



## 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
- 2<sup>nd</sup> parameter set
- 13 steps possible with version /F and /S
- Control series editor
- Detailed expert modes



**Features**

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

Recall recorded values	<ul style="list-style-type: none"> <li>- Maximum voltage (<math>V_{max}</math>)</li> <li>- Maximum reactive power, Q (kvar)</li> <li>- Maximum active power, P (kW)</li> <li>- Maximum apparent power, S (kVA)</li> <li>- Maximum temperature (<math>^{\circ}C</math>)</li> <li>- Maximum THD-V/THD-I</li> <li>- Switching cycles of capacitors</li> <li>- Operation time of capacitors</li> </ul>
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**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"> <li>- Over-voltage class</li> <li>- Pollution degree</li> <li>- Operating temperature</li> <li>- Storage temperature</li> <li>- Sensitivity to inference (industrial areas)</li> <li>- Spurious radiation (residential areas)</li> <li>- Safety guidelines</li> <li>- Mounting position</li> <li>- Humidity class</li> </ul>	III 2 -20 $^{\circ}C$ ... +60 $^{\circ}C$ -20 $^{\circ}C$ ... +75 $^{\circ}C$ 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"> <li>- Front plate</li> <li>- Rear side</li> </ul>	IP54 to IEC60529 IP20 to IEC60529
Operation <ul style="list-style-type: none"> <li>- Supply voltage</li> <li>- Target cos phi</li> <li>- Switching and discharge time range</li> <li>- Number of control series</li> <li>- Control modes</li> </ul>	110...230 V AC $\pm$ 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

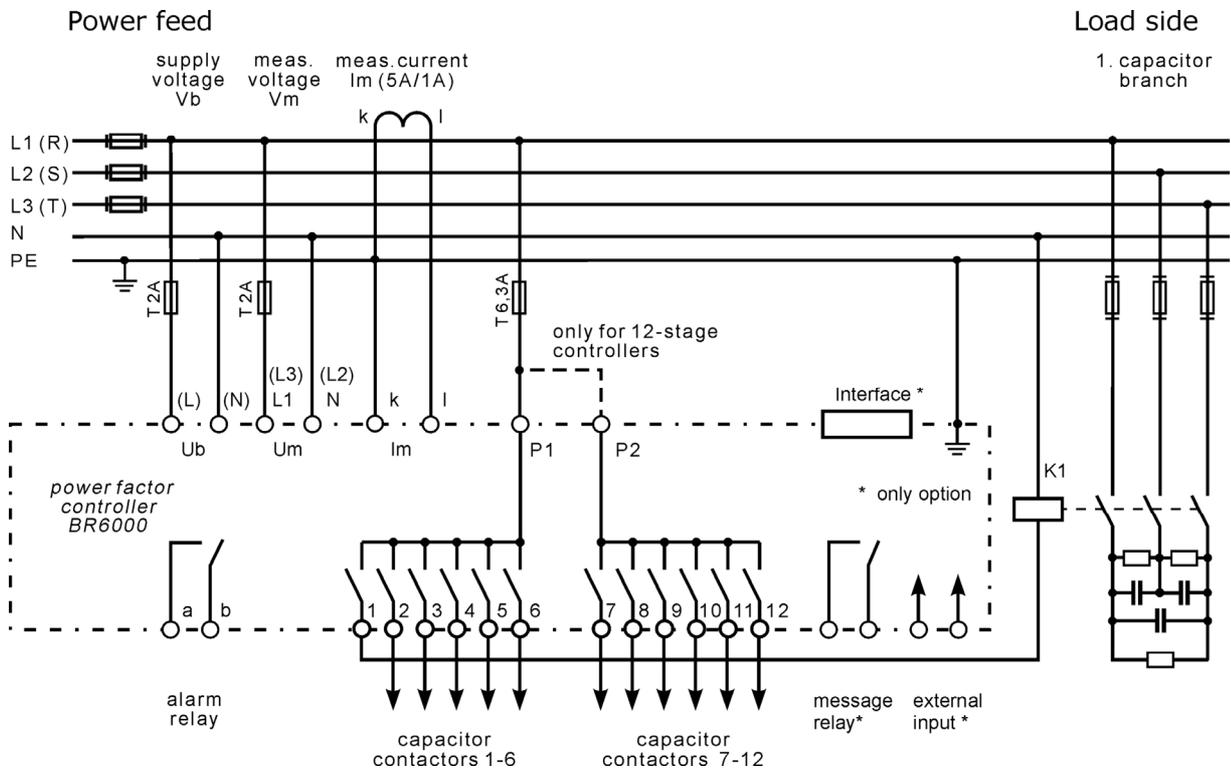
<b>Measurement</b> <ul style="list-style-type: none"> <li>- Measurement voltage range</li> <li>- Fundamental frequency</li> <li>- Measurement current (CT)</li> <li>- Minimum operating current</li> <li>- Maximum current</li> <li>- Zero voltage release</li> <li>- Accuracy</li> </ul>	30 ... 525 V AC (L–L / 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%
<b>Switching outputs</b> <b>Relay outputs</b> <ul style="list-style-type: none"> <li>- Number of outputs</li> <li>- Switching voltage/current</li> </ul>	6/7 or 12/13 steps available Max. 250 V, 6 A
<b>Alarm relay</b> <b>Message relay</b>	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 <sup>nd</sup> 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](http://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.

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