

SABA KHAZEN




LV PFC CAPACITOR

Power Quality Solutions



PFC Capacitor Series Overview





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PFC capacitor series for power factor correction and detuned filter				
Parameter		PhaseCap Energy	PhaseCap Premium	PhaseCap Compact
Power	Q_R	5.0 ... 33.0 kvar	5.0 ... 33.0 kvar	5.0 ... 33.0 kvar
Rated voltage	V_R	230 ... 690 V AC	230 ... 800 V AC	230 ... 1000 V AC
Inrush current	I_S	up to $500 \cdot I_R$	up to $300 \cdot I_R$	up to $400 \cdot I_R$
Temperature class		-40/60: max. temp. +60 °C max. mean 24 h = +45 °C max. mean 1 year = +35 °C lowest temperature = -40 °C	-40/D: max. temp. +55 °C max. mean 24 h = +45 °C max. mean 1 year = +35 °C lowest temperature = -40 °C	-40/60: max. temp. +60 °C max. mean 24 h = +45 °C max. mean 1 year = +35 °C lowest temperature = -40 °C -40/C: max. temp. +50 °C max. mean 24 h = +40 °C max. mean 1 year = +30 °C lowest temperature = -40 °C
Losses:				
- Dielectric	Q_L	< 0.2 W/kvar	< 0.2 W/kvar	< 0.2 W/kvar
- Total¹⁾	Q_L	< 0.45 W/kvar	< 0.45 W/kvar	< 0.45 W/kvar
Max. humidity	H_{rel}	95%	95%	95%
Safety		B25674A*: triple (self-healing, 3-phase overpressure disconnecter, dry technology) B25675A*: dual (self-healing, 3-phase overpressure disconnecter)	triple (self-healing, overpressure disconnecter, dry technology)	dual (self-healing, 3-phase overpressure disconnecter)
Impregnation		B25674A*: inert gas B25675A*: semi-dry biodegradable resin	inert gas	semi-dry biodegradable resin
Mean life expectancy	$t_{LD (co)}$	B25674A*: up to 180 000 h (temp. class -40/D) up to 160 000 h (temp. class -40/60) B25675A*: up to 200 000 h (temp. class -40/D) up to 180 000 h (temp. class -40/60)	up to 180 000 h (temp. class -40/C) up to 130 000 h (temp. class -40/D)	up to 200 000 h (temp. class -40/C) up to 150 000 h (temp. class -40/60)
Connection		optimized isolated capacitor safety terminals, IP20, (VDE 0106 part 100), for current and connection cable details and terminal type association see terminal and capacitor type list	optimized capacitor safety terminal (IP20), (VDE 0106 part 100), for current and connection cable details and terminal type/capacitor type association see terminal drawings and capacitor type list	optimized capacitor safety terminal (IP20), (VDE 0106 part 100), for current and connection cable details and terminal type/capacitor type association see terminal drawings and capacitor type list
Cooling		natural or forced	natural or forced	natural or forced
Case/shape		aluminum/cylindrical	aluminum/cylindrical	aluminum/cylindrical
Enclosure		IP20, indoor mounting, optionally with terminal cap for IP54 (for diameter 116 and 136 mm)	IP20, indoor mounting, optionally with terminal cap for IP54 (for diameter 116 and 136 mm)	IP20, indoor mounting, optionally with terminal cap for IP54 (for diameter 116 and 136 mm)
Standard		IEC 60831-1+2, Edition 3.0 (2014)	IEC 60831-1+2, UL 810 5 th edition, cUL file # E238746, GOST	IEC 60831-1+2, EN 60831-1+2, UL 810 5 th edition, cUL file # E238746, GOST
Ordering code		Gas filled: B25674A* Resin filled: B25675A*	B25667C*	B25673A* B25673S*
				

¹⁾ Without discharge resistor

PFC Capacitor Series Overview

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PhaseCap HD	DeltaCap	PhiCap
40.0 ... 60.0 kvar 400 ... 525 V AC up to 300 · I _R	0.5 ... 33.7 kvar 230 ... 525 V AC up to 200 · I _R	0.5 ... 30.0 kvar 230 ... 525 V AC up to 200 · I _R
-40/D: max. temp. +55 °C max. mean 24 h = +45 °C max. mean 1 year = +35 °C lowest temperature = -40 °C	-40/D: max. temp. +55 °C max. mean 24 h = +45 °C max. mean 1 year = +35 °C lowest temperature = -40 °C -40/C: max. temp. +50 °C max. mean 24 h = +40 °C max. mean 1 year = +30 °C lowest temperature = -40 °C	-40/D: max. temp. +55 °C max. mean 24 h = +45 °C max. mean 1 year = +35 °C lowest temperature = -40 °C
< 0.2 W/kvar < 0.45 W/kvar 95%	< 0.2 W/kvar < 0.45 W/kvar 95%	< 0.2 W/kvar < 0.45 W/kvar 95%
triple (self-healing, overpressure disconnecter, dry technology)	self-healing technology – overpressure disconnecter – isolated terminal (IP20) for B32304 series	dual (self-healing, overpressure disconnecter)
inert gas	biodegradable soft resin, semi-dry	biodegradable soft resin, semi-dry
up to 180 000 h (temp. class -40/C) up to 130 000 h (temp. class -40/D)	up to 150 000 h (temp. class -40/C) up to 115 000 h (temp. class -40/D)	up to 135 000 h (temp. class -40/C) up to 100 000 h (temp. class -40/D)
SIGUT™, block-type safety terminal	B32300*/B32303*: fast-on terminals B32301*/B32304: screw terminals, max. 25 mm ² cable cross-section	B32340 / B32343 series: fast-on terminals B32344 series: optimized capacitor safety terminal, block-type
natural or forced aluminum/cylindrical IP20	natural or forced aluminum/cylindrical P00 for B32300* and B32303* IP20 for B32301 and B32304*	natural or forced aluminum/cylindrical IP00 for B32340/B32343 series; optionally IP54 for B32344 series with terminal cap
IEC 60831-1+2, UL 810 5 th edition, GOST	IEC 60831-1+2, EN60831-1+2, VDE approval 	IEC 60831-1+2, UL 810 5 th edition cUL file # E106388 CSA file # C22.2 N°190 MC # 236094, (up to ø 85 mm), GOST
B25669*	B32300*, B32301* B32303* B32304*	B32340C* B32343C* B32344E*
		

PhaseCap Premium PFC Capacitors

Gas-impregnated • Dry type • Concentric winding • Wavy cut • Triple safety system

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General

PhaseCap capacitors in cylindrical aluminum cases have been designed for power factor correction in low-voltage applications.

Loads like motors and transformers consume active power as well as reactive power.

Generators, supply cables and other electrical distribution equipment, in turn, should be relieved of reactive power.

The MKK (metalized plastic compact) AC series is intended to increase packing density per bank and cut component costs.

Improved thermal response and simplified installation are advantages of the cylindrical aluminum case.



