The Weschler BG Series Circular BarGraphs include the BG241, BG251, BG261 and BG281. The panel footprint, shape and mounting meets direct retrofit applications for 4½" and 8¼" switchboard meters, as well as 6" and 8" pressure gauge meters. The electronics housing is identical for both sizes.

Bars are available in red, green or amber for easy viewing. Weschler BarGraphs combine the visual indication of an analog gauge with the precision of a digital instrument.

Digital displays are available with either 3½ or 4½ digit resolution. The 101 segment bar gives the operator a quick view of the measured signal and the control setpoints. Separate setpoint LEDs provide an added visual indication of control/alarm status. Signal direction is shown by two trend arrows. Setpoints and other parameters are easily entered from the front panel.

Weschler BarGraph instruments can be configured for a wide range of input signals. Retrofit sizes are available for most panel and switchboard meters in use today. These instruments satisfy the high quality standards of the utility, OEM and process industries.

**FEATURES**

- **High resolution 101 segment LED bar array**
- **3½, 4½ or 5 digit display with resolution to 0.01%**
- **Programmable functions**
  - Zero point location
  - Setpoint location
  - Hysteresis (setpoint, trend)
  - Span and zero
  - Digital display for engineering units
  - Enable/disable front buttons
  - I.D. selection for communication

**Form-C relay outputs**

- Normally Open
  - 5A, resistive @ 250V AC
  - 5A, resistive @ 28V DC
- Normally Closed
  - 3A, resistive @ 250V AC
  - 2A, resistive @ 28V DC

**Peak and Valley hold**

**Trend indication for signal Direction**

**Communication**

- RS-232, RS-485, SCADA, DCS

**Analog retransmit**

- 4-20, 10-50, 0-1 mA DC
- 1-5, 0-1, 0-5 V DC

**Retrofit sizes for:**

- GE/Yokogawa AB/DB40 4½" and AB/DB16 8¼" switchboard meters
- Crompton 075/077 4½" and 8¾" switchboard meters
- Ashcroft, Heise 6" and 8" gauges
- Dixson BW051/P, Weschler K241

**Versatile selection of inputs**

- DC: Up to 5A & 250V
- AC: Up to 5A & 250V
- Thermocouple: J, K, T
- RTD: 10Ω Cu or 100Ω Pt
- Power: Watts, VARS, power factor, phase angle
- Frequency: Line or mag pickup
- Process Control: ma, V
Bar Display
101 segment LED
1% full scale resolution
Circular Displays:
- BG-241 285°
- BG-261/281 270°
- BG-251 270°/345°

Digital Display
3½, 4½ or 5 digit
Linearity ±1 count
Resolution
- 3½ digit 0.1% full scale
- 4½ digit 0.01% full scale
- 5 digit 0.01% full scale
Height
- BG-241 0.4" (10.16mm)
- BG-261/281 0.8" (20.32mm)
- BG-251 0.56" (14.22mm)

Response Time
- DC <600msec full scale
- AC <800msec full scale

Temperature
- Operation 0° to 50°C, <95% RH (non-condensing)
- Storage -40° to 85°C

Input Isolation
- AC Transformer isolated (>50mA, 1V)
- DC Differential

Sensor Power
- 24V DC excitation power @ 90mA

Setpoints
Up to 4 SPDT relays with form C contacts available. Hysteresis values of 0.5, 1.0, 2.0% of full scale, selectable (other values are available). Optional: Field programmable 0-10% or latching

Retransmit Signals
- 4-20mA DC
- 0-1mA DC
- 10-50mA DC
- 1-5V DC
- 0-5V DC

Input Impedance
- 2Mohm @ >4V DC
- 30kohm @ 120V AC P.T.
- 0.1ohm @ 5A AC C.T.
- 250ohm @ 4-20mA DC
- 100ohm @ 10-50mA DC

Input Overload Ratings
- 200%, not to exceed 10A
- 200%, not to exceed 300V

Input Sensitivities [ANSI C39.1]
- DC:
  - Current 50 microamp - 5A
  - Voltage 50mV - 250V
  - Accuracy 0.04% of full scale ± 1 count

- AC RMS:
  - Current 1mA - 5A
  - Voltage 50mV - 250V
  - Accuracy 0.1% of full scale ± 1 count

- Temperature:
  - Thermocouple °C °F
    - Type J -210 to 795 -346 to 1463
    - Type K -270 to 851 -454 to 1563
    - Type T -270 to 400 -454 to 752
  - Accuracy 0.1% of full scale ± 1 count
  - Linearity 50 point, 0.1%

- RTD °C °F
  - 100Ω Pt -260 to 700 -436 to 1292
  - Alpha 0.00385 °C standard
  - Other Alpha ratings available
  - 10Ω Cu -100 to 260 -148 to 500
  - Accuracy 0.2% of full scale ± 1 count

- Frequency:
  - 50Hz to 20kHz at 5 to 250V p-p
  - Accuracy 0.1% of full scale ± 1 count

