



Film capacitors – Power Factor Correction

Key components – Hybrid PF-controller

Series/Type: BR6000-T6R6 V6.0

The following products presented in this data sheet are being withdrawn.

| Ordering Code | Substitute Product | Date of Withdrawal | Deadline Last Orders | Last Shipments |
|-----------------|--------------------|--------------------|----------------------|----------------|
| B44066R6466E230 | B44066R7612E230 | 2014-10-31 | 2015-01-31 | 2015-04-30 |
| B44066R6066E230 | B44066R7412E230 | 2014-10-31 | 2015-01-31 | 2015-04-30 |

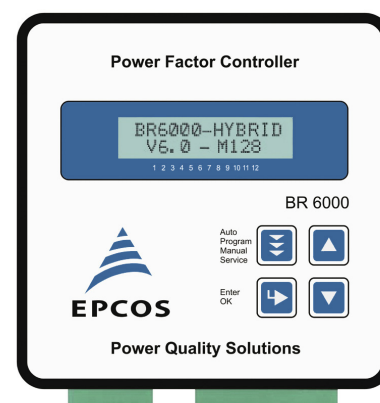
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Characteristics

- 6 transistor outputs for direct triggering of thyristor modules TSM series for dynamic compensation
- 6 relay outputs for direct triggering of capacitor contactors for conventional compensation
- Intelligent behavior that logically combines both types of control of the output steps
- Menu driven handling (plain language)
- Czech/Dutch/English/French/German/Polish/Portuguese/Russian/Spanish/Turkish
- Self-optimizing control capability
- Large measuring voltage range
- Recall function of recorded values (V_{max} , kvar, kW, kVA, °C)
- Four-quadrant operation (e.g. standby generator)
- Powerful alarm output
- Control series editor (value perception selectable)
- 2nd target power factor
- High precision of measurement
- 2nd expert mode
- Fixing of net frequency in the expert mode (for measuring) to avoid errors when measuring in critical grids
- Auto-range-function for sensitivity: For input current <1A the amplification is increased in order to reach a sensitivity of 20 mA.
- Interface RS485 optional



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 / °F) - Real-time cos φ - Target cos φ - Switchover cos-φ/tan-φ - kvar value to target cos φ - Harmonics of voltage and current - Display of values also as percentage |
| Alarm output | <ul style="list-style-type: none"> - Insufficient compensation - Overcompensation - Undercurrent - Overcurrent - Overtemperature - Threshold value programmable |
| 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) |

