q26 HD	100 x 230	B	3 x 150 kΩ / Delta	30	11917006	2.18
	15.0	19.7	18.0	23.6	82.2 x 3	HD	UCWT15V48 Q26 HD	100 x 230	B	3 x 150 kΩ / Delta	30	11917040	2.18
	16.7	21.9	20.0	26.2	91.3 x 3	HD	UCWT20V49 Q26 HD	100 x 230	B	3 x 150 kΩ / Delta	30	11917007	2.18
	17.5	23.0	-	-	95.9 x 3	HD	UCWT17.5V48 Q26 HD	100 x 230	B	3 x 150 kΩ / Delta	30	11917041	2.07
	18.8	24.6	22.5	29.5	102.8 x 3	HD	UCWT22.5V49 S26 HD	116 x 230	B	3 x 150 kΩ / Delta	30	11917018	2.70
	20.0	26.2	24.0	31.5	109.6 x 3	HD	UCWT20V48 S26 HD	116 x 230	B	3 x 150 kΩ / Delta	30	11917043	2.70
	20.8	27.3	25.0	32.8	114.2 x 3	HD	UCWT25V49 S26 HD	116 x 230	B	3 x 150 kΩ / Delta	30	11917021	3.26
	22.5	29.5	-	-	123.3 x 3	HD	UCWT22.5V48 S26 HD	116 x 230	B	3 x 150 kΩ / Delta	90	11917045	2.70
	25.0	32.8	-	-	137 x 3	HD	UCWT25V48 S26 HD	116 x 230	B	3 x 150 kΩ / Delta	90	11917058	2.71
	25.0	32.8	30.0	39.4	137 x 3	HD	UCWT30V49 S28 HD	116 x 290	B	3 x 150 kΩ / Delta	90	12272719	3.50
	29.2	38.3	35.0	45.9	159.8 x 3	HD	UCWT35V49 S28 HD	116 x 290	B	3 x 150 kΩ / Delta	90	12272780	3.50
	30.0	39.4	-	-	164.4 x 3	HD	UCWT30V48 S28 HD	116 x 290	B	3 x 150 kΩ / Delta	90	15824794	3.50
	33.3	43.7	40.0	52.5	182.7 x 3	HD	UCWT40V49 U28 HD	136 x 290	B	3 x 150 kΩ / Delta	90	13365671	4.45
	37.5	49.2	45.0	59.0	205.5 x 3	HD	UCWT45V49 U28 HD	136 x 290	B	3 x 150 kΩ / Delta	90	13365672	4.45
	40.0	52.5	-	-	219.2 x 3	HD	UCWT40V48 U28 HD	136 x 290	B	3 x 150 kΩ / Delta	90	16333404	4.45
	41.7	54.7	50.0	65.6	228.4 x 3	HD	UCWT50V49 U28 HD	136 x 290	B	3 x 150 kΩ / Delta	90	13365673	4.45

Note: 1) Capacitors with design A are provided with internal resistor. Capacitors with design B are provided with external resistor.

UCWT HD - Heavy duty three-phase capacitors

Product line

Three-phase capacitor - UCWT HD (Heavy Duty)													
Voltage (V)	50 Hz		60 Hz		Capacitance (uF)	Series	Reference	Dimensions Ø x H (mm)	Design[1)]	Discharge resistor		Code	Weight (kg)
	Reactive power (kvar)	Rated current I_n (A)	Reactive power (kvar)	Rated current I_n (A)						Discharge resistor	Discharge time		
480	0.4	0.5	0.5	0.6	1.9 x 3	HD	UCWT0.5V53 L10 HD	60 x 156	A	Internal resistor	30	10045990	0.49
	0.5	0.6	0.6	0.7	2.3 x 3	HD	UCWT0.5V52 L10 HD	60 x 156	A	Internal resistor	30	10046259	0.50
	0.6	0.8	0.8	0.9	2.9 x 3	HD	UCWT0.75V53 L10 HD	60 x 156	A	Internal resistor	30	10045991	0.51
	0.8	0.9	0.9	1.1	3.5 x 3	HD	UCWT0.75V52 L10 HD	60 x 156	A	Internal resistor	30	10072550	0.51
	0.8	1.0	1.0	1.2	3.8 x 3	HD	UCWT1V53 L10 HD	60 x 156	A	Internal resistor	30	10045992	0.50
	1.0	1.2	1.2	1.4	4.6 x 3	HD	UCWT1V52 L10 HD	60 x 156	A	Internal resistor	30	10072551	0.51
	1.3	1.5	1.5	1.8	5.8 x 3	HD	UCWT1.5V53 L10 HD	60 x 156	A	Internal resistor	30	10045993	0.52
	1.5	1.8	1.8	2.2	6.9 x 3	HD	UCWT1.5V52 L10 HD	60 x 156	A	Internal resistor	30	10072552	0.54
	1.7	2.0	2.0	2.4	7.7 x 3	HD	UCWT2V53 L10 HD	60 x 156	A	Internal resistor	30	10045994	0.53
	2.0	2.4	2.4	2.9	9.2 x 3	HD	UCWT2V52 L10 HD	60 x 156	A	Internal resistor	30	10072553	0.54
	2.1	2.5	2.5	3.0	9.6 x 3	HD	UCWT2.5V53 L10 HD	60 x 156	A	Internal resistor	30	10045995	0.56
	2.5	3.0	3.0	3.6	11.5 x 3	HD	UCWT2.5V52 L10 HD	60 x 156	A	Internal resistor	30	10072554	0.58
	3.0	3.6	3.6	4.3	13.8 x 3	HD	UCWT3V52 L10 HD	60 x 156	A	Internal resistor	30	10072555	0.55
	4.2	5.0	5.0	6.0	19.2 x 3	HD	UCWT5V53 L16 HD	60 x 204	A	Internal resistor	30	10045997	0.73
	5.0	6.0	-	-	23 x 3	HD	UCWT5V52 L16 HD	60 x 204	A	Internal resistor	30	10072556	0.78
	6.3	7.5	7.5	9.0	28.8 x 3	HD	UCWT7.5V53 N20 HD	75 x 225	B	3 x 56 kΩ / Star	30	11314667	1.50
	7.5	9.0	9.0	10.8	34.5 x 3	HD	UCWT7.5V52 N20 HD	75 x 225	B	3 x 56 kΩ / Star	30	11758740	1.50
	8.3	10.0	10.0	12.0	38.4 x 3	HD	UCWT10V53 N20 HD	75 x 225	B	3 x 56 kΩ / Star	30	11314728	1.53
	10.0	12.0	12.0	14.4	46.1 x 3	HD	UCWT10V52 N22 HD	75 x 285	B	3 x 56 kΩ / Star	30	11758742	1.97
	10.4	12.5	12.5	15.0	48 x 3	HD	UCWT12.5V53 N22 HD	75 x 285	B	3 x 56 kΩ / Star	30	11314729	1.79
	12.5	15.0	15.0	18.0	57.6 x 3	HD	UCWT12.5V52 N22 HD	75 x 285	B	3 x 56 kΩ / Star	30	11758746	2.17
	12.5	15.0	15.0	18.0	57.6 x 3	HD	UCWT15V53 N22 HD	75 x 285	B	3 x 56 kΩ / Star	30	11314730	1.81
	12.5	15.0	15.0	18.0	57.6 x 3	HD	UCWT15V53 Q26 HD	100 x 230	B	3 x 56 kΩ / Star	30	11917060	2.17
	14.6	17.5	17.5	21.0	67.2 x 3	HD	UCWT17.5V53 Q26 HD	100 x 230	B	3 x 56 kΩ / Star	30	11917063	2.18
	15.0	18.0	18.0	21.7	69.1 x 3	HD	UCWT15V52 Q26 HD	100 x 230	B	3 x 56 kΩ / Star	30	11917094	2.17
	16.7	20.0	20.0	24.1	76.8 x 3	HD	UCWT20V53 Q26 HD	100 x 230	B	3 x 56 kΩ / Star	30	11917064	2.18
	17.5	21.0	-	-	80.6 x 3	HD	UCWT17.5V52 Q26 HD	100 x 230	B	3 x 56 kΩ / Star	30	11917095	2.32
	18.8	22.6	22.5	27.1	86.3 x 3	HD	UCWT22.5V53 S26 HD	116 x 230	B	3 x 56 kΩ / Star	30	11917065	2.69
	20.0	24.1	24.0	28.9	92.1 x 3	HD	UCWT20V52 S26 HD	116 x 230	B	3 x 56 kΩ / Star	30	11917097	2.69
	20.8	25.1	25.0	30.1	95.9 x 3	HD	UCWT25V53 S26 HD	116 x 230	B	3 x 56 kΩ / Star	30	11917066	2.99
	22.5	27.1	-	-	103.6 x 3	HD	UCWT22.5V52 S26 HD	116 x 230	B	3 x 56 kΩ / Star	90	11917128	2.71
	25.0	30.1	-	-	115.1 x 3	HD	UCWT25V52 S26 HD	116 x 230	B	3 x 56 kΩ / Star	90	11917129	2.71
	25.0	30.1	30.0	36.1	115.1 x 3	HD	UCWT30V53 S28 HD	116 x 290	B	3 x 56 kΩ / Star	90	12272781	3.50
	29.2	35.1	35.0	42.1	134.3 x 3	HD	UCWT35V53 S28 HD	116 x 290	B	3 x 56 kΩ / Star	90	12272784	3.50
	33.3	40.1	40.0	48.1	153.5 x 3	HD	UCWT40V53 U28 HD	136 x 290	B	3 x 56 kΩ / Star	90	13365674	4.45
	37.5	45.1	45.0	54.1	172.7 x 3	HD	UCWT45V53 U28 HD	136 x 290	B	3 x 56 kΩ / Star	90	13365675	4.45
	41.7	50.1	50.0	60.1	191.9 x 3	HD	UCWT50V53 U28 HD	136 x 290	B	3 x 56 kΩ / Star	90	13365677	4.45

Note: 1) Capacitors with design A are provided with internal resistor. Capacitors with design B are provided with external resistor.

UCWT HD - Heavy duty three-phase capacitors

Product line

Three-phase capacitor - UCWT HD (Heavy Duty)													
Voltage (V)	50 Hz		60 Hz		Capacitance (uF)	Series	Reference	Dimensions Ø x H (mm)	Design[1)]	Discharge resistor		Code	Weight (kg)
	Reactive power (kvar)	Rated current I_n (A)	Reactive power (kvar)	Rated current I_n (A)						Discharge resistor	Discharge time		
525	4.2	4.6	5.0	5.5	16 x 3	HD	UCWT5V65 L16 HD	60 x 204	A	Internal resistor	90	14740486	0.67
	5.0	5.5	-	-	19.2 x 3	HD	UCWT5VD2 L16 HD	60 x 204	A	Internal resistor	90	12634786	0.83
	8.3	9.2	10.0	11.0	32.1 x 3	HD	UCWT10V65 N20 HD	75 x 225	B	3 x 62 kΩ / Star	30	14740743	1.72
	10.0	11.0	12.0	13.2	38.5 x 3	HD	UCWT10VD2 Q26 HD	100 x 230	B	3 x 62 kΩ / Star	30	12634787	2.57
	10.4	11.5	12.5	13.7	40.1 x 3	HD	UCWT12.5V65 Q26 HD	100 x 230	B	3 x 62 kΩ / Star	30	14326412	2.14
	12.5	13.7	15.0	16.5	48.1 x 3	HD	UCWT15V65 Q26 HD	100 x 230	B	3 x 62 kΩ / Star	30	14326414	2.10
	15.0	16.5	18.0	19.8	57.7 x 3	HD	UCWT15VD2 Q26 HD	100 x 230	B	3 x 62 kΩ / Star	30	12634848	2.61
	16.7	18.3	20.0	22.0	64.2 x 3	HD	UCWT20V65 S26 HD	116 x 230	B	3 x 62 kΩ / Star	30	14740914	2.10
	20.0	22.0	-	-	77 x 3	HD	UCWT20VD2 S26 HD	116 x 230	B	3 x 62 kΩ / Star	30	12634849	3.34
	20.8	22.9	25.0	27.5	80.2 x 3	HD	UCWT25V65 S26 HD	116 x 230	B	3 x 62 kΩ / Star	30	14200218	2.30
	25.0	27.5	30.0	33.0	96.2 x 3	HD	UCWT25VD2 S28 HD	116 x 290	B	3 x 62 kΩ / Star	90	12634850	3.67
	25.0	27.5	30.0	33.0	96.2 x 3	HD	UCWT30V65 U26 HD	136 x 230	B	3 x 62 kΩ / Star	90	15046151	3.50
	30.0	33.0	-	-	115.5 x 3	HD	UCWT30VD2 S28 HD	116 x 290	B	3 x 62 kΩ / Star	90	12634851	3.55
	29.2	32.1	35.0	38.5	112.3 x 3	HD	UCWT35V65 U28 HD	136 x 290	B	3 x 62 kΩ / Star	90	15046152	4.45
	33.3	36.7	40.0	44.0	128.3 x 3	HD	UCWT40V65 U28 HD	136 x 290	B	3 x 62 kΩ / Star	90	14740915	4.45
	37.5	41.2	45.0	49.5	144.4 x 3	HD	UCWT45V65 U28 HD	136 x 290	B	3 x 62 kΩ / Star	90	15046153	4.45
	40.0	44.0	48.0	52.8	154 x 3	HD	UCWT40VD2 U28 HD	136 x 290	B	3 x 62 kΩ / Star	90	13365679	4.45
535	0.4	0.4	0.5	0.5	1.5 x 3	HD	UCWT0.5V57 L10 HD	60 x 156	A	Internal resistor	30	10743966	0.38
	0.6	0.7	0.8	0.8	2.3 x 3	HD	UCWT0.75V57 L10 HD	60 x 156	A	Internal resistor	30	10744000	0.40
	0.8	0.9	1.0	1.1	3.1 x 3	HD	UCWT1V57 L10 HD	60 x 156	A	Internal resistor	30	10744001	0.42
	1.3	1.3	1.5	1.6	4.6 x 3	HD	UCWT1.5V57 L10 HD	60 x 156	A	Internal resistor	30	10744036	0.46
	1.7	1.8	2.0	2.2	6.2 x 3	HD	UCWT2V57 L10 HD	60 x 156	A	Internal resistor	30	10748191	0.48
	2.1	2.2	2.5	2.7	7.7 x 3	HD	UCWT2.5V57 L10 HD	60 x 156	A	Internal resistor	30	10748192	0.53
	2.5	2.7	3.0	3.2	9.3 x 3	HD	UCWT3V57 L10 HD	60 x 156	A	Internal resistor	30	10748195	0.67
	4.2	4.5	5.0	5.4	15.4 x 3	HD	UCWT5V57 L16 HD	60 x 204	A	Internal resistor	30	10648884	0.75
	6.3	6.7	7.5	8.1	23.2 x 3	HD	UCWT7.5V57 N20 HD	75 x 225	B	3 x 62 kΩ / Star	30	11314731	1.50
	8.3	9.0	10.0	10.8	30.9 x 3	HD	UCWT10V57 N20 HD	75 x 225	B	3 x 62 kΩ / Star	30	11314732	1.53
	10.4	11.2	12.5	13.5	38.6 x 3	HD	UCWT12.5V57 N22 HD	75 x 285	B	3 x 62 kΩ / Star	30	11314733	1.79
	12.5	13.5	15.0	16.2	46.3 x 3	HD	UCWT15V57 N22 HD	75 x 285	B	3 x 62 kΩ / Star	30	11314734	1.79
	12.5	13.5	15.0	16.2	46.3 x 3	HD	UCWT15V57 Q26 HD	100 x 230	B	3 x 62 kΩ / Star	30	11917359	2.17
	14.6	15.7	17.5	18.9	54.1 x 3	HD	UCWT17.5V57 Q26 HD	100 x 230	B	3 x 62 kΩ / Star	30	11917361	2.18
	16.7	18.0	20.0	21.6	61.8 x 3	HD	UCWT20V57 Q26 HD	100 x 230	B	3 x 62 kΩ / Star	30	11917362	2.18
	18.8	20.2	22.5	24.3	69.5 x 3	HD	UCWT22.5V57 S26 HD	116 x 230	B	3 x 62 kΩ / Star	30	11917364	2.69
	20.8	22.5	25.0	27.0	77.2 x 3	HD	UCWT25V57 S26 HD	116 x 230	B	3 x 62 kΩ / Star	30	11917366	2.70
	25.0	27.0	30.0	32.4	92.7 x 3	HD	UCWT30V57 S28 HD	116 x 290	B	3 x 62 kΩ / Star	90	12273233	3.50
	29.2	31.5	35.0	37.8	108.1 x 3	HD	UCWT35V57 S28 HD	116 x 290	B	3 x 62 kΩ / Star	90	12273234	3.50
	33.3	36.0	40.0	43.2	123.6 x 3	HD	UCWT40V57 U28 HD	136 x 290	B	3 x 62 kΩ / Star	90	13365680	4.45
	37.5	40.5	45.0	48.6	139 x 3	HD	UCWT45V57 U28 HD	136 x 290	B	3 x 62 kΩ / Star	90	13365682	4.45
	41.7	45.0	50.0	54.0	154.5 x 3	HD	UCWT50V57 U28 HD	136 x 290	B	3 x 62 kΩ / Star	90	13365683	4.45

Note: 1) Capacitors with design A are provided with internal resistor. Capacitors with design B are provided with external resistor.

UCWT HD - Heavy duty three-phase capacitors

Product line

Three-phase capacitor - UCWT HD (Heavy Duty)													
Voltage (V)	50 Hz		60 Hz		Capacitance (uF)	Series	Reference	Dimensions Ø x H (mm)	Design[1]	Discharge resistor		Code	Weight (kg)
	Reactive power (kvar)	Rated current I_n (A)	Reactive power (kvar)	Rated current I_n (A)						Discharge resistor	Discharge time		
600[2]	4.2	4.0	5.0	4.8	12.3 x 3	HD	UCWT5V103 N20 HD	75 x 225	B	3 x 82 kΩ / Star	30	15102473	1.46
	8.3	8.0	10.0	9.6	24.6 x 3	HD	UCWT10V103 N20 HD	75 x 225	B	3 x 82 kΩ / Star	30	15102474	1.37
	12.5	12.0	15.0	14.4	36.8 x 3	HD	UCWT15V103 O26 HD	85 x 230	B	3 x 82 kΩ / Star	30	15102475	1.62
	16.7	16.0	20.0	19.2	49.1 x 3	HD	UCWT20V103 Q26 HD	100 x 230	B	3 x 82 kΩ / Star	30	15102476	1.85
	20.8	20.0	25.0	24.1	61.4 x 3	HD	UCWT25V103 S26 HD	116 x 230	B	3 x 82 kΩ / Star	30	15102477	2.37
	25.0	24.1	30.0	28.9	73.7 x 3	HD	UCWT30V103 S26 HD	116 x 230	B	3 x 82 kΩ / Star	90	15102738	2.29
	29.2	28.1	35.0	33.7	86 x 3	HD	UCWT35V103 U26 HD	136 x 230	B	3 x 82 kΩ / Star	90	15102739	3.90
	33.3	32.1	40.0	38.5	98.2 x 3	HD	UCWT40V103 U26 HD	136 x 230	B	3 x 82 kΩ / Star	90	15102740	3.90
	37.5	36.1	45.0	43.3	110.5 x 3	HD	UCWT45V103 U28 HD	136 x 290	B	3 x 82 kΩ / Star	90	15102741	4.45
	41.7	40.1	50.0	48.1	122.8 x 3	HD	UCWT50V103 U28 HD	136 x 290	B	3 x 82 kΩ / Star	90	15006072	4.45
660[2]	3.8	3.3	4.6	4.0	9.3 x 3	HD	UCWT5V63 N20 HD	75 x 225	B	3 x 100 kΩ / Star	30	15102860	1.26
	7.6	6.7	9.1	8.0	18.6 x 3	HD	UCWT10V63 N20 HD	75 x 225	B	3 x 100 kΩ / Star	30	15102861	1.32
	11.4	10.0	13.7	12.0	27.9 x 3	HD	UCWT15V63 O26 HD	85 x 230	B	3 x 100 kΩ / Star	30	15102862	1.59
	15.2	13.3	18.3	16.0	37.1 x 3	HD	UCWT20V63 Q26 HD	100 x 230	B	3 x 100 kΩ / Star	30	15102864	1.71
	19.1	16.7	22.9	20.0	46.4 x 3	HD	UCWT25V63 S26 HD	116 x 230	B	3 x 100 kΩ / Star	30	15102865	2.21
	22.9	20.0	27.4	24.0	55.7 x 3	HD	UCWT30V63 U26 HD	136 x 230	B	3 x 100 kΩ / Star	90	15102866	3.90
	26.7	23.3	32.0	28.0	65 x 3	HD	UCWT35V63 U26 HD	136 x 230	B	3 x 100 kΩ / Star	90	15102867	3.90
	30.5	26.7	36.6	32.0	74.3 x 3	HD	UCWT40V63 U28 HD	136 x 290	B	3 x 100 kΩ / Star	90	15102909	4.55
	34.3	30.0	41.2	36.0	83.6 x 3	HD	UCWT45V63 U28 HD	136 x 290	B	3 x 100 kΩ / Star	90	15102910	4.55
	38.1	33.3	45.7	40.0	92.9 x 3	HD	UCWT50V63 U28 HD	136 x 290	B	3 x 100 kΩ / Star	90	15102911	4.55
690[2]	4.2	3.5	5.0	4.2	9.3 x 3	HD	UCWT5V63 N20 HD	75 x 225	B	3 x 100 kΩ / Star	30	15102860	1.26
	8.3	7.0	10.0	8.4	18.6 x 3	HD	UCWT10V63 N20 HD	75 x 225	B	3 x 100 kΩ / Star	30	15102861	1.32
	12.5	10.5	15.0	12.6	27.9 x 3	HD	UCWT15V63 O26 HD	85 x 230	B	3 x 100 kΩ / Star	30	15102862	1.59
	16.7	13.9	20.0	16.7	37.1 x 3	HD	UCWT20V63 Q26 HD	100 x 230	B	3 x 100 kΩ / Star	30	15102864	1.71
	20.8	17.4	25.0	20.9	46.4 x 3	HD	UCWT25V63 S26 HD	116 x 230	B	3 x 100 kΩ / Star	30	15102865	2.21
	25.0	20.9	30.0	25.1	55.7 x 3	HD	UCWT30V63 U26 HD	136 x 230	B	3 x 100 kΩ / Star	90	15102866	3.90
	29.2	24.4	35.0	29.3	65 x 3	HD	UCWT35V63 U26 HD	136 x 230	B	3 x 100 kΩ / Star	90	15102867	3.90
	33.3	27.9	40.0	33.5	74.3 x 3	HD	UCWT40V63 U28 HD	136 x 290	B	3 x 100 kΩ / Star	90	15102909	4.55
	37.5	31.4	45.0	37.7	83.6 x 3	HD	UCWT45V63 U28 HD	136 x 290	B	3 x 100 kΩ / Star	90	15102910	4.55
	41.7	34.9	50.0	41.8	92.9 x 3	HD	UCWT50V63 U28 HD	136 x 290	B	3 x 100 kΩ / Star	90	15102911	4.55

Notes: 1) Capacitors with design A are provided with internal resistor. Capacitors with design B are provided with external resistor.
2) UL in progress.

UCWT HD - Heavy duty three-phase capacitors

Technical data

Characteristics	
Phases	Three-phase
Connection	Δ (Delta)
Reactive power	0.5 … 50 kvar
Rated voltage	208 … 690 V
Frequency	50 or 60 Hz
Capacitance tolerance	±5%
Service life	150,000 hours
Safety	
Metallized polypropylene film	Self-healing properties
Mechanically safe	Overpressure switch
Maximum short-circuit capacity	10 kA

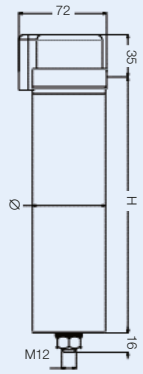
Maximum ratings	
Maximum current	1.5 x I_n
Maximum inrush current	300 x I_n
Maximum voltage (up to 8h daily)	1.1 x V_R

Design data	
Impregnation	Polyurethane resin
Condenser fixation	M12 screw
Maximum fixing torque	14 N.m

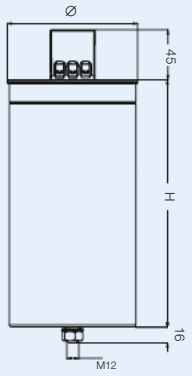
Environment conditions	
Minimum temperature	-25 °C
Maximum temperature	+55 °C
Maximum average temperature in 24h	+45 °C
Maximum average temperature in 1 year	+35 °C
Maximum altitude	2,000 m[1)]
Maximum humidity	95%
Reference standards and certifications	
Reference standards	IEC 60831-1/2 UL 810
Certifications	CE IRAM cULus[2)]

Dimensions

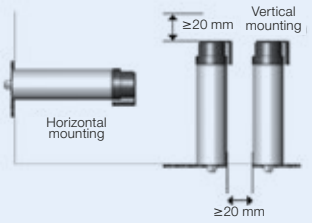
Design A



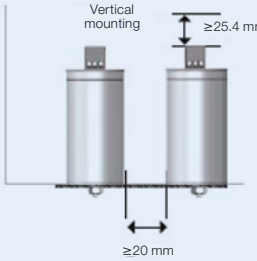
Design B



Mounting - Design A



Mounting - Design B



Cross-section and tightening torque

Connection type	Terminal type	Cross-section (mm^2)	Torque (Nm)
		0.5 … 2.5	0.8 … 1.5
		1.5 … 10.0	1.5… 2.5
		10 … 35.0	4.0 … 6.0

Notes: 1) For application at higher altitudes, contact WEG.
2) UL in progress for UCWT HD above 600 V.

