

Power capacitors

multicond



multicond one-phase power capacitors for power factor correction are developed for networks with harmonic load. Apart from a high expectancy life and high current and voltage load capacity, safety in case of overload (all-pole overpressure disconnecter) the compact design and dry technology is the crucial advantage. Other features: high thermal conduction, low self-heating as well as reliable performance at high ambient temperatures.

Rated voltage U_n **280, 440,
480, 525 V**

Rated frequency f **50/60 Hz**



Illustration similar

Power capacitor for power factor correction

- Highlights**
- Power from 7.4 to 34 kvar
 - Capacitor rated voltage of 280, 440, 480, 525 V
 - High level of safety through dry technology and internal overpressure disconnector
 - Including compact discharge resistor
 - High life expectancy

The **Construction diagram** can be found on page 6.

multicond-UHPC power capacitors stand out through their combined safety concept of a self-healing effect and internal overpressure disconnector. In low voltage networks, inadmissibly high voltage peaks up to 3 times the rated voltage can occur through switching procedures. If these loads lead to flashovers in the dielectric, self-healing takes effect. The capacitor remains fully functional as this happens. The internal overpressure

disconnector starts to work if the gas amount released by the many self-healing procedures causes a specific internal pressure. The lid of the aluminum casing bends slightly and the fuse disconnects the capacitor from the network.

Note: Depending on the network voltage and when used in detuned systems, a correspondingly higher capacitor rated voltage must be selected.

Capacitor rated voltage: **280 V – 1-phase**

FREQUENCY	POWER ON NETWORK VOLTAGE											CURRENT ON MAX. VOLTAGE	RATED CAPACITANCE	CAN SIZE in mm	TYPE
	220V	230V	280V	380V	400V	415V	440V	480V	525V	600V	690V				
Hz	kvar	kvar	kvar	kvar	kvar	kvar	kva	kva	kva	kvar	kvar	A	µF	dxH	multicond...
50	4,6	5,0	7,4	–	–	–	–	–	–	–	–	15,3	300,4	116 x 255	premium UHPC-7.4-280-1P
60	5,5	6,0	8,9	–	–	–	–	–	–	–	–	18,4		116 x 255	basic UHPC-7.4-280-1P basic HPC-7.4-280-1P
50	6,9	7,5	11,1	–	–	–	–	–	–	–	–	22,9	450,7	116 x 255	premium UHPC-11.1-280-1P
60	8,2	9,0	13,3	–	–	–	–	–	–	–	–	27,5		116 x 255	basic UHPC-11.1-280-1P basic HPC-11.1-280-1P

Capacitor rated voltage: **440 V – 1-phase**

FREQUENCY	POWER ON NETWORK VOLTAGE											CURRENT ON MAX. VOLTAGE	RATED CAPACITANCE	CAN SIZE in mm	TYPE
	220V	230V	280V	380V	400V	415V	440V	480V	525V	600V	690V				
Hz	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	A	µF	dxH	multicond...
50	4,2	4,6	6,8	12,5	13,8	14,9	16,7	–	–	–	–	38,0	274,6	116 x 255	premium UHPC-16.7-440-1P
60	5,0	5,5	8,1	15,0	16,6	17,9	20,0	–	–	–	–	45,5		95 x 255	basic UHPC-16.7-440-1P basic HPC-16.7-440-1P
50	4,3	4,7	6,9	12,8	14,1	15,2	17,1	–	–	–	–	38,9	281,2	116 x 255	premium UHPC-17.1-440-1P
60	5,1	5,6	8,3	15,3	17,0	18,3	20,5	–	–	–	–	46,6		95 x 255	basic UHPC-17.1-440-1P basic HPC-117.1-440-1P
50	4,6	5,0	7,4	13,6	15,0	16,2	18,2	–	–	–	–	41,4	299,2	116 x 255	premium UHPC-18.2-440-1P
60	5,5	6,0	8,8	16,3	18,0	19,4	21,8	–	–	–	–	49,6		95 x 255	basic UHPC-18.2440-1P basic HPC-18.2-440-1P
50	5,0	5,5	8,1	14,9	16,5	17,8	20,0	–	–	–	–	45,5	328,8	116 x 255	premium UHPC-20.0-440-1P
60	6,0	6,6	9,7	17,9	19,8	21,3	24,0	–	–	–	–	54,5		116 x 255	basic UHPC-20.0-440-1P basic HPC-20.0-440-1P
50	5,1	5,5	8,2	15,1	16,7	18,0	20,2	–	–	–	–	45,9	332,1	116 x 255	premium UHPC-20.2-440-1P
60	6,1	6,6	9,8	18,1	20,0	21,6	24,2	–	–	–	–	55,1		116 x 255	basic UHPC-20.2-440-1P basic HPC-20.2-440-1P
50	5,3	5,8	8,6	15,8	17,5	18,9	21,2	–	–	–	–	48,2	348,6	116 x 255	premium UHPC-21.2-440-1P
60	6,4	7,0	10,3	19,0	21,0	22,6	25,4	–	–	–	–	57,8		116 x 255	basic UHPC-21.2-440-1P basic HPC-21.2-440-1P
50	6,1	6,6	9,8	18,1	20,0	21,5	24,2	–	–	–	–	55,0	397,9	116 x 255	premium UHPC-24.2-440-1P
60	7,3	7,9	11,8	21,7	24,0	25,8	29,0	–	–	–	–	66,0		116 x 255	basic UHPC-24.2-440-1P basic HPC-24.2-440-1P
50	7,0	7,7	11,4	21,0	23,2	25,0	28,1	–	–	–	–	63,9	462,0	136 x 255	premium UHPC-28.1-440-1P
60	8,4	9,2	13,7	25,2	27,9	30,0	33,7	–	–	–	–	76,6		116 x 255	basic UHPC-28.1-440-1P basic HPC-28.1-440-1P
50	7,6	8,3	12,3	22,6	25,0	27,0	30,3	–	–	–	–	68,9	498,2	136 x 255	premium UHPC-30.3-440-1P
60	9,1	9,9	14,7	27,1	30,1	32,4	36,4	–	–	–	–	82,6		116 x 255	basic UHPC-30.3-440-1P basic HPC-30.3-440-1P

