Film Capacitors – Power Factor Correction

Power Factor Controller

Series/Type: BR604
Ordering code: B44066R6004E230
Date: 2010-04-12
Version: 3

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Film Capacitors – Power Factor Correction  
Power Factor Controller  

Characteristics
- Intelligent control
- Menu driven handling (plain language; German/English/Portuguese/Spanish)
- Self-optimizing control capability
- Recall function of recorded values
- Four-quadrant operation (e.g. stand by generator)

Features

<table>
<thead>
<tr>
<th>Display</th>
<th>- Large and multifunctional LCD (2 x 16 characters)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Graphic and alphanumeric</td>
</tr>
</tbody>
</table>

System parameters displayed
- System voltage (VAC)
- Reactive power (kvar)
- Active power (kW)
- Apparent power (kVA)
- Apparent current (A)
- Real-time cos \( \phi \)
- Target cos \( \phi \)
- kvar value to target cos \( \phi \)

Recall recorded values
- Maximum voltage, \( V_{\text{max}} \)
- Maximum reactive power, Q (kvar)
- Maximum active power, P (kW)
- Maximum apparent power, S (kVA)

Technical Data

<table>
<thead>
<tr>
<th>Weight</th>
<th>0.5 kg</th>
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<tbody>
<tr>
<td>Case</td>
<td>Panel-mounted instrument, 100 x 100 x 40 mm)</td>
</tr>
<tr>
<td></td>
<td>(cut out 92 x 92 mm)</td>
</tr>
</tbody>
</table>

Ambient conditions
- Overvoltage class III
- Pollution degree 2
- Operating temperature -10 ... +50 °C
- Storage temperature -20 ... +75 °C
- Sensitivity to inference (industrial areas) EN55082-2.1995
- Spurious radiation (residential areas) EN55011 10.1997
- Safety guidelines EN61010-1:2001
- Mounting position Any
- Humidity class 15 to 95% without dew

Protection class
- Front plate IP54 according IEC60529 / DIN 40050
- Rear side IP20 according IEC60529 / DIN 40050
### Operation
- **Supply voltage**: 230 V AC, 50 and 60 Hz power lines
- **Target cos \( \varphi \)**: 0.3 ind. – 0.3 cap.
- **Switching and discharge time range**: 1 – 255 seconds
- **Number of control series**: 23 series preset
- **Control modes**: Series switching (LIFO), circular switching (FIFO), self-optimized intelligent control mode

### Measurement
- **Measurement voltage range**: = supply voltage: 230 VAC (L-N)
- **Fundamental frequency**: 50 and 60 Hz
- **Measurement current (CT)**: \(x/1\) and \(x/5\) A possible
- **Minimum operating current**: 40 mA
- **Maximum current**: 5.3 (sinusoidal)
- **Zero voltage release**: < 15 ms

### Switching outputs

### Relay outputs
- **Number of relays**: 4 steps available
- **Switching voltage/power**: Maximum 250 V AC, max. 1000 W
- **Expected mechanical life**: > \(30 \times 10^6\) switching operations
- **Expected electrical life**: > \(5 \times 10^6\) switching operations

(\(\text{load} = 200 \text{ VA}, \cos \varphi = 0.4\))

### Ordering Code
B44066R6004E230
△ Cautions:

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 BR604 with the actual system parameters (current transformer prim. and sec., first kvar step, control series, switching time).

Note
For detailed information about PFC capacitors and cautions, refer to the latest version of EPCOS PFC Product Profile.
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