UCWT ND - Normal duty three-phase capacitors

The UCWT ND line is finally developed to meet the field requirements without compromising the installation costs.

The PPM technology was designed to increase the packing density in each bank and to reduce costs with components.

Characteristics

- Current capacity: 1.3 x I_n permanent
- Peak current tolerance: 100 x I_n
- Service life: 100,000h
- Temperature resistance: 55 °C
- Safety system: biodegradable flexible resin (triple protection system)
- Warranty: 1 year
- Altitude: up to 2,000 m above sea level

Guarantee of service continuity

Service live
100,000 h

1-year
warranty[1)]

Maximum
temperature 55 °C

Note: 1) 1-year warranty attributable to defects in material and workmanship. The warranty will not apply in case of overvoltage, harmonic problems or incorrect product applications.

UCWT ND - Normal duty three-phase capacitors

Product line

Three-phase capacitors - UCWT ND (Normal Duty)												
Rated voltage (V)	50 Hz		60 Hz		Capacitance (mF)	Series	Reference	Dimensions Ø x H (mm)	Design[1)]	Discharge resistor	Code	Weight (kg)
	Reactive power (kvar)	Rated current I_n (A)	Reactive power (kvar)	Rated current I_n (A)								
220	2.5	6.6	3.0	7.9	54.8 x 3	ND	UCWT3V25 L10 ND	60 x 156	A	Internal resistor	15546205	0.36
	4.2	10.9	5.0	13.1	91.3 x 3	ND	UCWT5V25 L16 ND	60 x 204	A	Internal resistor	15435548	0.43
	6.3	16.4	7.5	19.7	137 x 3	ND	UCWT7.5V25 N20 ND	75 x 225	B	2 x 120kΩ/3W	15546206	1.55
	8.3	21.9	10.0	26.2	182.7 x 3	ND	UCWT10V25 N20 ND	75 x 225	B	2 x 120kΩ/3W	15546561	1.57
	12.5	32.8	15.0	39.4	274 x 3	ND	UCWT15V25 O26 ND	85 x 230	B	2 x 120kΩ/3W	15544595	1.96
	16.7	43.7	20.0	52.5	365.4 x 3	ND	UCWT20V25 Q26 ND	100 x 230	B	2 x 120kΩ/3W	15436224	2.36
240	2.5	6.0	3.0	7.2	46.1 x 3	ND	UCWT3V29 L10 ND	60 x 156	A	Internal resistor	15737796	0.33
	4.2	10.0	5.0	12.0	76.8 x 3	ND	UCWT5V29 L16 ND	60 x 204	A	Internal resistor	15737795	0.43
	6.3	15.0	7.5	18.0	115.1 x 3	ND	UCWT7.5V29 N20 ND	75 x 225	B	2 x 120kΩ/3W	15737553	1.55
	8.3	20.0	10.0	24.1	153.5 x 3	ND	UCWT10V29 N20 ND	75 x 225	B	2 x 120kΩ/3W	15737550	1.59
	12.5	30.1	15.0	36.1	230.3 x 3	ND	UCWT15V29 Q26 ND	100 x 230	B	2 x 120kΩ/3W	15737315	2.33
	16.7	40.1	20.0	48.1	307 x 3	ND	UCWT20V29 Q26 ND	100 x 230	B	2 x 120kΩ/3W	15737034	2.36
380	4.5	6.9	-	-	33.2 x 3	ND	UCWT5V44 L10 ND	60 x 156	A	Internal resistor	14922267	0.51
	6.8	10.3	-	-	49.7 x 3	ND	UCWT7.5V44 L16 ND	60 x 204	A	Internal resistor	14922332	0.69
	9.0	13.7	-	-	66.3 x 3	ND	UCWT10V44 N20 ND	75 x 225	B	2 x 270kΩ/3W	14922337	1.36
	11.3	17.1	-	-	82.9 x 3	ND	UCWT12.5V44 N20 ND	75 x 225	B	2 x 270kΩ/3W	15016523	1.36
	13.5	20.6	-	-	99.5 x 3	ND	UCWT15V44 N20 ND	75 x 225	B	2 x 270kΩ/3W	14922370	1.36
	18.1	27.4	-	-	132.6 x 3	ND	UCWT20V44 Q26 ND	100 x 230	B	2 x 180kΩ/3W	14959573	2.18
	22.6	34.3	-	-	165.8 x 3	ND	UCWT25V44 Q26 ND	100 x 230	B	2 x 180kΩ/3W	14959574	2.18
	27.1	41.1	-	-	198.9 x 3	ND	UCWT30V44 S26 ND	116 x 230	B	2 x 120kΩ/3W	14959576	2.69
400	5.0	7.2	-	-	33.2 x 3	ND	UCWT5V44 L10 ND	60 x 156	A	Internal resistor	14922267	0.51
	7.5	10.8	-	-	49.7 x 3	ND	UCWT7.5V44 L16 ND	60 x 204	A	Internal resistor	14922332	0.69
	10.0	14.4	-	-	66.3 x 3	ND	UCWT10V44 N20 ND	75 x 225	B	2 x 270kΩ/3W	14922337	1.36
	12.5	18.0	-	-	82.9 x 3	ND	UCWT12.5V44 N20 ND	75 x 225	B	2 x 270kΩ/3W	15016523	1.36
	15.0	21.7	-	-	99.5 x 3	ND	UCWT15V44 N20 ND	75 x 225	B	2 x 270kΩ/3W	14922370	1.36
	20.0	28.9	-	-	132.6 x 3	ND	UCWT20V44 Q26 ND	100 x 230	B	2 x 180kΩ/3W	14959573	2.18
	25.0	36.1	-	-	165.8 x 3	ND	UCWT25V44 Q26 ND	100 x 230	B	2 x 180kΩ/3W	14959574	2.18
	30.0	43.3	-	-	198.9 x 3	ND	UCWT30V44 S26 ND	116 x 230	B	2 x 120kΩ/3W	14959576	2.69
415	4.4	6.2	-	-	27.4 x 3	ND	UCWT5V48 L10 ND	60 x 156	A	Internal resistor	14924810	0.51
	6.7	9.3	-	-	41.1 x 3	ND	UCWT7.5V48 L16 ND	60 x 204	A	Internal resistor	14924811	0.69
	8.9	12.4	-	-	54.8 x 3	ND	UCWT10V48 N20 ND	75 x 225	B	2 x 270kΩ/3W	14924812	1.36
	11.1	15.5	-	-	68.5 x 3	ND	UCWT12.5V48 O26 ND	85 x 230	B	2 x 270kΩ/3W	15016524	1.70
	13.3	18.6	-	-	82.2 x 3	ND	UCWT15V48 O26 ND	85 x 230	B	2 x 270kΩ/3W	14959880	1.70
	17.8	24.8	-	-	109.6 x 3	ND	UCWT20V48 Q26 ND	100 x 230	B	2 x 180kΩ/3W	14959881	2.18
	22.2	30.9	-	-	137 x 3	ND	UCWT25V48 S26 ND	116 x 230	B	2 x 180kΩ/3W	14959882	2.69
	26.7	37.1	-	-	164.4 x 3	ND	UCWT30V48 S26 ND	116 x 230	B	2 x 120kΩ/3W	14959883	2.69
440	5.0	6.6	-	-	27.4 x 3	ND	UCWT5V48 L10 ND	60 x 156	A	Internal resistor	14924810	0.51
	7.5	9.8	-	-	41.1 x 3	ND	UCWT7.5V48 L16 ND	60 x 204	A	Internal resistor	14924811	0.69
	10.0	13.1	-	-	54.8 x 3	ND	UCWT10V48 N20 ND	75 x 225	B	2 x 270kΩ/3W	14924812	1.36
	12.5	16.4	-	-	68.5 x 3	ND	UCWT12.5V48 O26 ND	85 x 230	B	2 x 270kΩ/3W	15016524	1.70
	15.0	19.7	-	-	82.2 x 3	ND	UCWT15V48 O26 ND	85 x 230	B	2 x 270kΩ/3W	14959880	1.70
	20.0	26.2	-	-	109.6 x 3	ND	UCWT20V48 Q26 ND	100 x 230	B	2 x 180kΩ/3W	14959881	2.18
	25.0	32.8	-	-	137 x 3	ND	UCWT25V48 S26 ND	116 x 230	B	2 x 180kΩ/3W	14959882	2.69
	30.0	39.4	-	-	164.4 x 3	ND	UCWT30V48 S26 ND	116 x 230	B	2 x 120kΩ/3W	14959883	2.69
480	4.2	5.0	5.0	6.0	19.2 x 3	ND	UCWT5V53 L10 ND	60 x 156	A	Internal resistor	14924817	0.51
	6.3	7.5	7.5	9.0	28.8 x 3	ND	UCWT7.5V53 L16 ND	60 x 204	A	Internal resistor	14924898	0.69
	8.3	10.0	10.0	12.0	38.4 x 3	ND	UCWT10V53 N20 ND	75 x 225	B	2 x 560kΩ/3W	14924899	1.36
	12.5	15.0	15.0	18.0	57.6 x 3	ND	UCWT15V53 O26 ND	85 x 230	B	2 x 270kΩ/3W	14959885	1.70
	16.7	20.0	20.0	24.1	76.8 x 3	ND	UCWT20V53 Q26 ND	100 x 230	B	2 x 270kΩ/3W	14959886	2.18
	20.8	25.1	25.0	30.1	95.9 x 3	ND	UCWT25V53 Q26 ND	100 x 230	B	2 x 270kΩ/3W	14959887	2.18
	25.0	30.1	30.0	36.1	115.1 x 3	ND	UCWT30V53 S26 ND	116 x 230	B	2 x 180kΩ/3W	14960058	2.69

Note: 1) Capacitors with design A are provided with internal resistor. Capacitors with design B are provided with external resistor.

UCWT ND - Normal duty three-phase capacitors

Technical data

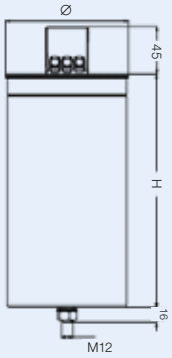
Characteristics	
Phases	Three-phase
Connection	Δ (Delta)
Reactive power	4.5 … 30 kvar
Rated voltage	220 … 480 V
Frequency	50 or 60 Hz
Capacitance tolerance	±5%
Service life	100,000 hours
Safety	
Metallized polypropylene film	Self-healing properties
Mechanically safe	Overpressure switch
Maximum short-circuit capacity	10 kA

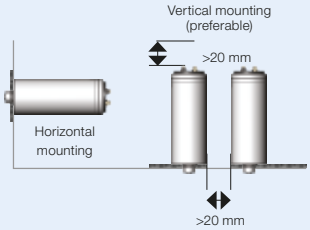
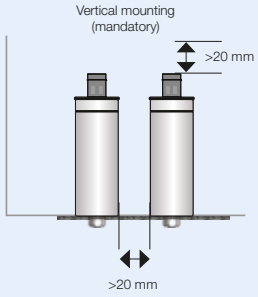
Maximum ratings	
Maximum current	1.3 x I_n
Maximum inrush current	100 x I_n
Maximum voltage (up to 8h daily)	1.1 x V_R

Design data	
Impregnation	Polyurethane resin
Discharge resistor	180s to 75 V
Condenser fixation	M12 screw
Maximum fixing torque	14 N.m

Environment conditions	
Minimum temperature	-25 °C
Maximum temperature	+55 °C
Maximum average temperature in 24h	+45 °C
Maximum average temperature in 1 year	+35 °C
Maximum altitude	2,000 m
Maximum humidity	95%
Reference standards and certifications	
Reference standards	IEC 60831-1/2 UL 810
Certifications	CE IRAM cULus

Dimensions

Design A	Design B
	

Mounting - Design A	Mounting - Design B
	

Cross-section and tightening torque

Connection type	Terminal type	Cross-section (mm^2)	Torque (Nm)
		0.5 … 2.5	0.8 … 1.5
		1.5 … 16.0	1.5… 2.5

UCW - Single-phase capacitors

The UCW line of capacitors was developed with self-healing metallized polypropylene film and a safety interrupting device against inner pressure.

Characteristics

- Current capacity: 1.3 x I_n permanent
- Peak current tolerance: 100 x I_n
- Service life: 100,000h
- Temperature resistance: 55 °C
- Safety system: biodegradable flexible resin (triple protection system)
- Warranty: 1 year
- Altitude: up to 2,000 m above sea level

Guarantee of service continuity

Service live 100,000h

1-year warranty[1)]

Maximum temperature 55 °C

Note: 1) 1-year warranty attributable to defects in material and workmanship. The warranty will not apply in case of overvoltage, harmonic problems or incorrect product applications.

UCW - Single-phase capacitors

Product line

Single phase capacitors - UCW												
Rated voltage (V)	50 Hz		60 Hz		Capacitance (mF)	Reference	Dimensions Ø x H (mm)	Design	Discharge resistor		Code	Weight (kg)
	Reactive power (kvar)	Rated current In (A)	Reactive power (kvar)	Rated current In (A)								
208	0.6	3.0	0.7	3.6	45.5	UCW0.83V25 J4	53 x 85	D	Not Included	270kΩ/3W	11488457	0.27
	0.6	3.0	0.7	3.6	45.5	UCW0.83V25 L6	60 x 105	D	Not Included	270kΩ/3W	10045809	0.34
	1.2	6.0	1.5	7.2	91.5	UCW1.67V25 L6	60 x 105	D	Not Included	150kΩ/3W	10045802	0.35
	1.9	9.0	2.2	10.7	137.0	UCW2.5V25 L10	60 x 156	D	Not Included	82kΩ/3W	10045950	0.51
	2.5	11.9	3.0	14.3	182.5	UCW3.33V25 L10	60 x 156	D	Not Included	56kΩ/3W	10046652	0.51
	3.7	17.9	4.5	21.5	274.0	UCW5V25 N14	75 x 205	E	Included	41kΩ/6W	11449885	1.19
	5.0	23.9	6.0	28.7	365.6	UCW6.67V25 N14	75 x 205	E	Included	28kΩ/6W	11507565	1.22
220	0.7	3.1	0.83	3.8	45.5	UCW0.83V25 J4	53 x 85	D	Not Included	270kΩ/3W	11488457	0.27
	0.7	3.1	0.83	3.8	45.5	UCW0.83V25 L6	60 x 105	D	Not Included	270kΩ/3W	10045809	0.34
	1.4	6.3	1.67	7.6	91.5	UCW1.67V25 L6	60 x 105	D	Not Included	150kΩ/3W	10045802	0.35
	2.1	9.5	2.50	11.4	137.0	UCW2.5V25 L10	60 x 156	D	Not Included	82kΩ/3W	10045950	0.51
	2.8	12.6	3.33	15.1	182.5	UCW3.33V25 L10	60 x 156	D	Not Included	56kΩ/3W	10046652	0.51
	4.2	18.9	5.00	22.7	274.0	UCW5V25 N14	75 x 205	E	Included	41kΩ/6W	11449885	1.19
	5.6	25.3	6.67	30.3	365.6	UCW6.67V25 N14	75 x 205	E	Included	28kΩ/6W	11507565	1.22
230	0.83	3.6	1.0	4.3	49.9	UCW0.83V34 L6	60 x 105	D	Not Included	180kΩ/3W	10072341	0.32
	1.67	7.3	2.0	8.7	100.5	UCW1.67V34 L8	60 x 141	D	Not Included	120kΩ/3W	10046044	0.44
	2.50	10.9	3.0	13.0	150.4	UCW2.5V34 L10	60 x 156	D	Not Included	56kΩ/3W	10046045	0.51
	3.33	14.5	4.0	17.4	200.4	UCW3.33V34 L10	60 x 156	D	Not Included	56kΩ/3W	11559336	0.50
	5.00	21.7	6.0	26.1	300.9	UCW5V34 N14	75 x 205	E	Included	28kΩ/6W	11507589	1.18
240	0.7	2.9	0.83	3.5	38.2	UCW0.83V29 L6	60 x 105	D	Not Included	270kΩ/3W	10048213	0.36
	1.4	5.8	1.67	7.0	76.9	UCW1.67V29 L6	60 x 105	D	Not Included	150kΩ/3W	10048211	0.33
	2.1	8.7	2.50	10.4	115.1	UCW2.5V29 L8	60 x 141	D	Not Included	82kΩ/3W	10045988	0.45
	2.8	11.6	3.33	13.9	153.4	UCW3.33V29 L10	60 x 156	D	Not Included	82kΩ/3W	10076158	0.51
	4.2	17.4	5.0	20.8	230.3	UCW5V29 N14	75 x 205	E	Included	60kΩ/6W	12573706	1.18
380	0.7	1.8	0.83	2.2	15.2	UCW0.83V40 G4	40 x 85	C	Not Included	560kΩ/3W	11509005	0.19
	0.7	1.8	0.83	2.2	15.2	UCW0.83V40 J2	53 x 68	D	Not Included	560kΩ/3W	11488508	0.23
	1.4	3.7	1.67	4.4	30.7	UCW1.67V40 J4	53 x 85	D	Not Included	390kΩ/3W	11488510	0.28
	2.1	5.5	2.50	6.6	45.9	UCW2.5V40 J6	53 x 105	D	Not Included	270kΩ/3W	13497628	0.22
	2.8	7.3	3.33	8.8	61.2	UCW3.33V40 J8	53 x 141	D	Not Included	150kΩ/3W	11488809	0.43
	4.2	11.0	5.00	13.2	91.8	UCW5V40 L10	60 x 156	D	Not Included	120kΩ/3W	10045951	0.52
	5.6	14.6	6.67	17.6	122.5	UCW6.67V40 M10	70 x 156	D	Not Included	82kΩ/3W	10630797	0.60
	6.3	16.4	7.5	19.7	137.8	UCW7.5V40 N14	75 x 205	E	Included	75kΩ/6W	11449886	1.19
	6.9	18.3	8.33	21.9	153.0	UCW8.33V40 N14	75 x 205	E	Included	60kΩ/6W	11449950	1.18
	7.6	20.1	9.17	24.1	168.5	UCW9.17V40 N14	75 x 205	E	Included	60kΩ/6W	11449951	1.23
	8.3	21.9	10.00	26.3	183.7	UCW10V40 N14	75 x 205	E	Included	60kΩ/6W	11449887	1.23

UCW - Single-phase capacitors

Product line

Single phase capacitors - UCW												
Rated voltage (V)	50 Hz		60 Hz		Capacitance (mF)	Reference	Dimensions Ø x H (mm)	Design	Discharge resistor		Code	Weight (kg)
	Reactive power (kvar)	Rated current In (A)	Reactive power (kvar)	Rated current In (A)								
400	0.83	2.1	-	-	16.5	UCW0.83V44 G6	40 x 105	C	Not Included	560kΩ/3W	11509029	0.22
	0.83	2.1	1.0	2.5	16.5	UCW0.83V44 J2	53 x 68	D	Not Included	560kΩ/3W	11488815	0.23
	0.83	2.1	1.0	2.5	16.5	UCW0.83V44 L4	60 x 85	D	Not Included	560kΩ/3W	10072342	0.32
	1.67	4.2	2.0	5.0	33.2	UCW1.67V44 J6	53 x 105	D	Not Included	270kΩ/3W	11488820	0.33
	1.67	4.2	2.0	5.0	33.2	UCW1.67V44 L4	60 x 85	D	Not Included	270kΩ/3W	10046046	0.29
	2.50	6.3	3.0	7.5	49.7	UCW2.5V44 J8	53 x 141	D	Not Included	180kΩ/3W	11488822	0.43
	2.50	6.3	3.0	7.5	49.7	UCW2.5V44 L6	60 x 105	D	Not Included	180kΩ/3W	10046047	0.35
	3.33	8.3	4.0	10.0	66.2	UCW3.33V44 L8	60 x 141	D	Not Included	150kΩ/3W	10046048	0.47
	5.00	12.5	-	-	99.5	UCW5V44 L10	60 x 156	D	Not Included	120kΩ/3W	10046049	0.51
	6.67	16.7	-	-	132.7	UCW6.67V44 M10	70 x 156	D	Not Included	82kΩ/3W	10872824	0.55
	7.50	18.8	9.0	22.5	149.2	UCW7.5V44 N14	75 x 205	E	Included	75kΩ/6W	11507590	1.18
	8.33	20.8	10.0	25.0	165.7	UCW8.33V44 N14	75 x 205	E	Included	60kΩ/6W	11507591	1.21
	9.17	22.9	-	-	182.4	UCW9.17V44 N14	75 x 205	E	Included	60kΩ/6W	11507593	1.23
415	0.6	1.5	0.7	1.8	11.4	UCW0.83V49 G4	40 x 85	C	Not Included	1MΩ/3W	11509007	0.19
	0.6	1.5	0.7	1.8	11.4	UCW0.83V49 J2	53 x 68	D	Not Included	1MΩ/3W	11488824	0.23
	0.7	1.8	0.9	2.1	13.6	UCW0.83V48 L4	60 x 85	D	Not Included	560kΩ/3W	10072343	0.30
	1.2	3.0	1.5	3.6	22.9	UCW1.67V49 J4	53 x 85	D	Not Included	560kΩ/3W	11488825	0.28
	1.5	3.6	1.8	4.3	27.5	UCW1.67V48 L4	60 x 85	D	Not Included	390kΩ/3W	10046050	0.29
	1.9	4.5	2.2	5.4	34.3	UCW2.5V49 J6	53 x 105	D	Not Included	390kΩ/3W	13497629	0.22
	2.2	5.4	2.7	6.4	41.1	UCW2.5V48 L6	60 x 105	D	Not Included	270kΩ/3W	10072344	0.35
	2.5	5.9	3.0	7.1	45.6	UCW3.33V49 J8	53 x 141	D	Not Included	270kΩ/3W	11488827	0.45
	3.0	7.1	3.6	8.6	54.8	UCW3.33V48 L8	60 x 141	D	Not Included	180kΩ/3W	10046051	0.47
	3.7	8.9	4.4	10.7	68.5	UCW5V49 L10	60 x 156	D	Not Included	150kΩ/3W	10186125	0.55
	4.4	10.7	-	-	82.2	UCW5V48 L10	60 x 156	D	Not Included	120kΩ/3W	10046722	0.53
	4.9	11.9	5.9	14.3	91.4	UCW6.67V49 M10	70 x 156	D	Not Included	120kΩ/3W	10630798	0.58
	5.6	13.4	6.7	16.1	102.8	UCW7.5V49 N14	75 x 205	E	Included	75kΩ/6W	11449911	1.17
	6.2	14.9	7.4	17.9	114.1	UCW8.33V49 N14	75 x 205	E	Included	75kΩ/6W	11449952	1.18
	6.8	16.4	8.2	19.7	125.6	UCW9.17V49 N14	75 x 205	E	Included	75kΩ/6W	11449953	1.21
	7.4	17.9	8.9	21.4	137.0	UCW10V49 N14	75 x 205	E	Included	75kΩ/6W	11449915	1.23

