EPCOS Product Brief 2015

Power Factor Correction

PhiCap Capacitors for Power Quality Solutions

Based on the well-proven MKP-technology with stacked winding, PhiCap© capacitors are found in numberless industrial and semi-industrial surroundings all over the world. The cost-effective design offers a broad output range from 0.7 to 6.0 kvar for single-phase capacitors and 0.5 to 30 kvar for three-phase capacitors. The voltage range covers 230 to 525 V.

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
- Output range 0.5 … 30 kvar
- Voltage range 230 … 525 V AC

Safety

- Self-healing
- Overpressure disconnector
- Optimized capacitor safety terminal for B32344E series

Electrical

- Up to 30 kvar per case for three-phase applications
- Up to 6 kvar per case for single-phase applications
- Long life expectancy up to 135 000 hours at temperature class –40/C
- High pulse current withstand capability (up to 200 • I_R)

Mechanical and maintenance

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

PQS

www.epcos.com

PhiCap Capacitors

Product range of PFC capacitors

Single-phase capacitor B32340 series

- With fast-on terminals, discharge resistors included in delivery unit
- Output range: 0.7 kvar at 50 Hz to 6 kvar at 60 Hz

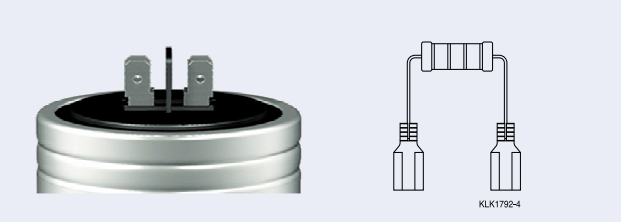
Three-phase capacitor B32343 series

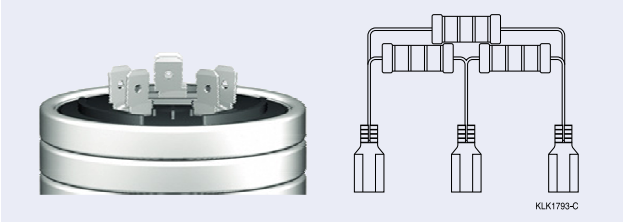
- With fast-on terminals, discharge resistors included in delivery unit
- Output range: 0.5 kvar at 50 Hz to 6.0 kvar at 60 Hz

Three-phase capacitor B32344E series

- With optimized capacitor safety terminal, discharge resistor pre-mounted
- Output range: 2.0 to 30 kvar

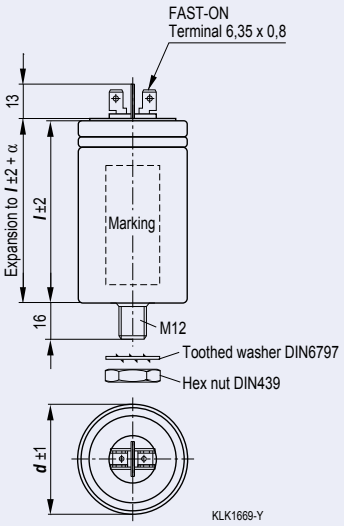
For particular ordering codes please refer to the PFC Product Profile or contact your local EPCOS sales office.





Dimensional drawing: single-phase capacitors

Capacitor B32340 series

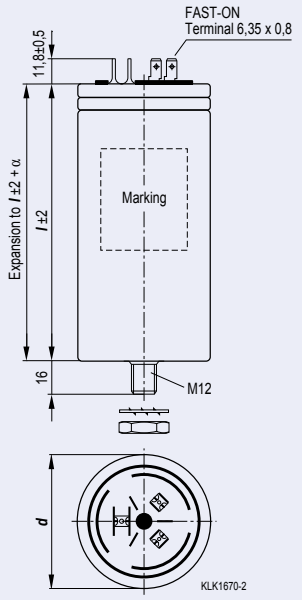


Creepage distance	10.0 mm
Clearance	16.5 mm
Diameter (Ø)	63.5 mm
Expansion α	max. 12 mm
Mounting	
	M12
Torque	T = 10 Nm
Toothed washer	J12.5 DIN 6797
Hex nut	BM 12 DIN 439

PhiCap Capacitors

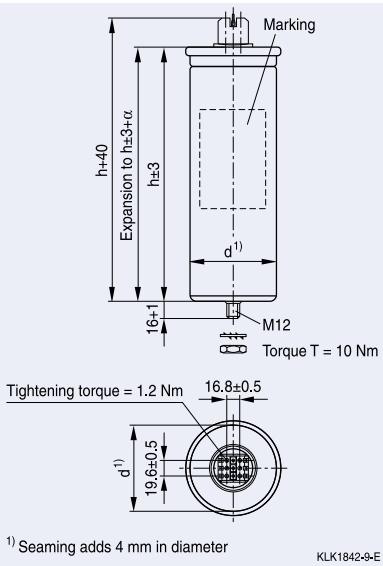
Dimensional drawings: three-phase capacitors

Capacitor B32343 series



Creepage distance	10.5 mm (Ø53) 10.0 mm (Ø 63.5)	
Clearance	13.0 mm (Ø53) 16.5 mm (Ø63.5)	
Diameter (Ø)	53.0 mm 63.5 mm	
Expansion α	max. 12 mm	
Mounting		
	M12 (Ø63.5 mm)	M8 (Ø53.0 mm)
Torque	T = 10 Nm	T = 4 Nm
Toothed washer	J12.5 DIN 6797	J8.0 DIN 6797
Hex nut	BM 12 DIN 439	BM 8 DIN439

Capacitor B32344 series



Creepage distance	9.6 mm
Clearance	12.7 mm
Diameter d1 (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	BM 12 DIN 439

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 • I_R including combined effects of harmonics, overvoltages and capacitances
Inrush current	I_s	up to 200 • 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 • 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 at temperature class –40/C up to 100 000 h at temperature class –40/D
Ambient temperature		–40/D; max. temperature 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 diameter > 53 mm, M8 (4 Nm) for case size diameter ≤ 53 mm
Safety		self-healing technology, overpressure disconnector, max. allowed fault current 10 000 A in accordance with UL 810 standard
Discharge resistor		discharge module 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 particular data sheets)
Dielectric		polypropylene film
Impregnation		biodegradable soft resin, semi-dry
Terminals		optimized capacitor safety terminal for B32344 series, max. current 50 A, max. 16 mm^2 cable cross-section, fast-on terminals for B32340 and 32343 series
Number of switching operations		max. 5000 switchings per year according to IEC 60831-1+2

* without discharge resistors