

Film Capacitors – Power Factor Correction

Power Factor Controller

Series/Type: BR6000 V6.0 Ordering code: B44066R6...E230

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Preliminary data

Characteristics

- Intelligent control
- Menu driven handling (plain language; Czech/Dutch/German/English/French/Polish/ Portuguese/Russian/Spanish/Turkish)
- Self-optimizing control capability
- Automatic initialization
- Test-run possible
- Large voltage measuring range
- Recall function of recorded values
- Four-quadrant operation (e.g. stand by generator)
- Powerful alarm output
- 13 steps possible
- Control series editor
- Detailed expert modes

Features



Display	- Large and multifunctional LCD		
	$(2 \times 16 \text{ characters})$		
	- Graphic and alphanumeric		
	- LCD illumination		
	- OLED display available for series		
 .	BR6000-HD		
Housing	 Zinc coated sheet steel 		
System parameters displayed	- System voltage (V AC)		
	 Reactive power (kvar) 		
	- Active power (kW)		
	- Frequency		
	 Apparent power (kVA) 		
	 Apparent current (A) 		
	Temperature (°C)		
	- Real-time cos δ		
	- Target cos δ		
	- kvar value to target $\cos \delta$		
	- Harmonics (3rd 19th) V (%), I (%)		
	- Energy (kvar)		
Alarm output	- Insufficient compensation		
	- Overcompensation		
	- Undercurrent		
	- Overcurrent		
	- Overtemperature		
	- Harmonics		
	- Threshold value programmable		
	- Internal error storage		



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Recall recorded values	- Maximum voltage (V _{max})
	 Minimum voltage
	 Maximum reactive power, Q (kvar)
	 Maximum active power, P (kW)
	 Maximum apparent power, S (kVA)
	 Maximum temperature (°C)
	- Maximum THD-V/THD-I
	 Switching cycles of capacitors
	 Operation time of capacitors

Technical Data

Weight	1 kg		
Case	Panel-mounted instrument, 144 × 144 × 55 mm		
	(cut out 138 × 138 mm)		
Ambient conditions			
 Over-voltage class 	111		
- Pollution degree	2		
 Operating temperature 	–20 +60 °C		
- Storage temperature	–20 +75 °C		
- Sensitivity to inference (industrial areas)	EN 55082-2.1995		
- Spurious radiation (residential areas)	EN 55011 10.1997		
- Safety guidelines	IEC 61010-1:2001		
	EN 61010-1:2001		
 Mounting position 	Any		
- Humidity class	15 95% without dew		
Protection class			
- Front plate	IP54 to IEC60529		
- Rear side	IP20 to IEC60529		
Operation			
- Supply voltage	110…230 V AC ±15%, 50/60 Hz		
- Target cos δ	0.3 ind 0.3 cap.		
- Switching and discharge time range	1 s … 20 min		
- Number of control series	20 series preset + control series editor for free programming		
- Control modes	Series switching (LIFO), circular switching (FIFO), self-optimized intelligent control mode		



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Measurement	
 Measurement voltage range 	30 525 V AC (L–L / L–N)
- Fundamental frequency	50 and 60 Hz
 Measurement current (CT) 	x/5 and x/1 Ampere possible
 Minimum operating current 	40 mA / 10 mA
- Maximum current	5.3 A (sinusoidal)
- Zero voltage release	< 15 ms
- Accuracy	Current, voltage: 1% Reactive, active, apparent power: 2%
Switching outputs	
Relay outputs	
- Number of outputs	6/7 or 12/13 steps available
- Switching voltage/current	Max. 250 V, 6 A
Alarm relay	Potential-free contact (max. 250 V, 6 A)

Ordering Codes

Туре	Voltage 50/60 Hz	Output		Alarm output	Ordering code
		Relay	Transistor		
BR6000-R6	110 230	6	_	Yes	B44066R6006E230
BR6000-HD6	110 230	6	_	Yes	B44066R6506E230
BR6000-R12	110 230	12	-	Yes	B44066R6012E230
BR6000-HD12	110 230	12	_	Yes	B44066R6512E230

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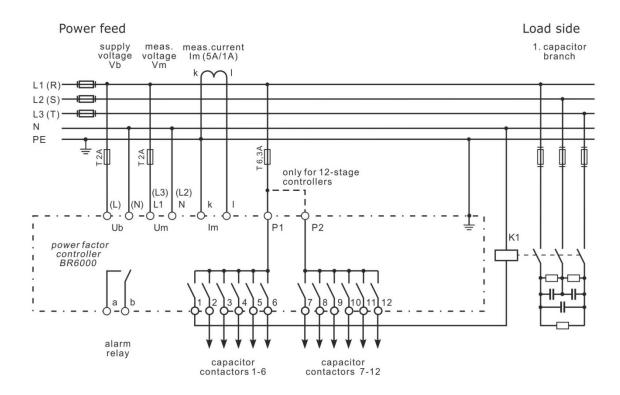
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Connection plan



▲ Cautions and warnings

Controller hunting: When putting the capacitor bank into operation, it is required to avoid needless switching cycles (means permanent switching on and off of steps without significant change of consumer load). This so called "controller hunting" would increase the number of switching operations of the connected contactors and capacitors and decrease the expected life cycle (wear out) and, in worst case, capacitor bursting and fire, etc . This can be avoided by a proper programming of the BR6000 with the actual system parameters (current transformer prim. and sec., first kvar step, control series, switching time).

▲ Please read cautions information about PFC capacitors and cautions as well as installation and maintenance instructions in the actual version of the Product Profile *Power Factor Correction* to ensure optimum performance and prevent products from failing, and in worst case, bursting and fire, etc. The actual Product Profile is available at www.epcos.com/publications.

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