

Power capacitors

multicond



multicond are 3-phase power capacitors for reactive current compensation, developed for networks with many harmonics. Apart from a long working life and high current and voltage load capacity, safety in case of overload (3-phase internal overpressure disconnecter) is a crucial advantage of the compact components, constructed according to dry safety concepts. Other features: good thermal conduction, low build-up of heat as well as reliable performance at high ambient temperatures.

multicond-UHPC 30.0-440-3P

Power capacitor with a power of > 15 kvar.

**multicond-UHPC 15.0-440-3P**

Power capacitor with a power range from 1.5 to 15 kvar.

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Rated voltage U_n **280, 440, 480,
525 oder 690 V**

Rated frequency f **50/60 Hz**



Power capacitor for reactive current compensation

- Highlights**
- Power from 1.5 to 37 kvar
 - Capacitor rated voltage of 280, 440, 480, 525 or 690 V
 - High level of safety through drying technology and 3-phase internal overpressure disconnecter
 - Including compact discharge resistor
 - Long working life

An overall view of **technical details** can be found on page 115
A **construction diagram** can be found on page 114.

multicond-UHPC power capacitors stand out through their combined safety concept of a self-restoring effect and 3-phase internal overpressure disconnecter. 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, the self-restoring effect comes into play. The capacitor remains fully functional as this happens. The 3-phase internal overpressure disconnecter starts to func-

tion if the gas amount released by the many self-restoring 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 units, a correspondingly higher capacitor rated voltage must be selected.

Specifications multicond-UHPC

Capacitor rated voltage: **280 V**

FREQUENCY	POWER ON NETWORK VOLTAGE									CURRENT ON MAX. VOLTAGE	RATED CAPACITY	CAN SIZE in mm	WEIGHT	TYPE
	230V	280V	400V	415V	440V	480V	525V	600V	690V					
Hz	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	A	μF	d x h (h+t+12)	kg	multicond- ...
50	5.0	7.4	–	–	–	–	–	–	–	15.3	3 x 100.1	116 x 255	2,6	UHPC-7.4-280-3P
60	6.0	8.9	–	–	–	–	–	–	–	18.4				
50	10.0	14.8	–	–	–	–	–	–	–	30.5	3 x 200.3	136 x 255	3,3	UHPC-14.8-280-3P
60	12.0	17.8	–	–	–	–	–	–	–	36.7				

Capacitor rated voltage: **440 V**

FREQUENCY	POWER ON NETWORK VOLTAGE									CURRENT ON MAX. VOLTAGE	RATED CAPACITY	CAN SIZE in mm	WEIGHT	TYPE
	230V	280V	400V	415V	440V	480V	525V	600V	690V					
Hz	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	A	μF	d x h (h+t+12)	kg	multicond- ...
50	–	–	1.5	1.6	1.8	–	–	–	–	2.4	3 x 9.9	70 x 215	1,0	UHPC-1.8-440-3P
60	–	–	1.8	1.9	2.2	–	–	–	–	2.9				
50	–	–	2.0	2.1	2.4	–	–	–	–	3.1	3 x 13.2	70 x 215	1,1	UHPC-2.4-440-3P
60	–	–	2.4	2.6	2.9	–	–	–	–	3.8				
50	–	–	2.5	2.7	3.0	–	–	–	–	3.9	3 x 16.4	70 x 215	1,2	UHPC-3.0-440-3P
60	–	–	3.0	3.2	3.6	–	–	–	–	4.7				
50	–	–	4.1	4.4	5.0	–	–	–	–	6.6	3 x 27.4	70 x 215	1,3	UHPC-5.0-440-3P
60	–	–	5.0	5.3	6.0	–	–	–	–	7.9				
50	–	–	5.0	5.4	6.1	–	–	–	–	8.0	3 x 33.4	70 x 215	1,4	UHPC-6.1-440-3P
60	–	–	6.0	6.5	7.3	–	–	–	–	9.6				
50	–	–	6.2	6.7	7.5	–	–	–	–	9.8	3 x 41.1	85 x 215	1,8	UHPC-7.5-440-3P
60	–	–	7.4	8.0	9.0	–	–	–	–	11.8				
50	–	–	7.5	8.1	9.1	–	–	–	–	11.9	3 x 49.9	85 x 215	2,0	UHPC-9.1-440-3P
60	–	–	9.0	9.7	10.9	–	–	–	–	14.3				
50	–	–	8.3	8.9	10.0	–	–	–	–	13.1	3 x 54.8	85 x 215	2,2	UHPC-10.0-440-3P
60	–	–	9.9	10.7	12.0	–	–	–	–	15.7				
50	–	–	9.3	10.0	11.2	–	–	–	–	14.7	3 x 61.4	85 x 215	2,3	UHPC-11.2-440-3P
60	–	–	11.1	12.0	13.4	–	–	–	–	17.6				
50	–	–	10.0	10.8	12.1	–	–	–	–	15.9	3 x 66.3	100 x 215	2,5	UHPC-12.1-440-3P
60	–	–	12.0	12.9	14.5	–	–	–	–	19.0				
50	–	–	11.7	12.5	14.1	–	–	–	–	18.5	3 x 77.3	100 x 215	2,7	UHPC-14.1-440-3P
60	–	–	14.0	15.1	16.9	–	–	–	–	22.2				
50	–	–	12.5	13.4	15.1	–	–	–	–	19.8	3 x 82.8	100 x 215	2,8	UHPC-15.1-440-3P
60	–	–	15.0	16.1	18.1	–	–	–	–	23.8				
50	–	–	14.1	15.2	17.1	–	–	–	–	22.4	3 x 93.7	116 x 255	2,6	UHPC-17.1-440-3P
60	–	–	17.0	18.3	20.5	–	–	–	–	26.9				
50	–	–	15.0	16.2	18.2	–	–	–	–	23.9	3 x 99.7	116 x 255	2,6	UHPC-18.2-440-3P
60	–	–	18.0	19.4	21.8	–	–	–	–	28.6				
50	–	–	16.5	17.8	20.0	–	–	–	–	26.2	3 x 109.6	116 x 255	2,4	UHPC-20.0-440-3P
60	–	–	19.8	21.3	24.0	–	–	–	–	31.5				