- Line Frequency (55 to 65 Hz):
  - Accuracy 0.01% of full scale ± 1 count

Bar Display
101 segment LED
1% full scale resolution
Circular Displays:
- BG-241 4.5" (114.3 mm) SQUARE
- BG-261 8.5" (215.9 mm) SQUARE
- BG-251 6.0" (152.4 mm) ROUND
- BG-281 8.5" (215.9 mm) ROUND

ARTWORK GUIDELINES

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  - Voltage 50mV - 250V
  - Accuracy 0.1% of full scale ± 1 count

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### ORDERING GUIDE

**SAMPLE PART NUMBER** (SEE BOTTOM OF PAGE FOR EXAMPLE)

<table>
<thead>
<tr>
<th>TYPE</th>
<th>BAR ZERO POINT:</th>
<th>DIGITAL DISPLAY:</th>
<th>SETPOINTS:</th>
<th>SETPOINT HYSTERESIS:</th>
<th>INPUT TYPE:</th>
<th>COMMUNICATION:</th>
<th>POWER:</th>
<th>INPUT LEVEL:</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>BG241</td>
<td>3-1/2 digit</td>
<td>N</td>
<td>1% of F.S. (standard)</td>
<td>A = DC Volts</td>
<td>A = RS232</td>
<td>120V AC ±15% 50/60Hz</td>
<td>See input Level Matrix Guide</td>
</tr>
<tr>
<td>6</td>
<td>BG261</td>
<td>4-1/2 digit</td>
<td>H</td>
<td>2% of F.S.</td>
<td>B = DC Amps</td>
<td>C = RS485 Bi-directional</td>
<td>240V AC ±15% 50/60Hz</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>BG281</td>
<td>5 digit</td>
<td>L</td>
<td>0.5% of F.S.</td>
<td>P = 4-20mA DC</td>
<td>X = None</td>
<td>12V DC</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>BG251</td>
<td>Not required</td>
<td>Z</td>
<td>Not required</td>
<td>F = 1-5V DC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td>D = 0-1V DC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>S</td>
<td></td>
<td>F = 4-20mA DC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>P</td>
<td></td>
<td>G = 0-1mA DC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>H = 10-50mA DC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>W = Excitation Power 24 VDC @ 90mA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**EXAMPLE:**

(4) BG-241, (B) zero at bottom, (3) 3 1/2 digit, (N) Hi/Lo setpoint, (1) 1% of F.S. setpoint hysteresis, (A) DC volts input, (A-M) full scale is 0.05 volts, (1) 120 VAC 50/60 Hz power, (F) 4/20 mA DC isolated retransmit, (A) RS232 communication, (P) peak/valley hold, (T) trend indicator, (T) terminal strip connector, (X) red led color
**DIMENSIONS**

**BG-241**

- **FRONT VIEW**
  - Dimensions: 4.421" x 112.293 mm

- **SIDE VIEW**
  - Dimensions: 4.421" x 112.293 mm

- **BACK VIEW**
  - Dimensions: 4.0" x 101.6 mm

- **PANEL CUTOUT** (All Models)
  - Dimensions: 4.0" x 101.6 mm

**BG-261**

- **FRONT VIEW**
  - Dimensions: 8.750" x 222.25 mm

- **SIDE VIEW**
  - Dimensions: 8.750" x 222.25 mm

- **BACK VIEW**
  - Dimensions: 8.750" x 222.25 mm

- **ALTERNATE PANEL CUTOUT** FOR BG-251 / 281
  - Dimensions: 0.312" x 7.925 mm

**BG-251 / 281**

- **FRONT VIEW**
  - Dimensions: 4.0" x 101.6 mm

- **SIDE VIEW**
  - Dimensions: 4.0" x 101.6 mm

**TERMINAL CONNECTIONS**

**INPUTS**
- **VOLTAGE / CURRENT**
  - (1) Hot Side (+) (2) Return Side (−)

- **RTD**
  - (1) + Source (2) + Sense (3) − Sense (4) − Source

- **MAGNETIC PICKUP**
  - (1) − (2) +

- **THERMOCOUPLE**
  - Provided w/ flying lead and plug

**AC LINE FREQUENCY**
- (1) Hot Side (+) (2) Return Side (−)

**AC Inputs have 6/32 barrier lug connections.**

**POWER**
- (1) Hot Side (+) (2) Return Side (−)

**EXCITATION POWER 24 VDC**
- (1) − (2) +

**COMMUNICATIONS**
- (1) Transmit (2) Common (3) Receive

**RELAY CONTACTS**
- (1) Hi/Hi N.O. (2) Hi/Hi C.
- (3) Hi/Hi N.C. (4) Hi N.O.
- (5) Hi C. (6) Hi N.C.
- (7) Lo N.O. (8) Lo C.
- (9) Lo N.C. (10) Lo/Lo N.O.
- (11) Lo/Lo C. (12) Lo/Lo N.C.

* N.O. = Normally Open
* N.C. = Normally Closed
* C. = Common

**Options and features vary by model. Contact factory for details and latest specifications.**

9/1/12