Film capacitors – Power Factor Correction

Power Factor Controller

Series/Type: BR6000-T V6.0
Ordering code: B44066R6106E230
Date: August 2015
Version: 2

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Film capacitors – Power Factor Correction

Power Factor Controller

B4406R6106E230

Power Factor Controller

BR6000-T V6.0

Preliminary data

Characteristics

- Intelligent control
- 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
- Four-quadrant operation (e.g. stand by generator)
- Powerful alarm output
- Control series editor (value perception selectable)
- High precision of measurement
- 2\textsuperscript{nd} 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.

Features

| Display | - Large and multifunctional LCD
  (2 x 16 characters)
  - Graphic and alphanumeric
  - LCD illumination |
|-------------------------------|---------------------------------------------------------------|
| System parameters displayed | - System voltage (V AC)
  - Reactive power (kvar)
  - Active power (kW)
  - Frequency
  - Apparent power (kVA)
  - Apparent current (A)
  - Temperature (°C / °F )
  - Real-time cos \phi
  - Target cos \phi
  - Switchover cos-\phi/tan-\phi
  - kvar value to target cos \phi
  - Harmonics of voltage and current
  - Display of values also as percentage |
| Alarm output | - Insufficient compensation
  - Overcompensation
  - Undercurrent
  - Overcurrent
  - Overtemperature
  - Threshold value programmable
  - Internal error storage
  - 2\textsuperscript{nd} signal relay random
  - Triggering time programmable |
| Recall recorded values | - Maximum voltage, (V\textsubscript{max})
  - Maximum reactive power, Q (kvar)
  - Maximum active power, P (kW)
  - Maximum apparent power, S (kVA)
  - Maximum temperature (°C) |
| Dynamic PFC | - Direct triggering of thyristor modules
  series TSM |
## Technical data

<table>
<thead>
<tr>
<th>Weight</th>
<th>1 kg</th>
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</thead>
<tbody>
<tr>
<td>Case</td>
<td>Panel-mounted instrument, 144 x 144 x 55 mm (cut out 138 x 138 mm)</td>
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</tbody>
</table>

### Ambient conditions
- **Over-voltage class**: III
- **Pollution degree**: 2
- **Operating temperature**: -20 ... +60 °C
- **Storage temperature**: -20 ... +75 °C
- **Sensitivity to interference (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 according to IEC60529
- **Rear side**: IP20 according 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
- **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

### 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 (sinusodial) < 15 ms
- **Zero voltage release**

### Switching outputs
- **Transistor outputs**
  - **Number of outputs**: 6
  - **Switching voltage/power**: 10 ... 24 V DC

### Alarm relay
- Potential-free contact (max. 250 V, 6 A)

### Ordering code
- B44066R6106E230
Connection plan

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⚠️ 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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