



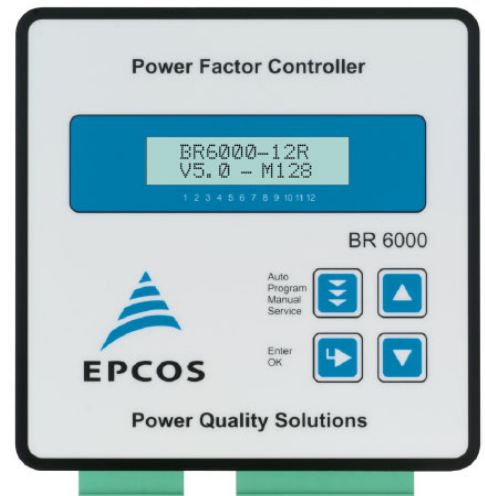
Film capacitors – Power Factor Correction

Key components – PF controller

Series/Type: BR6000 V5.0
Ordering code: B44066R6...E230
Date: May 2009
Version: 4

Characteristics

- Intelligent control
- Menu driven handling (plain language; Czech/Dutch/German/English/French/Polish/Portuguese/Russian/Spanish)
- 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
- 2nd parameter set
- 13 steps possible with version /F and /S
- Control series editor
- Detailed expert modes



Features

Display	<ul style="list-style-type: none"> - Large and multifunctional LCD (2 × 16 characters) - Graphic and alphanumeric - LCD illumination
System parameters displayed	<ul style="list-style-type: none"> - System voltage (V AC) - Reactive power (kvar) - Active power (kW) - Frequency - Apparent power (kVA) - Apparent current (A) - Temperature (°C) - Real-time cos phi - Target cos phi - kvar value to target cos phi - Harmonics (3rd ... 19th) V (%), I (%)
Alarm output	<ul style="list-style-type: none"> - Insufficient compensation - Overcompensation - Undercurrent - Overcurrent - Overtemperature - Harmonics - Threshold value programmable - Internal error storage - 2nd signal relay random

Recall recorded values	<ul style="list-style-type: none"> - Maximum voltage (V_{max}) - 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 <ul style="list-style-type: none"> - Over-voltage class - Pollution degree - Operating temperature - Storage temperature - Sensitivity to inference (industrial areas) - Spurious radiation (residential areas) - Safety guidelines - Mounting position - Humidity class 	III 2 –20 °C ... +60 °C –20 °C ... +75 °C EN 55082-2:1995 EN 55011 10:1997 IEC 61010-1:2001 EN 61010-1:2001 Any 15% ... 95% without dew
Protection class <ul style="list-style-type: none"> - Front plate - Rear side 	IP54 to IEC60529 IP20 to IEC60529
Operation <ul style="list-style-type: none"> - Supply voltage - Target cos phi - Switching and discharge time range - Number of control series - Control modes 	110...230 V AC ±15%, 50/60 Hz 0.3 ind. ... 0.3 cap. 1 sec ... 20 min 20 series preset + control series editor for free programming Series switching (LIFO), circular switching (FIFO), self-optimized intelligent control mode