Applications

- Automatic PFC equipment, capacitor banks
- Individual fixed PFC (e.g. motors, transformers, lighting)
- Group fixed PFC
- Tuned and detuned capacitor banks
- Dynamic PFC

Features

- Compact design in cylindrical aluminum can with stud
- Concentric winding
- MKK-technology with wavy cut and heavy edge
- Voltage range 230 V ... 800 V
- Output range 5.0 kvar ... 33 kvar

Electrical

- Long life expectancy
- High pulse current withstand capability

Mechanical and maintenance

- Reduced mounting costs
- Maintenance-free
- Highest packing density thanks to compact dimensions

Safety

- Self-healing
- Overpressure disconnecter ضد انفجار
- Shock hazard protected terminals
- Longterm approved
- cUL approval
- Ceramic discharge resistor pre-mounted

Environmental

- Dry design, inert gas
- No oil leakage

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Technical data and limit values		
Standards IEC 60831-1+2, EN 60831-1+2, UL 810 5 th edition		استاندارد ساخت
Overvoltage	V_{max}	$V_R + 10\%$ (up to 8 h daily) / $V_R + 15\%$ (up to 30 min daily) / $V_R + 20\%$ (up to 5 min daily) / $V_R + 30\%$ (up to 1 min daily)
Overcurrent	I_{max}	up to $1.6 \cdot I_R$ including combined effects of harmonics, overvoltages and capacitance tolerance
Inrush current	I_S	up to $300 \cdot I_R$
Losses: – Dielectric – Total*		< 0.2 W/kvar < 0.45 W/kvar
Rated frequency	f	50/60 Hz
Capacitance tolerance		–5% / +10%
Test voltage, terminal / terminal	V_{TT}	$2.15 \cdot V_{R1}$, AC, 2 s
Test voltage, terminal / case	V_{TC}	up to $V_R \leq 660$ V: 3000 V AC, 10 s; above $V_R = 660$ V: 6000 V AC, 10 s
Mean life expectancy	$t_{LD(Co)}$	up to 180 000 h (temp. class –40/C); up to 130 000 h (temp. class –40/D)
Ambient temperature		–40/D; max. temp. +55 °C; max. mean 24 h = +45 °C; max. mean 1 year = +35 °C; lowest temperature = –40 °C
Cooling		natural or forced
Humidity	H_{rel}	max. 95%
Altitude		max. 4000 m above sea level
Mounting position		upright / ho rizontal خصوصیت بسیار مهم خازن گازی
Mounting and grounding		threaded M12 stud on bottom of case
Safety		dry technology, overpressure disconnecter, self-healing, maximum allowed fault current 10 000 A in accordance with UL 810 standard
Discharge device		ceramic discharge resistor pre-mounted up to 660 V; external discharge module for > 660 V
Case		extruded aluminum can
Enclosure		IP20, indoor mounting (optionally with terminal cap for IP54)
Dielectric		polypropylene film
Impregnation		inert gas, Nitrogen (N ₂)
Terminals		optimized capacitor safety terminal with electric shock protection (IP20), (VDE 0106 part 100), max. 25 mm ² cable cross-section, max. current 80 A
Certification		cUL file # E238746, GOST
Number of switching operations		max. 7500 switchings per year

* Without discharge resistor

PhaseCap Premium PFC Capacitors

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Three-phase capacitors									
Type	50 Hz		60 Hz		C _R μF	d x h mm	Weight kg	Ordering code	Packing unit*
	Output kvar	I _R A	Output kvar	I _R A					
Rated voltage 230 V AC, 50 / 60 Hz, delta connection									
MKK230-D-5.0-01	5.0	13	6.0	16	3 · 100	116 x 164	1.3	B25667C3297A375	6
MKK230-D-7.5-01	7.5	19	9.0	23	3 · 150	116 x 164	1.3	B25667C2457A375	6
MKK230-D-10.4-01	10.4	26	12.5	31	3 · 209	116 x 164	1.5	B25667C2627A375	6
MKK230-D-12.5-01 ³⁾	12.5	31	15.0	37	3 · 251	116 x 200	1.7	B25667C2757A375	4
Rated voltage 400 V AC, 50 / 60 Hz, delta connection									
MKK400-D-5.0-01	5.0	7	6.0	9	3 · 32	116 x 164	1.1	B25667C5966A375	6
MKK400-D-7.5-01	7.5	11	9.0	13	3 · 50	116 x 164	1.2	B25667C3147A375	6
MKK400-D-10.0-01	10.0	14	12.0	17	3 · 64	116 x 164	1.2	B25667C4197A375	6
MKK400-D-12.5-01	12.5	18	15.0	22	3 · 83	116 x 164	1.1	B25667C3247A375	6
MKK400-D-15.0-01	15.0	22	18.0	26	3 · 100	116 x 164	1.3	B25667C3297A375	6
MKK400-D-20.0-01	20.0	30	24.0	36	3 · 133	116 x 164	1.5	B25667C3397A375	6
MKK400-D-25.0-01	25.0	36	–	–	3 · 165	116 x 200	1.8	B25667C3497A375	4
Rated voltage 415 V AC, 50 / 60 Hz, delta connection									
MKK415-D-5.0-01	5.0	7	6.0	8	3 · 32	116 x 164	1.1	B25667C5966A375	6
MKK415-D-6.2-01	6.2	8	7.5	10	3 · 39	116 x 164	1.2	B25667C5127A375	6
MKK415-D-10.4-01	10.4	15	12.5	17	3 · 64	116 x 164	1.2	B25667C4197A375	6
MKK415-D-12.5-01	12.5	17	15.0	21	3 · 77	116 x 164	1.3	B25667C4237A375	6
MKK415-D-15.0-01	15.0	21	18.0	25	3 · 93	116 x 164	1.4	B25667C4287A375	6
MKK415-D-16.7-01	16.7	23	20.0	28	3 · 103	116 x 164	1.5	B25667C4307A375	6
MKK415-D-20.0-01	20.8	29	25.0 ²⁾	35 ²⁾	3 · 128	116 x 200	1.7	B25667C4387A375	4
MKK415-D-25.0-01	25.0	35	–	–	3 · 154	136 x 200	2.1	B25667C4467A375	4
Rated voltage 440 V AC, 50 / 60 Hz, delta connection									
MKK440-D-5.0-01	5.0	7	6.0	8	3 · 27	116 x 164	1.2	B25667C4826A375	6
MKK440-D-7.5-01	7.5	10	9.0	12	3 · 41	116 x 164	1.2	B25667C4127A375	6
MKK440-D-10.4-01	10.4	14	12.5	16	3 · 57	116 x 164	1.3	B25667C4177A375	6
MKK440-D-12.5-01	12.5	16	15.0	20	3 · 69	116 x 164	1.4	B25667C4207A375	6
MKK440-D-14.2-01	14.2	19	17.0	22	3 · 77	116 x 164	1.3	B25667C4237A375	6
MKK440-D-15.0-01	15.0	20	18.0	24	3 · 83	116 x 164	1.4	B25667C4247A375	6
MKK440-D-16.7-01	16.7	22	20.0	26	3 · 92	116 x 200	1.8	B25667C4277A375	4
MKK440-D-18.8-01	18.8	25	22.6	30	3 · 103	116 x 164	1.5	B25667C4307A375	6
MKK440-D-20.0-01	20.0	26	24.0	31	3 · 111	116 x 200	1.7	B25667C4337A375	4
MKK440-D-25.0-01	25.0	33	30.0	39	3 · 137	136 x 200	2.0	B25667C4417A375	4
MKK440-D-28.1-01 ³⁾	28.1	37	–	–	3 · 154	136 x 200	2.1	B25667C4467A375	4
(MKK440-D-30.0-01)³⁾	30.0¹⁾	39¹⁾	–	–	3 · 164	136 x 200	2.4	B25667C4497A375	4
MKK440-D-33.0-01 ³⁾	33.0 ¹⁾	43 ¹⁾	–	–	3 · 181	136 x 200	2.5	B25667C4547A375	4

Types for voltages 220 V, 240 V, 600 V, 660 V and other kvar-outputs are available upon request.

¹⁾ Temperature class deviation –40/C max. +50 °C

²⁾ Temperature class deviation –40/B max. +45 °C

³⁾ Discharge time ≤ 75 V in 90 s

* Packing units for capacitors equal minimum order quantity.
Orders will be rounded up to packing unit or multiple thereof.

