# Wescbler Digital Instruments

## Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>BarGraph Selector Guide</td>
<td>iii</td>
</tr>
<tr>
<td>BarGraph Replacement Guide &amp; Cross Reference</td>
<td>v</td>
</tr>
<tr>
<td>BarGraph 2 Series High Reliability Bargraph Meters</td>
<td>1</td>
</tr>
<tr>
<td>BG Series Tricolor Edgewise BarGraphs</td>
<td>5</td>
</tr>
<tr>
<td>BG Series Single Edgewise BarGraphs</td>
<td>9</td>
</tr>
<tr>
<td>BG Series Tricolor Circular BarGraphs</td>
<td>13</td>
</tr>
<tr>
<td>BG Series Circular BarGraphs</td>
<td>17</td>
</tr>
<tr>
<td>BG Series AC Power Circular BarGraphs</td>
<td>21</td>
</tr>
<tr>
<td>BG Series Large Edgewise BarGraphs</td>
<td>25</td>
</tr>
<tr>
<td>BG Series Dual Edgewise BarGraphs</td>
<td>29</td>
</tr>
<tr>
<td>BF Series Dual Concentric BarGraphs</td>
<td>33</td>
</tr>
<tr>
<td>Bowmar Series Single Edgewise BarGraphs</td>
<td>35</td>
</tr>
<tr>
<td>Gate Position Indicator</td>
<td>39</td>
</tr>
<tr>
<td>Input Level Matrix</td>
<td>41</td>
</tr>
<tr>
<td>Special Configurations</td>
<td>42</td>
</tr>
<tr>
<td>BarGraph &amp; Meter Accessories</td>
<td>43</td>
</tr>
<tr>
<td>PSP Series Digital Switchboard Meters</td>
<td>45</td>
</tr>
</tbody>
</table>

### How to Specify a BarGraph for an Existing Installation

- Use the Selector Guide to determine which models fit the panel cutout.
- Match the power supply voltage available in the panel to the various BarGraph supply options.
- Select the input type and next higher full scale value (see ordering guide for the specific model).
- Select other options such as display colors, setpoint relays, analog retransmit, communications.
- Use this information to build the 15 digit part number. Add notes to specify the scale markings, legend & any special requirements.

### How to Specify a BarGraph for a New Application

- Use the Selector Guide to determine which models have the desired input type and range.
- Select a model based on meter size and bar style.
- Specify input type and next higher full scale value (see ordering guide for the specific model).
- Select power supply to match the supply voltage available in the panel.
- Select other options such as display colors, setpoint relays, analog retransmit, communications.
- Use this information to build the 15 digit part number. Add notes to specify the scale markings, legend & any special requirements.
### Weschler Digital BarGraph Selector Guide

#### TriColor BarGraph

<table>
<thead>
<tr>
<th>Style</th>
<th>Series</th>
<th>P/N</th>
<th>Bezel Size</th>
<th>Segments</th>
<th>Digits</th>
<th>Data Sheet</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edgewise Single</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6&quot; Vertical</td>
<td>BG-252TC</td>
<td>2</td>
<td>1.7 x 6.04</td>
<td>40</td>
<td>5</td>
<td>TriColor Edgewise</td>
<td>5</td>
</tr>
<tr>
<td>6&quot; Horizontal</td>
<td>BH-252TC</td>
<td>5</td>
<td>6.04 x 1.7</td>
<td>40</td>
<td>5</td>
<td>&quot;</td>
<td>5</td>
</tr>
<tr>
<td>7.5&quot; Vertical</td>
<td>BV-5ATC</td>
<td>A</td>
<td>1.75 x 7.6</td>
<td>40</td>
<td>5</td>
<td>&quot;</td>
<td>5</td>
</tr>
<tr>
<td>12&quot; Vertical</td>
<td>BD-101TC</td>
<td>K</td>
<td>3.14 x 12.9</td>
<td>40</td>
<td>5</td>
<td>&quot;</td>
<td>5</td>
</tr>
<tr>
<td>Circular</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5&quot; Square</td>
<td>BG-241TC</td>
<td>4</td>
<td>4.42 x 4.42</td>
<td>50</td>
<td>5</td>
<td>TriColor Circular</td>
<td>13</td>
</tr>
<tr>
<td>8.5&quot; Square</td>
<td>BG-261TC</td>
<td>6</td>
<td>8.75 x 8.75</td>
<td>50</td>
<td>5</td>
<td>&quot;</td>
<td>13</td>
</tr>
<tr>
<td>6&quot; Round</td>
<td>BG-251TC</td>
<td>3</td>
<td>7.5&quot; dia</td>
<td>50</td>
<td>5</td>
<td>&quot;</td>
<td>13</td>
</tr>
<tr>
<td>8&quot; Round</td>
<td>BG-281TC</td>
<td>8</td>
<td>10&quot; dia</td>
<td>50</td>
<td>5</td>
<td>&quot;</td>
<td>13</td>
</tr>
<tr>
<td>Square/Round</td>
<td>various</td>
<td>4, 6, 8</td>
<td>various</td>
<td>50</td>
<td>4.5</td>
<td>Gate Position</td>
<td>39</td>
</tr>
</tbody>
</table>