Table continued on next page.

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and: Capacitor rated voltage: 440 V

FREQUENCY	POWER ON NETWORK VOLTAGE									CURRENT ON MAX. VOLTAGE	RATED CAPACITY	CAN SIZE in mm	WEIGHT	TYPE
	230V	280V	400V	415V	440V	480V	525V	600V	690V					
Hz	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	A	µF	d x h (h + t + 12)	kg	multicond- ...
50	-	-	17.5	18.9	21.2	-	-	-	-	27.8	3 x 116.2	116 x 255	2,5	UHPC-21.2-440-3P
60	-	-	21.0	22.6	25.4	-	-	-	-	33.3				
50	-	-	20.0	21.5	24.2	-	-	-	-	31.8	3 x 132.6	116 x 255	2,5	UHPC-24.2-440-3P
60	-	-	24.0	25.8	29.0	-	-	-	-	38.1				
50	-	-	22.5	24.2	27.2	-	-	-	-	35.7	3 x 149.1	136 x 255	3,4	UHPC-27.2-440-3P
60	-	-	27.0	29.0	32.6	-	-	-	-	42.8				
50	-	-	23.2	25.0	28.1	-	-	-	-	36.9	3 x 154.0	136 x 255	3,5	UHPC-28.1-440-3P
60	-	-	27.9	30.0	33.7	-	-	-	-	44.2				
50	-	-	25.0	27.0	30.3	-	-	-	-	39.8	3 x 166.1	136 x 255	3,5	UHPC-30.3-440-3P
60	-	-	30.1	32.4	36.4	-	-	-	-	47.8				
50	-	-	30.0	32.3	36.3	-	-	-	-	47.6	3 x 198.9	136 x 255	3,3	UHPC-36.3-440-3P
60	-	-	36.0	38.7	43.6	-	-	-	-	57.2				