PhaseCap Premium PFC Capacitors

Gas-impregnated • Dry type • Concentric winding • Wavy cut • Triple safety system

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Three-phase capacitors

Type	50 Hz		60 Hz		C _R μF	d x h mm	Weight kg	Ordering code	Packing unit*
	Output kvar	I _R A	Output kvar	I _R A					
Rated voltage 480 V AC, 50/60 Hz, delta connection									
MKK480-D-6.25-01	6.25	8	7.5	9	3 · 29	116 x 164	1.2	B25667C4866A375	6
MKK480-D-8.3-01	8.3	10	10.0	12	3 · 39	116 x 164	1.2	B25667C5127A375	6
MKK480-D-10.4-01	10.4	12	12.5	14	3 · 48	116 x 164	1.3	B25667C5147A375	6
MKK480-D-12.5-01	12.5	15	15.0	18	3 · 58	116 x 164	1.5	B25667C5177A375	6
MKK480-D-15.0-01	15.0	18	18.0	22	3 · 69	116 x 164	1.4	B25667C4207A375	6
MKK480-D-16.7-01	16.7	20	20.0	24	3 · 77	116 x 200	1.8	B25667C5237A375	4
MKK480-D-20.0-01	20.0	24	24.0	29	3 · 92	116 x 200	1.8	B25667C4277A375	4
MKK480-D-25.0-01	25.0	30	30.0	36	3 · 115	136 x 200	2.2	B25667C4347A375	4
MKK480-D-30.0-01 ²⁾	30.0 ¹⁾	36 ¹⁾	–	–	3 · 138	136 x 200	2.4	B25667C4417A365	4
Rated voltage 525 V AC, 50/60 Hz, delta connection									
MKK525-D-8.3-01	8.3	9	10.0	11	3 · 32	116 x 164	1.1	B25667C5966A375	6
MKK525-D-10.0-01	10.0	11	12.0	13	3 · 39	116 x 164	1.2	B25667C5127A375	6
MKK525-D-12.5-01	12.5	14	15.0	17	3 · 48	116 x 164	1.3	B25667C5147A375	6
MKK525-D-15.0-01	15.0	17	18.0	20	3 · 58	116 x 164	1.5	B25667C5177A375	6
MKK525-D-16.7-01	16.7	18	20.0	21	3 · 64	116 x 164	1.6	B25667C5197A375	6
MKK525-D-20.0-01	20.0	22	24.0	26	3 · 77	116 x 200	1.8	B25667C5237A375	4
MKK525-D-25.0-01	25.0	28	30.0	33	3 · 96	136 x 200	2.3	B25667C5287A375	4
MKK525-D-30.0-01 ²⁾	30.0 ¹⁾	33 ¹⁾	–	–	3 · 115	136 x 200	2.4	B25667C5347A375	4
Rated voltage 570 V AC, 50/60 Hz, delta connection									
MKK570-D-27.5-01	27.5	27	33	32.4	3 · 90	136 x 200	2.5	B25667C5277A375	4
Rated voltage 690 V AC, 50/60 Hz, delta connection									
MKK690-D-5.0-01	5.0	4.2	6	5.0	3 · 11	116 x 164	1.3	B25667C6336A375	6
MKK690-D-10.0-01	10.0	8.4	12	10.1	3 · 23	116 x 164	1.4	B25667C6676A375	6
MKK690-D-12.5-01	12.5	10.5	15	12.6	3 · 28	116 x 164	1.5	B25667C6836A375	6
MKK690-D-15.0-01	15.0	12.6	18	15.1	3 · 34	116 x 164	1.5	B25667C6107A375	6
MKK690-D-20.8-01	20.8	17.5	25	21.0	3 · 47	136 x 200	2.0	B25667C6137A375	4
MKK690-D-25.0-01	25.0	21.0	30	25.1	3 · 56	136 x 200	2.2	B25667C6167A375	4
Rated voltage 765 V AC, 50/60 Hz, delta connection									
MKK765-D-30.0-01	30	23	36	28	3 · 55	136 x 200	2.4	B25667C7167A375	4
Rated voltage 800 V AC, 50/60 Hz, delta connection									
MKK800-D-5.0-01	5.0	3.6	6	4.3	3 · 8	116 x 164	1.2	B25667C7246A375	6
MKK800-D-7.5-01	7.5	5.4	9.0	6.5	3 · 12.4	121 x 164	1.2	B25667C7376A375	6
MKK800-D-10.0-01	10.0	7.2	12	8.7	3 · 17	116 x 164	1.3	B25667C7496A375	6
MKK800-D-12.5-01	12.5	9.0	15	11.0	3 · 21	116 x 164	1.4	B25667C7626A375	6
MKK800-D-15.0-01	15.0	11.0	18	13.0	3 · 25	116 x 164	1.5	B25667C7746A375	6
MKK800-D-20.0-01	20.0	14.5	24	17.3	3 · 33	136 x 200	2.0	B25667C7996A375	4
MKK800-D-25.0-01	25.0	18.0	30	22.0	3 · 41	136 x 200	2.3	B25667C7127A375	4
MKK800-D-28.0-01	28.0	20.0	33	24.0	3 · 46	136 x 200	2.4	B25667C7137A375	4

Types for voltages 220 V, 240 V, 600 V, 660 V and other kvar-outputs are available upon request.

¹⁾ Temperature class deviation –40/C max. +50 °C

²⁾ Temperature class deviation –40/B max. +45 °C

³⁾ Discharge time ≤ 75 V in 90 s

* Packing units for capacitors equal minimum order quantity.

Orders will be rounded up to packing unit or multiple thereof.

PhaseCap Premium PFC Capacitors

Gas-impregnated • Dry type • Concentric winding • Wavy cut • Triple safety system

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Single-phase capacitors									
Type	50 Hz		60 Hz		C _R μF	d x h mm	Weight kg	Ordering code	Packing unit*
	Output kvar	I _R A	Output kvar	I _R A					
Rated voltage 230 V AC, 50 / 60 Hz									
MKK230-I-5.0-01	5.2	23	6.2	28	313	116 x 164	1.1	B25667C2317A175	6
MKK230-I-6.6-01	6.6	29	7.9	34	397	116 x 164	1.4	B25667C2397A175	6
MKK230-I-7.5-01	7.5	33	9.0	40	457	116 x 164	1.3	B25667C2457A175	6
MKK230-I-8.3-01	8.3	36	10.0	43	502	116 x 164	1.3	B25667C2507A175	6
MKK230-I-9.1-01 ¹⁾	9.1	38	–	–	548	116 x 164	1.4	B25667C2557A175	6
Rated voltage 400 V AC, 50 / 60 Hz									
MKK400-I-10.4-01	10.4	26	12.5	31	207	116 x 164	1.2	B25667C3207A175	6
MKK400-I-12.5-01	12.5	31	15.0	37	249	116 x 164	1.3	B25667C3247A175	6
Rated voltage 440 V AC, 50 / 60 Hz									
MKK440-I-6.9-01	6.9	16	8.3	19	116	116 x 164	1.3	B25667C5117A175	6
MKK440-I-8.3-01	8.3	19	10.0	23	144	116 x 164	1.5	B25667C5147A175	6
Rated voltage 525 V AC, 50 / 60 Hz									
MKK525-I-10.0-01	10.0	19	12.0	23	116	116 x 164	1.3	B25667C5117A175	6
MKK525-I-12.5-01	12.5	24	15.0	29	144	116 x 164	1.5	B25667C5147A175	6
MKK525-I-15.0-01 ¹⁾	15.0	29	18.0	35	173	116 x 200	1.7	B25667C5177A175	4
MKK525-I-18.6-01 ¹⁾	18.6	36	22.3	43	215	136 x 200	2.0	B25667C5217A175	4
Plastic protective case for capacitor²⁾									
Capacitor d x h mm	Protection class	Cable diameter outside mm	Dimensions				Ordering code		
			l ₁ mm	l ₂ mm	l ₃ mm	h mm			
116 x 164	IP54	9–13	134	110	177	243	B44066X9122		
116 x 200 / 136 x 200	IP54	10–18	154.5	130.5	186	280	B44066X9142		
Plastic protective terminal cover³⁾									
Capacitor d x h mm	For cable gland	Cable diameter outside mm	Dimensions		Ordering code				
			Ø d ₁ mm	Ø d ₂ mm					
116 x 164	PG 13.5	9–13	116	125	B44066K0135A000				
116 x 200	PG 16	10–14	116	125	B44066K0160A000				
136 x 200	PG 21	14–18	137	145	B44066K0210A000				

Types for voltages 220 V, 240 V, 600 V, 660 V and other kvar-outputs are available upon request.

