

EPCOS Product Profile

Power Factor Correction

Power Quality Solutions



PF Controllers BR6000 Series

Intelligent • User-friendly • Cost-effective • Version 5.0

General

Controllers for PFC are of major importance in the PFC system. They measure the actual power factor and connect or disconnect capacitor stages to achieve a specific desired value ($\cos \varphi$).

The PF controller series and BR6000 (six and twelve stages) offer highly intelligent control behavior and are very user-friendly thanks to menu-driven handling (plain language). Their multifunctional display greatly simplifies installation, handling and maintenance.

Different versions of the BR6000 series provide solutions to various applications:

- BR6000-R6 and BR6000-R12 for conventional applications with slowly changing loads (optionally with RS485 interface)
- BR6000-T6 and BR6000-T12 for dynamic PFC in applications with fast-changing loads



Features

- Display
 - Large and multifunctional LCD (2 x 16 characters)
 - Graphic and alphanumeric LCD illumination
- Intelligent control
- Menu-driven handling (plain language)
- Self-optimizing control capability
- Recall function of recorded values
- Four-quadrant operation (e.g. stand-by generator)
- Large measuring voltage range
- Powerful alarm output
- Display of numerous of system parameters
 - System voltage (V AC)
 - Reactive power (KVAR)
 - Active power (kW)
 - Frequency
 - THD-V, THD-I
 - Individual harmonics up to 19th*
 - Monitoring of individual capacitor currents
 - Apparent power (KVA)
 - Apparent current (A)
 - Temperature (°C)
 - Real-time $\cos \varphi$
 - Target $\cos \varphi$
 - KVAR value to target $\cos \varphi$
- Alarm output
 - Insufficient compensation
 - Overcompensation
 - Undercurrent
 - Overcurrent
 - Overtemperature
 - Harmonics exceeded
 - Threshold value programmable
 - Internal error storage
 - Programming of 2nd signal relay random
 - Undervoltage and overvoltage
- Recall recorded values
 - Number of contactor switching operations
 - Maximum voltage V (Vmax)
 - Maximum reactive power, Q (KVAR)
 - Maximum value of harmonic
 - Maximum active power, P (kW)
 - Maximum apparent power, S (KVA)
 - Maximum temperature (°C)
 - Operation time of all capacitors
 - Complete 2nd parameter set available
 - Automatic initialization
 - Dynamic PFC (transistor output)
 - Thyristor switching
- Dual target power factor setting (EB and DG) is available in selected models

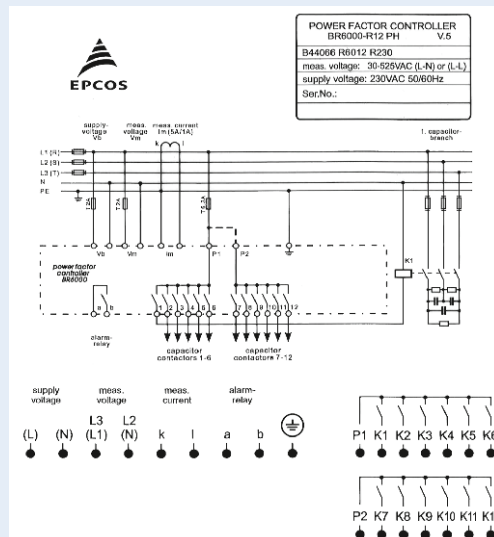
⚠ Cautions:

1. Discharge time: Make sure that the discharge time set in controller matches the capacitor discharge time. See page 84
2. Number of switchings: LV PFC capacitors according to standard IEC 60831 are designed for up to 5000 switching operations. Make sure that 5000 switching operations per year are not exceeded.