Capacitor rated voltage: **480 V**

FREQUENCY	POWER ON NETWORK VOLTAGE									CURRENT ON MAX. VOLTAGE	RATED CAPACITY	CAN SIZE in mm	WEIGHT	TYPE
	230V	280V	400V	415V	440V	480V	525V	600V	690V					
Hz	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	A	µF	d x h (h + t + 12)	kg	multicond- ...
50	-	-	2.5	2.7	3.0	3.6	-	-	-	4.3	3 x 16.6	70 x 215	1,2	UHPC-3.6-480-3P
60	-	-	3.0	3.2	3.6	4.3	-	-	-	5.2				
50	-	-	4.2	4.5	5.0	6.0	-	-	-	7.2	3 x 27.6	70 x 215	1,4	UHPC-6.0-480-3P
60	-	-	5.0	5.4	6.0	7.2	-	-	-	8.7				
50	-	-	4.9	5.3	6.0	7.1	-	-	-	8.5	3 x 32.7	85 x 215	1,8	UHPC-7.1-480-3P
60	-	-	5.9	6.4	7.2	8.5	-	-	-	10.2				
50	-	-	6.2	6.7	7.6	9.0	-	-	-	10.8	3 x 41.4	85 x 215	2,0	UHPC-9.0-480-3P
60	-	-	7.5	8.1	9.1	10.8	-	-	-	13.0				
50	-	-	7.5	8.1	9.1	10.8	-	-	-	13.0	3 x 49.7	100 x 215	2,3	UHPC-10.8-480-3P
60	-	-	9.0	9.7	10.9	13.0	-	-	-	15.6				
50	-	-	8.3	8.9	10.0	11.9	-	-	-	14.3	3 x 54.8	100 x 215	2,3	UHPC-11.9-480-3P
60	-	-	9.9	10.7	12.0	14.3	-	-	-	17.2				
50	-	-	8.7	9.3	10.5	12.5	-	-	-	15.0	3 x 57.6	100 x 215	2,5	UHPC-12.5-480-3P
60	-	-	10.4	11.2	12.6	15.0	-	-	-	18.0				
50	-	-	9.9	10.7	12.0	14.3	-	-	-	17.2	3 x 65.9	100 x 215	2,7	UHPC-14.3-480-3P
60	-	-	11.9	12.8	14.4	17.2	-	-	-	20.7				
50	-	-	11.6	12.5	14.0	16.7	-	-	-	20.1	3 x 76.9	116 x 255	2,7	UHPC-16.7-480-3P
60	-	-	13.9	15.0	16.8	20.0	-	-	-	24.1				
50	-	-	12.4	13.4	15.0	17.9	-	-	-	21.5	3 x 82.4	116 x 255	2,7	UHPC-17.9-480-3P
60	-	-	14.9	16.1	18.0	21.5	-	-	-	25.9				
50	-	-	16.5	17.8	20.0	23.8	-	-	-	28.6	3 x 109.6	116 x 255	2,5	UHPC-23.8-480-3P
60	-	-	19.8	21.3	24.0	28.6	-	-	-	34.4				
50	-	-	17.4	18.7	21.0	25.0	-	-	-	30.1	3 x 115.1	116 x 255	2,5	UHPC-25.0-480-3P
60	-	-	20.8	22.4	25.2	30.0	-	-	-	36.1				
50	-	-	20.7	22.3	25.0	29.8	-	-	-	35.8	3 x 137.2	136 x 255	3,5	UHPC-29.8-480-3P
60	-	-	24.8	26.7	30.0	35.8	-	-	-	43.1				

Table continued on next page.

and: Capacitor rated voltage: 480 V

FREQUENCY	POWER ON NETWORK VOLTAGE									CURRENT ON MAX. VOLTAGE	RATED CAPACITY	CAN SIZE in mm	WEIGHT	TYPE
	230V	280V	400V	415V	440V	480V	525V	600V	690V					
Hz	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	A	µF	d x h (h + t + 12)	kg	multicond- ...
50	-	-	23.2	25.0	28.1	33.4	-	-	-	40.2	3 x 153.8	136 x 255	3,5	UHPC-33.4-480-3P
60	-	-	27.8	30.0	33.7	40.1	-	-	-	48.2				
50	-	-	24.8	26.7	30.0	35.7	-	-	-	42.9	3 x 164.4	136 x 255	3,6	UHPC-35.7-480-3P
60	-	-	29.7	32.0	36.0	42.8	-	-	-	51.5				