¹⁾ Discharge time ≤ 75 V in 90 s

²⁾ Applicable up to 16 mm² cable cross section

³⁾ Note: The new terminal covers can be used for B25667B series; the formerly available terminal covers do not fit for the B25667C series

* Packing units for capacitors equal minimum order quantity. Orders will be rounded up to packing unit or multiple thereof.

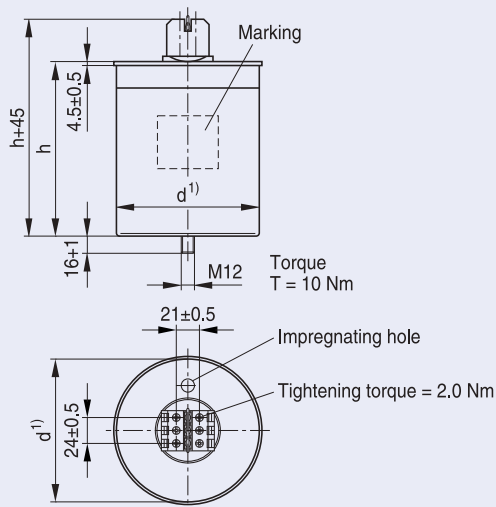
PhaseCap Premium PFC Capacitors

Gas-impregnated • Dry type • Concentric winding • Wavy cut • Triple safety system

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Dimensional drawings

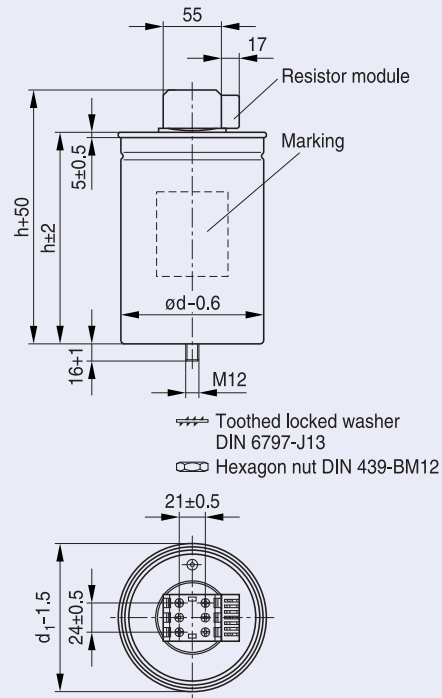
Capacitor up to 660 V AC



¹⁾ Seaming adds 5.5 mm in diameter

KLK1841-1-E

Capacitor > 660 V AC



d_1 : seaming adds 5.5 mm in diameter

KLK1863-W-E

Protective terminal cover IP54



Protective case for capacitor



Ceramic discharge resistors

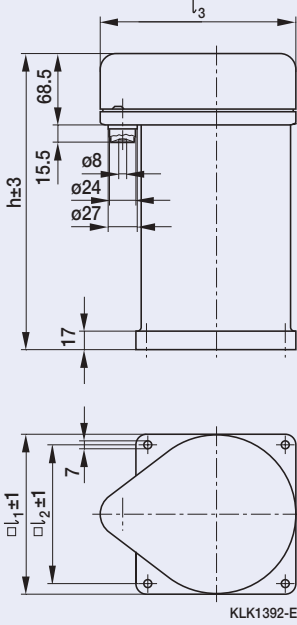






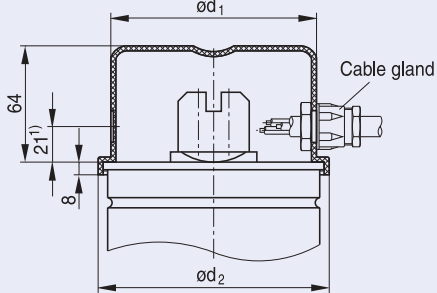

Pre-mounted for series B25667, B25673 and B32344; available as spare parts upon request



PhaseCap Premium PFC Capacitors

Gas-impregnated • Dry type • Concentric winding • Wavy cut • Triple safety system

SABA KHAZEN

Dimensional drawings	
Protective case for capacitor	Mounting / Protective cover for terminal
 <p>KLK1392-E</p>	<p> Toothed washer J 12.5 DIN 6797  Hex nut BM12 DIN 439  or nut C61010-A415-C15  18   SW 17  KLK1394-V </p>  <p> 1) Perforation for second cable gland  </p> <p>KLK1837-8-E</p>

PhaseCap HD PFC Capacitors

High density type • Up to 60 kvar • Gas-impregnated • Wavy cut • Triple safety system

SABA KHAZEN

General

The PhaseCap HD series is a follow-on development of the MKK AC series, covering the power range above 40 through 60 kvar with just one capacitor in a cylindrical aluminum case.

The PhaseCap HD is especially intended for industrial applications with demands for long life, constant capacitance and high inrush current withstand capability up to $300 \cdot I_R$.

Such applications require typical power steps of 25 or 50 kvar switched by a PFC controller via each capacitor contactor.

This MKK AC series was developed to increase packing density per bank and cut component costs.



Applications

- Automatic PFC equipment, capacitor banks
- Individual fixed PFC (e.g. motors, transformers, lighting)
- Group fixed PFC
- Tuned and detuned capacitor banks
- Dynamic PFC
- PFC systems with space constraints

Features

- Compact design in cylindrical aluminum can with stud
- Stacked winding
- MKK-technology with wavy cut and heavy edge
- Voltage range 400 V ... 525 V
- Output range 40 kvar (50 Hz) ... 60 kvar (60 Hz)

Electrical

- Low losses
- High pulse current withstand capability (up to $300 \cdot I_R$)

Mechanical and maintenance

- Reduced mounting costs
- Maintenance-free

Safety

- Self-healing
- Overpressure disconnecter
- Shock hazard protected terminals
- Long-term approved
- Pre-mounted discharge resistor module

Environmental

- Dry design, inert gas
- No oil leakage

PhaseCap HD PFC Capacitors

High density type • Up to 60 kvar • Gas-impregnated • Wavy cut • Triple safety system