UCW - Single-phase capacitors

Product line

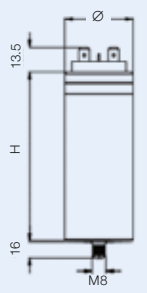
Single phase capacitors - UCW												
Rated voltage (V)	50 Hz		60 Hz		Capacitance (mF)	Reference	Dimensions Ø x H (mm)	Design	Discharge resistor		Code	Weight (kg)
	Reactive power (kvar)	Rated current In (A)	Reactive power (kvar)	Rated current In (A)								
440	0.7	1.6	0.83	1.9	11.4	UCW0.83V49 G4	40 x 85	C	Not Included	1MΩ/3W	11509007	0.19
	0.7	1.6	0.83	1.9	11.4	UCW0.83V49 J2	53 x 68	D	Not Included	1MΩ/3W	11488824	0.23
	0.83	1.9	1.0	2.3	13.6	UCW0.83V48 L4	60 x 85	D	Not Included	560kΩ/3W	10072343	0.30
	1.4	3.2	1.67	3.8	22.9	UCW1.67V49 J4	53 x 85	D	Not Included	560kΩ/3W	11488825	0.28
	1.67	3.8	2.0	4.6	27.5	UCW1.67V48 L4	60 x 85	D	Not Included	390kΩ/3W	10046050	0.29
	2.1	4.7	2.50	5.7	34.3	UCW2.5V49 J6	53 x 105	D	Not Included	390kΩ/3W	13497629	0.22
	2.50	5.7	3.0	6.8	41.1	UCW2.5V48 L6	60 x 105	D	Not Included	270kΩ/3W	10072344	0.35
	2.8	6.3	3.33	7.6	45.6	UCW3.33V49 J8	53 x 141	D	Not Included	270kΩ/3W	11488827	0.45
	3.33	7.6	4.0	9.1	54.8	UCW3.33V48 L8	60 x 141	D	Not Included	180kΩ/3W	10046051	0.47
	4.2	9.5	5.00	11.4	68.5	UCW5V49 L10	60 x 156	D	Not Included	150kΩ/3W	10186125	0.55
	5.00	11.4	-	-	82.2	UCW5V48 L10	60 x 156	D	Not Included	120kΩ/3W	10046722	0.53
	5.6	12.6	6.67	15.2	91.4	UCW6.67V49 M10	70 x 156	D	Not Included	120kΩ/3W	10630798	0.58
	6.3	14.2	7.5	17.0	102.8	UCW7.5V49 N14	75 x 205	E	Included	75kΩ/6W	11449911	1.17
	6.9	15.8	8.33	18.9	114.1	UCW8.33V49 N14	75 x 205	E	Included	75kΩ/6W	11449952	1.18
	7.6	17.4	9.17	20.8	125.6	UCW9.17V49 N14	75 x 205	E	Included	75kΩ/6W	11449953	1.21
	8.3	18.9	10.0	22.7	137.0	UCW10V49 N14	75 x 205	E	Included	75kΩ/6W	11449915	1.23
480	0.7	1.4	0.83	1.7	9.6	UCW0.83V53 G4	40 x 85	C	Not Included	1MΩ/3W	11509028	0.19
	0.7	1.4	0.83	1.7	9.6	UCW0.83V53 J2	53 x 68	D	Not Included	1MΩ/3W	11488839	0.23
	0.83	1.7	1.0	2.1	11.5	UCW0.83V52 L6	60 x 105	D	Not Included	560kΩ/3W	10072476	0.34
	1.4	2.9	1.67	3.5	19.2	UCW1.67V53 J6	53 x 105	D	Not Included	560kΩ/3W	11488841	0.33
	1.67	3.5	2.0	4.2	23.1	UCW1.67V52 L6	60 x 105	D	Not Included	390kΩ/3W	10072477	0.34
	2.1	4.3	2.50	5.2	28.8	UCW2.5V53 J6	53 x 105	D	Not Included	390kΩ/3W	13497630	0.22
	2.50	5.2	3.0	6.3	34.5	UCW2.5V52 L6	60 x 105	D	Not Included	270kΩ/3W	10072345	0.34
	2.8	5.8	3.33	6.9	38.3	UCW3.33V53 J8	53 x 141	D	Not Included	270kΩ/3W	11488845	0.45
	3.33	6.9	4.0	8.3	46.0	UCW3.33V52 L8	60 x 141	D	Not Included	180kΩ/3W	10046053	0.44
	4.2	8.7	5.00	10.4	57.6	UCW5V53 L10	60 x 156	D	Not Included	180kΩ/3W	10045952	0.52
	5.00	10.4	-	-	69.1	UCW5V52 L10	60 x 156	D	Not Included	150kΩ/3W	10046255	0.54
	5.6	11.6	6.67	13.9	76.8	UCW6.67V53 M10	70 x 156	D	Not Included	150kΩ/3W	10630800	0.57
	6.3	13.0	7.50	15.6	86.3	UCW7.5V53 N14	75 x 205	E	Included	135kΩ/6W	11449916	1.19
	6.9	14.5	8.33	17.4	95.9	UCW8.33V53 N14	75 x 205	E	Included	75kΩ/6W	11449954	1.18
	7.6	15.9	9.17	19.1	105.6	UCW9.17V53 N14	75 x 205	E	Included	75kΩ/6W	11449955	1.23
	8.3	17.4	10.00	20.8	115.1	UCW10V53 N14	75 x 205	E	Included	75kΩ/6W	11449928	1.22
535	0.7	1.3	0.8	1.6	7.7	UCW0.83V57 L6	60 x 105	D	Not Included	1MΩ/3W	10046599	0.30
	1.4	2.6	1.7	3.1	15.5	UCW1.67V57 L6	60 x 105	D	Not Included	560kΩ/3W	10046600	0.30
	2.1	3.9	2.5	4.7	23.2	UCW2.5V57 L6	60 x 105	D	Not Included	390kΩ/3W	10046215	0.33
	2.8	5.2	3.3	6.2	30.9	UCW3.33V57 L6	60 x 105	D	Not Included	270kΩ/3W	10046362	0.34
	4.2	7.8	5.0	9.3	46.3	UCW5V57 L10	60 x 156	D	Not Included	180kΩ/3W	10045866	0.51
	5.6	10.4	6.7	12.5	61.8	UCW6.67V57 N14	75 x 205	D	Included	135kΩ/6W	11449929	1.18
	6.3	11.7	7.5	14.0	69.5	UCW7.5V57 N14	75 x 205	E	Included	135kΩ/6W	11449930	1.19
	6.9	13.0	8.3	15.6	77.2	UCW8.33V57 N14	75 x 205	E	Included	135kΩ/6W	11449957	1.18
	7.6	14.3	9.2	17.1	85.0	UCW9.17V57 N14	75 x 205	E	Included	135kΩ/6W	11449959	1.23
	8.3	15.6	10.0	18.7	92.7	UCW10V57 N14	75 x 205	E	Included	75kΩ/6W	11449931	1.22

UCW - Single-phase capacitors

Technical data

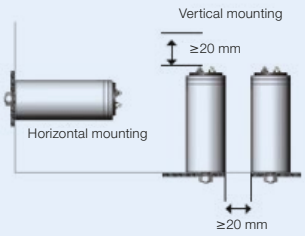
Characteristics	
Phases	Single-phase
Connection	0.6 … 10 kvar
Reactive power	208 … 535 V
Frequency	50 and 60 Hz
Capacitance tolerance	±5%
Service life	100,000 hours
Safety	
Metallized polypropylene film	Self-healing properties
Mechanically safe	Disconnected by overpressure
Maximum short-circuit capacity	10 kA

Dimensions

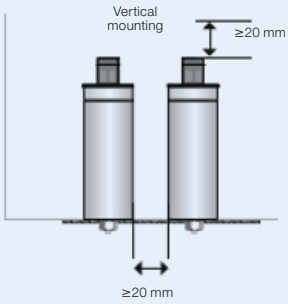
Design C	Design D	Design E
		

Maximum ratings	
Maximum current	1.3 x I_n
Maximum inrush current	100 x I_n
Maximum voltage (up to 8h daily)	1.1 x V_R

Mounting - Design C and D



Mounting - Design E



Design data	
Impregnation	Polyurethane resin
Discharge resistor	Design C and D: not included Design E: ≤30s to 75 V
Capacitor fixation	Design C - M8 screw Design D and E - M12 screw
Maximum fixing torque	Design C - 6 N.m Design D and E - 14 N.m

Environment conditions	
Minimum temperature	-25 °C
Maximum temperature	+55 °C
Maximum average temperature in 24h	+45 °C
Maximum average temperature in 1 year	+35 °C
Maximum altitude	2,000 m
Maximum humidity	95%
Reference standards and certifications	
Reference standards	IEC 60831-1/2 UL 810
Certifications	CE IRAM c UL us

Cross-section and tightening torque

Connection type	Terminal type	Cross-section (mm^2)	Torque (Nm)
		0.5 … 2.5	0.8 … 1.5
		1.5 … 16.0	1.5… 2.5

Note: 1) Nuts and washers provided as standard for design E. For C and D design - sold separately.

MCW - Three-phase capacitor module

Combining the technical characteristics of the UCW line with its modular design, the MCW line is applicable to powers from 1.86 to 10 kvar (208 - 240 V) and from 1.85 to 48 kvar (380 - 535 V).

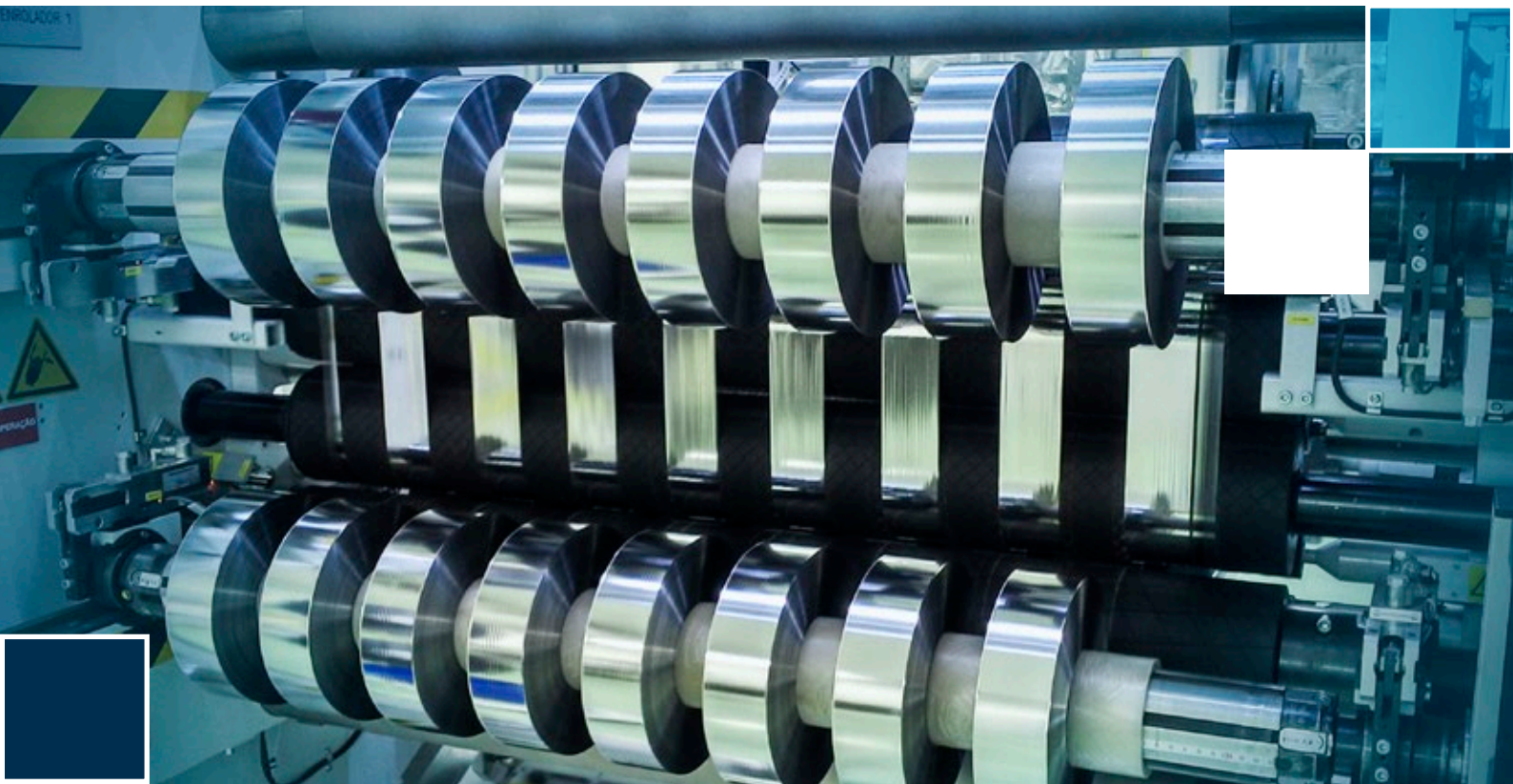
Parallel modules connection

- Voltage up to 240 V:
  Using the BI-MCW bus-tie, it is possible to interconnect up to three modules in parallel.
  At voltages from 208 V to 240 V, the maximum power may reach 30 kvar.
- 380 V or above:
  Using the BI-MCW bus-tie, it is possible to interconnect up to four modules in parallel.
  At voltages from 380 V to 535 V, the maximum power may reach 60 kvar.

Guarantee of service continuity

Service live
100,000h

Modularity



MCW - Three-phase capacitor module

Product line

Three-phase capacitor modules - MCW[1)2)]									
Rated voltage (V)[1)]	50 Hz		60 Hz		Reference	Composition quant. x UCW (D connection)[2)]	Dimensions (L x W x H) (mm)	Code	Weight (kg)
	Reactive power (kvar)	Rated current In (A)	Reactive power (kvar)	Rated current In (A)					
208	1.9	5.2	2.2	6.2	MCW2.5V25	3 x UCW0.83V25 L6	219 x 78 x 257	10045851	3.01
	3.7	10.3	4.5	12.4	MCW5V25	3 x UCW1.67V25 L6	219 x 78 x 257	10045799	3.04
	5.6	15.5	6.7	18.6	MCW7.5V25	3 x UCW2.5V25 L10	219 x 78 x 257	10186130	3.62
	7.4	20.7	8.9	24.8	MCW10V25	3 x UCW3.33V25 L10	219 x 78 x 257	10046861	3.65
	9.3	25.8	11.2	31.0	MCW12.5V25	1 x MCW10V25 + 1 x MCW2.5V25	219 x 156 x 257	11433560	4.33
	11.2	31.0	13.4	37.2	MCW15V25	1 x MCW10V25 + 1 x MCW5V25	219 x 156 x 257	11425743	4.33
	13.0	36.2	15.6	43.4	MCW17.5V25	1 x MCW10V25 + 1 x MCW7.5V25	219 x 156 x 257	11433563	4.40
	14.9	41.4	17.9	49.6	MCW20V25	2 x MCW10V25	219 x 156 x 257	10731824	4.40
	16.8	46.5	20.1	55.8	MCW22.5V25	2 x MCW10V25 + 1 x MCW2.5V25	219 x 234 x 257	11433565	6.53
	18.6	51.7	22.3	62.0	MCW25V25	2 x MCW10V25 + 1 x MCW5V25	219 x 234 x 257	10731826	6.53
	20.5	56.9	24.6	68.2	MCW27.5V25	2 x MCW10V25 + 1 x MCW7.5V25	219 x 234 x 257	11433566	6.60
	22.3	62.0	26.8	74.4	MCW30V25	3 x MCW10V25	219 x 234 x 257	11433567	6.60
220	2.1	5.5	2.5	6.6	MCW2.5V25	3 x UCW0.83V25 L6	219 x 78 x 257	10045851	3.01
	4.2	10.9	5.0	13.1	MCW5V25	3 x UCW1.67V25 L6	219 x 78 x 257	10045799	3.04
	6.3	16.4	7.5	19.7	MCW7.5V25	3 x UCW2.5V25 L10	219 x 78 x 257	10186130	3.62
	8.3	21.9	10.0	26.2	MCW10V25	3 x UCW3.33V25 L10	219 x 78 x 257	10046861	3.65
	10.4	27.3	12.5	32.8	MCW12.5V25	1 x MCW10V25 + 1 x MCW2.5V25	219 x 156 x 257	11433560	4.33
	12.5	32.8	15.0	39.4	MCW15V25	1 x MCW10V25 + 1 x MCW5V25	219 x 156 x 257	11425743	4.33
	14.6	38.3	17.5	45.9	MCW17.5V25	1 x MCW10V25 + 1 x MCW7.5V25	219 x 156 x 257	11433563	4.40
	16.7	43.7	20.0	52.5	MCW20V25	2 x MCW10V25	219 x 156 x 257	10731824	4.40
	18.8	49.2	22.5	59.0	MCW22.5V25	2 x MCW10V25 + 1 x MCW2.5V25	219 x 234 x 257	11433565	6.53
	20.8	54.7	25.0	65.6	MCW25V25	2 x MCW10V25 + 1 x MCW5V25	219 x 234 x 257	10731826	6.53
	22.9	60.1	27.5	72.2	MCW27.5V25	2 x MCW10V25 + 1 x MCW7.5V25	219 x 234 x 257	11433566	6.60
	25.0	65.6	30.0	78.7	MCW30V25	3 x MCW10V25	219 x 234 x 257	11433567	6.60
230	2.5	6.3	3.0	7.5	MCW2.5V34	3 x UCW0.83V34 L6	219 x 78 x 257	10072478	2.95
	5.0	12.6	6.0	15.1	MCW5V34	3 x UCW1.67V34 L6	219 x 78 x 257	10211646	3.43
	7.5	18.8	9.0	22.6	MCW7.5V34	3 x UCW2.5V34 L10	219 x 78 x 257	10211647	3.62
	10.0	25.1	-	-	MCW10V34	3 x UCW3.33V34 L10	219 x 78 x 257	11559337	3.62
240	2.1	5.0	2.5	6.0	MCW2.5V29	3 x UCW0.83V29 L4	219 x 78 x 257	10072559	3.04
	4.2	10.0	5.0	12.0	MCW5V29	3 x UCW1.67V29 L6	219 x 78 x 257	10045989	3.01
	6.3	15.0	7.5	18.0	MCW7.5V29	3 x UCW2.5V29 L10	219 x 78 x 257	10072302	3.47
	8.3	20.0	10.0	24.1	MCW10V29	3 x UCW3.3V29 L10	219 x 78 x 257	11214119	3.66
380	2.1	3.2	2.5	3.8	MCW2.5V40	3 x UCW0.83V40 L4	219 x 78 x 257	10452269	2.29
	4.2	6.3	5.0	7.6	MCW5V40	3 x UCW1.67V40 L4	219 x 78 x 257	10186090	2.32
	6.3	9.5	7.5	11.4	MCW7.5V40	3 x UCW2.5V40 L6	219 x 78 x 257	10186099	3.08
	8.3	12.7	10.0	15.2	MCW10V40	3 x UCW3.33V40 L8	219 x 78 x 257	10186092	3.66
	12.5	19.0	15.0	22.8	MCW15V40	3 x UCW5V40 L10	219 x 78 x 257	10186131	3.67
	14.6	22.2	17.5	26.6	MCW17.5V40	1 x MCW15V40 + 1 x MCW2.5V40	219 x 156 x 257	11433568	4.18
	16.7	25.3	20.0	30.4	MCW20V40	1 x MCW15V40 + 1 x MCW5V40	219 x 156 x 257	10073612	4.16
	18.8	28.5	22.5	34.2	MCW22.5V40	1 x MCW15V40 + 1 x MCW7.5V40	219 x 156 x 257	11433570	4.33
	20.8	31.7	25.0	38.0	MCW25V40	1 x MCW15V40 + 1 x MCW10V40	219 x 156 x 257	11363326	4.48
	22.9	34.8	27.5	41.8	MCW27.5V40	1 x MCW15V40 + 1 x MCW12.5V40	219 x 156 x 257	11433571	6.47
	25.0	38.0	30.0	45.6	MCW30V40	2 x MCW15V40	219 x 156 x 257	10212419	4.38
	29.2	44.3	35.0	53.2	MCW35V40	2 x MCW15V40 + 1 x MCW5V40	219 x 234 x 257	11433573	6.35
	33.3	50.6	40.0	60.8	MCW40V40	2 x MCW15V40 + 1 x MCW10V40	219 x 234 x 257	11433574	6.67
	37.5	57.0	45.0	68.4	MCW45V40	3 x MCW15V40	219 x 234 x 257	11433575	6.57
	41.7	63.3	50.0	76.0	MCW50V40	3 x MCW15V40 + 1 x MCW5V40	219 x 312 x 257	11433576	8.96
	50.0	76.0	60.0	91.2	MCW60V40	4 x MCW15V40	219 x 312 x 257	11433577	8.76
400	2.5	3.6	3.0	4.3	MCW2.5V44	3 x UCW0.83V44 L4	219 x 78 x 257	10072333	2.47
	5.0	7.2	6.0	8.7	MCW5V44	3 x UCW1.67V44 L4	219 x 78 x 257	10072334	2.37
	7.5	10.8	9.0	13.0	MCW7.5V44	3 x UCW2.5V44 L6	219 x 78 x 257	10186140	3.03
	10.0	14.4	12.0	17.3	MCW10V44	3 x UCW3.33V44 L8	219 x 78 x 257	10046040	3.53
	15.0	21.7	-	-	MCW15V44	3 x UCW5V44 L10	219 x 78 x 257	10046041	3.63
415	1.9	2.6	2.2	3.1	MCW2.5V49	3 x UCW0.83V49 L4	219 x 78 x 257	10045854	2.35
	2.2	3.1	2.7	3.7	MCW2.5V48	3 x UCW0.83V48 L4	219 x 78 x 257	10072479	2.40
	3.7	5.2	4.4	6.2	MCW5V49	3 x UCW1.67V49 L4	219 x 78 x 257	10186091	2.35
	4.4	6.2	5.3	7.4	MCW5V48	3 x UCW1.67V48 L4	219 x 78 x 257	10072480	2.37
	5.6	7.7	6.7	9.3	MCW7.5V49	3 x UCW2.5V49 L6	219 x 78 x 257	10045855	3.08
	6.7	9.3	8.0	11.1	MCW7.5V48	3 x UCW2.5V48 L6	219 x 78 x 257	10072481	3.03
	7.4	10.3	8.9	12.4	MCW10V49	3 x UCW3.33V49 L8	219 x 78 x 257	10186093	3.56

Notes: 1) For other voltages, contact WEG.
2) Three-phase capacitor modules provided with discharge resistors.

MCW - Three-phase capacitor module

Product line

Three-phase capacitor modules - MCW[1)2)]									
Rated voltage (V)[1)]	50 Hz		60 Hz		Reference	Composition quant. x UCW (D connection)[2)]	Dimensions (L x W x H) (mm)	Code	Weight (kg)
	Reactive power (kvar)	Rated current In (A)	Reactive power (kvar)	Rated current In (A)					
415	8.9	12.4	10.7	14.9	MCW10V48	3 x UCW3.33V48 L8	219 x 78 x 257	10072482	3.53
	11.1	15.5	13.3	18.6	MCW15V49	3 x UCW5V49 L10	219 x 78 x 257	10045983	3.76
	13.3	18.6	-	-	MCW15V48	3 x UCW5V48 L10	219 x 78 x 257	11608707	3.70
	13.0	18.0	15.6	21.7	MCW17.5V49	1 x MCW15V49 + 1 x MCW2.5V49	219 x 156 x 257	11433578	4.16
	14.8	20.6	17.8	24.8	MCW20V49	1 x MCW15V49 + 1 x MCW5V49	219 x 156 x 257	11338289	4.16
	16.7	23.2	20.0	27.8	MCW22.5V49	1 x MCW15V49 + 1 x MCW7.5V49	219 x 156 x 257	11433580	4.34
	18.5	25.8	22.2	30.9	MCW25V49	1 x MCW15V49 + 1 x MCW10V49	219 x 156 x 257	11148586	4.49
	20.4	28.4	24.5	34.0	MCW27.5V49	1 x MCW15V49 + 1 x MCW12.5V49	219 x 156 x 257	11433582	4.49
	22.2	30.9	26.7	37.1	MCW30V49	2 x MCW15V49	219 x 156 x 257	10074765	4.49
	25.9	36.1	31.1	43.3	MCW35V49	2 x MCW15V49 + 1 x MCW5V49	219 x 234 x 257	11433584	6.35
	29.7	41.3	35.6	49.5	MCW40V49	2 x MCW15V49 + 1 x MCW10V49	219 x 234 x 257	11433585	6.68
	33.4	46.4	40.0	55.7	MCW45V49	3 x MCW15V49	219 x 234 x 257	11433586	6.57
	37.1	51.6	44.5	61.9	MCW50V49	3 x MCW15V49 + 1 x MCW5V49	219 x 312 x 257	11433587	8.98
	44.5	61.9	53.4	74.3	MCW60V49	4 x MCW15V49	219 x 312 x 257	11338292	8.76
440	2.1	2.7	2.5	3.3	MCW2.5V49	3 x UCW0.83V49 L4	219 x 78 x 257	10045854	2.35
	2.5	3.3	3.0	3.9	MCW2.5V48	3 x UCW0.83V48 L4	219 x 78 x 257	10072479	2.40
	4.2	5.5	5.0	6.6	MCW5V49	3 x UCW1.67V49 L4	219 x 78 x 257	10186091	2.35
	5.0	6.6	6.0	7.9	MCW5V48	3 x UCW1.67V48 L4	219 x 78 x 257	10072480	2.37
	6.3	8.2	7.5	9.8	MCW7.5V49	3 x UCW2.5V49 L6	219 x 78 x 257	10045855	3.08
	7.5	9.8	9.0	11.8	MCW7.5V48	3 x UCW2.5V48 L6	219 x 78 x 257	10072481	3.03
	8.3	10.9	10.0	13.1	MCW10V49	3 x UCW3.33V49 L8	219 x 78 x 257	10186093	3.56
	10.0	13.1	12.0	15.7	MCW10V48	3 x UCW3.33V48 L8	219 x 78 x 257	10072482	3.53
	12.5	16.4	15.0	19.7	MCW15V49	3 x UCW5V49 L10	219 x 78 x 257	10045983	3.76
	15.0	19.7	-	-	MCW15V48	3 x UCW5V48 L10	219 x 78 x 257	11608707	3.70
	14.6	19.1	17.5	23.0	MCW17.5V49	1 x MCW15V49 + 1 x MCW2.5V49	219 x 156 x 257	11433578	4.16
	16.7	21.9	20.0	26.2	MCW20V49	1 x MCW15V49 + 1 x MCW5V49	219 x 156 x 257	11338289	4.16
	18.8	24.6	22.5	29.5	MCW22.5V49	1 x MCW15V49 + 1 x MCW7.5V49	219 x 156 x 257	11433580	4.34
	20.8	27.3	25.0	32.8	MCW25V49	1 x MCW15V49 + 1 x MCW10V49	219 x 156 x 257	11148586	4.49
	22.9	30.1	27.5	36.1	MCW27.5V49	1 x MCW15V49 + 1 x MCW12.5V49	219 x 156 x 257	11433582	4.49
	25.0	32.8	30.0	39.4	MCW30V49	2 x MCW15V49	219 x 156 x 257	10074765	4.49
	29.2	38.3	35.0	45.9	MCW35V49	2 x MCW15V49 + 1 x MCW5V49	219 x 234 x 257	11433584	6.35
	33.3	43.7	40.0	52.5	MCW40V49	2 x MCW15V49 + 1 x MCW10V49	219 x 234 x 257	11433585	6.68
	37.5	49.2	45.0	59.0	MCW45V49	3 x MCW15V49	219 x 234 x 257	11433586	6.57
	41.7	54.7	50.0	65.6	MCW50V49	3 x MCW15V49 + 1 x MCW5V49	219 x 312 x 257	11433587	8.98
	50.0	65.6	60.0	78.7	MCW60V49	4 x MCW15V49	219 x 312 x 257	11338292	8.76
480	2.1	2.5	2.5	3.0	MCW2.5V53	3 x UCW0.83V53 L6	219 x 78 x 257	10045856	2.92
	2.5	3.0	3.0	3.6	MCW2.5V52	3 x UCW0.83V52 L6	219 x 78 x 257	10072484	2.99
	4.2	5.0	5.0	6.0	MCW5V53	3 x UCW1.67V53 L6	219 x 78 x 257	10045857	2.94
	5.0	6.0	6.0	7.2	MCW5V52	3 x UCW1.67V52 L6	219 x 78 x 257	10072485	2.99
	6.3	7.5	7.5	9.0	MCW7.5V53	3 x UCW2.5V53 L6	219 x 78 x 257	10186100	2.97
	7.5	9.0	9.0	10.8	MCW7.5V52	3 x UCW2.5V52 L6	219 x 78 x 257	10072486	3.00
	8.3	10.0	10.0	12.0	MCW10V53	3 x UCW3.33V53 L8	219 x 78 x 257	10186101	3.46
	10.0	12.0	12.0	14.4	MCW10V52	3 x UCW3.33V52 L8	219 x 78 x 257	10072487	3.42
	12.5	15.0	15.0	18.0	MCW15V53	3 x UCW5V53 L10	219 x 78 x 257	10045984	3.66
	15.0	18.0	-	-	MCW15V52	3 x UCW5V52 L10	219 x 78 x 257	10072488	3.73
	14.6	17.5	17.5	21.0	MCW17.5V53	1 x MCW15V53 + 1 x MCW2.5V53	219 x 156 x 257	11433588	4.35
	2.5	3.0	20.0	24.1	MCW20V53	1 x MCW15V53 + 1 x MCW5V53	219 x 156 x 257	11433589	4.33
	18.8	22.6	22.5	27.1	MCW22.5V53	1 x MCW15V53 + 1 x MCW7.5V53	219 x 156 x 257	11433590	4.34
	5.0	6.0	25.0	30.1	MCW25V53	1 x MCW15V53 + 1 x MCW10V53	219 x 156 x 257	11433592	4.51
	22.9	27.6	27.5	33.1	MCW27.5V53	1 x MCW15V53 + 1 x MCW12.5V53	219 x 156 x 257	11433593	4.51
	7.5	9.0	30.0	36.1	MCW30V53	2 x MCW15V53	219 x 156 x 257	11088319	4.38
	29.2	35.1	35.0	42.1	MCW35V53	2 x MCW15V53 + 1 x MCW5V53	219 x 234 x 257	11114396	6.52
	10.0	12.0	40.0	48.1	MCW40V53	2 x MCW15V53 + 1 x MCW10V53	219 x 234 x 257	11433594	6.70
	37.5	45.1	45.0	54.1	MCW45V53	3 x MCW15V53	219 x 234 x 257	11433596	6.57
	15.0	18.0	50.0	-	MCW50V53	3 x MCW15V53 + 1 x MCW5V53	219 x 312 x 257	11433597	9.02
	15.0	18.0	60.0	-	MCW60V53	4 x MCW15V53	219 x 312 x 257	11433608	8.76
535	2.1	2.2	2.5	2.7	MCW2.5V57	3 x UCW0.83V57 L6	219 x 78 x 257	10073617	2.87
	4.2	4.5	5.0	5.4	MCW5V57	3 x UCW1.67V57 L6	219 x 78 x 257	10046601	2.88
	6.3	6.7	7.5	8.1	MCW7.5V57	3 x UCW2.5V57 L6	219 x 78 x 257	10046602	2.97
	8.3	9.0	10.0	10.8	MCW10V57	3 x UCW3.33V57 L6	219 x 78 x 257	10046603	3.01
	12.5	13.5	15.0	16.2	MCW15V57	3 x UCW5V57 L10	219 x 78 x 257	10046604	3.63