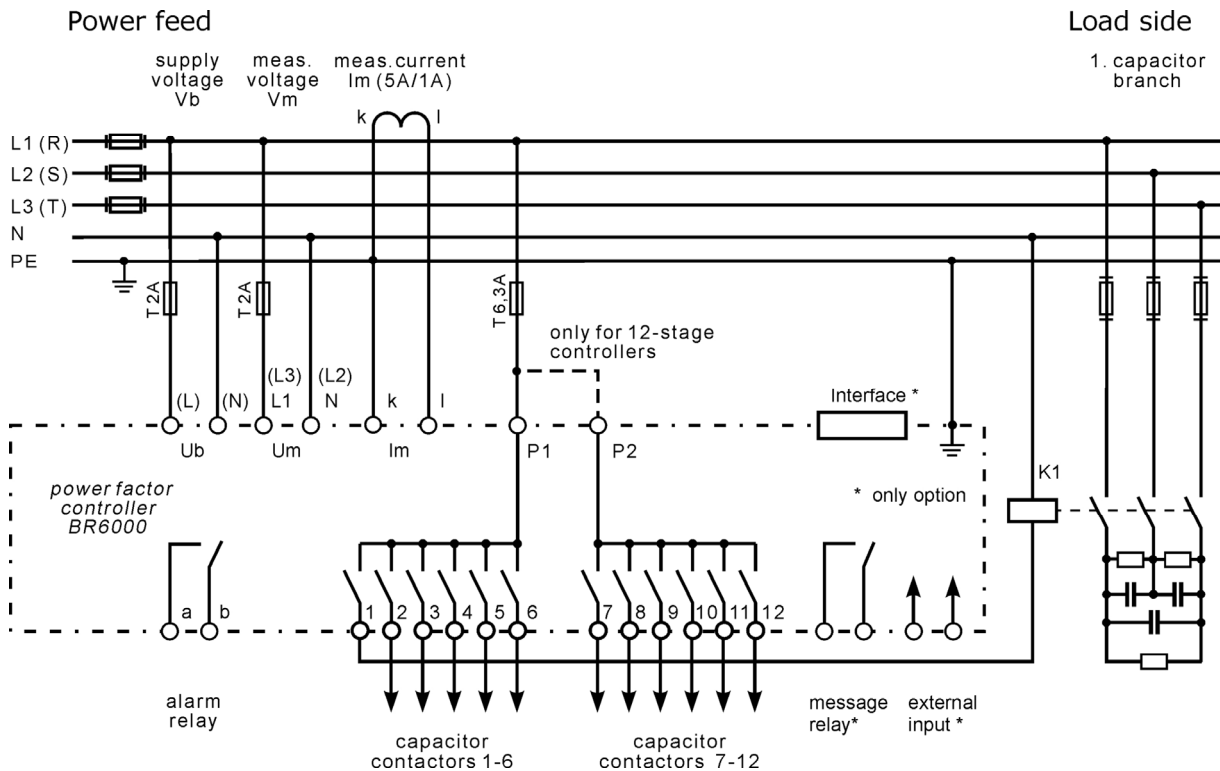
Measurement <ul style="list-style-type: none"> - Measurement voltage range - Fundamental frequency - Measurement current (CT) - Minimum operating current - Maximum current - Zero voltage release - Accuracy 	30 ... 525 V AC (L–L / L–N) 50 and 60 Hz x/5 and x/1 Ampere possible 40 mA / 10 mA 5.3 A (sinusoidal) < 15 ms Current, voltage: 1% Reactive, active, apparent power: 2%
Switching outputs Relay outputs <ul style="list-style-type: none"> - Number of outputs - Switching voltage/current 	6/7 or 12/13 steps available Max. 250 V, 6 A
Alarm relay Message relay	Potential-free contact (max. 250 V, 6 A) Potential-free contact (max. 250 V, 6 A) Parameters programmable

Ordering Codes

Type	Voltage 50/60 Hz	Output		Alarm output	Switchover 2 nd parameter set	Inter- face	Ordering code
		Relay	Transistor				
BR6000-R6	110 ... 230	6	–	Yes	No	No	B44066R6006E230
BR6000-R12	110 ... 230	12	–	Yes	No	No	B44066R6012E230
BR6000-R12/F	110 ... 230	12	–	Yes	Yes	No	B44066R6212E230
BR6000- R12/S485*	110 ... 230	12	–	Yes	Yes	RS485	B44066R6412E230

* including new Windows-Software V5.0

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).

Accessory for PFC-Controller BR6000

USB to RS485 converter to connect the BR6000 or other devices with interface RS485 to a PC with USB-interface. Connection of several devices at RS485 possible.

Technical data see separate data sheet B44066R3333E230.

⚠ 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.

Information given in the PFC-product profile and values given in the data sheet reflect typical specifications. You are kindly requested to approve our product specifications or request our approval for your specification before ordering.

Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule, EPCOS is either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether an EPCOS product with the properties described in the product specification is suitable for use in a particular customer application.
2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.
3. **The warnings, cautions and product-specific notes must be observed.**
4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous)**. Useful information on this will be found in our Material Data Sheets on the Internet (www.epcos.com/material). Should you have any more detailed questions, please contact our sales offices.
5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order. We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available. The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.
6. Unless otherwise agreed in individual contracts, **all orders are subject to the current version of the "General Terms of Delivery for Products and Services in the Electrical Industry" published by the German Electrical and Electronics Industry Association (ZVEI)**.
7. The trade names EPCOS, BAOKE, Alu-X, CeraDiode, CSMP, CSSP, CTVS, DSSP, MiniBlue, MKK, MLSC, MotorCap, PCC, PhaseCap, PhaseCube, PhaseMod, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMDAD, SIMID, SineFormer, SIOV, SIP5D, SIP5K, ThermoFuse, WindCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at www.epcos.com/trademarks.