Data Sheet
040.D.101.02
Operating Hours
Counters

BWQ 48
BWQ 55
BWQ 72
BWQ 96
BGQ 48
BGQ 55
BGQ 72
BGQ 96
Application

Operating hours counters are used for recording the operating time of vehicles, machines, or installations.

BWQ ... models are suitable for use in AC systems 50 Hz or 60 Hz.

BGQ ... models are quartz controlled and DC supplied.

Functional Principle

Cyclometer register driven by a wheel gearing and
– synchronous motor (BWQ ...)
– stepper motor with quartz controlled electronics (BGQ ...)

General Technical Data

case details square case for mounting in switchboards, stackable
material of case thermoplastics, flame retardant
material of window thermoplastics
colour of bezel black
position of use any position permissible
panel fixing clamping frame (BWQ/BGQ 48), clamping bracket (BWQ/BGQ 55/72/96)
terminals screw clamps
dimensions (in mm) BWQ 48 BWQ 55 BWQ 72 BWQ 96
bezel 48 55 72 96
case 45 50 67 90
case depth 31 53 53
panel cutout 46 50 50 +1
panel thickness 1 10 10 10 1 10
weight approx. 60 g 60 g 140 g 180 g
enclosure code IP 50 (BWQ/BGQ 48)
IP 54 (BWQ/BGQ 55)
IP 52 (BWQ/BGQ 72/96)
terminals IP 00 without protection against accidental contact

Measuring Ranges

measuring unit time

counting range BWQ 48/55/72/96 000,000.0 ... 999,999.9 h
BWQ 48/55/72/96 00,000.00 ... 99,999.99 h

operating voltage tolerance power consumption

BWQ 48
24 V – ±15% approx. 1 VA
115 V – ±15% approx. 1 VA
230 V – ±15% approx. 1 VA

BWQ 55/72/96
110 V – ±10% to –15% approx. 1.5 VA
230 V – ±10% to –15% approx. 1.5 VA

BGQ 48
12...48 V = ±10% approx. 20 mW at 12 V

BGQ 55/72/96
10 ... 50 V = 0.07 ... 2 W

rated frequency BWQ 50 Hz

* also refer to "Options"

Indication

size of numerals 4.4 mm (BWQ/BGQ 48)
4 mm (BWQ/BGQ 55/72/96)
colour of numerals pre-decimal places white on black,
decimal places red on black
running indicator by a running gear

Accuracy at Reference Conditions

accuracy same as supply frequency (BWQ ...)
±0.02 s in 24 h (BGQ ...)

reference conditions
ambient temperature 23°C ± 1 K
frequency (BWQ ... ) rated frequency
operating voltage within limits specified

Environmental

ambient –15 ... +55°C (BWQ 48)
temperature range –10 ... +55°C (BWQ/BGQ 55/72/96)
–10 ... +50°C (BGQ 48)

Rules and Standards

DIN 43 718 Measurement and control; front-frames and
frontpanels of measurement and control
equipment; principal dimensions

DIN EN 60 529 Enclosure codes by housings (IP-code)

DIN EN 61 010-1 Safety requirements for electrical measuring,
control and laboratory equipment
Part 1: General requirements

DIN EN 61 326-1 Electrical equipment for measurement, con-
trol and laboratory use – EMC requirements
Part 1: General requirements
(BWQ/BGQ 55/72/96: DIN EN 61 000-6-4)

DIN IEC 61 554 Panel mounted equipment –
Electrical measuring instruments –
Dimensions for panel mounting

Options (on Request)

operating voltage BWQ 55 24, 48, 60 V–
BWQ 72 24, 48 V–
BWQ 96 24 V–
BGQ 48 5 ... 24 V=, 36 ... 110 V=,
others on request

rated frequency BWQ ... 60 Hz
zero reset pushbutton
case
front mask for Q55 bezel 55 mm x 55 mm,
BWQ/BGQ 48 Q72 mask 72 mm x 72 mm, or
D72 mask 72 mm ø

enclosure code IP 54

terminal protection against accidental contact
BWQ/BGQ 72/96 terminal cover

* also refer to "Options"
Connections

Diagram showing connections for BWQ/BGQ 48.