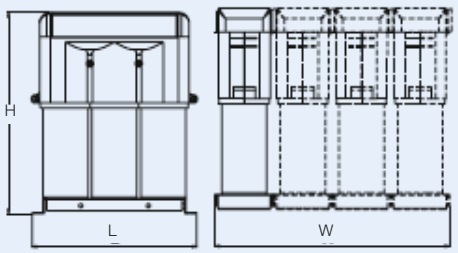
Notes: 1) For other voltages, contact WEG.
2) Three-phase capacitor modules provided with discharge resistors.

MCW - Three-phase capacitor module

Technical data

Characteristics	
Phases	Three-phase
Connection	Δ (Delta)
Reactive power	1.9 … 60 kvar
Rated voltage	208 … 535 V
Frequency	50 or 60 Hz
Capacitance tolerance	±5%
Service life	100,000 hours
Safety	
Metallized polypropylene film	Self-healing properties
Mechanically safe	Overpressure switch
Maximu short-circuit capacity	10 kA

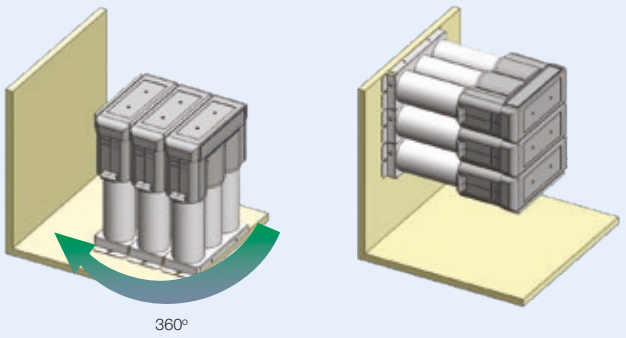
Dimensions



Maximum ratings	
Maximum current	1.3 x I_n
Maximum inrush current	100 x I_n
Maximum voltage (up to 8h daily)	1.1 x V_R

Design data	
Impregnation	Polyurethane resin
Discharge resistor	≤30s to 75 V
Condenser fixation	M12 screw
Maximum fixing torque	14 N.m

Mounting - Design A



Vertical mounting module

Horizontal mounting module

Environment conditions	
Minimum temperature	-25 °C
Maximum temperature	+55 °C
Maximum average temperature in 24h	+45 °C
Maximum average temperature in 1 year	+35 °C
Maximum altitude	2,000 m
Maximum humidity	95%
Reference standards and certifications	
Reference standards	IEC 60831-1/2 UL 810
Certifications	CE

Cross-section and tightening torque

Connection type	Terminal type	Cross-section (mm^2)	Torque (Nm)
		1.5 … 35.0	8.0 … 10.0

BCW – Three-phase capacitor bank

Characterized by their small size and assembly in a metal cabinet, the BCW capacitor banks provide easy power factor correction in large individual loads and small load centers.

Characteristics

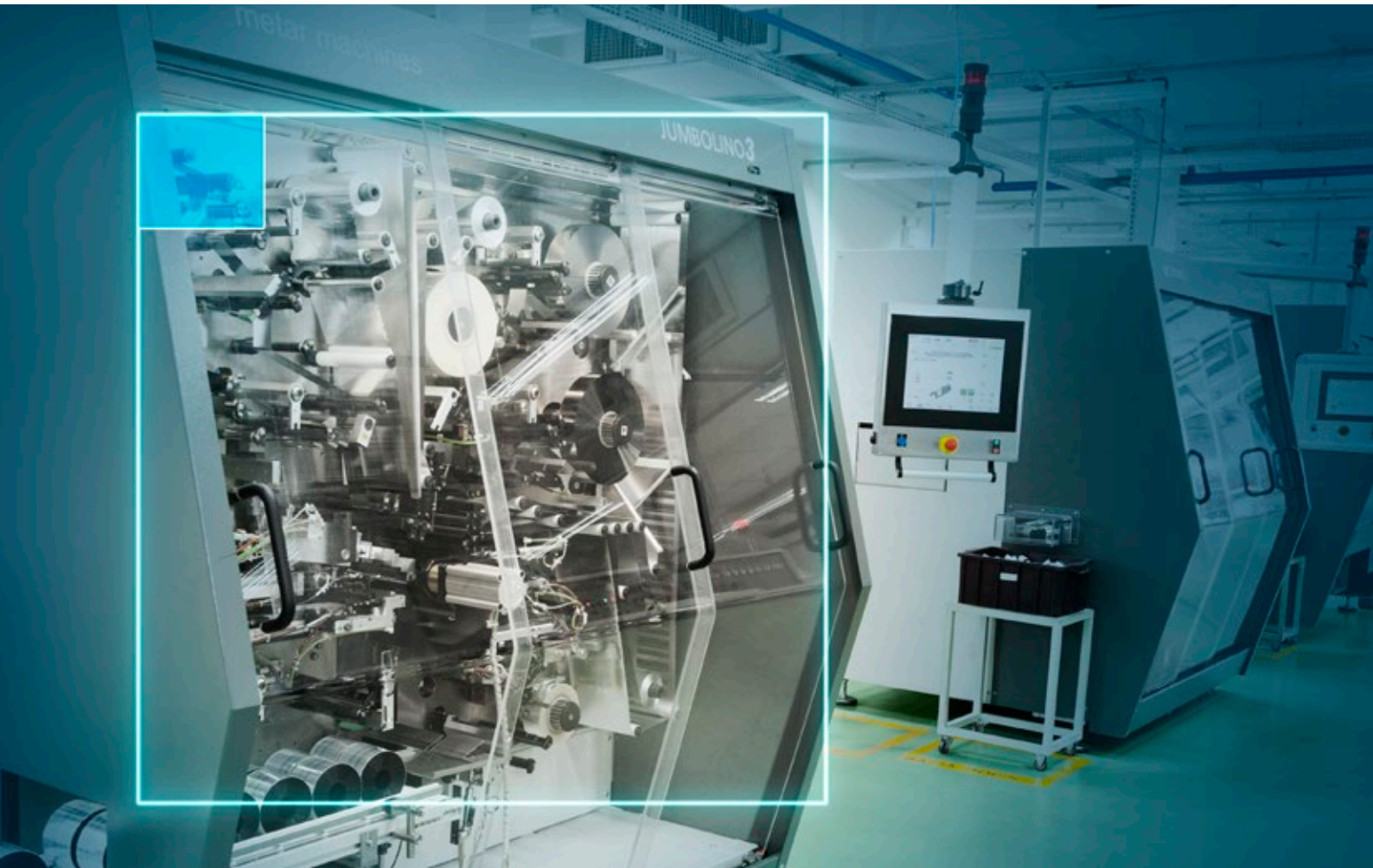
- Mounting with three-phase units
- Wide power range: 10 to 100 kvar
- Applied voltages from 208 to 535 V

Durable and compact

Maintenance – simplicity

Without forced ventilation

Compact – high power density / m^3



BCW – Three-phase capacitor bank

Product line

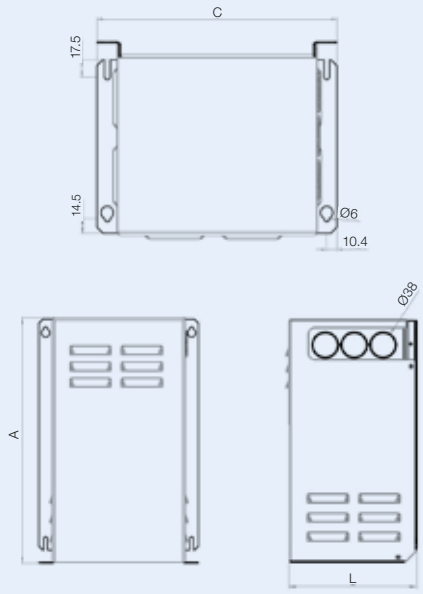
Protected three-phase capacitor bank - BCW									
Voltage (V)	50 Hz		60 Hz		Reference	Composition qty. x UCW / MCW (connection Δ)	Dimensions (H x W x D) (mm)	Code	Weight (kg)
	Reactive power (kvar)	Rated current In (A)	Reactive power (kvar)	Rated current In (A)					
220	8.3	21.9	10.0	26.2	BCW10V25 T	1x UCWT10V25 N22 HD	247 x 200 x 380	14891694	5.7
	12.5	32.8	15.0	39.4	BCW15V25 T	1x UCWT15V25 S26 HD	247 x 200 x 380	14891695	6.6
	16.7	43.7	20.0	52.5	BCW20V25 T	1x UCWT20V25 S28 HD	247 x 200 x 380	14891696	7.5
	20.8	54.7	25.0	65.6	BCW25V25 T	1x UCWT25V25 U28 HD	247 x 200 x 380	14891697	8.4
	25.0	65.6	30.0	78.7	BCW30V25 T	1x UCWT30V25 U28 HD	247 x 200 x 380	14891778	8.4
	29.2	76.5	35.0	91.9	BCW35V25 T	1x UCWT20V25 S28 HD + 1x UCWT15V25 S26 HD	387 x 200 x 380	14893330	12.5
	33.3	87.5	40.0	105.0	BCW 40V25 T	2x UCWT20V25 S28 HD	387 x 200 x 380	14893482	13.4
	37.5	98.4	45.0	118.1	BCW 45V25 T	1x UCWT25V25 U28 HD + 1x UCWT20V25 S28 HD	387 x 200 x 380	14893544	14.3
	41.7	109.3	50.0	131.2	BCW 50V25 T	2x UCWT25V25 U28 HD	387 x 200 x 380	14893602	15.2
380	16.7	25.3	20.0	30.4	BCW20V40 T	1x UCWT20V40 Q26 HD	247 x 200 x 380	14901141	6.1
	20.8	31.7	25.0	38.0	BCW25V40 T	1x UCWT25V40 S26 HD	247 x 200 x 380	14901440	6.6
	25.0	38.0	30.0	45.6	BCW30V40 T	1x UCWT30V40 S28 HD	247 x 200 x 380	14901441	7.5
	29.2	44.3	35.0	53.2	BCW35V40 T	1x UCWT35V40 S28 HD	247 x 200 x 380	14901772	7.5
	33.3	50.6	40.0	60.8	BCW40V40 T	1x UCWT40V40 U28 HD	247 x 200 x 380	14901774	8.4
	37.5	57.0	45.0	68.4	BCW45V40 T	1x UCWT45V40 U28 HD	247 x 200 x 380	14902307	8.4
	41.7	63.3	50.0	76.0	BCW50V40 T	1x UCWT50V40 U28 HD	247 x 200 x 380	14902441	8.4
	50.0	76.0	60.0	91.2	BCW60V40 T	2x UCWT30V40 S28 HD	387 x 200 x 380	14902644	13.4
	62.5	95.0	75.0	114.0	BCW75V40 T	1x UCWT40V40 U28 HD + 1x UCWT35V40 S28 HD	387 x 200 x 380	14902750	14.3
	83.3	126.6	100.0	151.9	BCW100V40 T	2x UCWT50V40 U28 HD	387 x 200 x 380	14902788	15.3
440	16.7	21.9	20.0	26.2	BCW20V49 T	1x UCWT20V49 Q26 HD	247 x 200 x 380	14896261	6.1
	20.8	27.3	25.0	32.8	BCW25V49 T	1x UCWT25V49 S26 HD	247 x 200 x 380	14896578	6.6
	25.0	32.8	30.0	39.4	BCW30V49 T	1x UCWT30V49 S28 HD	247 x 200 x 380	14896670	7.5
	29.2	38.3	35.0	45.9	BCW35V49 T	1x UCWT35V49 S28 HD	247 x 200 x 380	14896794	7.5
	33.3	43.7	40.0	52.5	BCW40V49 T	1x UCWT40V49 U28 HD	247 x 200 x 380	14896951	8.4
	37.5	49.2	45.0	59.0	BCW45V49 T	1x UCWT45V49 U28 HD	247 x 200 x 380	14897028	8.4
	41.7	54.7	50.0	65.6	BCW50V49 T	1x UCWT50V49 U28 HD	247 x 200 x 380	14897034	8.4
	50.0	65.6	60.0	78.7	BCW60V49 T	2x UCWT30V49 S28 HD	387 x 200 x 380	14897092	13.4
	62.5	82.0	75.0	98.4	BCW75V49 T	1x UCWT40V49 U28 HD + 1x UCWT35V49 S28 HD	387 x 200 x 380	14897095	14.3
	83.3	109.3	100.0	131.2	BCW100V49 T	2x UCWT50V49 U28 HD	387 x 200 x 380	14897172	15.3
480	16.7	20.0	20.0	24.1	BCW20V53 T	1x UCWT20V53 Q26 HD	247 x 200 x 380	14904548	6.1
	20.8	25.1	25.0	30.1	BCW 25V53 T	1x UCWT25V53 S26 HD	247 x 200 x 380	14904550	6.7
	25.0	30.1	30.0	36.1	BCW30V53 T	1x UCWT30V53 S28 HD	247 x 200 x 380	14904551	7.5
	29.2	35.1	35.0	42.1	BCW35V53 T	1x UCWT35V53 S28 HD	247 x 200 x 380	14904552	7.5
	33.3	40.1	40.0	48.1	BCW40V53T	1x UCWT40V53 U28 HD	247 x 200 x 380	14904554	8.4
	37.5	45.1	45.0	54.1	BCW45V53 T	1x UCWT45V53 U28 HD	247 x 200 x 380	14904555	8.4
	41.7	50.1	50.0	60.1	BCW50V53 T	1x UCWT50V53 U28 HD	247 x 200 x 380	14904556	8.4
	50.0	60.1	60.0	72.2	BCW60V53 T	2x UCWT30V53 S28 HD	387 x 200 x 380	14904557	13.4
	62.5	75.2	75.0	90.2	BCW75V53 T	1x UCWT40V53 U28 HD + 1x UCWT35V53 S28 HD	387 x 200 x 380	14904579	14.3
	83.3	100.2	100.0	120.3	BCW100V53 T	2x UCWT50V53 U28 HD	387 x 200 x 380	14904580	15.3
535	16.7	18.0	20.0	21.6	BCW20V57 T	1x UCWT20V57 Q26 HD	247 x 200 x 380	14904757	6.0
	20.8	22.5	25.0	27.0	BCW25V57 T	1x UCWT25V57 S26 HD	247 x 200 x 380	14904799	6.5
	25.0	27.0	30.0	32.4	BCW30V57 T	1x UCWT30V57 S28 HD	247 x 200 x 380	14904801	7.3
	29.2	31.5	35.0	37.8	BCW35V57 T	1x UCWT35V57 S28 HD	247 x 200 x 380	14904803	7.3
	33.3	36.0	40.0	43.2	BCW40V57 T	1x UCWT40V57 U28 HD	247 x 200 x 380	14904804	8.4
	37.5	40.5	45.0	48.6	BCW45V57 T	1x UCWT45V57 U28 HD	247 x 200 x 380	14904806	8.4
	41.7	45.0	50.0	54.0	BCW50V57 T	1x UCWT50V57 U28 HD	247 x 200 x 380	14904809	8.4
	50.0	54.0	60.0	64.7	BCW60V57 T	2x UCWT30V57 S28 HD	387 x 200 x 380	14904811	13.1
	62.5	67.4	75.0	80.9	BCW75V57 T	1x UCWT40V57 U28 HD + 1x UCWT35V57 S28 HD	387 x 200 x 380	14904815	14.2
	83.3	89.9	100.0	107.9	BCW100V57 T	2x UCWT50V57 U28 HD	387 x 200 x 380	14904816	15.3

BCW – Three-phase capacitor bank

Technical data

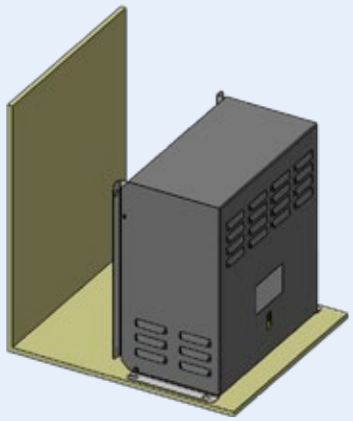
Characteristics	
Phases	Three-phase
Connection	Δ (Delta)
Reactive power	8.3 … 100 kvar
Rated voltage	220 … 535 V
Frequency	50 or 60 Hz
Capacitance tolerance	±5%
Service life	100,000 hours
Safety	
Cabinet type	Metallic cabinet
Electrical protection	Self-healing properties
Metallized polypropylene film	Self-healing properties
Mechanically safe	Overpressure switch
Maximum short-circuit capacity	10 kA

Dimensions



Maximum ratings	
Maximum current	1.3 x I_R
Maximum inrush current	100 x I_R
Maximum voltage (up to 8h daily)	1.1 x V_R

Mounting



Design data	
Discharge resistor (208 .. 240 V)	≤30s for 75 V ≤90s for 75 V (greater than 15 kvar)
Discharge resistor (380 ... 535 V)	≤30s for 75 V ≤90s for 75 V (greater than 25 kvar)
Bank cabinet	Metallic cabinet with paint RAL 7022
Protection rating	IP32

Environment conditions	
Minimum temperature	-25 °C
Maximum temperature	+55 °C
Maximum average temperature in 24h	+45 °C
Maximum average temperature in 1 year	+35 °C
Maximum altitude	2,000 m
Maximum humidity	95%
Reference standards and certifications	
Reference standards	IEC 60831-1/2 UL 810
Certifications	CE

Cross-section and tightening torque

Connection type	Terminal type[1)]	Cross-section (mm²)	Torque (Nm)
		1.5 … 10.0	1.5 … 2.5
		10.0 … 35.0[1)]	4.0 … 6.0[1)]

Note: 1) For powers above 20 kvar @ 220, 230, 240 V and 35 kvar @ 380, 400, 440, 480 and 535 V.

BCWP – Three-phase capacitor bank with protection

Characterized by their small size and assembly in a metal cabinet, the BCWP capacitor banks provide easy power factor correction in large individual loads and small load centers.

In addition, they feature protection, control and activation of the individual capacitor units.