SABA KHAZEN

Technical data and limit values		
Standards IEC 60831-1+2, EN 60831-1+2, UL 810 5 th edition		
Overvoltage	V_{max}	$V_R + 10\%$ (up to 8 h daily) / $V_R + 15\%$ (up to 30 min daily) / $V_R + 20\%$ (up to 5 min daily) / $V_R + 30\%$ (up to 1 min daily)
Overcurrent	I_{max}	up to $1.5 \cdot I_R$ including combined effects of harmonics, overvoltages and capacitance tolerance
Inrush current	I_s	up to $300 \cdot I_R$
Losses: – Dielectric – Total*		< 0.2 W/kvar < 0.45 W/kvar
Rated frequency	f	50/60 Hz
Capacitance tolerance		–5% / +10%
Test voltage, terminal / terminal	V_{TT}	$2.15 \cdot V_{R1}$, AC, 2 s
Test voltage, terminal / case	V_{TC}	up to $V_R \leq 660$ V: 3000 V AC, 10 s
Mean life expectancy	$t_{LD(Co)}$	up to 180 000 h (temperature class –40/C) up to 130 000 h (temperature class –40/D)
Ambient temperature		–40/D; max. temp. +55 °C; max. mean 24 h = +45 °C; max. mean 1 year = +35 °C; lowest temperature = –40 °C
Cooling		natural or forced
Humidity	H_{rel}	max. 95%
Altitude		max. 4000 m above sea level
Mounting position		upright
Mounting and grounding		threaded M12 stud on bottom of case
Safety		dry technology, overpressure disconnecter, self-healing, maximum allowed fault current 10 000 A in accordance with UL 810 standard
Discharge device		pre-mounted discharge module
Case		extruded aluminum can
Enclosure		IP20, indoor mounting
Dielectric		polypropylene film
Impregnation		inert gas, Nitrogen (N ₂)
Terminals		optimized capacitor safety terminal with electric shock protection (IP20), (VDE 0106 part 100), max. 35 mm ² cable cross section, max. current 130 A
Number of switching operations		max. 5000 switchings per year according to IEC 60831-1+2

* Without discharge resistor

PhaseCap HD PFC Capacitors

High density type • Up to 60 kvar • Gas-impregnated • Wavy cut • Triple safety system

SABA KHAZEN

Three-phase capacitors

Type	50 Hz		60 Hz		C _R μF	d x h mm	Weight kg	Ordering code	Packing unit ²⁾
	Output kvar	I _R A	Output kvar	I _R A					
Rated voltage 400 V AC, 50 / 60 Hz, delta connection									
MKK400-D-40.0-21	40.0	58	48.0	69	3 · 265	136 x 317	4.4	B25669A3796J375	2
MKK400-D-50.0-21	50.0	72	60.0 ¹⁾	87 ¹⁾	3 · 332	136 x 355	4.7	B25669A3996J375	2
(Suitable also for 415 V with 7.6% higher output)									
Rated voltage 440 V AC, 50 / 60 Hz, delta connection									
MKK440-D-40.0-21	40.0	52	48.0	63	3 · 219	136 x 317	4.4	B25669A4657J375	2
MKK440-D-50.0-21	50.0	66	60.0 ¹⁾	79 ¹⁾	3 · 274	136 x 355	4.7	B25669A4827J375	2
MKK440-D-56.0-21	56.0	74	–	–	3 · 307	136 x 355	4.7	B25669B4927J375	2
Rated voltage 525 V AC, 50 / 60 Hz, delta connection									
MKK525-D-40.0-21	40.0	44	48.0	53	3 · 154	136 x 355	4.7	B25669A5467J375	2

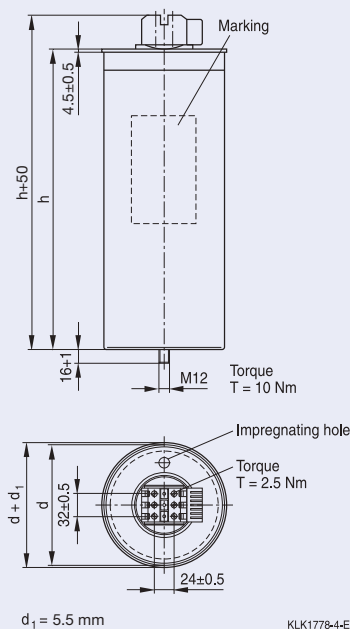
Customized products available upon request.

¹⁾ Temperature class deviation –40/B max. +45 °C

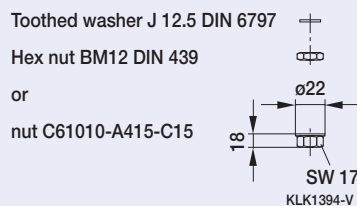
²⁾ Packing units for capacitors equal minimum order quantity. Orders will be rounded up to packing unit or multiple thereof.

Dimensional drawings

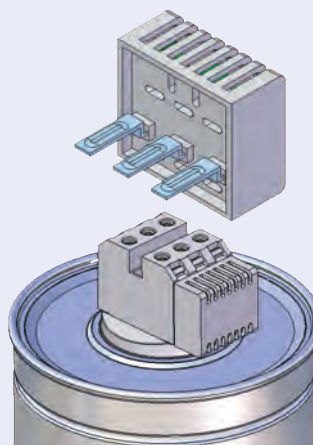
Capacitor



Mounting



Discharge resistor



PhiCap PFC Capacitors

Biodegradable soft resin impregnated • Stacked winding • Dual safety system

SABA KHAZEN

General

PhiCap capacitors are a tried and tested series of MKP (metalized polypropylene) capacitors from EPCOS which have been used for PFC applications for more than 15 years.

The power range varies from 0.5 to 30.0 kvar and 0.7 to 6.0 kvar per single capacitor can, depending on a three-phase or single-phase capacitor design.

The PhiCap capacitor is especially intended for power factor correction in industrial applications.

The capacitors are manufactured using metalized polypropylene film as the dielectric and housed in a cylindrical aluminum case.



Applications

- Power Factor Correction (PFC)
- Automatic capacitor banks
- Fixed PFC applications, e.g. motor compensation
- Detuned PFC systems
- Dynamic PFC systems

Features

- Compact design in cylindrical aluminum can with stud
- Stacked winding
- MKP technology
- Voltage range 230 ... 525 V
- Output range 0.5 ... 30 kvar

Electrical

- Up to 30 kvar per case for three-phase applications
- Up to 6 kvar per case for single-phase applications
- Long life expectancy of up to 135 000 hours
- High pulse current withstand capability (up to $200 \cdot I_R$)

Mechanical and maintenance

- Reduced mounting costs, easy installation and connection
- Low weight and compact volume
- Maintenance-free

Safety

- Self-healing
- Overpressure disconnecter
- Shock hazard protected optimized capacitor safety terminal for B32344 series

PhiCap PFC Capacitors

Biodegradable soft resin impregnated • Stacked winding • Dual safety system

SABA KHAZEN

Technical data and limit values		
Standards IEC 60831-1+2, IS: 13340/41, GOST		
Overvoltage	V_{max}	$V_R + 10\%$ (up to 8 h daily) / $V_R + 15\%$ (up to 30 min daily) / $V_R + 20\%$ (up to 5 min daily) / $V_R + 30\%$ (up to 1 min daily)
Overcurrent	I_{max}	up to $1.5 \cdot I_R$ including combined effects of harmonics, overvoltages and capacitance
Inrush current	I_S	up to $200 \cdot I_R$
Losses: – Dielectric – Total*		< 0.2 W/kvar < 0.45 W/kvar
Rated frequency	f	50/60 Hz
Capacitance tolerance		–5% / 10%
Test voltage, terminal / terminal	V_{TT}	$2.15 \cdot V_R$, AC, 2 s
Test voltage, terminal / case	V_{TC}	3000 V AC, 10 s
Mean life expectancy	$t_{LD(Co)}$	up to 135 000 h (temperature class –40/C) up to 100 000 h (temperature class –40/D)
Ambient temperature		–40/D; max. temp. +55 °C; max. mean 24 h = +45 °C; max. mean 1 year = +35 °C; lowest temperature = –40 °C
Cooling		natural or forced
Humidity	H_{rel}	max. 95%
Altitude		max. 4000 m above sea level
Mounting position		upright
Mounting and grounding		threaded M12 (10 Nm) for case size diam. > 53 mm M8 (4 Nm) for case size diam. ≤ 53 mm
Safety		self-healing technology, overpressure disconnecter, maximum allowed fault current 10 000 A in accordance with UL 810 standard
Discharge device		discharge resistor included; pre-mounted for B32344 series
Case		extruded aluminum can
Enclosure		IP00 for B32340/B32343, indoor mounting (IP54 for B32344 with plastic terminal cap; for other series please refer to page 35)
Dielectric		polypropylene film
Impregnation		biodegradable soft resin, semi-dry
Terminals		optimized capacitor safety terminals for B32344 series, max. current 50 A, max. 16 mm ² cable cross section, fast-on terminals for B32340 and B32343 series
Number of switching operations		max. 5000 switchings per year according to IEC 60831-1+2