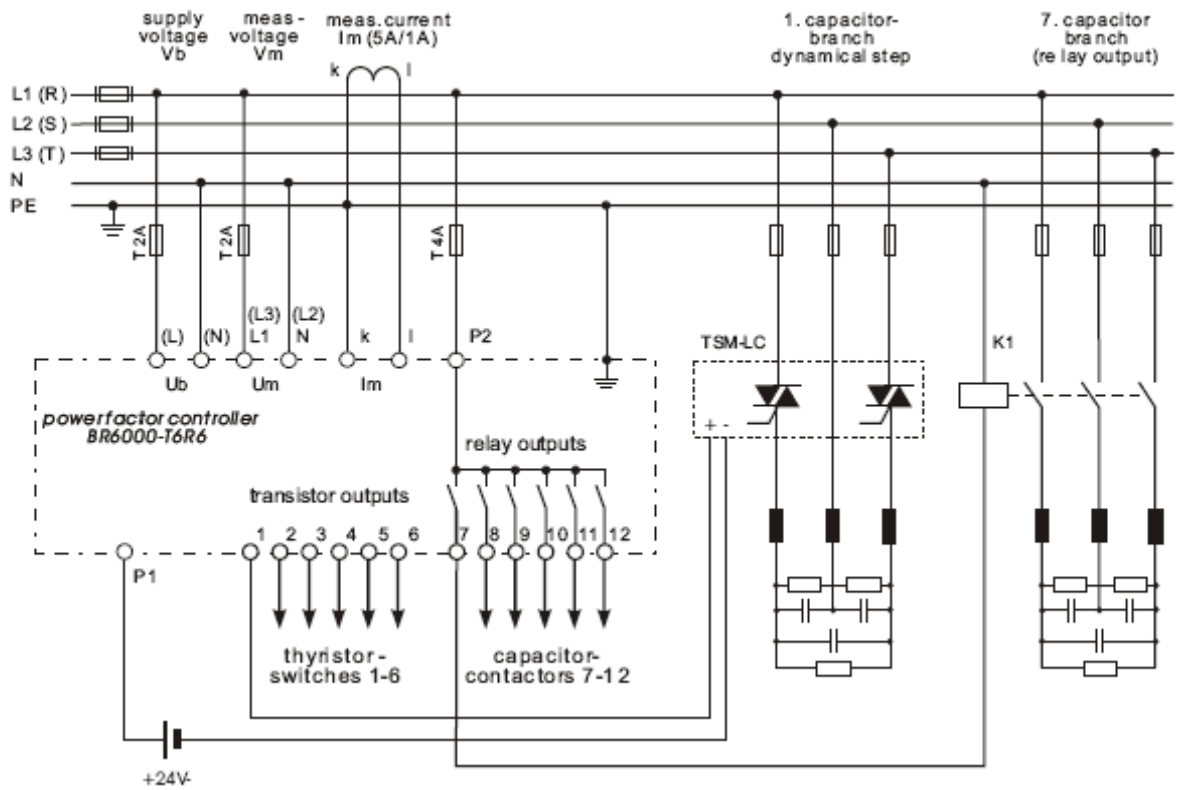
| | |
|---|---|
| Additional Features | <ul style="list-style-type: none"> - Internal error storage - 2nd signal relay random - Triggering time programmable |
| Technical data | |
| Weight | 1 kg |
| Case | Panel-mounted instrument, 144 × 144 × 55 mm (cut out 138 × 138 mm) |
| Ambient conditions | |
| Overvoltage class | II |
| Pollution degree | 2 |
| Operating temperature | –20 ... +60 °C |
| Storage temperature | –20 ... +75 °C |
| Sensitivity to inference (industrial areas) | EN55082–2.1995 |
| Spurious radiation (residential areas) | EN55011–10.1997 |
| Safety guidelines | IEC61010–1:2001, EN61010–1:2001 |
| 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, 50 and 60 Hz power lines |
| Target cos φ | 0.3 inductive to 0.3 capacitive adjustable |
| Switching and discharge time range | 20 ... 1000 ms / 1 ... 1200 s (dynamic / static section) |
| Number of control series | 20 series preset + control series editor for free programming |
| Control modes | <ul style="list-style-type: none"> - Series switching (LIFO), - Circular switching (FIFO), - Self-optimized intelligent control mode |
| Measurement | |
| Measurement voltage range | 30 ... 525 V AC (L–N) or (L–L) |
| 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 |

| | |
|--|---|
| Switching outputs Output 1... 6: transistor Output 7...12: relay | 6 steps (10 ... 24 V DC, 40 mA) 6 steps (230 V AC, 6 A) |
| Alarm relay Message relay | Potential-free contact (max. 250 V, 6 A) Potential-free contact (max. 250 V, 6 A) 2 nd target power factor programmable (activation via external input) |
| Interface | Optional RS485 Parity can be set for the transfer protocol |

Ordering codes

| Type | Voltage 50/60 Hz V AC | Output | | Alarm output | Switchover target cos ϕ 1/2 | Inter- face | Ordering code |
|------------------|-----------------------------|--------|------------|-----------------|--|----------------|-----------------|
| | | Relay | Transistor | | | | |
| BR6000-T6R6 | 110 ... 230 | 6 | 6 | Yes | Yes | No | B44066R6066E230 |
| BR6000-T6R6/S485 | 110 ... 230 | 6 | 6 | Yes | Yes | RS485 | B44066R6466E230 |

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 PF-Controller BR6000

- USB to RS485 converter to connect BR6000-T6R6/S485 to a PC, ordering code B44066R3333E230
- Data logger "DataLog SD" for BR6000, ordering code B44066R1311E230
- Multi measuring interfaces MMI6000/MMI7000 for real current measuring

Technical data see separate data sheets.

⚠ 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.

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