Characteristics

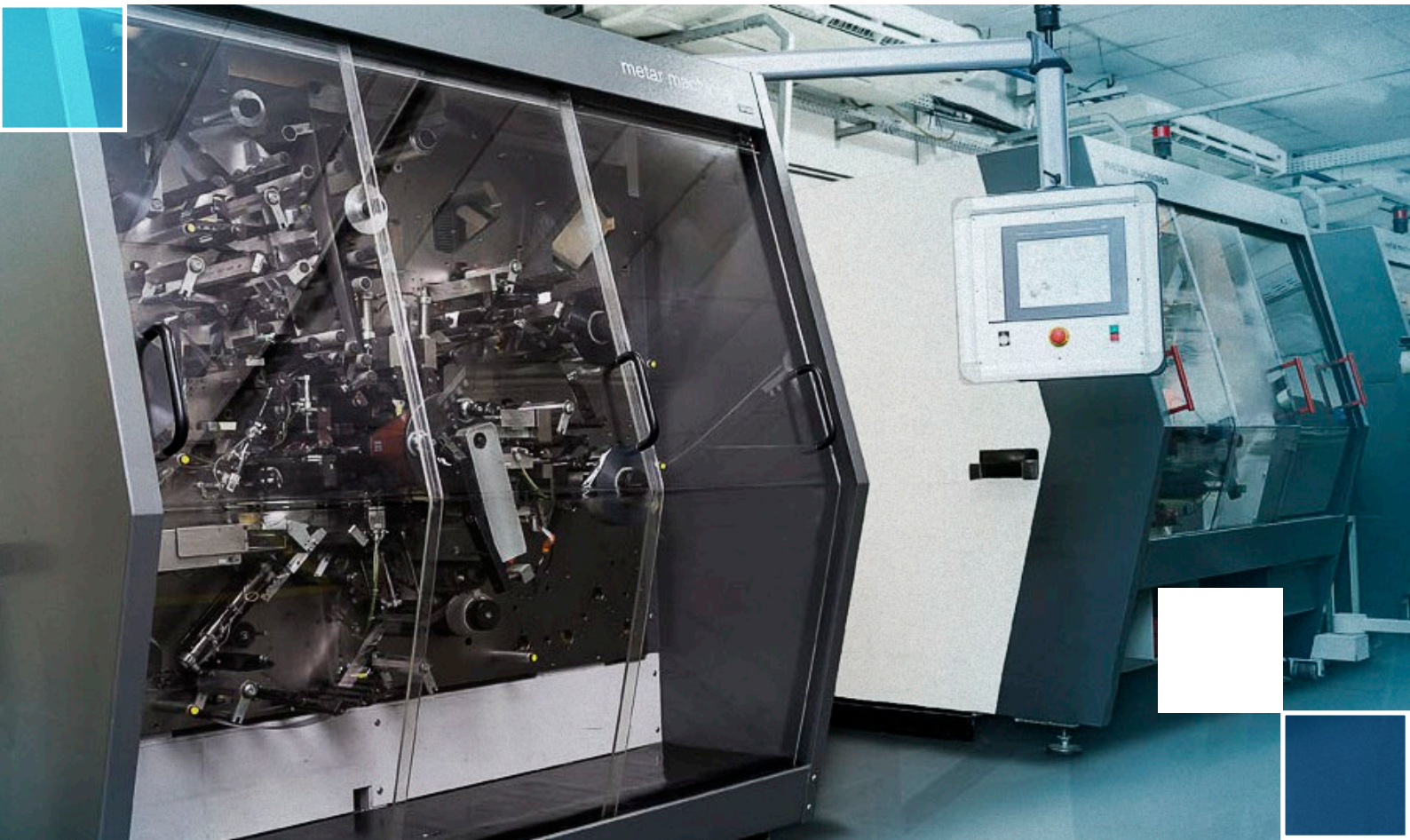
- Higher power density (22% increase)
- No need to disconnect the cables to open the bank
- Easy access to internal components
- Neoprene caps to facilitate power cable installation
- New cable entry design, reducing heat generation due to magnetic losses in the frame

Compact and complete

Safety – access to the circuit breaker command on the front cover

Control - Built-in contactors and timer

Compact - high power density / m^3



BCWP – Three-phase capacitor bank with protection

Product line

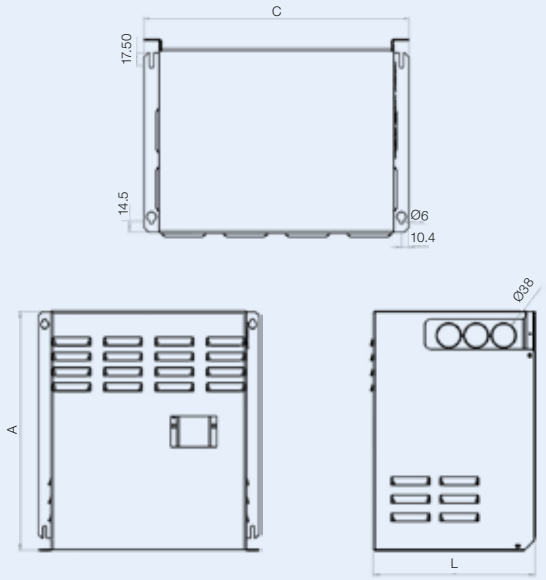
Protected three-phase capacitor bank - BCW									
Voltage (V)	50 Hz		60 Hz		Reference	Composition qty. x UCW / MCW (connection Δ)	Dimensions (H x W x D) (mm)	Code	Weight (kg)
	Reactive power (kvar)	Rated current In (A)	Reactive power (kvar)	Rated current In (A)					
220	8.3	21.9	10.0	26.2	BCWP10V25D-V25 T	1x UCWT10V25 N22 HD	364x266x421	14907602	9.8
	12.5	32.8	15.0	39.4	BCWP15V25D-V25 T	1x UCWT15V25 S26 HD	364x266x421	14907603	11.0
	16.7	43.7	20.0	52.5	BCWP20V25D-V25 T	1x UCWT20V25 S28 HD	364x266x421	14907605	12.5
	20.8	54.7	25.0	65.6	BCWP25V25D-V25 T	1x UCWT25V25 U28 HD	364x266x421	14907639	13.4
	25.0	65.6	30.0	78.7	BCWP30V25D-V25 T	1x UCWT30V25 U28 HD	364x266x421	14907640	13.4
	29.2	76.5	35.0	91.9	BCWP35V25D-V25 T	1x UCWT20V25 S28 HD + 1x UCWT15V25 S26 HD	603x266x421	14907641	16.9
	33.3	87.5	40.0	105.0	BCWP40V25D-V25 T	2x UCWT20V25 S28 HD	603x266x421	14907642	17.7
	37.5	98.4	45.0	118.1	BCWP45V25D-V25 T	1x UCWT25V25 U28 HD + 1x UCWT20V25 S28 HD	603x266x421	14907643	18.7
	41.7	109.3	50.0	131.2	BCWP50V25D-V25 T	2x UCWT25V25 U28 HD	603x266x421	14907644	19.6
380	16.7	25.3	20.0	30.4	BCWP20V40D-V25 T	1x UCWT20V40 Q26 HD	364x266x421	14907646	10.2
	20.8	31.7	25.0	38.0	BCWP25V40D-V25 T	1x UCWT25V40 S26 HD	364x266x421	14907647	11.0
	25.0	38.0	30.0	45.6	BCWP30V40D-V25 T	1x UCWT30V40 S28 HD	364x266x421	14907698	12.5
	29.2	44.3	35.0	53.2	BCWP35V40D-V25 T	1x UCWT35V40 S28 HD	364x266x421	14907699	12.5
	33.3	50.6	40.0	60.8	BCWP40V40D-V25 T	1x UCWT40V40 U28 HD	364x266x421	14907700	13.4
	37.5	57.0	45.0	68.4	BCWP45V40D-V25 T	1x UCWT45V40 U28 HD	364x266x421	14907701	13.4
	41.7	63.3	50.0	76.0	BCWP50V40D-V25 T	1x UCWT50V40 U28 HD	364x266x421	14806173	13.4
	50.0	76.0	60.0	91.2	BCWP60V40D-V25 T	2x UCWT30V40 S28 HD	603x266x421	14907704	17.7
	62.5	95.0	75.0	114.0	BCWP75V40D-V25 T	1x UCWT40V40 U28 HD + 1x UCWT35V40 S28 HD	603x266x421	14907705	18.7
	83.3	126.6	100.0	151.9	BCWP100V40D-V25 T	2x UCWT50V40 U28 HD	603x266x421	14806310	19.2
440	16.7	21.9	20.0	26.2	BCWP20V49D-V25 T	1x UCWT20V49 Q26 HD	364x266x421	14907729	10.2
	20.8	27.3	25.0	32.8	BCWP25V49D-V25 T	1x UCWT25V49 S26 HD	364x266x421	14907733	11.0
	25.0	32.8	30.0	39.4	BCWP30V49D-V25 T	1x UCWT30V49 S28 HD	364x266x421	14907734	11.8
	29.2	38.3	35.0	45.9	BCWP35V49D-V25 T	1x UCWT35V49 S28 HD	364x266x421	14907735	12.5
	33.3	43.7	40.0	52.5	BCWP40V49D-V25 T	1x UCWT40V49 U28 HD	364x266x421	14907736	13.4
	37.5	49.2	45.0	59.0	BCWP45V49D-V25 T	1x UCWT45V49 U28 HD	364x266x421	14907737	13.4
	41.7	54.7	50.0	65.6	BCWP50V49D-V25 T	1x UCWT50V49 U28 HD	364x266x421	14907783	13.4
	50.0	65.6	60.0	78.7	BCWP60V49D-V25 T	2x UCWT30V49 S28 HD	603x266x421	14907784	19.1
	62.5	82.0	75.0	98.4	BCWP75V49D-V25 T	1x UCWT40V49 U28 HD + 1x UCWT35V49 S28 HD	603x266x421	14907785	18.7
	83.3	109.3	100.0	131.2	BCWP100V49D-V25 T	2x UCWT50V49 U28 HD	603x266x421	14907786	22.4
480	16.7	20.0	20.0	24.1	BCWP20V53D-V25 T	1x UCWT20V53 Q26 HD	364x266x421	14907808	10.2
	20.8	25.1	25.0	30.1	BCWP25V53D-V25 T	1x UCWT25V53 S26 HD	364x266x421	14907810	10.8
	25.0	30.1	30.0	36.1	BCWP30V53D-V25 T	1x UCWT30V53 S28 HD	364x266x421	14907811	11.8
	29.2	35.1	35.0	42.1	BCWP35V53D-V25 T	1x UCWT35V53 S28 HD	364x266x421	14907812	12.5
	33.3	40.1	40.0	48.1	BCWP40V53D-V25 T	1x UCWT40V53 U28 HD	364x266x421	14907813	13.4
	37.5	45.1	45.0	54.1	BCWP45V53D-V25 T	1x UCWT45V53 U28 HD	364x266x421	14907815	13.4
	41.7	50.1	50.0	60.1	BCWP50V53D-V25 T	1x UCWT50V53 U28 HD	364x266x421	14907816	13.4
	50.0	60.1	60.0	72.2	BCWP60V53D-V25 T	2x UCWT30V53 S28 HD	603x266x421	14907817	18.6
	62.5	75.2	75.0	90.2	BCWP75V53D-V25 T	1x UCWT40V53 U28 HD + 1x UCWT35V53 S28 HD	603x266x421	14907878	18.7
	83.3	100.2	100.0	120.3	BCWP100V53D-V25 T	2x UCWT50V53 U28 HD	603x266x421	14907879	19.6
535	16.7	18.0	20.0	21.6	BCWP20V57D-V25 T	1x UCWT20V57 Q26 HD	364x266x421	14907881	10.1
	20.8	22.5	25.0	27.0	BCWP25V57D-V25 T	1x UCWT25V57 S26 HD	364x266x421	14907882	10.6
	25.0	27.0	30.0	32.4	BCWP30V57D-V25 T	1x UCWT30V57 S28 HD	364x266x421	14907883	11.7
	29.2	31.5	35.0	37.8	BCWP35V57D-V25 T	1x UCWT35V57 S28 HD	364x266x421	14907884	12.4
	33.3	36.0	40.0	43.2	BCWP40V57D-V25 T	1x UCWT40V57 U28 HD	364x266x421	14907886	13.4
	37.5	40.5	45.0	48.6	BCWP45V57D-V25 T	1x UCWT45V57 U28 HD	364x266x421	14907887	13.4
	41.7	45.0	50.0	54.0	BCWP50V57D-V25 T	1x UCWT50V57 U28 HD	364x266x421	14907908	13.4
	50.0	54.0	60.0	64.7	BCWP60V57D-V25 T	2x UCWT30V57 S28 HD	603x266x421	14907909	18.3
	62.5	67.4	75.0	80.9	BCWP75V57D-V25 T	1x UCWT40V57 U28 HD + 1x UCWT35V57 S28 HD	603x266x421	14907910	18.6
	83.3	89.9	100.0	107.9	BCWP100V57D-V25 T	2x UCWT50V57 U28 HD	603x266x421	14907911	19.6

BCWP – Three-phase capacitor bank with protection

Technical data

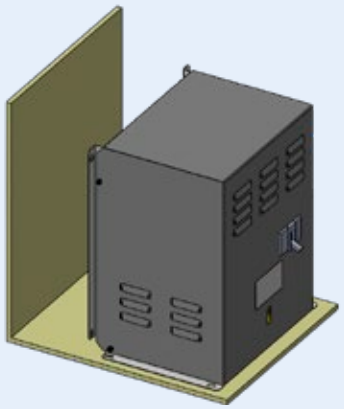
Characteristics	
Phases	Three-phase
Connection	Δ (Delta)
Reactive power	8.3 … 100 kvar
Rated voltage	220 … 535 V
Frequency	50 or 60 Hz
Capacitance tolerance	±5%
Service life	100,000 hours
Safety	
Cabinet type	Metallic cabinet
Electrical protection	Molded case automatic switch
Metallized polypropylene film	Self-healing properties
Mechanically safe	Overpressure switch
Maximum short-circuit capacity	10 kA

Dimensions



Maximum ratings	
Maximum current	1.3 x I_R
Maximum inrush current	100 x I_R
Maximum voltage (up to 8h daily)	1.1 x V_R

Mounting



Design data	
Discharge resistor (220 … 240 V)	≤ 30s for 75 V ≤120s for 75 V (greater than 20 kvar)
Discharge resistor (380 ... 535 V)	≤30s for 75 V ≤120s for 75 V (greater than 35 kvar)
Bank cabinet	Metallic cabinet with paint RAL 7022
Protection rating	IP30

Environment conditions	
Minimum temperature	-25 °C
Maximum temperature	+55 °C
Maximum average temperature in 24h	+45 °C
Maximum average temperature in 1 year	+35 °C
Maximum altitude	2,000 m
Maximum humidity	95%
Reference standards and certifications	
Reference standards	IEC 60831-1/2 UL 810
Certifications	CE

Cross-section and tightening torque

Connection type	Terminal type	Cross-section (mm²)	Torque (Nm)
	 M5 ... M8	6.0 ... 70.0	2.5 ... 12.5

BCWA – Three-phase automatic capacitor bank

The automatic bank BCWA offers a complete solution for consumer units that demand power factor correction in a versatile, safe, efficient, robust and easy to install way. The BCWA is fully assembled with WEG components.
The BCWA design is ideal for power factor correction in systems with photovoltaic generation.

Features

- Fine tuning: the distribution of power in each step allows fine tuning of the reactive power supplied by the capacitor bank.
- Easy installation and configuration: the bank's internal connections allow the bank to be installed in a simple and practical way. The power factor controller is already supplied with a factory setting.
- Complete protection: TTW01-QD panels are used, manufactured and tested according to IEC 61439-1/2 standard requirements.
- The capacitors of the bank are certified at the highest level of short-circuit current, ensuring that the product is safe, reliable and robust.
- Moulded case circuit breakers, AGW line, overcurrent protection both in the main busbar and in each step.
- Power Factor Controller PFW03 line.
- Heavy Duty Capacitors, UCWT HD line.
- Forced ventilation.

Automatic control

MCCB protection

Fine tuning

Optimised for PV generation

Forced ventilation

BCWA – Three-phase automatic capacitor bank

Product line

Three-phase automatic capacitor bank - BCWA								
Voltage (V)	50 Hz		60 Hz		Capacitance (uF)	Reference	Code	Weight (kg)
	Reactive power (kvar)	Rated current I_n (A)	Reactive power (kvar)	Rated current I_n (A)				
220	16.7	43.7	20.0	52.5	365.4 x 3	BCWA20V25-V25	16308647	73
	25.0	65.6	30.0	78.7	548.1 x 3	BCWA30V25-V25	16308791	75
	33.3	87.5	40.0	105.0	730.7 x 3	BCWA40V25-V25	16308795	77
	41.7	109.3	50.0	131.2	913.4 x 3	BCWA50V25-V25	16308909	79
	50.0	131.2	60.0	157.5	1096.1 x 3	BCWA60V25-V25	16308912	81
	58.3	153.1	70.0	183.7	1278.8 x 3	BCWA70V25-V25	16308916	81
380	16.7	25.3	20.0	30.4	122.5 x 3	BCWA20V40-V25	16311944	73
	25.0	38.0	30.0	45.6	183.7 x 3	BCWA30V40-V25	16312320	75
	33.3	50.6	40.0	60.8	244.9 x 3	BCWA40V40-V25	16312749	77
	41.7	63.3	50.0	76.0	306.2 x 3	BCWA50V40-V25	16312753	79
	50.0	76.0	60.0	91.2	367.4 x 3	BCWA60V40-V25	16312756	81
	58.3	88.6	70.0	106.4	428.6 x 3	BCWA70V40-V25	16312901	81
	66.7	101.3	80.0	121.6	489.9 x 3	BCWA80V40-V25	16312906	83
	75.0	114.0	90.0	136.7	551.1 x 3	BCWA90V40-V25	16313030	85
	83.3	126.6	100.0	151.9	612.3 x 3	BCWA100V40-V25	16313037	87
	91.7	139.3	110.0	167.1	673.6 x 3	BCWA110V40-V25	16313165	89
	100.0	151.9	120.0	182.3	734.8 x 3	BCWA120V40-V25	16313199	89
440	16.7	21.9	20.0	26.2	91.3 x 3	BCWA20V49-V25	16344046	73
	25.0	32.8	30.0	39.4	137 x 3	BCWA30V49-V25	16344047	75
	33.3	43.7	40.0	52.5	182.7 x 3	BCWA40V49-V25	16344225	77
	41.7	54.7	50.0	65.6	228.4 x 3	BCWA50V49-V25	16344248	78
	50.0	65.6	60.0	78.7	274 x 3	BCWA60V49-V25	16344250	81
	58.3	76.5	70.0	91.9	319.7 x 3	BCWA70V49-V25	16344251	81
	66.7	87.5	80.0	105.0	365.4 x 3	BCWA80V49-V25	16344254	83
	75.0	98.4	90.0	118.1	411 x 3	BCWA90V49-V25	16344255	85
	83.3	109.3	100.0	131.2	456.7 x 3	BCWA100V49-V25	16344313	87
	91.7	120.3	110.0	144.3	502.4 x 3	BCWA110V49-V25	16344317	89
	100.0	131.2	120.0	157.5	548.1 x 3	BCWA120V49-V25	16344349	89
480	16.7	20.0	20.0	24.1	76.8 x 3	BCWA20V53-V25	16348664	73
	25.0	30.1	30,0	36.1	115.1 x 3	BCWA30V53-V25	16348666	75
	33.3	40.1	40.0	48.1	153.5 x 3	BCWA40V53-V25	16348667	77
	41.7	50.1	50.0	60.1	191.9 x 3	BCWA50V53-V25	16348755	78
	50.0	60.1	60.0	72.2	230.3 x 3	BCWA60V53-V25	16348757	81
	58.3	70.2	70.0	84.2	268.6 x 3	BCWA70V53-V25	16348878	81
	66.7	80.2	80.0	96.2	307 x 3	BCWA80V53-V25	16348881	83
	75.0	90.2	90.0	108.3	345.4 x 3	BCWA90V53-V25	16348882	85
	83.3	100.2	100.0	120.3	383.8 x 3	BCWA100V53-V25	16348883	87
	91.7	110.3	110.0	132.3	422.1 x 3	BCWA110V53-V25	16348884	89
	100.0	120.3	120.0	144.3	460.5 x 3	BCWA120V53-V25	16348885	89

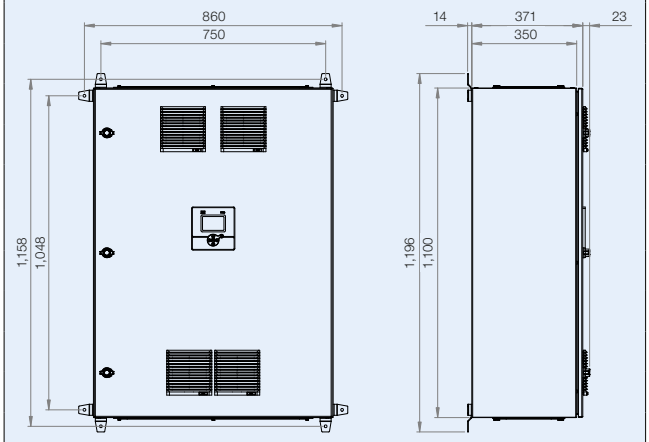
BCWA – Three-phase automatic capacitor bank

Technical data

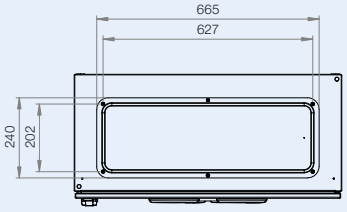
Characteristics	
Phases	Three-phase
Connection	Δ (Delta)
Reactive power	20 to 120 kvar
Rated voltage[1)]	220, 380, 440 or 480 V
Rated frequency	50/60 Hz
Capacitance tolerance	±5 %
Service life[2)]	150,000h
Weight	73 to 89 kg
Dimensions (H x W x D)	1,100 x 800 x 350 mm
Mechanical impact resistance	IK-05
Color	RAL 7035 Grey
Control circuit comsumption	< 50 W
Control circuit voltage[1)]	220 V
Safety	
Maximum rated short-circuit breaking capacity (ICU)	10 kA
Rated service short-circuit breaking capacity (ICS)	100% I_{CU}
Rated impulse withstand voltage	8 kV
Maximum inrush current	≤ 10 x I_n

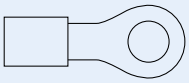
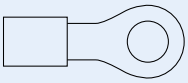
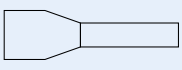
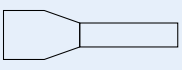
Limit operation values	
Minimum ambient temperature	-5 °C
Maximum ambient temperature	40 °C
Maximum average temperature in 24h	+35°C
Maximum altitude[3)]	2,000 m
Maximum voltage	1.1 x U_{RN}
Maximum current	1.3 x I_{RN}

Dimensions



Mounting

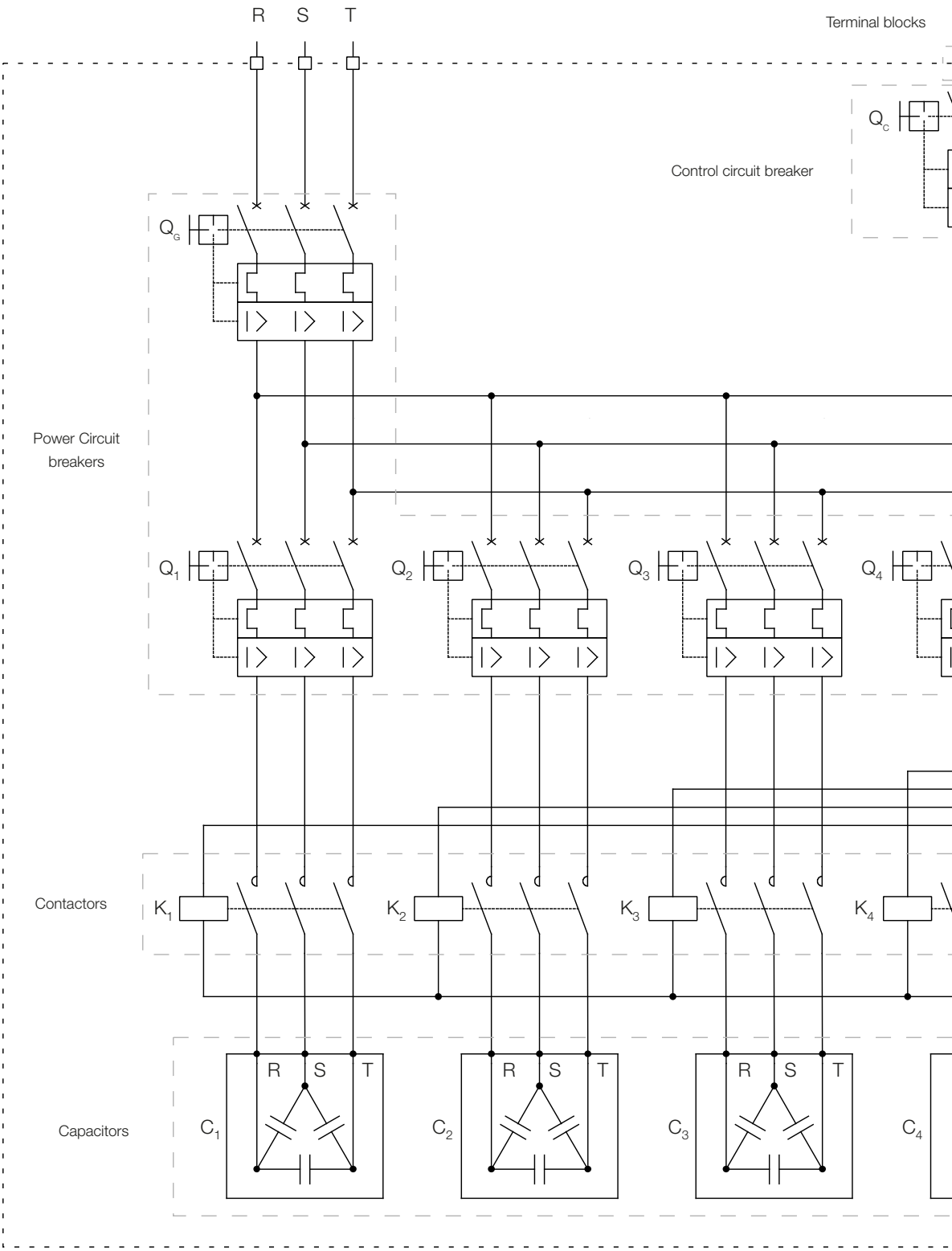


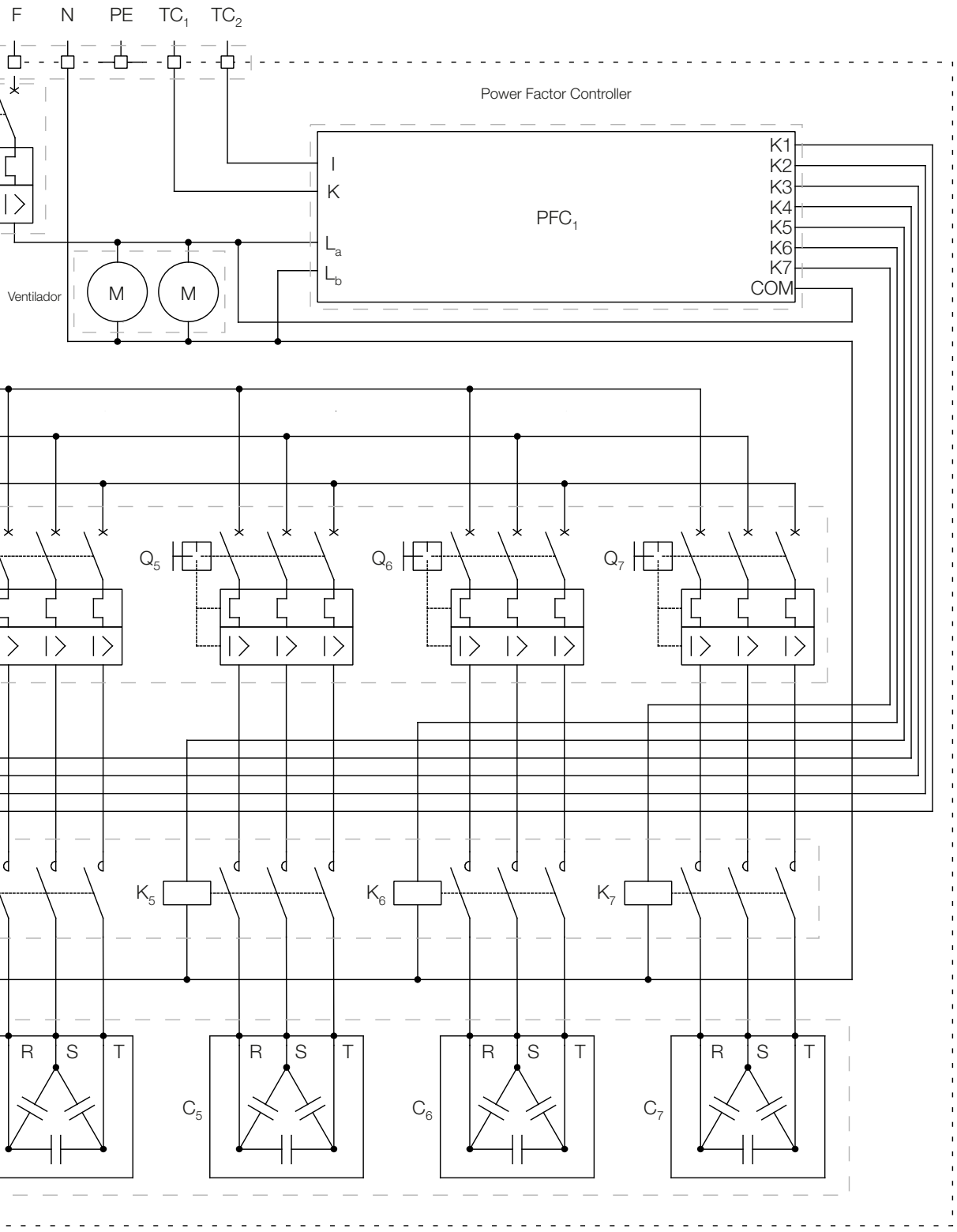
Circuit		Main circuit breaker AGW100				Main circuit breaker AGW250			
		Environment conditions			Torque (N·m)	Type and size of terminal and bolt			Torque (N·m)
Power	Phase[1] (R)	 Ring	M5	Phillips	5.4 to 7.3	 Ring	M8	Phillips	7.9 to 1.7
Power	Phase[2] (S)								
Power	Phase[3] (T)								
Grounding (PE)		 Tubular	1/8”	Screw-driver	1.2	 Tubular	1/8”	Screw-driver	1.2
Cont	Phase (F)				0.4				0.4
Cont	Neutral (N)				0.4				0.4
Cont	TC_{IA}				1.5				1.5
Cont	TC_N				1.5				1.5

Notes: 1) For different rated and control voltages, contact WEG.
2) Capacitor with -25/D temperature class.
3) For application at higher altitudes, contact WEG.
4) Operation above the rated values may result in reduction of the product's life expectancy.