* Without discharge resistor

PhiCap PFC Capacitors

Biodegradable soft resin impregnated • Stacked winding • Dual safety system

SABA KHAZEN

Three-phase capacitors

Type	50 Hz		60 Hz		C _R μF	d x h mm	Weight kg	Ordering code	Packing unit*
	Output kvar	I _R A	Output kvar	I _R A					
Rated voltage 230 V AC, 50/60 Hz, delta connection									
MKP230-D-0.5	0.5	1.3	0.6	1.6	3 · 10	53 x 114	0.3	B32343C2002A530	12
MKP230-D-0.7	0.7	1.9	0.9	2.3	3 · 15	53 x 114	0.3	B32343C2002A730	12
MKP230-D-1.0	1.0	2.5	1.2	3.0	3 · 20	63.5 x 129	0.3	B32343C2012A030	12
MKP230-D-1.5	1.5	3.8	1.8	4.6	3 · 30	63.5 x 129	0.4	B32343C2012A530	12
MKP230-D-2.0	2.0	5.0	2.4	6.0	3 · 42	75 x 138	0.4	B32344E2022A030	6
MKP230-D-2.5	2.5	6.3	3.0	7.5	3 · 50	75 x 138	0.4	B32344E2022A530	6
MKP230-D-5.0	5.0	12.6	6.0	15.1	3 · 100	75 x 198	0.6	B32344E2052A030	6
MKP230-D-7.5	7.5	18.8	9.0	22.6	3 · 150	85 x 198	0.8	B32344E2072A530	4
MKP230-D-10.0	10.0	25.1	12.0	30.2	3 · 200	85 x 273	1.2	B32344E2102A030	4
MKP230-D-12.5	12.5	31.4	15.0	37.7	3 · 250	85 x 348	1.5	B32344E2122A530	4
MKP230-D-15.0	15.0	37.7	-	-	3 · 300	85 x 348	1.5	B32344E2152A030	4
Rated voltage 400 V AC, 50/60 Hz, delta connection									
MKP400-D-1.0	1.0	1.4	1.2	1.7	3 · 7	53 x 114	0.3	B32343C4012A000	12
MKP400-D-1.5	1.5	2.2	1.8	2.6	3 · 10	53 x 114	0.3	B32343C4012A500	12
MKP400-D-2.0	2.0	2.9	2.4	3.5	3 · 13	63.5 x 129	0.4	B32343C4022A000	12
MKP400-D-2.5	2.5	3.6	3.0	4.3	3 · 17	63.5 x 129	0.4	B32343C4022A500	12
MKP400-D-5.0	5.0	7.2	6.0	8.6	3 · 33	63.5 x 129	0.4	B32343C4052A000	12
MKP400-D-6.3	6.3	9.1	7.5	11.0	3 · 42	75 x 160	0.5	B32344E4071A500	6
MKP400-D-7.5	7.5	10.8	9.0	13.0	3 · 50	75 x 160	0.5	B32344E4072A500	6
MKP400-D-8.3	8.3	12.0	10.0	14.5	3 · 55	75 x 160	0.5	B32344E4101A000	6
MKP400-D-10.0	10.0	14.5	12.0	17.3	3 · 67	75 x 198	0.6	B32344E4102A000	6
MKP400-D-12.5	12.5	18.1	15.0	21.7	3 · 83	85 x 198	0.8	B32344E4122A500	4
MKP400-D-15.0	15.0	21.7	18.0	26.0	3 · 100	85 x 198	0.8	B32344E4152A000	4
MKP400-D-16.7	16.7	24.1	20.0	28.9	3 · 111	85 x 198	0.8	B32344E4201A000	4
MKP400-D-20.0	20.0	28.9	24.0	34.7	3 · 133	85 x 273	1.1	B32344E4202A000	4
MKP400-D-25.0	25.0	36.1	-	-	3 · 166	85 x 273	1.5	B32344E4252A000	4
Rated voltage 415 V AC, 50/60 Hz, delta connection									
MKP415-D-1.0	1.0	1.4	1.2	1.6	3 · 6	53 x 114	0.3	B32343C4012A010	12
MKP415-D-1.5	1.5	2.1	1.8	2.4	3 · 9	53 x 114	0.3	B32343C4012A510	12
MKP415-D-2.0	2.0	2.8	2.4	3.4	3 · 12	53 x 114	0.4	B32343C4022A010	12
MKP415-D-2.5	2.5	3.5	3.0	4.2	3 · 15	63.5 x 129	0.4	B32343C4022A510	12
MKP415-D-5.0	5.0	7.0	6.0	8.4	3 · 31	63.5 x 154	0.4	B32343C4052A010	12
MKP415-D-6.3	6.3	8.8	7.5	10.6	3 · 39	75 x 160	0.5	B32344E4071A510	6
MKP415-D-7.5	7.5	10.4	9.0	12.5	3 · 46	75 x 198	0.6	B32344E4072A510	6
MKP415-D-10.0	10.0	13.9	12.0	16.7	3 · 62	75 x 198	0.6	B32344E4102A010	6
MKP415-D-12.5	12.5	17.4	15.0	20.9	3 · 77	85 x 198	0.8	B32344E4122A510	4
MKP415-D-15.0	15.0	20.9	18.0	25.1	3 · 92	85 x 273	1.2	B32344E4152A010	4
MKP415-D-20.0	20.0	27.9	24.0	33.4	3 · 123	85 x 273	1.2	B32344E4202A010	4
MKP415-D-25.0	25.0	34.8	-	-	3 · 154	85 x 348	1.5	B32344E4252A010	4
Rated voltage 440 V AC, 50/60 Hz, delta connection									
MKP440-D-0.9	0.9	1.2	1.0	1.3	3 · 5	53 x 114	0.3	B32343C4011A040	12
MKP440-D-1.0	1.0	1.3	1.2	1.6	3 · 6	53 x 114	0.3	B32343C4012A040	12
MKP440-D-1.2	1.2	1.6	1.5	2.0	3 · 7	53 x 114	0.3	B32343C4011A540	12

Types for voltages 220, 240, 480, 600, 660 V and other kvar-values available upon request.

* Packing units for capacitors equal minimum order quantity. Orders will be rounded up to packing unit or multiple thereof.