Capacitor rated voltage: 525 V

FREQUENCY	POWER ON NETWORK VOLTAGE									CURRENT ON MAX. VOLTAGE	RATED CAPACITY	CAN SIZE in mm	WEIGHT	TYPE
	230V	280V	400V	415V	440V	480V	525V	600V	690V					
Hz	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	A	µF	d x h (h + t + 12)	kg	multicond- ...
50	-	-	2.3	2.5	2.8	3.3	4.0	-	-	4.4	3 x 15.4	70 x 215	1,3	UHPC-4.0-525-3P
60	-	-	2.8	3.0	3.4	4.0	4.8	-	-	5.3				
50	-	-	2.5	2.7	3.0	3.6	4.3	-	-	4.7	3 x 16.6	70 x 215	1,3	UHPC-4.3-525-3P
60	-	-	3.0	3.2	3.6	4.3	5.2	-	-	5.7				
50	-	-	2.9	3.1	3.5	4.2	5.0	-	-	5.5	3 x 19.2	70 x 215	1,3	UHPC-5.0-525-3P
60	-	-	3.5	3.7	4.2	5.0	6.0	-	-	6.6				
50	-	-	3.5	3.7	4.2	5.0	6.0	-	-	6.6	3 x 23.1	70 x 215	1,4	UHPC-6.0-525-3P
60	-	-	4.2	4.5	5.1	6.0	7.2	-	-	7.9				
50	-	-	4.4	4.7	5.3	6.3	7.5	-	-	8.2	3 x 28.9	85 x 215	1,8	UHPC-7.5-525-3P
60	-	-	5.2	5.6	6.3	7.5	9.0	-	-	9.9				
50	-	-	4.6	5.0	5.6	6.7	8.0	-	-	8.8	3 x 30.8	85 x 215	1,9	UHPC-8.0-525-3P
60	-	-	5.6	6.0	6.7	8.0	9.6	-	-	10.6				
50	-	-	5.0	5.4	6.0	7.2	8.6	-	-	9.5	3 x 33.1	85 x 215	1,9	UHPC-8.6-525-3P
60	-	-	6.0	6.4	7.2	8.6	10.3	-	-	11.3				
50	-	-	5.8	6.2	7.0	8.4	10.0	-	-	11.0	3 x 38.5	85 x 215	2,2	UHPC-10.0-525-3P
60	-	-	7.0	7.5	8.4	10.0	12.0	-	-	13.2				
50	-	-	7.3	7.8	8.8	10.4	12.5	-	-	13.7	3 x 48.1	100 x 215	2,5	UHPC-12.5-525-3P
60	-	-	8.7	9.4	10.5	12.5	15.0	-	-	16.5				
50	-	-	7.5	8.1	9.1	10.9	13.0	-	-	14.3	3 x 50.0	100 x 215	2,5	UHPC-13.0-525-3P
60	-	-	9.0	9.7	10.9	13.0	15.6	-	-	17.2				
50	-	-	8.7	9.4	10.5	12.5	15.0	-	-	16.5	3 x 57.7	100 x 215	2,6	UHPC-15.0-525-3P
60	-	-	10.4	11.2	12.6	15.0	18.0	-	-	19.8				
50	-	-	9.9	10.6	11.9	14.2	17.0	-	-	18.7	3 x 65.4	116 x 255	2,7	UHPC-17.0-525-3P
60	-	-	11.8	12.7	14.3	17.0	20.4	-	-	22.4				
50	-	-	10.5	11.2	12.6	15.0	18.0	-	-	19.8	3 x 69.3	116 x 255	2,7	UHPC-18.0-525-3P
60	-	-	12.5	13.5	15.2	18.1	21.6	-	-	23.8				
50	-	-	11.6	12.5	14.0	16.7	20.0	-	-	22.0	3 x 77.0	116 x 255	2,7	UHPC-20.0-525-3P
60	-	-	13.9	15.0	16.9	20.1	24.0	-	-	26.4				
50	-	-	12.2	13.1	14.7	17.5	21.0	-	-	23.1	3 x 80.8	116 x 255	2,6	UHPC-21.0-525-3P
60	-	-	14.6	15.7	17.7	21.1	25.2	-	-	27.7				
50	-	-	14.5	15.6	17.6	20.9	25.0	-	-	27.5	3 x 96.2	116 x 255	2,5	UHPC-25.0-525-3P
60	-	-	17.4	18.7	21.1	25.1	30.0	-	-	33.0				
50	-	-	17.4	18.7	21.1	25.1	30.0	-	-	33.0	3 x 115.5	136 x 255	3,5	UHPC-30.0-525-3P
60	-	-	20.9	22.5	25.3	30.1	36.0	-	-	39.6				
50	-	-	21.5	23.1	26.0	30.9	37.0	-	-	40.7	3 x 142.4	136 x 255	3,4	UHPC-37.0-525-3P
60	-	-	25.8	27.7	31.2	37.1	44.4	-	-	48.8				

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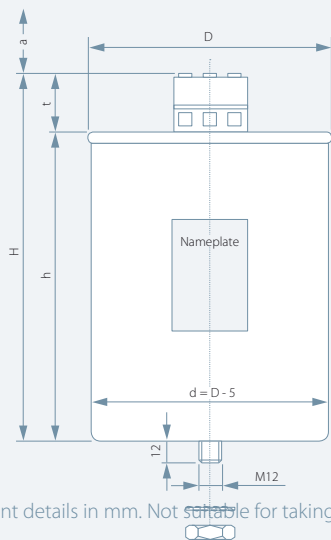
Capacitor rated voltage: **690 V** star-connected