Table continued on next page.

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and: Capacitor rated voltage: **480 V – 1-phase**

FREQUENCY	POWER ON NETWORK VOLTAGE											CURRENT ON MAX. VOLTAGE	RATED CAPACITANCE	CAN SIZE in mm	TYPE
	220V	230V	280V	380V	400V	415V	440V	480V	525V	600V	690V				
Hz	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	A	μF	d x H	multicond...
50	3,5	3,8	5,7	10,5	11,6	12,5	14,0	16,7	–	–	–	38,0	230,7	116 x 255	premium UHPC-16.7-480-1P
60	4,2	4,6	6,8	12,6	13,9	15,0	16,8	20,0	–	–	–	45,5		95 x 255	basic UHPC-16.7-480-1P
														95 x 255	basic HPC-16.7-480-1P
50	3,8	4,1	6,1	11,2	12,4	13,4	15,0	17,9	–	–	–	37,3	247,3	116 x 255	premium UHPC-17.9-480-1P
60	4,5	4,9	7,3	13,5	14,9	16,1	18,0	21,5	–	–	–	44,8		95 x 255	basic UHPC-17.9-480-1P
														95 x 255	basic HPC-17.9-480-1P
50	4,4	4,8	7,1	13,0	14,4	15,5	17,5	20,8	–	–	–	43,3	287,4	116 x 255	premium UHPC-20.8-480-1P
60	5,2	5,7	8,5	15,7	17,3	18,6	21,0	25,0	–	–	–	52,0		116 x 255	basic UHPC-20.8-480-1P
														116 x 255	basic HPC-20.8-480-1P
50	5,0	5,5	8,1	14,9	16,5	17,8	20,0	23,8	–	–	–	49,6	328,8	116 x 255	premium UHPC-23.8-480-1P
60	6,0	6,6	9,7	17,9	19,8	21,3	24,0	28,6	–	–	–	59,5		116 x 255	basic UHPC-23.8-480-1P
														116 x 255	basic HPC-23.8-480-1P
50	5,3	5,7	8,5	15,7	17,4	18,7	21,0	25,0	–	–	–	52,1	345,4	116 x 255	premium UHPC-25.0-480-1P
60	6,3	6,9	10,2	18,8	20,8	22,4	25,2	30,0	–	–	–	62,5		116 x 255	basic UHPC-25.0-480-1P
														116 x 255	basic HPC-25.0-480-1P
50	6,3	6,8	10,1	18,7	20,7	22,3	25,0	29,8	–	–	–	62,1	411,7	136 x 255	premium UHPC-29.8-480-1P
60	7,5	8,2	12,2	22,4	24,8	26,7	30,0	35,8	–	–	–	74,5		116 x 255	basic UHPC-29.8-480-1P
														116 x 255	basic HPC-29.8-480-1P
50	7,0	7,7	11,4	20,9	23,2	25,0	28,1	33,4	–	–	–	69,6	461,4	136 x 255	premium UHPC-33.4-480-1P
60	8,4	9,2	13,6	25,1	27,8	30,0	33,7	40,1	–	–	–	83,5		136 x 255	basic UHPC-33.4-480-1P
														136 x 255	basic HPC-33.4-480-1P

Other capacitor powers available on request.