BCWA – Three-phase automatic capacitor bank

Wiring diagram




F
N
PE
TC1
TC2
Power Factor Controller
I
K
La
Lb
PFC1
K1
K2
K3
K4
K5
K6
K7
COM
Ventilador
M
M
Q5
Q6
Q7
K5
K6
K7
R
S
T
C5
C6
C7

DRW – Detuning reactors

WEG detuning reactors are made of special silicon steel plate, which ensures excellent magnetic properties in all directions. All reactors are vacuum impregnated with resin, ensuring a low noise level and high durability.

Characteristics

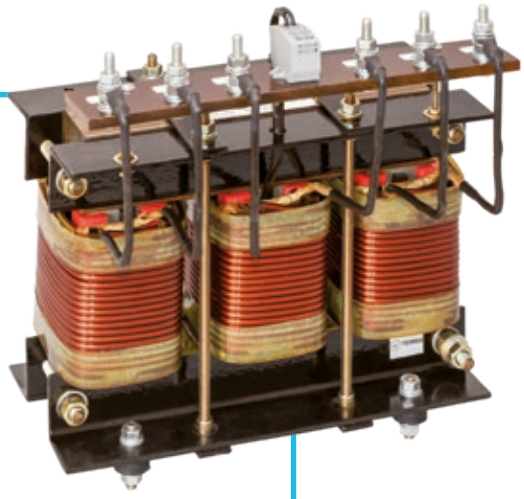
- 7% and 14% detuning factor
- Reduced vibration
- Insulation voltage of 1 kV
- Low losses
- Supplied with thermal protector in the central winding
- Class H insulation (180 °C)

Efficiency and reliability

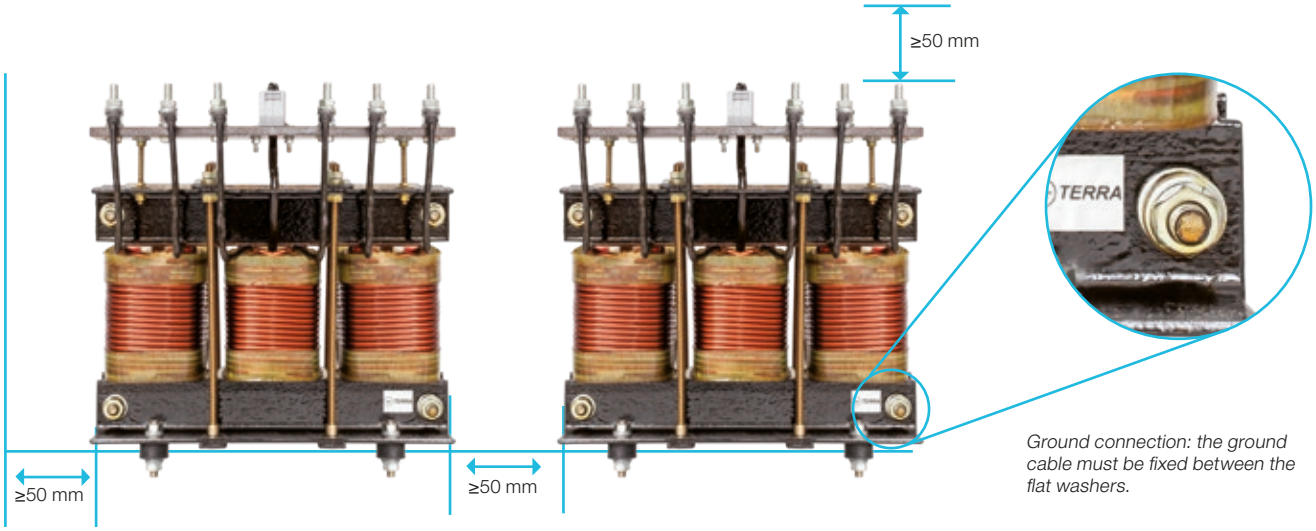
Low noise

Low operating temperature

Connection



Distance between DRW / ground

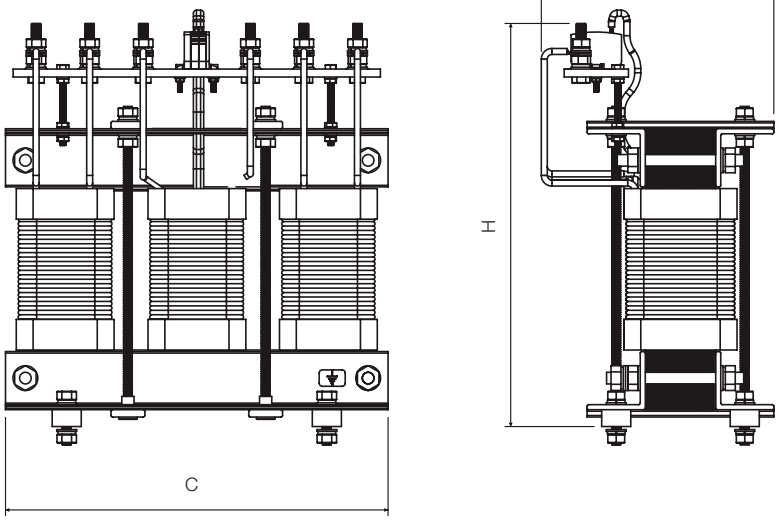


Ground connection: the ground cable must be fixed between the flat washers.

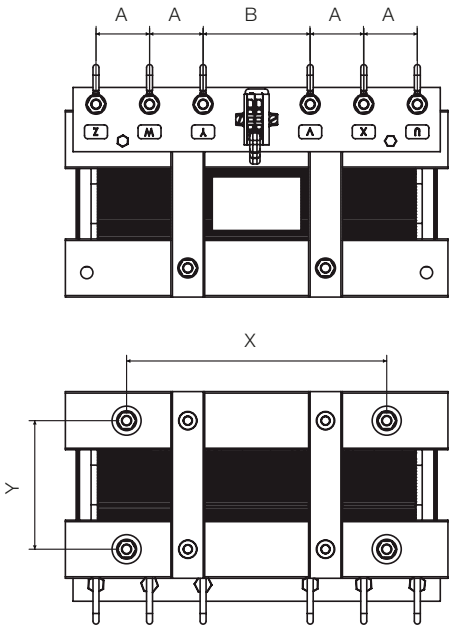
DRW – Detuning reactors

Distance between DRW / Ground

Dimensions



Distance between terminals



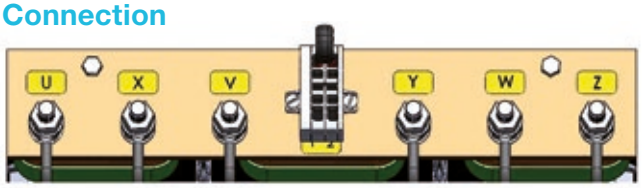
Design	Dimensions			Distance between terminals		Mounting base	
	L (mm)	A (mm)	A (mm)	A (mm)	B (mm)	X (mm)	Y (mm)
1	215	150	245	30	65	140	78
2	240	165	260	35	70	160	83
3	255	170	305	35	85	170	88
4	270	180	330	40	80	180	93
5	295	220	380	45	80	190	116
6	310	220	430	45	80	190	116
7	310	230	450	45	80	190	121

DRW – Detuning reactors

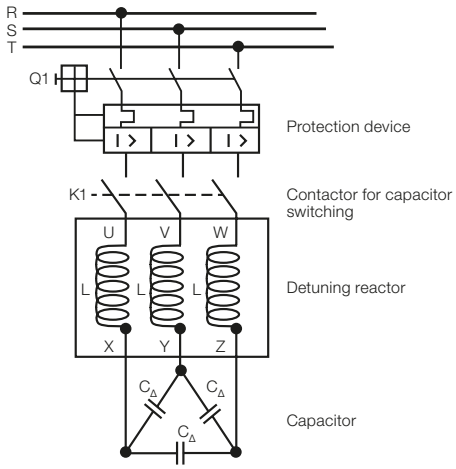
Panel mounting position / panel cooling

Note: forced ventilation when installed on a panel.

Connection



Identification	Description
U	Winding conductor input 1
X	Winding conductor output 1
V	Winding conductor input 2
Y	Winding conductor output 2
W	Winding conductor input 3
Z	Winding conductor output 3
1	-
2	Access to the thermal protector connection



Capacitor voltage

Where:

$$V_c = \frac{V_{red}}{1 - DTF}$$

V_c - Voltage at the Capacitor terminals (V)
V_{red} - Line voltage (V)
DTF - Detuning Factor (%)

Thus, a rated voltage for the capacitor greater than VC must be specified. Below is the table that correlates the line voltage with the dielectric voltage of the capacitors for DTF - 7%.

Line voltage	Condenser dielectric voltage
220 V	380 V
380 V	440 V
440 V	480 V
480 V	535 V

Important: for greater safety and guarantee of the equipment integrity, it is recommended to use the contact of the thermal protector for the supervision of overtemperature failures.

DRW – Detuning reactors

Technical data

Technical data	DRW
Phases	3
Power	9...63.3 kvar
Rated voltage	220...480 V
Inductance tolerance	5%
Line frequency	60 Hz
Detuning factor / Detuning frequency	7% / 227 Hz and 14% / 160.4 Hz
Min. ambient temperature	-5 °C
Max. ambient temperature	40 °C
Temperature class	Class H - 180 °C
Ventilation	Forced ventilation when installed on a panel
Thermal protector	130 ±10 °C (temperature)
	115 ±10 °C (return temperature)
Overload current	1.1 x I_n (system fluctuation in service duty)
	1.5 x I_1 (short periods) I_1 - fundamental component (60 Hz)
Thermal current	1.1 x I_n

Power cable cross-section and torque

	Connection type	Terminal type	Fixing screw type	DRW
Cross-section (mm²)			Lug M6	1 x 6.0...50.0 2 x 6.0...35.0
Torque (Nm)	 Nm			8.0...10.0

Ground cable torque

	Connection type	Terminal type	Fixing screw type
Cross-section (mm²)			Lug M8
Torque (Nm)	 Nm		6.0...10.0

DRW – Detuning reactors

Product line

Rated frequency: 60 Hz Detuning factor: 7% Series resonance frequency: 226.8 Hz						
Reactor + Capacitor						
Voltage (V)	Reactive power (kvar)	Rated current In (A)	Contactor	Fuse gL/gG (A)	MCCB (A)	
220	9.0	23.6	CWBC25	35	40	
	12.6	33.1	CWBC32	50	50	
	18.0	47.3	CWBC50	80	70	
	25.2	66.2	CWBC65	100	100	
380	12.0	18.3	CWBC18	35	32	
	20.1	30.5	CWBC25	50	50	
	28.1	42.6	CWBC50	80	63	
	40.1	60.9	CWBC50	100	90	
	56.1	85.3	CWBC95	160	125	
440	13.6	17.8	CWBC18	35	32	
	22.6	29.6	CWBC25	50	50	
	31.6	41.5	CWBC50	80	63	
	45.2	59.3	CWBC50	100	90	
	63.2	83.0	CWBC95	160	125	
480	13.0	15.6	CWBC18	25	25	
	21.6	26.0	CWBC25	50	40	
	30.3	36.4	CWBC32	63	63	
	43.3	52.1	CWBC50	80	80	
	60.6	72.9	CWBC65	125	110	

Rated frequency: 60 Hz Detuning factor: 14% Series resonance frequency: 160.4 Hz						
Reactor + Capacitor						
Voltage (V)	Reactive power (kvar)	Rated current In (A)	Contactor	Fuse gL/gG (A)	MCCB (A)	
220	9.7	25.6	CWBC25	50	40	
	15.6	40.9	CWBC50	80	63	
	23.4	61.4	CWBC50	100	90	
	31.2	81.8	CWBC95	125	125	
380	10.9	16.6	CWBC18	25	25	
	21.9	33.2	CWBC32	50	50	
	32.8	49.8	CWBC50	80	80	
	43.7	66.4	CWBC65	125	100	
	51.0	77.5	CWBC95	125	110	
440	11.8	15.5	CWBC18	25	25	
	19.7	25.8	CWBC25	50	40	
	31.5	41.3	CWBC50	63	63	
	39.3	51.6	CWBC50	80	80	
	51.1	67.1	CWBC65	125	100	

Rated frequency: 50 Hz Detuning factor: 7% Series resonance frequency: 189.0 Hz						
Reactor + Capacitor						
Voltage (V)	Reactive power (kvar)	Rated current In (A)	Contactor	Fuse gL/gG (A)	MCCB (A)	
230	5.3	13.3	CWBC9	25	20	
	10.7	26.9	CWBC25	50	40	
	17.8	44.7	CWBC50	80	65	
	24.9	62.5	CWBC50	125	90	
400	13.3	25.7	CWBC25	50	40	
	22.2	32	CWBC32	63	50	
	26.7	38.5	CWBC32	63	63	
	35.6	51.4	CWBC50	100	80	
	53.3	76.9	CWBC65	125	110	

Note: the power cables and connections must be sized according to the selected protection device.

Reactor						Capacitor	
Reference	Inductance (mH)	Design	Rated thermal dissipation (W) @ 60 Hz	Code	Weight (kg)	Reference	Code
DETUNING REACTOR DRW7-1.07V25	1.072	1	66	12787635	11.2	UCWT25V40 S26 HD	11916924
DETUNING REACTOR DRW7-0.77V25	0.766	2	81	12789058	14.5	UCWT35V40 S28 HD	12267042
DETUNING REACTOR DRW7-0.54V25	0.536	2	101	12789065	14.5	UCWT50V40 U28 HD	13365637
DETUNING REACTOR DRW7-0.39V25	0.383	3	138	12789067	21.8	2 x UCWT35V40 S28 HD	2 x 12267042
DETUNING REACTOR DRW7-2.40V40	2.397	1	77	12789187	11.2	UCWT15V49 N22 HD	11314666
DETUNING REACTOR DRW7-1.44V40	1.438	2	127	12789288	14.5	UCWT25V49 S26 HD	11917021
DETUNING REACTOR DRW7-1.03V40	1.027	3	135	12789290	21.8	UCWT35V49 S28 HD	12272780
DETUNING REACTOR DRW7-0.72V40	0.719	4	178	12789291	28.4	UCWT50V49 U28 HD	13365673
DETUNING REACTOR DRW7-0.51V40	0.514	5	246	12789388	40.5	2 x UCWT35V49 S28 HD	2 x 12272780
DETUNING REACTOR DRW7-2.85V49	2.852	1	74	12789393	11.2	UCWT15V53 N22 HD	11314730
DETUNING REACTOR DRW7-1.71V49	1.711	2	126	12789394	14.5	UCWT25V53 S26 HD	11917066
DETUNING REACTOR DRW7-1.22V49	1.222	3	141	12789397	21.8	UCWT35V53 S28 HD	12272784
DETUNING REACTOR DRW7-0.86V49	0.856	4	173	12789478	28.4	UCWT50V53 U28 HD	13365677
DETUNING REACTOR DRW7-0.61V49	0.611	5	240	12789481	40.5	2 x UCWT35V53 S28 HD	2 x 12272784
DETUNING REACTOR DRW7-3.54V53	3.543	2	71	15876638	14.7	UCWT15V57 N22 HD	11314734
DETUNING REACTOR DRW7-2.13V53	2.126	3	106	15876639	22.0	UCWT25V57 S26 HD	11917366
DETUNING REACTOR DRW7-1.52V53	1.518	4	125	15876641	28.6	UCWT35V57 S28 HD	12273234
DETUNING REACTOR DRW7-1.06V53	1.063	4	176	15876644	28.6	UCWT50V57 U28 HD	13365683
DETUNING REACTOR DRW7-0.76V53	0.759	5	185	15876645	40.7	2 x UCWT35V57 S28 HD	2 x 12273234

Reactor						Capacitor	
Reference	Inductance (mH)	Design	Rated thermal dissipation (W) @ 60 Hz	Code	Weight (kg)	Reference	Code
DETUNING REACTOR DRW14-2.15V25	2.145	4	50	15134866	21.3	1 x UCWT25V40 S26 HD	11916924
DETUNING REACTOR DRW14-1.34V25	1.341	4	75	15134867	23.0	1 x UCWT40V40 U28 HD	13365634
DETUNING REACTOR DRW14-0.89V25	0.894	5	119	15135901	36.1	2 x UCWT30V40 S28 HD	2 x 12272194
DETUNING REACTOR DRW14-0.67V25	0.670	5	160	15135980	38.0	2 x UCWT40V40 U28 HD	2 x 13365634
DETUNING REACTOR DRW14-5.70V40	5.704	4	49	15135983	20.9	1 x UCWT15V53 N22 HD	11314730
DETUNING REACTOR DRW14-2.85V40	2.852	5	97	15136018	33.3	1 x UCWT30V53 S28 HD	12272781
DETUNING REACTOR DRW14-1.90V40	1.901	6	134	15136026	43.2	1 x UCWT45V53 U28 HD	13365675
DETUNING REACTOR DRW14-1.43V40	1.426	6	184	15136108	45.3	2 x UCWT30V53 S28 HD	2 x 12272781
DETUNING REACTOR DRW14-1.22V40	1.222	7	184	15136113	52.9	2 x UCWT35V53 S28 HD	2 x 12272784
DETUNING REACTOR DRW14-7.09V49	7.086	5	63	15136117	31.6	1 x UCWT15V57 N22 HD	11314734
DETUNING REACTOR DRW14-4.25V49	4.252	5	85	15136152	32.7	1 x UCWT25V57 S26 HD	11917366
DETUNING REACTOR DRW14-2.66V49	2.657	6	135	15136157	42.4	1 x UCWT40V57 U28 HD	13365680
DETUNING REACTOR DRW14-2.13V49	2.126	6	156	15136252	44.0	1 x UCWT50V57 U28 HD	13365683
DETUNING REACTOR DRW14-1.64V49	1.635	7	198	15136256	51.4	1 x UCWT30V57 S28 HD + 1 x UCWT35V57 S28 HD	12273233 + 12273234

Reactor						Capacitor	
Reference	Inductance (mH)	Design	Rated thermal dissipation (W) @ 50 Hz	Code	Weight (kg)	Reference	Code
DETUNING REACTOR DRW7-2.38V34	2.376	1	29	16502107	8,1	UCWT15V44 N22 HD	11758282
DETUNING REACTOR DRW7-1.19V34	1.188	2	45.6	16502203	11,4	UCWT30V44 S28 HD	12272688
DETUNING REACTOR DRW7-0.71V34	0.713	3	56.6	16502239	17,9	2x UCWT25V44 S26 HD	2 x 11894313
DETUNING REACTOR DRW7-0.51V34	0.509	3	78.6	16502258	18,3	2x UCWT35V44 S28 HD	2 x 12272697
DETUNING REACTOR DRW7-2.16V44	2.157	3	59.4	16502260	17	UCWT20V48 S26 HD	11917043
DETUNING REACTOR DRW7-1.73V44	1.725	3	68.3	16502262	17,7	UCWT25V48 S26 HD	11917058
DETUNING REACTOR DRW7-1.44V44	1.438	4	71.1	16502263	22,4	UCWT30V48 S28 HD	15824794
DETUNING REACTOR DRW7-1.08V44	1.078	4	96.1	16502265	23,6	UCWT40V48 U28 HD	16333404
DETUNING REACTOR DRW7-0.72V44	0.719	5	116	16502267	34,3	2x UCWT30V48 S28 HD	2 x 15824794

Accessories

Discharge resistor

Discharge resistor for UCWT HD		
Reference	Resistance / Power	Code
RDC 82KΩ 3W - UCW-T	3 x 82 kΩ / Delta	11533458
RDC 120KΩ 3W - UCW-T	3 x 120 kΩ / Delta	11533462
RDC 150KΩ 3W - UCW-T	3 x 150 kΩ / Delta	11533468
RDC ESTRELA 56kΩ 3W-UCW-T	3 x 56 kΩ / Star	15546863
RDC ESTRELA 62kΩ 3W-UCW-T	3 x 62 kΩ / Star	15547268
RDC ESTRELA 82kΩ 3W-UCW-T	3 x 82 kΩ / Star	15547113
RDC ESTRELA 100kΩ 3W-UCW-T	3 x 100 kΩ / Star	15547269
RDC ESTRELA 56kΩ 3W-UCW-T>25kvar[1)]	3 x 56 kΩ / Star	15547115
RDC ESTRELA 62kΩ 3W-UCW-T>25kvar[1)]	3 x 62 kΩ / Star	15547270
RDC ESTRELA 82kΩ 3W-UCW-T>25kvar[1)]	3 x 82 kΩ / Star	15547116
RDC ESTRELA 100kΩ 3W-UCW-T>25kvar[1)]	3 x 100 kΩ / Star	15547271

Note: 1) For power ratings above 25 kvar.