PhiCap PFC Capacitors

Biodegradable soft resin impregnated • Stacked winding • Dual safety system

SABA KHAZEN

Three-phase capacitors									
Type	50 Hz		60 Hz		C _R μF	d x h mm	Weight kg	Ordering code	Packing unit*
	Output kvar	I _R A	Output kvar	I _R A					
Rated voltage 440 V AC, 50 / 60 Hz, delta connection									
MKP440-D-1.5	1.5	2.0	1.8	2.3	3 · 8	53 x 114	0.3	B32343C4012A540	12
MKP440-D-2.1	2.1	2.7	2.5	3.3	3 · 11	53 x 114	0.4	B32343C4021A540	12
MKP440-D-2.5	2.5	3.3	3.0	3.9	3 · 14	63.5 x 129	0.3	B32343C4022A540	12
MKP440-D-4.2	4.2	5.5	5.0	6.6	3 · 23	63.5 x 129	0.4	B32343C4051A040	12
MKP440-D-5.0	5.0	6.5	6.0	7.8	3 · 27	63.5 x 154	0.5	B32343C4052A040	12
MKP440-D-6.3	6.3	8.3	7.5	9.9	3 · 34	75 x 160	0.5	B32344E4071A540	6
MKP440-D-7.5	7.5	9.9	9.0	11.8	3 · 41	75 x 160	0.5	B32344E4072A540	6
MKP440-D-8.3	8.3	10.9	10.0	13.1	3 · 46	75 x 198	0.6	B32344E4101A040	6
MKP440-D-10.0	10.0	13.1	12.0	15.8	3 · 55	75 x 198	0.6	B32344E4102A040	6
MKP440-D-10.4	10.4	13.7	12.5	16.4	3 · 57	75 x 198	0.6	B32344E4121A540	6
MKP440-D-12.5	12.5	16.4	15.0	19.7	3 · 69	85 x 198	0.8	B32344E4151A040	4
MKP440-D-15.0	15.0	19.7	18.0	23.6	3 · 82	85 x 273	1.2	B32344E4152A040	4
MKP440-D-16.7	16.7	21.9	20.0	26.3	3 · 92	85 x 273	1.2	B32344E4201A040	4
MKP440-D-20.8	20.8	27.3	25.0	32.8	3 · 114	85 x 273	1.2	B32344E4251A040	4
MKP440-D-25.0	25.0	32.8	30.0	40.0	3 · 138	85 x 348	1.5	B32344E4252A040	4
MKP440-D-28.0	28.0	36.8	–	–	3 · 154	85 x 348	1.5	B32344E4282A040	4
MKP440-D-30.0	30.0	39.0	–	–	3 · 165	85 x 348	1.6	B32344E4302A040	4
Rated voltage 480 V AC, 50 / 60 Hz, delta connection									
MKP480-D-1.5	1.5	1.8	1.8	2.2	3 · 7	63.5 x 129	0.4	B32343C4012A580	12
MKP480-D-2.0	2.0	2.4	2.4	2.9	3 · 9	63.5 x 129	0.4	B32343C4022A080	12
MKP480-D-2.5	2.5	3.0	3.0	3.6	3 · 11	63.5 x 129	0.4	B32343C4022A580	12
MKP480-D-4.2	4.2	5.1	5.0	6.1	3 · 19	63.5 x 154	0.5	B32343C4051A080	12
MKP480-D-5.0	5.0	6.0	6.0	7.2	3 · 23	75 x 160	0.5	B32344E4052A080	6
MKP480-D-6.3	6.3	7.6	7.6	9.1	3 · 29	75 x 160	0.5	B32344E4071A580	6
MKP480-D-7.5	7.5	9.0	9.0	10.8	3 · 35	75 x 198	0.6	B32344E4072A580	6
MKP480-D-8.3	8.3	10.0	10.0	12.0	3 · 38	75 x 198	0.6	B32344E4101A080	6
MKP480-D-10.4	10.4	12.5	12.5	15.0	3 · 48	85 x 198	0.8	B32344E4121A580	4
MKP480-D-12.5	12.5	15.1	15.0	18.1	3 · 58	85 x 198	0.8	B32344E4151A080	4
MKP480-D-15.0	15.0	18.1	18.0	21.7	3 · 69	85 x 273	1.2	B32344E4152A080	4
MKP480-D-16.7	16.7	20.1	20.0	24.1	3 · 77	85 x 273	1.2	B32344E4162A780	4
MKP480-D-20.8	20.8	25.0	25.0	30.1	3 · 96	85 x 273	1.2	B32344E4202A080	4
MKP480-D-25.0	25.0	30.1	30.0	36.1	3 · 115	85 x 348	1.5	B32344E4252A080	4
MKP480-D-30.0	30.0	36.1	–	–	3 · 138	90 x 348	1.5	B32344E4302A080	4
Rated voltage 525 V AC, 50 / 60 Hz, delta connection									
MKP525-D-1.0	1.0	1.1	1.2	1.3	3 · 4	53 x 114	0.3	B32343C5012A020	12
MKP525-D-1.5	1.5	1.6	1.8	2.0	3 · 6	53 x 114	0.3	B32343C5012A520	12
MKP525-D-2.0	2.0	2.2	2.4	2.6	3 · 8	63.5 x 129	0.4	B32343C5022A020	12
MKP525-D-2.5	2.5	2.7	2.7	3.0	3 · 9	63.5 x 129	0.4	B32343C5022A520	12
MKP525-D-5.0	5.0	5.5	6.0	6.6	3 · 19	75 x 160	0.3	B32344E5061A020	6
MKP525-D-6.3	6.3	6.9	7.6	8.3	3 · 24	75 x 160	0.5	B32344E5071A520	6
MKP525-D-8.3	8.3	9.1	10.0	11.0	3 · 32	75 x 198	0.6	B32344E5101A020	6
MKP525-D-10.4	10.4	11.5	12.5	13.7	3 · 40	85 x 198	0.8	B32344E5121A520	4
MKP525-D-12.5	12.5	13.8	15.0	16.5	3 · 48	85 x 273	1.2	B32344E5151A020	4
MKP525-D-16.7	16.7	18.3	20.0	21.9	3 · 64	85 x 273	1.2	B32344E5201A020	4
MKP525-D-20.8	20.8	22.9	25.0	27.5	3 · 80	85 x 348	1.5	B32344E5202A020	4
MKP525-D-25.0	25.0	27.5	30.0	33.0	3 · 96	85 x 348	1.5	B32344E5252A020	4

Types for voltages 220, 240, 480, 600, 660 V and other kvar-values available upon request.

* Packing units for capacitors equal minimum order quantity. Orders will be rounded up to packing unit or multiple thereof.

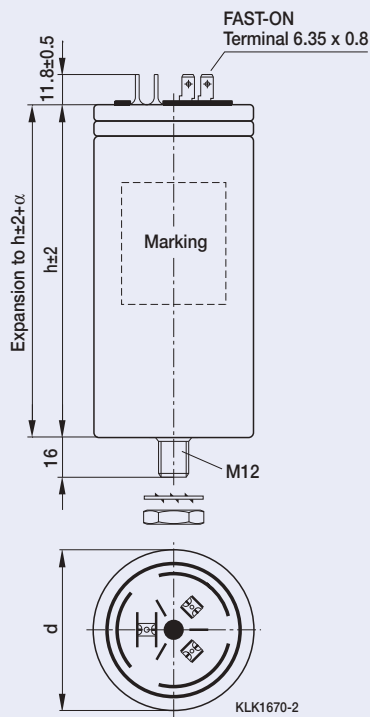
PhiCap PFC Capacitors

Biodegradable soft resin impregnated • Stacked winding • Dual safety system

SABA KHAZEN

Dimensional drawings: three-phase capacitors

Capacitor B32343 series

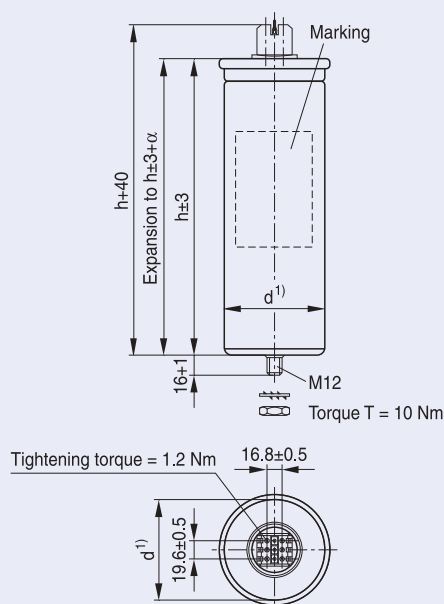


Creepage distance	10.5 mm (ø 53) 10.0 mm (ø 63.5)
Clearance	13.0 mm (ø 53) 16.5 mm (ø 63.5)
Diameter (ø)	53.0 mm 63.5 mm
Expansion α	max. 12 mm