FREQUENCY	POWER ON NETWORK VOLTAGE									CURRENT ON MAX. VOLTAGE	RATED CAPACITY	CAN SIZE in mm	WEIGHT	TYPE
	230V	280V	400V	415V	440V	480V	525V	600V	690V					
Hz	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	kvar	A	μF	d x h (h+t+12)	kg	multicond- ...
50	–	–	–	–	–	–	–	3.8	5.0	4.2	3 x 11.1	75 x 215	1,4	UHPC-5.0-690-3S
60	–	–	–	–	–	–	–	4.5	6.0	5.0				
50	–	–	–	–	–	–	–	7.6	10.0	8.4	3 x 22.3	85 x 215	2,6	UHPC-10.0-690-3S
60	–	–	–	–	–	–	–	9.1	12.0	10.0				
50	–	–	–	–	–	–	–	9.5	12.5	10.5	3 x 27.9	100 x 215	2,8	UHPC-12.5-690-3S
60	–	–	–	–	–	–	–	11.4	15.0	12.6				
50	–	–	–	–	–	–	–	11.3	15.0	12.6	3 x 33.4	116 x 255	2,2	UHPC-15.0-690-3S
60	–	–	–	–	–	–	–	13.6	18.0	15.1				
50	–	–	–	–	–	–	–	15.1	20.0	16.7	3 x 44.6	116 x 255	3,0	UHPC-20.0-690-3S
60	–	–	–	–	–	–	–	18.2	24.0	20.1				
50	–	–	–	–	–	–	–	18.9	25.0	20.9	3 x 55.7	136 x 255	3,6	UHPC-25.0-690-3S
60	–	–	–	–	–	–	–	22.7	30.0	25.1				

Performances and sizes deviating from the standard are available on request. All changes reserved.

Example for order: Power capacitor, 30.3 kvar to 440 V. The corresponding order detail is as follows: **Type multicond-UHPC-30.3-440-3P**

Construction diagram



All measurement details in mm. Not suitable for taking measurements.

General:

- Adapter box, safe to touch
- Expansion (a) maximum 12 mm
- Minimum clearance upwards 13 mm

Mounting:

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

Adapter box:

D 116 (16 mm²)

- Terminal screw M4
- Adapter box $t = 30 \text{ mm}$
- Tightening torque $T = 1.3 \text{ Nm}$

D 136 (25 mm²)

- Terminal screw M5
- Adapter box $t = 33 \text{ mm}$
- Tightening torque $T = 2.5 \text{ Nm}$

multicond Technical details

Power capacitors for reactive current compensation

Rated voltage Frequency	$U_n = 280, 440, 480, 525$ or 690 V 50/60 Hz
Maximum permissible operating voltage	$1.0 \times U_n$ lasting $1.1 \times U_n$ on 8 hours/day $1.15 \times U_n$ on 30 minutes/day $1.2 \times U_n$ 200 x 5 minutes $1.3 \times U_n$ on 200 x 1 minute
Maximum permissible operating current	$1,5 \times I_n$ bei 0 – 15,9 kvar $2,0 \times I_n$ bei > 15,9 kvar
Maximum inrush current	$400 \times I_n$
Capacity tolerance	+/- 5 %
Power dissipation	< 0.25 W/kvar, without discharge resistors
Voltage test (terminal – terminal)	$2,15 \times U_{nenn}$ (AC), 2 sec
Voltage test (terminal – housing)	≤ 600 V : 3000 V (AC), 10 sec > 600 V : 6000 V (AC), 10 sec
Life expectancy	> 150000 h
Temperature class (ambient temperature)	-40/60 °C
Maximum permissible temperature on housing	65 °C on housing surface
Cooling	Natural cooling
Permissible humidity	95 %
Maximum deployment altitude	4000 m above sea-level
Installation site, installation position	M12 threaded bolts on ground
Fixing	M12 Gewindebolzen am Boden
Safety features	→ Drying technology → Self-restoring → Internal overpressure disconnecter 3-phase
Housing	Aluminum
Schutzart	IP 20
Mode of protection	Polypropylene
Dielectric	High-purity gas, SF6-free, PCB-free
Terminal strips	Double-sided terminal strip, safe to touch
Discharge	Discharge resistors on outside of strip
Standards	IEC 60831-1 + 2, EN 60831-1 + 2, VDE 0560-46 + 47