Discharge resistor for UCW		
UCW		
Reference	Resistance / Power	Code
RDC 56KΩ 3W	56 kΩ / 3 W	10683543
RDC 82KΩ 3W	82 kΩ / 3 W	10668936
RDC 120KΩ 3W	120 kΩ / 3 W	10668937
RDC 150KΩ 3W	150 kΩ / 3 W	10668968
RDC 180KΩ 3W	180 kΩ / 3 W	10668935
RDC 270KΩ 3W	270 kΩ / 3 W	10668970
RDC 390KΩ 3W	390 kΩ / 3 W	10671279
RDC 560KΩ 3W	560 kΩ / 3 W	10668971
RDC 1MΩ 3W	1 MΩ / 3 W	10668972
RDC 28KΩ 6W	28 kΩ / 6 W	11456258
RDC 41KΩ 6W	41 kΩ / 6 W	11456226
RDC 60KΩ 6W	60 kΩ / 6 W	11456252
RDC 75KΩ 6W	75 kΩ / 6 W	11456260
RDC 135KΩ 6W	135 kΩ / 6 W	11456259

MCW interconnection

Connecting bar for MCW	
Reference	Code
BI-MCW	10045985

For 2 x MCW = use 1 x BI - MCW
For 3 x MCW = use 2 x BI - MCW
For 4 x MCW = use 3 x BI - MCW

Capacitor fixation

Nut and washer for fixing the UCW and UCWT		
Reference	Series	Code
PAC M8	A	10186133
PAC M12	B. C. D. E and F	10186132

Selection code

Capacitor / module / bank[1)]

UCWT 15 V40 S26 UHD

Reference

Code	Reference
UCW	Single-phase Capacitor unit
UCWT	Three-phase Capacitor unit
MCW	Three-phase Capacitor module
BCW	Three-phase Capacitor bank
BCWP	Three-phase Capacitor bank with protection
BCWA	Three-phase Automatic Capacitor bank with protection

Power

0.5 - 120 kvar

Rated voltage

Code	1,058 mm
V16	110 V / 60 Hz
V25	220 V / 60 Hz
V27	230 V / 60 Hz
V29	240 V / 60 Hz
V31	220 V / 50 Hz
V34	230 V / 50 Hz
VD3	260 V / 60 Hz
V40	380 V / 60 Hz
V44	400 V / 50 Hz
V45	400 V / 60 Hz
V48	440 V / 50 Hz
V49	440 V / 60 Hz
V52	480 V / 50 Hz
V53	480 V / 60 Hz
V65	525 V / 60 Hz
V57	535 V / 60 Hz

Frame size[2)]

Diameter code		Height code	
Code	Ø	Code	Height
G	40 mm	2	68 mm
J	53 mm	4	85 mm
L	60 mm	6	105 mm
M	70 mm	8	141 mm
N	75 mm	10	156 mm
O	85 mm	12	200 mm
Q	100 mm	14	205 mm
S	116 mm	16	204 mm
U	136 mm	18	220 mm
		20	225 mm
		22	285 mm
		24	360 mm
		26	230 mm
		28	290 mm

Control voltage[5)]

Code	Control voltage
V16	110 V / 60 Hz
V25	220 V / 60 Hz
V40	380 V / 60 Hz

Type of protection[4)]

Code	Type of protection
D	MCCB and contactor

Product line[3)]

Code	Product line
UHD	Ultra Heavy Duty
HD	Heavy Duty
ND	Normal Duty

Notes: 1) To compose the codes, consider the values available in the tables for each product.
2) Only for UCW and UCWT lines.
3) Only for UCWT line.
4) Only for BCWP line.
5) Only for BCWP and BCWA lines.

CWBC - Contactors for switching capacitors

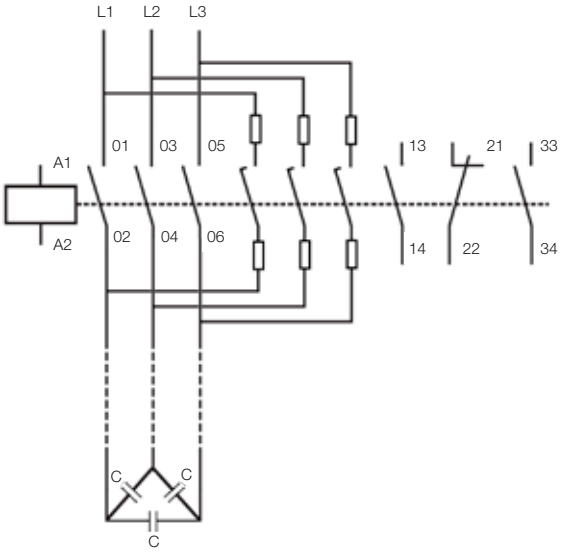
Switching of capacitors for power factor correction

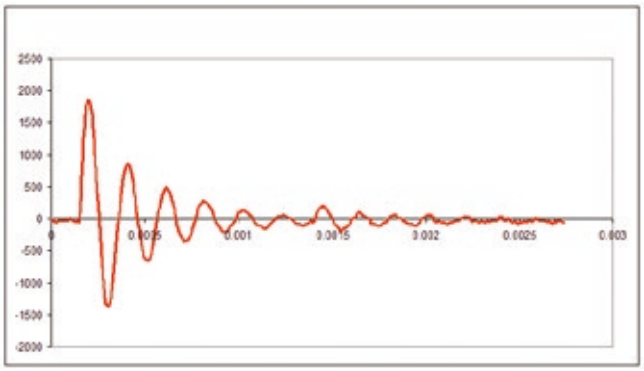
The CWBC line was specially developed for switching apacitors according to the IEC 60947-1 and UL standards, providing the best solution for switching your capacitors for power factor correction.

In-rush currents

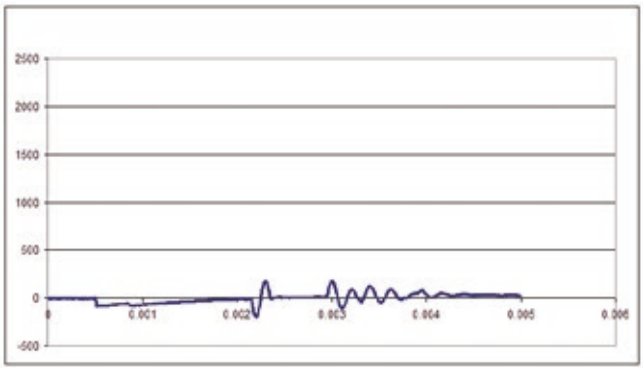
When capacitors banks are switched, the voltage associated with a low line impedance may produce high currents on the capacitors. This current may reach 100 x I_n (A), being one of the main causes of reduction in the capacitor lifespan.

The CWBC contactors have pre-charge resistors that limit the in-rush currents when the capacitors are switched. The resistors, assembled in series with the early make contact blocks, are connected before the main contacts. After the main contacts close, the early make contacts are disconnected, and only the capacitors in parallel remain with their inductive load for the proper power factor correction.





I_n(A) with standard contactors



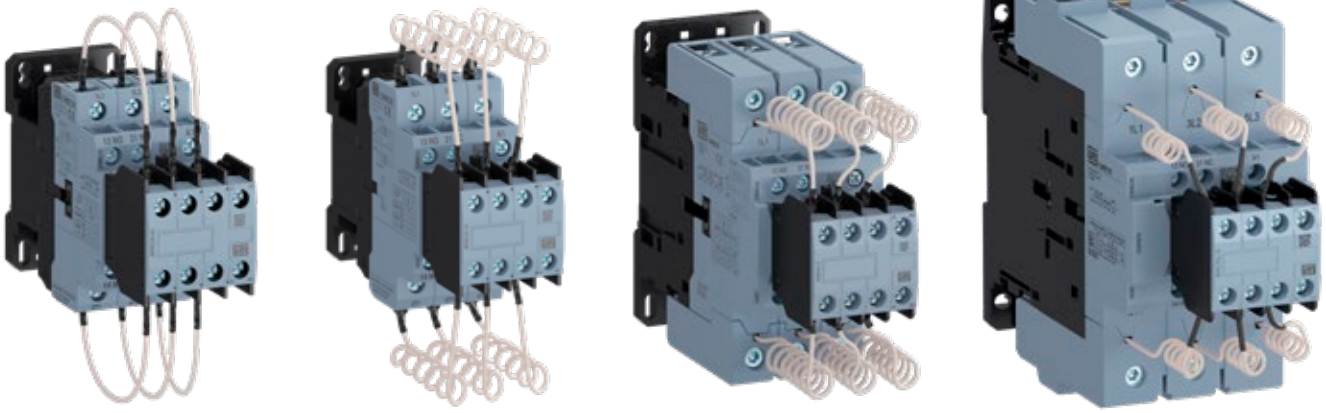
I_n(A) with CWBC contactors

Calculation of the capacitor rated current

$$I_c = \frac{\text{React.pow. (kvar)} \times 1000}{\sqrt{3} \times V_{FF}} \text{(A)}$$

Where:
I_c = Capacitor bank current
V_{FF}= Voltage between phases

CWBC - Contactors for switching capacitors



Three-pole from 17 A to 103 A (θ = 55 °C)

I_e AC-6b ($T_{amb.}$ = 55 °C) Ue<480 V A	Reactive power for AC-6b capacitor banks ($T_{amb.}$ = 55 °C)					Integrated auxiliary contacts per contactor		Code to fill in with the control voltage	Weight[2] kg
	220 V 230 V kvar	380 V 415 V kvar	440 V kvar	480 V kvar	660 V kvar	3 4 NO	1 2 NC		
17	6	10	13	14	14	2	1	CWBC9-21-30♦	0.40
						1	2	CWBC9-12-30♦	
22	8	16	16	17	20	2	1	CWBC18-21-30♦	
						1	2	CWBC18-12-30♦	
28	11	20	23	25	30	2	1	CWBC25-21-30♦	0.45
						1	2	CWBC25-12-30♦	
40	15	25	30	33	40	2	1	CWBC32-21-30♦	
						1	2	CWBC32-12-30♦	
63	25	40	45	50	65	2	1	CWBC50-21-30♦	0.92
						1	2	CWBC50-12-30♦	
77	30	50	60	65	70	2	1	CWBC65-21-30♦	
						1	2	CWBC65-12-30♦	
103	40	68	78	85	85	2	1	CWBC95-21-30♦	1.66
						1	2	CWBC95-12-30♦	
152	50	100	115	120	105	2	1	CWBC125-21-30♦	
						1	2	CWBC125-12-30♦	

Replace "♦" with the control voltage code[1].

Alternating current (CWBC9...95)

Code	D02	D07	D13	D15	D17	D23	D24	D25	D33	D34	D35	D36	D39
V (50/60 Hz)	24	48	110	120	127	220	230	240	380	400	415	440	480

Direct current (CWBC9...65)

Code	C03	C07	C09	C12	C13	C15
V dc	24	48	60	110	125	220

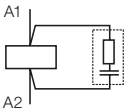
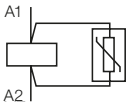
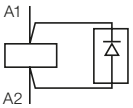
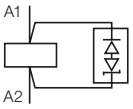
Alternating current/direct current with electronic module (CWBC95/125)

Code	E04	E64	E65	E66
V ac (50/60 Hz) and V dc	24...60 V	48...130 V	110...255 V	250...500 V

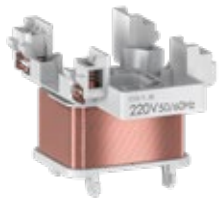
Notes: 1) Other voltages on request.
2) Weights for contactors with control circuit in alternating current. For DC control circuit, add 0.110 kg to the CWBC9/18 models and 0.120 kg to the CWBC25/32 models; add 0.060 kg to the CWBC50/65 AC models. For CWBC95 with electronic coil add 0.010kg.

Accessories

Surge suppressors - plug-in type

Illustrative picture	Use with	Voltages	Diagram	Code	Part number	Weight kg
	CWBC9...95	24...48 V 50/60 Hz		RCBD53	12242511	0.008
		50...127 V 50/60 Hz		RCBD55	12242512	
		130...250 V 50/60 Hz		RCBD63	12242513	
		12...48 V 50/60 Hz / 12...60 V dc		VRBE49	12242514	
		50...127 V 50/60 Hz / 60...180 V dc		VRBE34	12242515	
		130...250 V 50/60 Hz / 180...300 V dc		VRBE50	12242516	
		277...380 V 50/60 Hz / 300...510 V dc		VRBE41	12242517	
		400...510 V 50/60 Hz		VRBD73	12242558	
		12...600 V dc		DIBC33[1]	12242560	
		12...250 V dc		DIZBC26[2]	12242561	

Spare coils

Illustrative picture	Use with	Control type	Code to complete with the control voltage[3]	Part number	Weight kg
	CWC9...32	AC	BRB-38♦	On request	0.08
	CWBC50/65	AC	BRB-80♦	On request	0.09
		DC	BRB-80♦	On request	0.40
	CWBC95/125	AC	BRB-110♦	On request	0.15
		AC/DC	BRB-125♦	On request	0.15

Replace "♦" with the control voltage code[3].

Alternating current (CWBC9...95)

Code	D02	D07	D13	D15	D17	D23	D24	D25	D33	D34	D35	D36	D39
V (50/60 Hz)	24	48	110	120	127	220	230	240	380	400	415	440	480

Direct current (CWBC9...65)

Code	C03	C07	C09	C12	C13	C15
V dc	24	48	60	110	125	220

Alternating current/direct current with electronic module (CWBC95/125)

Code	E04	E64	E65	E66
V ac (50/60 Hz) and V dc	24...60 V	48...130 V	110...255 V	250...500 V

Notes: 1) Contactors with control in direct current assembled with dib surge suppressor blocks increases the opening time by six times.
Do not use with bfbc auxiliary contact blocks that contain nc contact (cwbcx-12-30 contactors).
2) Contactors with control in direct current assembled with dizb surge suppressor blocks increases the opening time by four times.
3) Other voltages on request.

Technical data

Basic data

Models			CWBC9/18	CWBC25/32	CWBC50/65	CWBC95/125
Compliance with the standards			IEC/EN 60947-1 IEC/EN 60947-4-1 IEC/EN 60947-5-1			
Rated insulation voltage U_i (pollution degree 3)	IEC 60947-4-1	(V)	690			
	UL, CSA	(V)	600			
Rated impulse withstand voltage U_{imp} (IEC/EN 60947-1)		(kV)	6			
Frequency limits		(Hz)	25...400			
Mechanical life	AC coil	(millions of operations)	1			
	DC coil	(millions of operations)	1			
Electrical life	I_e (AC-6b)	(millions of operations)	0.1			
Maximum frequency of operation cycles		(ops./h)	120 (1 operation every 30 seconds)			
Protection rating (IEC 60529)	Main terminals		IP10 (front)			
	Coil and auxiliary contacts		IP20 (front)			
Mounting			Screws or DIN rail 35 mm (EN 50022)			
Coil connection points	Contactors with AC coil		2			
	Contactors with DC coil		2			
Vibration resistance (IEC 60068-2-6)	Open contactor	(g)	4			
	Closed contactor	(g)	4			
Resistance to mechanical shocks (½ sine wave = 11ms - IEC 60068-2-27)	Open contactor	(g)	10			
	Closed contactor	(g)	15			
Ambient air temperature	Operation		-25 °C...+55 °C			
	Storage		-55 °C...+80 °C			
Maximum operation altitude without modification in the rated values[1)]			3,000 m			

Notes: 1) Check the time between activations of the capacitor used, as this time is normally greater than that of the contactor and must be observed (the longer time between activations shall prevail) to avoid damage to the set.
2) For altitudes of 3,000...4,000 m, consider 0.90 x Ie and 0.80 x Ui; for altitudes of 4,000...5,000 m, consider 0.80 x Ie and 0.75 x Ui.

Auxiliary contacts

Model			CWBC9...125
Compliance with the standards			IEC/EN 60947-5-1
Rated insulation voltage U_i (pollution degree 3)	IEC/EN 60947-4-1, VDE 0660	(V)	690
	UL, CSA	(V)	600
Rated operational voltage U_e	IEC/EN 60947-4-1, VDE 0660	(V)	690
	UL, CSA	(V)	600
Conventional thermal current I_{th} ($\theta \leq 55$ °C)		(A)	10
Rated operational current I_e			
AC-15 (IEC 60947-5-1)	220/230 V	(A)	10
	380/440 V	(A)	4
	500 V	(A)	2.5
	660/690 V	(A)	1.5
DC-13(IEC 60947-5-1)	24 V	(A)	4
	48 V	(A)	2
	110 V	(A)	0.7
	220 V	(A)	0.3
	440 V	(A)	0.15
Making capacity	$U_e \leq 690$ V 50/60 Hz - AC-15	(A)	10 x I_e
Breaking capacity	$U_e \leq 400$ V 50/60 Hz - AC-15	(A)	1 x I_e
Short circuit protection with fuse (gL/gG)		(A)	10
Control circuit reliability		(V / mA)	17 / 5
Electrical life	(millions of operations)		1
Mechanical life	(millions of operations)		10
Non-overlapping time between NO and NC contacts		(ms)	1.5
Impedance of the contacts		(mΩ)	2.5

Technical data

Control circuit - alternate current (AC)

Models			CWBC9...32	CWBC50/65	CWBC95
Rated insulation voltage U_i (pollution degree 3)	IEC/EN 60947-4-1	(V)	690	1,000	1,000
	UL, CSA	(V)	600	600	600
Standard voltages at 50/60 Hz		(V)	12...500	24...500	24...500
Coil operation limits	At 50 Hz	(xUs)	0.8...1.1	0.8...1.1	0.8...1.1
	At 60 Hz	(xUs)	0.8...1.1	0.8...1.1	0.8...1.1
Average coil consumption 50/60 Hz (operation at 60 Hz)	Closed magnetic circuit	(VA)	7.5	17.5	25
	Power factor switched on	(cos φ)	0,27	0.28	0.4
	Thermal power dissipation	(W)	1.5...2.5	4...5.5	9...11
	Closing of the magnetic circuit	(VA)	75	185	410
	Power factor switching on	(cos φ)	0.7	0.55	0.48
Average coil consumption 50/60 Hz (operation at 50 Hz)	Closing of the NO contacts	(ms)	9	27	27
	Opening of the NO contacts	(ms)	0.24	0.25	0.4
	Thermal power dissipation	(W)	1.5...2.5	5.5...7.8	11...13.4
	Closing of the magnetic circuit	(VA)	90	202	426
	Power factor switching on	(cos φ)	0.8	0.56	0.5
Average operating time	Closing of the NO contacts	(ms)	15...25	10...15	8...12.5
	Opening of the NO contacts	(ms)	8...12	8...12	4...8

Control circuit - direct current (DC)

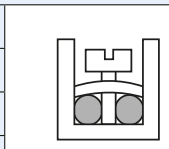
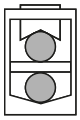
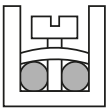
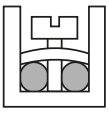
Models			CWBC9...32	CWBC50/65	CWBC95
Rated insulation voltage U_i (pollution degree 3)	IEC/EN 60947-4-1	(V)	690	690	-
	UL, CSA	(V)	600	600	-
Standard voltages		(V)	12...500	12...500	-
Coil operation limits		(xUs)	0.8...1.1	0.8...1.1	-
Average DC coil consumption	Closed magnetic circuit	(W)	5.8	10.6	-
	Closing of the magnetic circuit	(W)	5.8	105.5	-
Average operating time	Closing of the NO contacts	(ms)	35...45	20...30	-
	Opening of the NO contacts	(ms)	8...12	4...8	-

Control circuit - alternating current/direct current with electronic module (AC/DC)

Models			CWBC9/32	CWBC50/65	CWBC95/125
Rated insulation voltage U_i (pollution degree 3)	IEC/EN 60947-4-1, VDE 0660	(V)	-	-	1,000
	UL, CSA	(V)	-	-	600
Standard voltages		(V)	-	-	24...500
Coil operation limits	in V dc	(xUs)	-	-	0.8...1.1
	at 50 Hz	(xUs)	-	-	0.8...1.1
	at 60 Hz	(xUs)	-	-	0.8...1.1
Average consumption			-	-	1.0 x Us and cold coil
AC power supply (60 Hz)	Closed magnetic circuit	(ms)	-	-	10.8
	Power factor	(VA)	-	-	0.47
	Thermal power dissipation	(cos φ)	-	-	5.1
	Closing of the magnetic circuit	(W)	-	-	217
	Power factor	(VA)	-	-	0.88
DC power supply	Closed magnetic circuit	(cos φ)	-	-	2...5
	Closing of the magnetic circuit	(W)	-	-	180...220
Average operating time	Closing of the NO contacts	(W)	-	-	32...48
	Opening of the NO contacts	(ms)	-	-	30...55

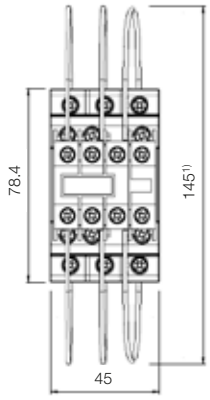
Technical data

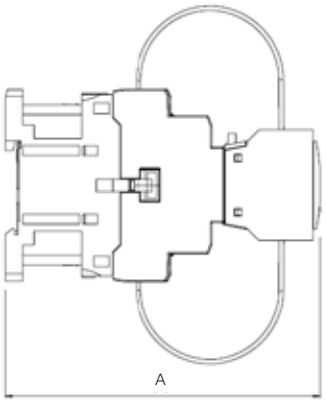
Terminal capacity and tightening torque

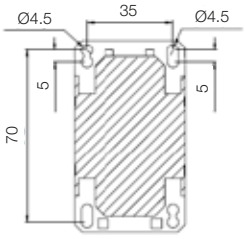
Models			CWBC9/18	CWBC25/32	CWBC50/65	CWBC95/125
Power circuit						
Mounting system screw type			Phillips number 2	Phillips number 2	ALLEN 4 mm	ALLEN 4 mm
Flexible conductor without terminal	(mm²)		1 x 1...6 2 x 1...6	1 x 2.5...10 2 x 2.5...10	-	-
Flexible conductor with terminal	(mm²)		1 x 1...6 2 x 1...4	1 x 1.5...10 2 x 1.5...6	-	-
Solid wire	(mm²)		1 x 1...6 2 x 1...6	1 x 2.5...10 2 x 2.5...10	-	-
Tightening torque	(mm²)		1.7	2.5	-	-
Flexible conductor without terminal	(mm²)		-	-	1 x 2.5...35 2 x 2.5...35	1 x 2.5...70 2 x 2.5...70
Flexible conductor with terminal	(Nm)		-	-	1 x 2.5...35 2 x 2.5...35	1 x 2.5...70 2 x 2.5...70
Solid wire	(mm²)		-	-	1 x 2.5...35 2 x 2.5...35	1 x 2.5...25 2 x 2.5...25
Tightening torque	(Nm)		-	-	5.0	6.0
Control circuit and auxiliary contacts						
Mounting system screw type			Philips number 2			
Flexible conductor without terminal	(mm²)		1 x 1...4 2 x 1...4			
Flexible conductor with terminal	(mm²)		1 x 1...4 2 x 1...2.5			
Solid wire	(mm²)		1 x 1...4 2 x 1...4			
Tightening torque	(Nm)		1.0			
Front Mounted Block (BFBC)						
Mounting system screw type			Philips number 2			
Flexible conductor without terminal	(mm²)		1 x 1...2.5 2 x 1...2.5			
Flexible conductor with terminal	(mm²)		1 x 1...2.5 2 x 1...2.5			
Solid wire	(mm²)		1 x 1...2.5 2 x 1...2.5			
Tightening torque	(Nm)		1.0			

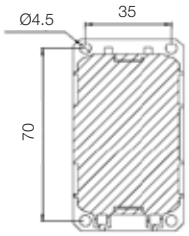
Dimensions (mm)

CWBC9/18



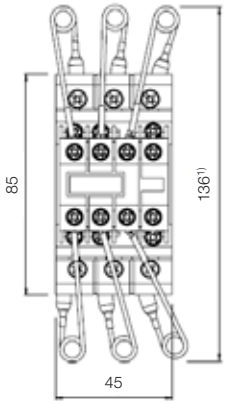


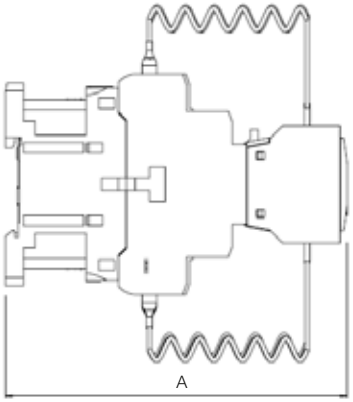


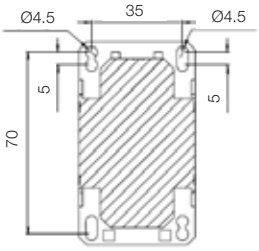


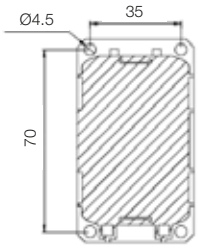
Coil	
AC	DC
A=128.3	A=137.5

CWBC25/32



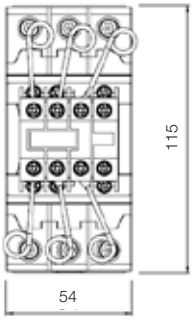


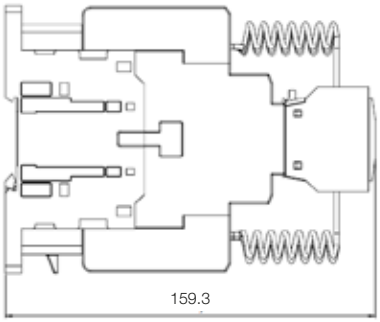


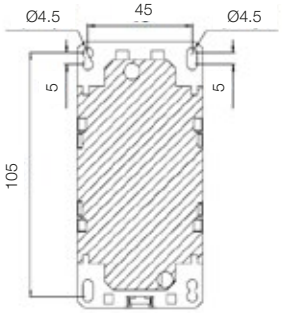


Coil	
AC	DC
A=131.8	A=141

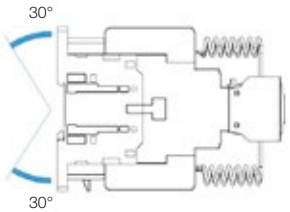
CWBC50/65



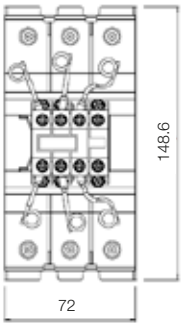


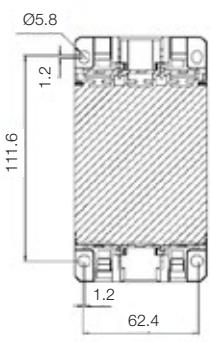


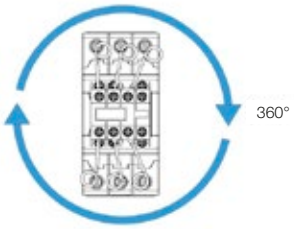
Mounting position



CWBC95/125







Note: 1) Approximate size.