Dimensions

(dimensions in mm)

**BWQ/BGQ 48**

- Clamping frame: 7
- Mounting: ASF2

**BWQ/BGQ 55**

- Dimensions: 55 x 55

**BWQ/BGQ 72/96**

- Dimensions: 72 x 96
## Ordering Information

<table>
<thead>
<tr>
<th>Type</th>
<th>Operating Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>BWQ</td>
<td>Operating hours counters, square for AC voltage</td>
</tr>
<tr>
<td>BGQ</td>
<td>for DC voltage</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Front dimensions</th>
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<tbody>
<tr>
<td>48</td>
<td>48 mm x 48 mm</td>
</tr>
<tr>
<td>55</td>
<td>55 mm x 55 mm</td>
</tr>
<tr>
<td>72</td>
<td>72 mm x 72 mm</td>
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<tr>
<td>96</td>
<td>96 mm x 96 mm</td>
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<table>
<thead>
<tr>
<th>Operating voltage</th>
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<tbody>
<tr>
<td>BWQ 48</td>
<td>24 V AC</td>
</tr>
<tr>
<td></td>
<td>115 V AC</td>
</tr>
<tr>
<td></td>
<td>230 V AC 1)</td>
</tr>
<tr>
<td>BWQ 55/72/96</td>
<td>24 V AC</td>
</tr>
<tr>
<td></td>
<td>48 V AC (BWQ 55/72 only)</td>
</tr>
<tr>
<td></td>
<td>60 V AC (BWQ 55 only)</td>
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<tr>
<td></td>
<td>110 V AC</td>
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<tr>
<td></td>
<td>230 V AC 1)</td>
</tr>
<tr>
<td>BGQ 48</td>
<td>12 ... 48 V DC 1)</td>
</tr>
<tr>
<td></td>
<td>5 ... 24 V DC</td>
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<tr>
<td></td>
<td>36 ... 110 V DC</td>
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<tr>
<td></td>
<td>others 2)</td>
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<tr>
<td>BGQ 55/72/96</td>
<td>10 ... 50 V DC</td>
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<table>
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<tr>
<th>Rated frequency</th>
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<tr>
<td>BWQ ...</td>
<td>50 Hz 1)</td>
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<td></td>
<td>60 Hz</td>
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<table>
<thead>
<tr>
<th>Front mask for BWQ/BGQ 48</th>
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<tbody>
<tr>
<td>none (48 mm) 1)</td>
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<tr>
<td>Q55</td>
<td>55 mm</td>
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<tr>
<td>Q72</td>
<td>72 mm</td>
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<tr>
<td>D72 Ø 72 mm</td>
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<table>
<thead>
<tr>
<th>Enclosure code front side</th>
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<tbody>
<tr>
<td>IP50 BWQ/BGQ 48 1)</td>
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<tr>
<td>IP52 BWQ/BGQ 72/96</td>
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<td>IP54 BWQ/BGQ 55, BWQ/BGQ 48 2)</td>
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<tr>
<th>Terminal protection</th>
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<td>BWQ/BGQ 72/96</td>
<td>none 1)</td>
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<tr>
<td></td>
<td>terminal cover</td>
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1) Standard  
2) On request, please clearly add the desired specifications.

### Ordering example

BWQ 72, operating voltage 230 V AC, 50 Hz

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Weigel Meßgeräte GmbH
Postfach 720 154 • 90241 Nürnberg • Phone: 0911/4 2347-0
Erlenstraße 14 • 90441 Nürnberg • Fax: 0911/4 2347-39
Sales: Phone: 0911/4 2347-94
Internet: http://www.weigel-messgeraete.de
e-mail: vertrieb@weigel-messgeraete.de

– specifications subject to change without notice; date of issue 04/11 –