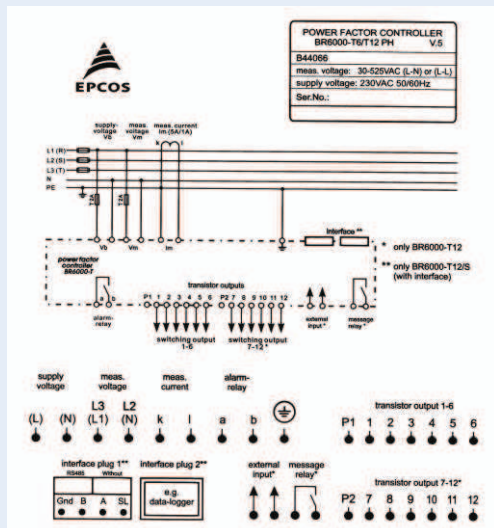
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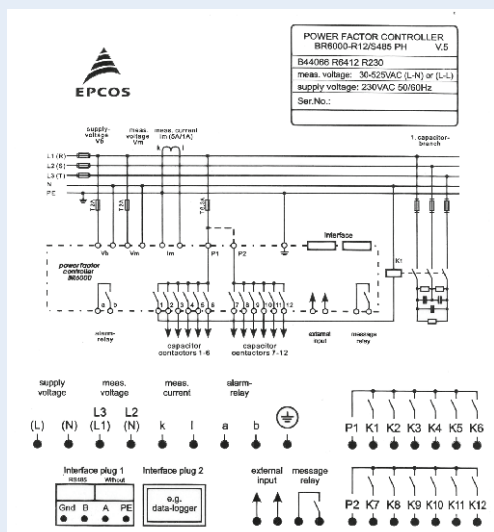
PF controller BR6000 R-12 : Relay output



PF Controller BR6000 T- 6/12 : Transistor output



PF Controller BR6000 R-12 (RS 485) : Relay output



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Selection table for controllers				
	BR6000 relay output		BR6000 transistor output	
Steps	6 STEP	12 STEP	6 STEP	12 STEP
Switching	Contactor	Contactor	Thyristor	Thyristor
Ordering code	B44066R6006R230N1	B44066R6012R230N1	B44066R6106R230N1	B44066R6112R230N1
Auxiliary supply	1-Phase, 2-Wire, 245 Vac (-20% to +20%)	1-Phase, 2-Wire, 245 Vac (-20% to +20%)	1-Phase, 2-Wire, 245 Vac (-20% to +20%)	1-Phase, 2-Wire, 245 Vac (-20% to +20%)
Measurement voltage	30-525 V AC (L-N) or (L-L)	30-525 V AC (L-N) or (L-L)	1Ph 30-300 V AC (L-N)	1Ph 30-300 V AC (L-N)
Load CT Input current 1 / 5 A	1 / 5 A	1 / 5 A	1 / 5 A	
No. of outputs	6	12	6	12
Alarm outputs	1 No.	1 No.	1 No.	1 No.
- Insufficient Compensation	Yes	Yes	Yes	Yes
- Overcompensation	Yes	Yes	Yes	Yes
- Over / under voltage	Yes	Yes	Yes	Yes
- Overcurrent	Yes	Yes	Yes	Yes
Automatic Initialisation	Yes	Yes	Yes	Yes
Communication interface RSXXX	No	No*	No	No
Parameters displayed				
System voltage	Yes	Yes	Yes	Yes
Load current	Yes	Yes	Yes	Yes
Capacitor current	No	No	No	No
Active power	Yes	Yes	Yes	Yes
Reactive power	Yes	Yes	Yes	Yes
Apparent power	Yes	Yes	Yes	Yes
Frequency	Yes	Yes	Yes	Yes
Individual harmonics measurement upto	19	19	19	19
THD - V	Yes	Yes	Yes	Yes
THD - I	Yes	Yes	Yes	Yes
Monitoring of individual capacitor current	Yes - Health check	Yes - Health check	No	No
Apparent current	Yes	Yes	Yes	Yes
Overttemperature	Yes	Yes	Yes	Yes
Real time cos ϕ	Yes	Yes	Yes	Yes
Target cos ϕ	Yes	Yes	Yes	Yes
KVA _r value to target cos ϕ	Yes	Yes	Yes	Yes
Switching and discharge time range				
- Correction time	1 sec - 20 min	1 sec - 20 min	20-1000 m sec	20-1000 m sec
- Discharge time	1 sec - 20 min	1 sec - 20 min	20-1000 m sec	20-1000 m sec
Number of control series	20 + E series	20 + E series	20 + E series	20 + E series
Weight (in kG)	1kG	1kG	1kG	1kG
Dimensions (L x D x H in mm)	144 x 55 x 144 mm	144 x 55 x 144 mm	144 x 53 x 144 mm	144 x 53 x 144 mm

*RS 232-B44066R6312R230N1

*RS 485-B44066R6412R230N1