Capacitor rated voltage: **525 V – 1-phase**

FREQUENCY	POWER ON NETWORK VOLTAGE											CURRENT ON MAX. VOLTAGE	RATED CAPACITANCE	CAN SIZE in mm	TYPE
	220V	230V	280V	380V	400V	415V	440V	480V	525V	600V	690V				
Hz	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	A	µF	dxH	multicond...
50	2,6	2,9	4,3	7,9	8,7	9,4	10,5	12,5	15,0	-	-	28,6	173.2	95 x 255	premium UHPC-15.0-525-1P
60	3,2	3,5	5,1	9,4	10,4	11,2	12,6	15,0	18,0	-	-	34,3		95 x 255	basic UHPC-15.0-525-1P
50	3,0	3,3	4,8	8,9	9,9	10,6	11,9	14,2	17,0	-	-	32,4	196.3	116 x 255	premium UHPC-17.0-525-1P
60	3,6	3,9	5,8	10,7	11,8	12,7	14,3	17,0	20,4	-	-	38,9		95 x 255	basic HPC-17.0-525-1P
50	3,3	3,7	5,4	10,0	11,0	11,9	13,3	15,9	19,0	-	-	36,2	219.4	116 x 255	premium UHPC-19.0-525-1P
60	4,0	4,4	6,5	11,9	13,2	14,2	16,0	19,0	22,8	-	-	43,4		95 x 255	basic UHPC-19.0-525-1P
50	3,5	3,8	5,7	10,5	11,6	12,5	14,0	16,7	20,0	-	-	38,1	231.0	116 x 255	premium UHPC-20.0-525-1P
60	4,2	4,6	6,8	12,6	13,9	15,0	16,9	20,1	24,0	-	-	45,7		116 x 255	basic UHPC-20.0-525-1P
50	3,7	4,0	6,0	11,0	12,2	13,1	14,7	17,5	21,0	-	-	40,0	242.5	116 x 255	premium UHPC-21.0-525-1P
60	4,4	4,8	7,2	13,2	14,6	15,7	17,7	21,1	25,2	-	-	48,0		116 x 255	basic UHPC-21.0-525-1P
50	4,2	4,6	6,8	12,6	13,9	15,0	16,9	20,1	24,0	-	-	45,7	277.2	116 x 255	premium UHPC-24.0-525-1P
60	5,1	5,5	8,2	15,1	16,7	18,0	20,3	24,1	28,8	-	-	54,9		116 x 255	basic UHPC-24.0-525-1P
50	4,4	4,8	7,1	13,1	14,5	15,6	17,6	20,9	25,0	-	-	47,6	288.7	116 x 255	premium UHPC-25.0-525-1P
60	5,3	5,8	8,5	15,7	17,4	18,7	21,1	25,1	30,0	-	-	57,1		116 x 255	basic UHPC-25.0-525-1P
50	5,3	5,8	8,5	15,7	17,4	18,7	21,1	25,1	30,0	-	-	57,1	346.5	116 x 255	premium UHPC-30.0-525-1P
60	6,3	6,9	10,4	18,9	20,9	22,5	25,3	30,1	36,0	-	-	68,6		116 x 255	basic UHPC-30.0-525-1P
50	6,0	6,5	9,7	17,8	19,7	21,2	23,9	28,4	34,0	-	-	64,8	392.7	136 x 255	premium UHPC-34.0-525-1P
60	7,2	7,8	11,6	21,4	23,6	25,4	28,7	34,1	40,8	-	-	77,7		136 x 255	basic UHPC-34.0-525-1P

Other capacitor powers available on request.

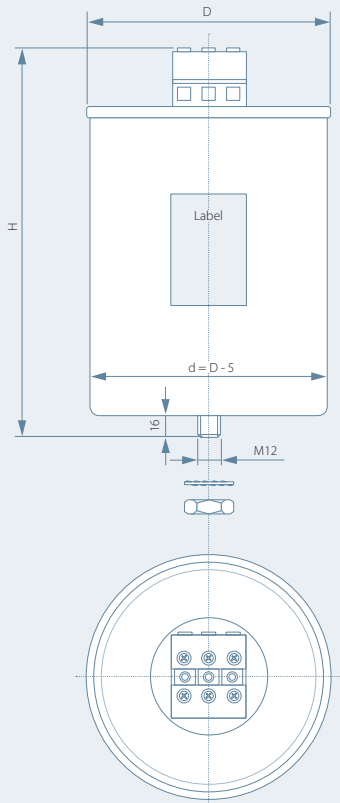
Performance data and sizes deviating from the standard are available on request.
Subject to typesetting and printing errors or technical changes.