Mounting

	M12 (ø 63.5 mm)	M8 (ø 53.0 mm)
Torque	T = 10 Nm	T = 4 Nm
Toothed washer	J12.5 DIN 6797	J8.0 DIN 6797
Hex nut	BM12 DIN 439	BM 8 DIN 439

Capacitor B32344 series



Creepage distance	9.6 mm
Clearance	12.7 mm
Diameter d (ø)	75.0 mm / 85.0 mm
Expansion α	max. 13 mm

Mounting

	M12
Torque	T = 10 Nm
Toothed washer	J12.5 DIN 6797
Hex nut	BM12 DIN 439

¹⁾ Seaming adds 4 mm in diameter

KLK1842-9-E

PhiCap PFC Capacitors

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Single-phase capacitors									
Type	50 Hz		60 Hz		C _R μF	d x h mm	Weight kg	Ordering code	Packing unit*
	Output kvar	I _R A	Output kvar	I _R A					
Rated voltage 230 V AC, 50 / 60 Hz									
MKP230-I-0.8	0.8	3.6	1.0	4.3	50	63.5 x 105	0.30	B32340C2002A830	12
MKP230-I-1.7	1.7	7.2	2.0	8.7	100	63.5 x 142	0.40	B32340C2012A730	12
MKP230-I-2.5	2.5	10.9	3.0	13.1	150	63.5 x 142	0.50	B32340C2022A530	12
Rated voltage 400 V AC, 50 / 60 Hz									
MKP400-I-0.8	0.8	2.0	1.0	2.3	15	63.5 x 68	0.30	B32340C3001A880	12
MKP400-I-1.7	1.7	4.2	2.0	5.0	33	63.5 x 68	0.30	B32340C4012A700	12
MKP400-I-2.5	2.5	6.3	3.0	7.5	50	63.5 x 105	0.40	B32340C4022A500	12
MKP400-I-3.3	3.3	8.4	4.0	10.0	66	63.5 x 105	0.40	B32340C4032A300	12
MKP400-I-4.2	4.2	10.4	5.0	12.5	84	63.5 x 142	0.40	B32340C4051A000	12
MKP400-I-5.0	5.0	12.4	6.0	15.0	99	63.5 x 142	0.50	B32340C4052A000	12
Rated voltage 415 V AC, 50 / 60 Hz									
MKP415-I-0.8	0.8	2.0	1.0	2.4	15	63.5 x 68	0.35	B32340C4082A810	12
MKP415-I-1.7	1.7	4.0	2.0	4.8	31	63.5 x 105	0.45	B32340C4012A710	12
MKP415-I-2.5	2.5	6.0	3.0	7.2	46	63.5 x 105	0.50	B32340C4022A510	12
MKP415-I-3.3	3.3	8.0	4.0	9.7	62	63.5 x 142	0.50	B32340C4032A310	12
MKP415-I-5.0	5.0	12.0	6.0	14.5	91	63.5 x 142	0.60	B32340C4052A010	12
Rated voltage 440 V AC, 50 / 60 Hz									
MKP440-I-0.7	0.7	1.6	0.8	1.9	11	63.5 x 68	0.30	B32340C4001A840	12
MKP440-I-1.4	1.4	3.2	1.7	3.8	23	63.5 x 68	0.30	B32340C4011A740	12
MKP440-I-2.1	2.1	4.7	2.5	5.7	34	63.5 x 105	0.40	B32340C4021A540	12
MKP440-I-2.8	2.8	6.4	3.3	7.6	46	63.5 x 105	0.40	B32340C4031A340	12
MKP440-I-3.3	3.3	7.6	4.0	9.1	55	63.5 x 142	0.50	B32340C4032A340	12
MKP440-I-4.2	4.2	9.5	5.0	11.4	68	63.5 x 142	0.50	B32340C4051A040	12
MKP440-I-5.0	5.0	11.4	6.0	13.6	82	63.5 x 142	0.60	B32340C4052A040	12
Rated voltage 480 V AC, 50 / 60 Hz									
MKP480-I-0.7	0.7	1.5	0.8	1.7	10	63.5 x 105	0.30	B32340C4001A880	12
MKP480-I-1.4	1.4	2.9	1.7	3.5	19	63.5 x 105	0.30	B32340C4011A780	12
MKP480-I-2.1	2.1	4.3	2.5	5.2	29	63.5 x 105	0.50	B32340C4021A580	12
MKP480-I-2.8	2.8	5.8	3.3	6.9	38	63.5 x 142	0.50	B32340C4031A380	12
Rated voltage 525 V AC, 50 / 60 Hz									
MKP525-I-1.4	1.4	2.6	1.7	3.1	16	63.5 x 105	0.30	B32340C5011A720	12
MKP525-I-2.8	2.8	5.2	3.3	6.2	31	63.5 x 142	0.50	B32340C5031A330	12
MKP525-I-3.3	3.3	6.3	4.0	7.6	38	63.5 x 142	0.60	B32340C5032A320	12
MKP525-I-4.2	4.2	8.0	5.0	9.5	48	63.5 x 142	0.70	B32340C5051A020	12

Types for voltages 220, 240, 600, 660 V and other kvar-values available upon request.

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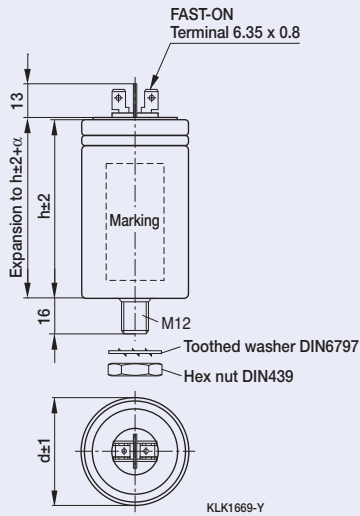
PhiCap PFC Capacitors

Biodegradable soft resin impregnated • Stacked winding • Dual safety system

SABA KHAZEN

Dimensional drawings: single-phase capacitors

Capacitor B32340 series

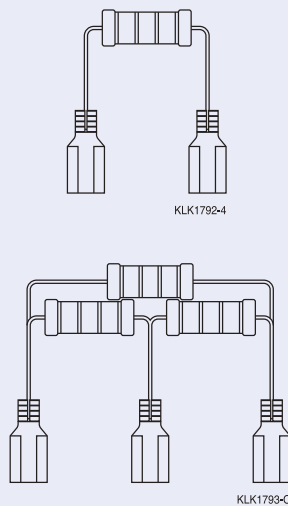


Creepage distance	10.0 mm
Clearance	16.5 mm
Diameter (\varnothing)	63.5 mm
Expansion α	max. 12 mm

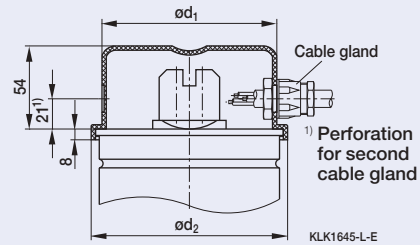
Mounting

	M12
Torque	T = 10 Nm
Toothed washer	J12.5 DIN 6797
Hex nut	BM12 DIN 439

Discharge resistors for B32340 and B32343 series



Protective cover for terminal, protection class / IP54



\varnothing in mm	Ordering code
53.0	B44066K0530A000*
63.5	B44066K0635A000*
75	B44066K0795A000
85	B44066K0895A000

* For B32340 and B32343 series (diameter 53.0 and 63.5 mm), terminal covers with cable entry on top

For IP54 additional cable gland at cable entry required.