PFW – Automatic Power Factor Controller

RELIABILITY, SAFETY AND MANAGEMENT OF ELECTRICAL INSTALLATIONS

The PFW is an automation device for permanent monitoring of the installation reactive power and power factor control. The PFW performs this control by connecting and disconnecting the capacitor steps. Thus, the Automatic Power Factor Controller enables the power distribution system to operate at maximum efficiency by reducing the reactive power. In addition, it informs electrical parameters such as current, voltage, power, energy, demands and maximum and minimum values.

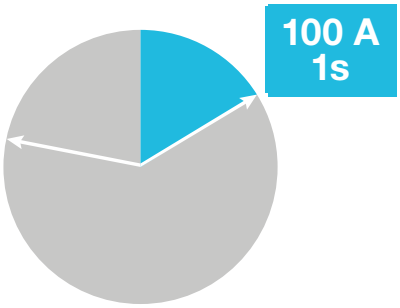
General characteristics

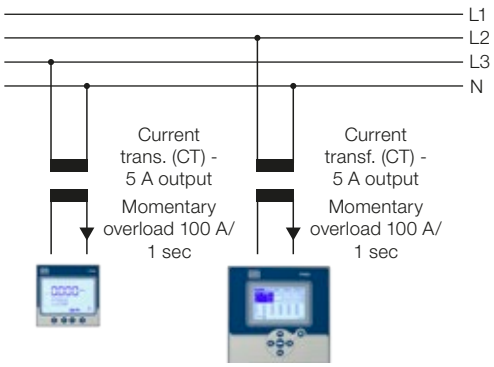
- Switching of capacitors and reactors with 8 to 24 control steps
- Applicable to balanced and unbalanced systems
- Capacity to learn and record the reactive powers of the steps. Parameter setting of each one is not required
- Dynamic step monitoring – DCM that speeds up maintenance and increases reliability in power factor correction
- Capacity to learn and check the current and voltage connections making it easy to correct them
- Multiple reactive power compensation modes
- Option to create 2 reading periods of electrical parameters using the available digital input
- Internal temperature sensor
- Recording of the switching cycles and actuated times of the steps
- Configurable step discharge times
- Direct and reverse energy measurement
- Recording of the maximum, minimum and average values of the available electrical parameters
- Configurable digital inputs and outputs
- Phasor diagram, table and bar graph of harmonics up to the 51st order for current and voltage
- Calendar and real-time clock
- Programmable password to access the keypad
- Identification on the display of the active alarms
- Communication with RS485 isolated serial output, Modbus-RTU protocol.
- Pluggable connecting terminals for easy maintenance
- Equipment with CE certification

Benefits and advantages

Robustness for momentary overloads

The PFW current inputs withstand current overloads up to 100 A for 1 second. This feature increases the safety of the installation by avoiding interruption/burning of the current circuit on the equipment.

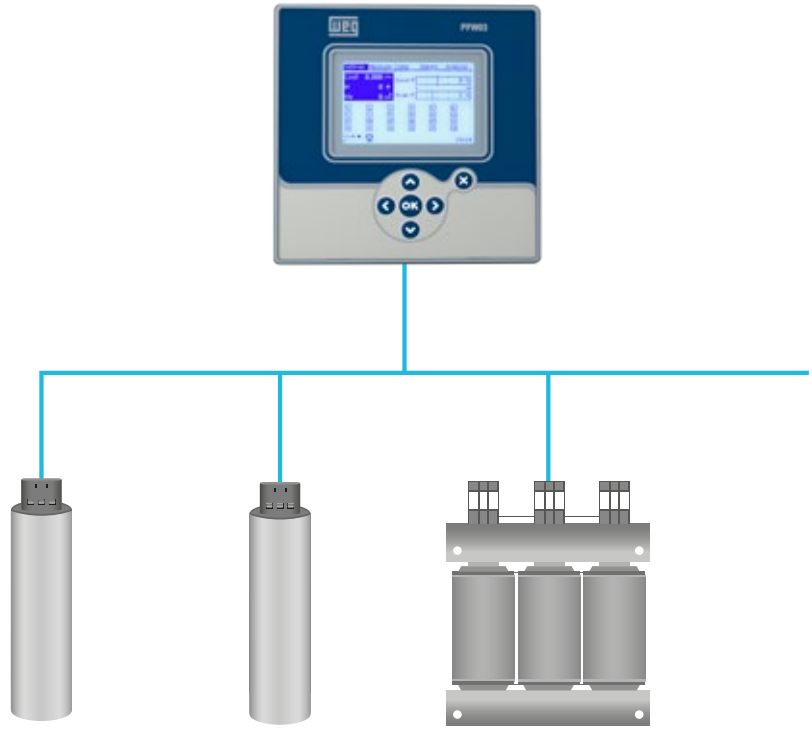




Inductive or capacitive reactive power control

Depending on the environment in which the PFW is installed, it will work with different components.

- In environments with predominantly inductive loads, such as industrial areas, the PFW works with single-phase or three-phase capacitors
- In environments with reactive capacitive loads, such as Data Centers, the PFW works with inductors
- In environments that float between capacitive and inductive loads, the PFW can work with inductors and capacitors in their various steps



Benefits and advantages

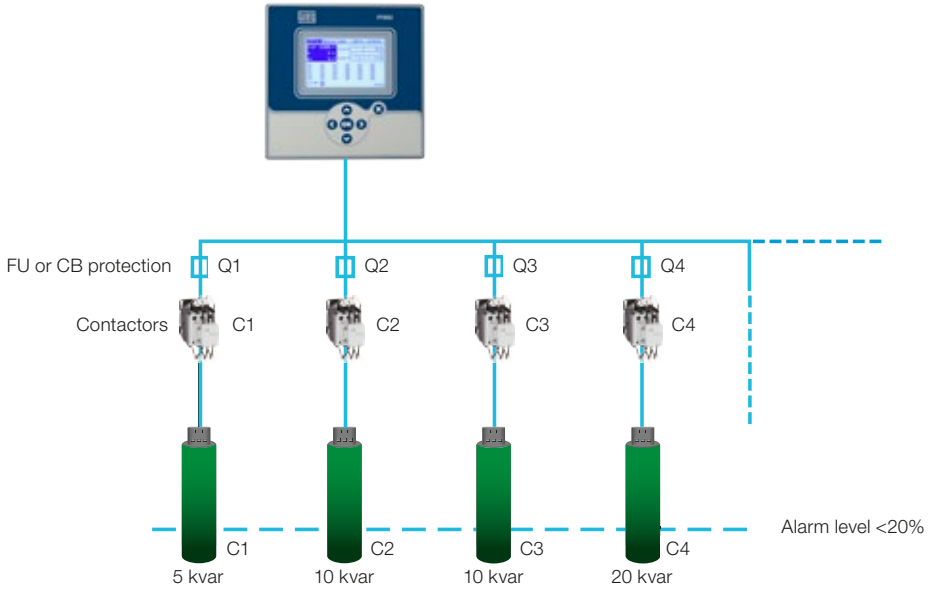
Easy parameter setting and connection of the PFW with the advanced reading function (learning)

In the parameter setting, the PFW identifies and records the powers available in the steps, both capacitors and inductors/ reactors. At the reading, it evaluates the voltage and current connections. If an error is found in the connection sequences, an error message will be displayed on the device screen.

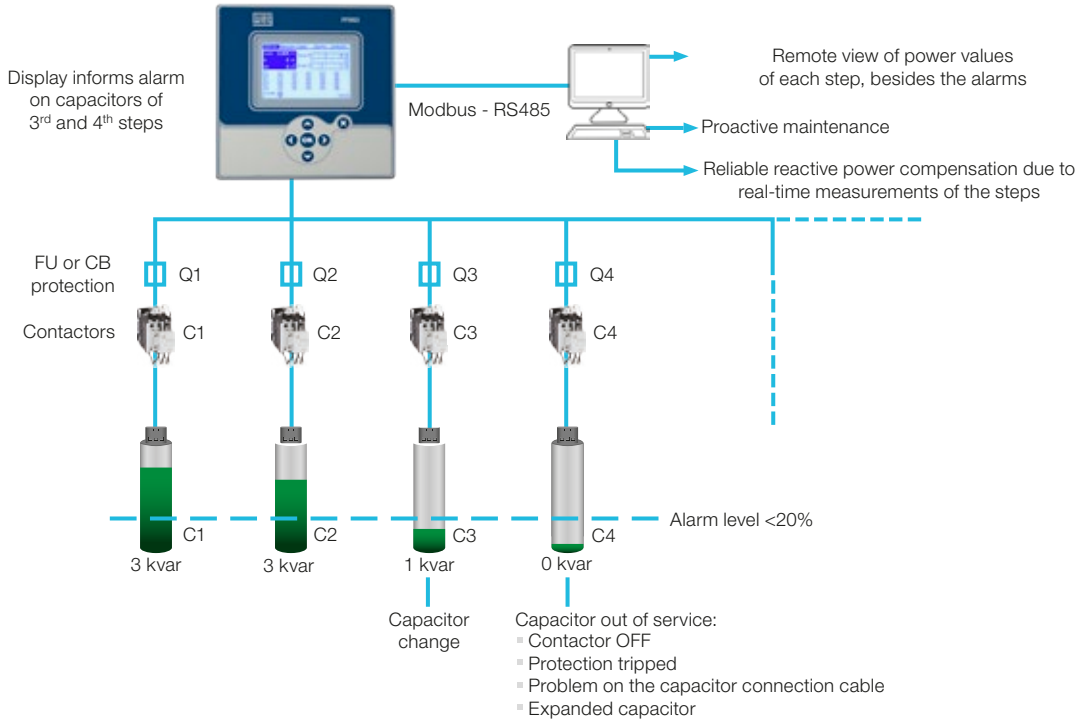
Reliability and speed in the maintenance of the capacitor bank

Based on the Dynamic Step Monitoring (DCM), the actual kvar values of each step are tracked and used to calculates the compensation. That makes the compensation more accurate and reliable, in addition to optimizing the maintenance of the capacitor bank, generating an alarm to replace it.

Initial condition - capacitors at rated condition



Condition after use where the capacitors lost reactive power



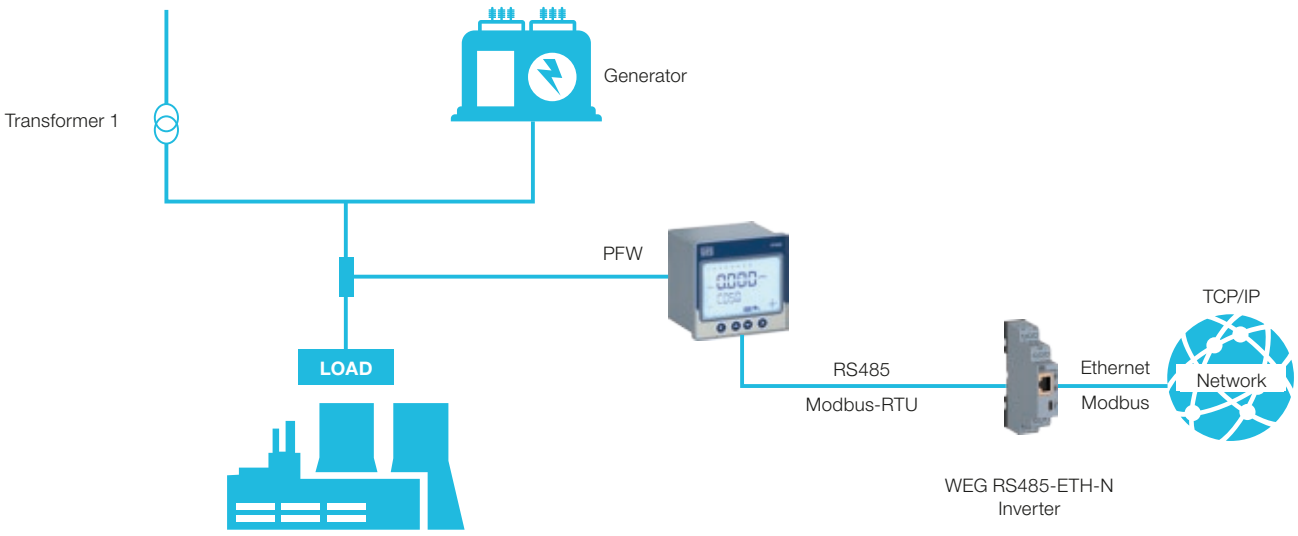
Benefits and advantages

Segmentation of the power factor control and energy measurement with 2 different power supplies

For an industry powered by 2 different energy sources, a transformer and a generator for instance, it is necessary to measure the energy supplied by the generator and by the transformer separately. PFW has a GEN input which is activated when the generator is turned on.

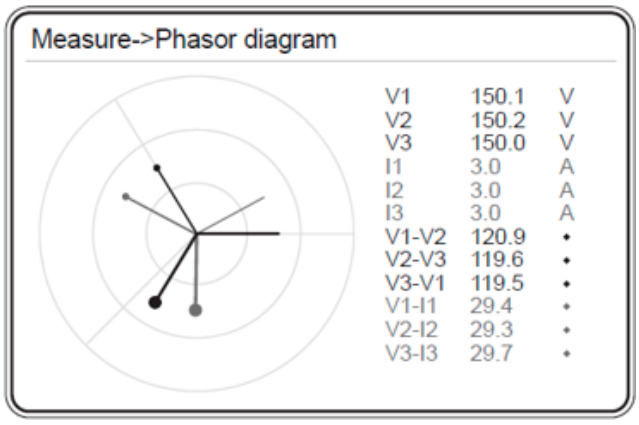
This input allows:

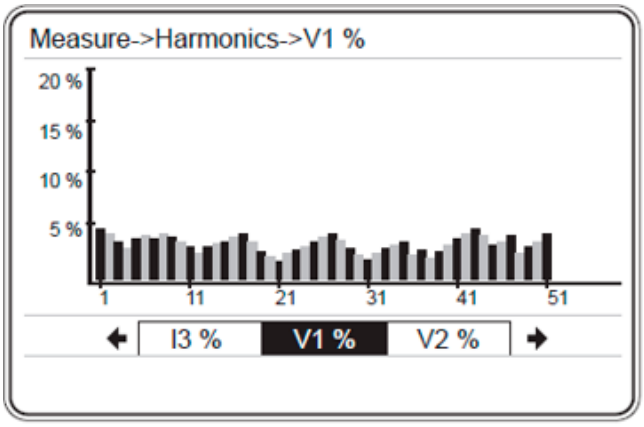
- Configuring a new control power factor, characterizing two values of Cos φ to be reached. The second one is enabled via the GEN input.
- Having 2 specific periods of electric energy measurement. The user sets Cos φ 2 available in the equipment to measure the energy delivered by the generator. And Cos φ measures the consumption of the energy supplied by transformer 1.



Analysis of the electric energy system

The view of the harmonics present in the electrical system enables an analysis and consequent corrective action if necessary.



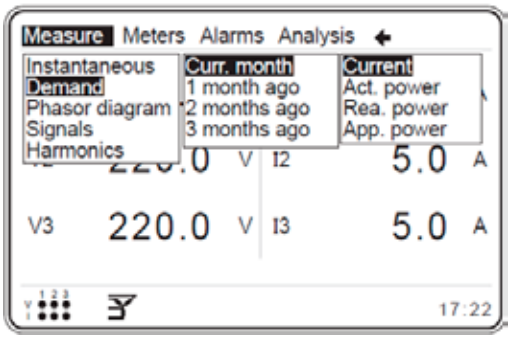


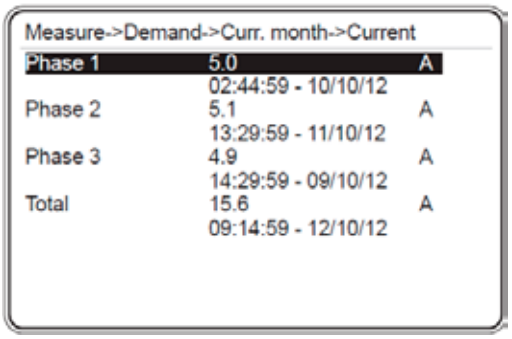
Benefits and advantages

Demand management

The recording of the demands allows evaluating a tariff reclassification or load rearrangement in order to improve the load factor of the industrial, commercial or residential consumption unit.

- The demand recording is done with a real-time clock
- The user can adjust the demand calculation period between 1 and 60 minutes
- Monitoring of P, Q, S and recording of the average values for each defined demand period
- Monthly recording of the maximum demand values
- Recording of 4 months of demand

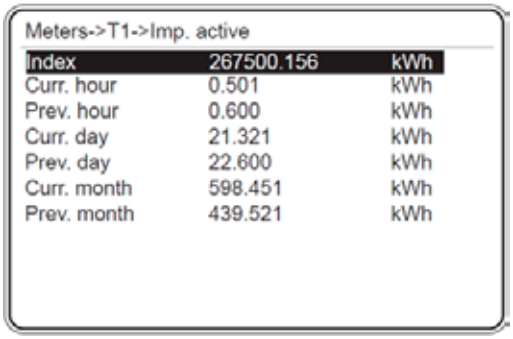




Storage of measured and calculated values

The PFW allows assessing the performance of the electrical installation by analyzing minimum, maximum or average parameters recorded on the device.
Capacity to record different parameters on the device memory:

- 68 hourly records for 1,920 hours
- 68 daily records for 240 days
- 68 monthly records for 36 months
- 16 different demand records for 4 months
- 50 alarm records



Overview of the line

General characteristics		PFW - Automatic power factor controllers				
						
Reference		PFW03-M8	PFW03-M12	PFW03-M24	PFW03-T12	PFW03-T24
Material code		14387138	14387141	14387143	14387080	14387086
Mechanical characteristics	Dimensions - A x H x P (mm)	96 x 96 x 80	144 x 144 x 75	144 x 144 x 75	144 x 144 x 75	144 x 144 x 75
	Protection rating	IP40 (front)[1)]	IP40 (front)	IP40 (front)	IP40 (front)	IP40 (front)
	Display type	LCD	LCD	LCD	LCD	LCD
General characteristics	Measurement system	Single-phase	Single-phase	Single-phase	Three-phase	Three-phase
	Number of steps	8	12	24	12	24
	Configurable password to access the keyboard	Yes	Yes	Yes	Yes	Yes
	Load types of the steps	Capacitor 3Ø and capacitor 1Ø	Capacitor 3Ø, reactor/inductor 3Ø	Capacitor 3Ø, reactor/inductor 3Ø	Capacitor 3Ø, reactor/inductor 3Ø	Capacitor 3Ø, reactor/inductor 3Ø
	Alarm relay	2	2	2	2	2
	Temperature sensor	Yes	Yes	Yes	Yes	Yes
	Modbus-RTU Communication, isolated RS485 port	Yes	Yes	Yes	Yes	Yes
	Reading and recording of the reactive power of the steps	No	Yes	Yes	Yes	Yes
	Reading and indication of the electrical connections of the measurements	No	Yes	Yes	Yes	Yes
	Dynamic monitoring of the capacitors - DCM	No	Yes	No	Yes	No
	Real time clock and calendar	No	Yes	Yes	Yes	Yes
	Setting for 2 periods of the day with different Cos φ	No	Yes	Yes	Yes	Yes
Available electrical quantities	Voltage (V); current (I); frequency (F)	Yes	Yes	Yes	Yes	Yes
	Powers (P; Q; S); demand; energy; power factor and Cos φ	Yes, except energies and demand	Yes	Yes	Yes	Yes
	Total (THD) and individual (HD) voltage and current harmonic distortion	DHT only (up to 51st order)	Yes (DH 51st)	Yes (DH up to DH 51st)	Yes (DH up to DH 51st)	Yes (DH up to DH 51st)
	Direct and reverse energy reading	No	Yes	Yes	Yes	Yes
Recording (memory) of demand values in the last 3 months		No	Yes	Yes	Yes	Yes
Recording (memory) of alarms		No	50	50	50	50
Recording (memory) of electrical quantities and alarms		No	Yes	Yes	Yes	Yes
Phasor diag.; Harmonic table and bar chart		No	Yes	Yes	Yes	Yes
CE certified		Yes	Yes	Yes	Yes	Yes

Note: 1) The protection rating of the device is extended to IP66 by installing the MBN96X96 silicone membrane accessory code 14432877.

Control operations and functions

Reactive power compensation modes

Functions	Setting type	Smart	Sequential ascending	Sequential descending	Linear	Circular	Manual
Activates the closest step to the requested reactive power and deactivates when it is no longer needed		√					
DCM - Dynamic step monitoring - check of the life of capacitors and inductors		√	√	√	√		
The activation and deactivation of steps is done from the lowest power to the highest power in order to meet the requested reactive power			√				
The activation and deactivation of steps is done using the highest power available in order to meet the requested reactive power				√			
The first activated step will be the last one to be deactivated					√		
The first activated step will be the first one to be deactivated						√	
Automatic reading system and deactivated step control. Manual action of the steps							√
Steps with three-phase capacitors or reactors		√	√	√	√	√	√
Single or two-phase capacitors or reactors		√					√
In the steps, capacitors or reactors may have any reactive power value		√	√	√			√
In the steps, capacitors or reactors must have the same reactive power value					√	√	

Note: check in the technical data table, on pages 34 and 35, which types of settings and functions are available for each PFW model.

Control operations and functions

Reactive power configuration modes

Manual parameter setting

- Step values are entered manually, one by one.

Parameter setting with preset steps

The power of the first stage is defined, and the others are recorded according to the sequence chosen during parameterization.
Example considering an 8-step controller:

- Chosen sequence = 1-2-4-8.
- Power of step 1 = 10 kvar.
- Power of steps 2 to 8 = 20; 40; 80; 80; 80; 80; 80 kvar.

Reading and recording of the powers (*Learning* function)

In this mode, the controller automatically reads the powers in the steps and records them on the device.

Fixed step

The fixed step is activated while the controller is switched on and allows defining the steps that will not automatically participate in the correction.

Step entry and exit time

The controller allows defining the step entry and exit time. In addition to this configuration, the controller can delay the entry and exit based on the "average time" setting.

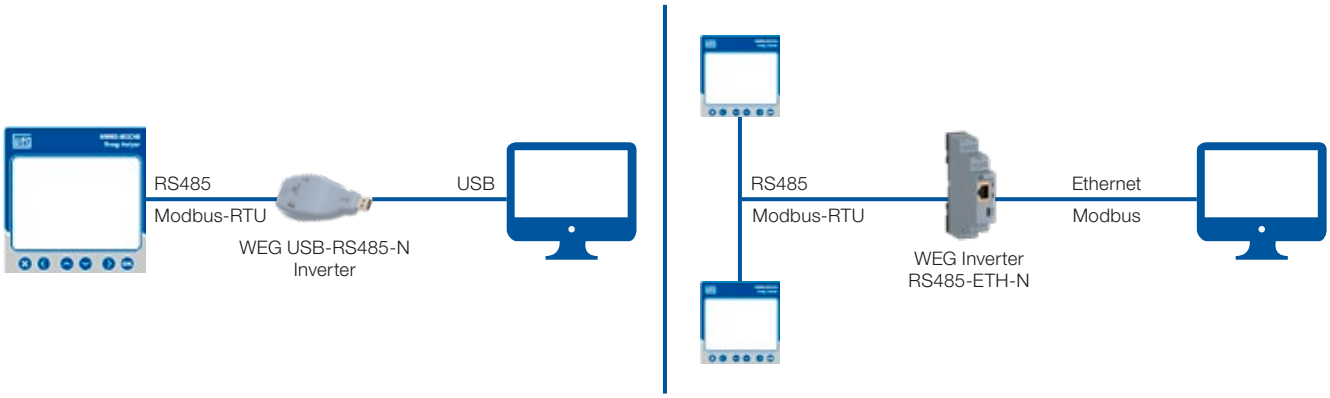
Parameter setting software

The device can be set locally with the keypad or remotely using the appropriate configuration apps for each product. Preferably, the interconnection between the device and the computer should be made through a WEG inverter.

For a USB/RS485 connection, you must use WEG USB-RS485-N inverter, and for an RS485/Ethernet connection, you must use WEG RS485-ETH-N inverter. For details on these accessories, see page 37.

The table and diagram below show the parameter setting software and an example of interconnection for parameter setting.

Model	Parameter setting application
PFW03-M8	WPM-PFW03
PFW03-M12	
PFW03-M24	
PFW03-T12	
PFW03-T24	



Parameter setting of the PFW using the USB/RS485 inverter or the RS485/ETH-N inverter

Global presence
is essential, as much as understanding your needs.

Global Presence

With more than 40,000 employees worldwide, WEG is one of the largest electric motors, electronic equipments and systems manufacturers. We are constantly expanding our portfolio of products and services with expertise and market knowledge. We create integrated and customized solutions ranging from innovative products to complete after-sales service.

WEG's know-how guarantees our ***Products for Power Factor Correction*** are the right choice for your application and business, assuring safety, efficiency and reliability.

- **Availability** is to have a global support network
- **Partnership** is to create solutions that suits your needs
- **Competitive edge** is to unite technology and inovation

Know More

High performance and reliable products to improve your production process.

Excelence is to provide a whole solution in industrial automation that improves our customers productivity.

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The scope of WEG Group solutions
is not limited to products and solutions
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To see our portfolio, contact us.

For WEG's worldwide
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