Example for order: Power condensator, 30,3 kvar to 440 V.

The corresponding order detail is as follows:

Type multicond-premium-UHPC-30.3-440-3P (for three-phase type)

Type multicond-premium-UHPC-30.3-440-1P (for one-phase type)



Construction diagram

General:

- Fingerproof Terminal
- Expansion (a) by 12 mm maximum
- Clearance above 13 mm minimum

Mounting:

- M12 threaded bolts
- Tightening torque $T = 10 \text{ Nm}$
- Thoothed washer J12 DIN 6797
- Hexagonal nut BM12 DIN 439

Terminal:

D 95/116/136 (25 mm²)

- M5 terminal screw
- Tightening torque $T = 2.5 \text{ Nm}$

All dimensions in mm. Not suitable for taking measurements.

Technical details

Power capacitors for power factor correction

	multicond premium UHPC	multicond basic UHPC	multicond basic HPC
Rated voltage	$U_n = 280, 440, 480, 525 \text{ V}$		
Frequency	50/60 Hz		
Maximum permissible operating voltage	1.0 x U_n continuous 1.1 x U_n 8 hours/day 1.15 x U_n 30 minutes/day 1.2 x U_n 200 x 5 minutes 1.3 x U_n 200 x 1 minute		
Maximum permissible operating current	$2.0 \times I_n$		
Maximum inrush current	$400 \times I_n$		
Capacitance tolerance	+ / - 5 %		
Power dissipation	< 0.20 W / kvar, without discharge resistors	< 0.25 W / kvar, without discharge resistors	< 0.25 W / kvar, without discharge resistors
Voltage test (terminal – terminal)	$2.15 \times U_{\text{rated}} \text{ (AC), 10 sec}$		
Voltage test (terminal – housing)	$\leq 600 \text{ V} : 3600 \text{ V (AC), 2,5 sec}$ $> 600 \text{ V} : 6000 \text{ V (AC), 10 sec}$		
Temperature class D+5:	-40/60	–	–
Life expectancy*	> 150000 h max. ambient temp.: 60°C highest average over 24 h hours: 50°C highest average over 1 year: 40°C	–	–
Temperature class D:	-40/55	-40/55	–
Life expectancy*	> 250000 h max. ambient temp.: 55°C highest average over 24 hours: 45°C highest average over 1 year: 35°C	> 130000 h max. ambient temp.: 55°C highest average over 24 h hours: 45°C highest average over 1 year: 35°C	–
Temperature class C:	–	-40/50	-40/50
Life expectancy*	–	> 150000 h max. ambient temp.: 50°C highest average over 24 hours 40°C highest average over 1 year: 30°C	> 100000 h max. ambient temp.: 50°C highest average over 24 h hours: 40°C highest value over 1 year: 30°C
Temperature class B:	–	–	-40/45
Life expectancy*	–	–	> 130000 h max. ambient temp.: 45°C highest average over 24 hours 35°C highest average over 1 year: 25°C
*The maximum life expectancy may vary depending on the application and temperature class the capacitors used in.			

Technical details

Power capacitors for power factor correction

	multicond premium UHPC and multicond UHPC	multicond basic UHPC	multicond basic HPC
Cooling	Natural cooling		
Permissible humidity	95 %		
Maximum deployment altitude	4000 m above sea-level		
Installation site, installation position	Inside, anywhere		
Attachment	M12 threaded bolts on ground		
Safety features	<ul style="list-style-type: none"> → Dry technology, resin-filled → Self-healing → Overpressure disconnecter all-pole → SF6-free, PCB-free 	<ul style="list-style-type: none"> → Dry technology, resin-filled → Self-healing → Overpressure disconnecter all-pole → SF6-free, PCB-free 	<ul style="list-style-type: none"> → Dry technology, without resin → Self-healing → Overpressure disconnecter all-pole → SF6-free, PCB-free
Housing	Aluminum		
Degree of protection	IP 20		
Dielectric	Polypropylene		
Terminal	Double-sided, fingerproof terminal		
Discharge	Discharge resistors pre-mounted on terminal		
Standards	IEC 60831-1 + 2, EN 60831-1 + 2, VDE 0560-46 + 47		

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