#### Standard BarGraph

<table>
<thead>
<tr>
<th>Style</th>
<th>Series</th>
<th>P/N</th>
<th>Bezel Size</th>
<th>Segments</th>
<th>Digits</th>
<th>Data Sheet</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edgewise Single</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6&quot; Vertical</td>
<td>BG-252</td>
<td>2</td>
<td>1.7 x 6.04</td>
<td>101</td>
<td>3.5 or 4.5</td>
<td>Single Edgewise</td>
<td>9</td>
</tr>
<tr>
<td>6&quot; Vertical</td>
<td>BG2-252</td>
<td>A</td>
<td>1.7 x 6.04</td>
<td>101</td>
<td>5</td>
<td>Bargraph 2</td>
<td>1</td>
</tr>
<tr>
<td>6&quot; Vertical</td>
<td>BW-1316</td>
<td>7</td>
<td>2.13 x 6.0</td>
<td>101</td>
<td>3.5 or 4.5</td>
<td>Single Edgewise</td>
<td>9</td>
</tr>
<tr>
<td>6&quot; Vertical</td>
<td>BW2-1316</td>
<td>C</td>
<td>2.13 x 6.0</td>
<td>101</td>
<td>5</td>
<td>Bargraph 2</td>
<td>1</td>
</tr>
<tr>
<td>7.5&quot; Vertical</td>
<td>BV-5A</td>
<td>A</td>
<td>1.75 x 7.6</td>
<td>101</td>
<td>3.5 or 4.5</td>
<td>Single Edgewise</td>
<td>9</td>
</tr>
<tr>
<td>7.5&quot; Vertical</td>
<td>BV2-5A</td>
<td>E</td>
<td>1.75 x 7.6</td>
<td>101</td>
<td>5</td>
<td>Bargraph 2</td>
<td>1</td>
</tr>
<tr>
<td>10&quot; Vertical</td>
<td>PG-101V</td>
<td>V</td>
<td>4.05 x 10.1</td>
<td>101</td>
<td>3 or 4</td>
<td>Large Edgewise</td>
<td>25</td>
</tr>
<tr>
<td>12&quot; Vertical</td>
<td>BD-101K</td>
<td>K</td>
<td>3.14 x 12.9</td>
<td>101</td>
<td>3.5 or 4.5</td>
<td>&quot;</td>
<td>25</td>
</tr>
<tr>
<td>DIN Vertical</td>
<td>PC-101C</td>
<td>C</td>
<td>2.835 x 5.7</td>
<td>101</td>
<td>3.5 or 4.5</td>
<td>Single Edgewise</td>
<td>9</td>
</tr>
<tr>
<td>6&quot; Horizontal</td>
<td>BH-252K</td>
<td>5</td>
<td>6.04 x 1.7</td>
<td>101</td>
<td>3.5 or 4.5</td>
<td>&quot;</td>
<td>9</td>
</tr>
<tr>
<td>6&quot; Horizontal</td>
<td>BH2-252</td>
<td>B</td>
<td>6.04 x 1.7</td>
<td>101</td>
<td>5</td>
<td>Bargraph 2</td>
<td>1</td>
</tr>
<tr>
<td>DIN Horizontal</td>
<td>PH-101H</td>
<td>H</td>
<td>5.7 x 2.835</td>
<td>101</td>
<td>3.5 or 4.5</td>
<td>Single Edgewise</td>
<td>9</td>
</tr>
<tr>
<td>Edgewise Dual</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6&quot; Vert/Horiz</td>
<td>BI-1251</td>
<td>X</td>
<td>1.7 x 6.04</td>
<td>101</td>
<td>----</td>
<td>Dual Edgewise</td>
<td>29</td>
</tr>
<tr>
<td>10&quot; Vertical</td>
<td>PG-202W</td>
<td>W</td>
<td>4.05 x 10.1</td>
<td>101</td>
<td>3 or 4</td>
<td>Large Edgewise</td>
<td>25</td>
</tr>
<tr>
<td>DIN Vertical</td>
<td>PC-202D</td>
<td>D</td>
<td>2.835 x 5.7</td>
<td>101</td>
<td>3 or 4</td>
<td>Dual Edgewise</td>
<td>29</td>
</tr>
<tr>
<td>Edgewise Multiple</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12&quot; Vertical</td>
<td>BD-101Multi</td>
<td>K</td>
<td>=2.7n x 15.4</td>
<td>101</td>
<td>3.5 or 4.5</td>
<td>Large Edgewise</td>
<td>25</td>
</tr>
</tbody>
</table>

BG-252, BV-5A, BW-1316 can also be ganged without special hardware

#### Circular

<table>
<thead>
<tr>
<th>Style</th>
<th>Series</th>
<th>P/N</th>
<th>Bezel Size</th>
<th>Segments</th>
<th>Digits</th>
<th>Data Sheet</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5&quot; Square</td>
<td>BG-241</td>
<td>4</td>
<td>4.42 x 4.42</td>
<td>50</td>
<td>3.5, 4.5 or 5</td>
<td>Single Circular</td>
<td>17</td>
</tr>
<tr>
<td>8.5&quot; Square</td>
<td>BG-261</td>
<td>6</td>
<td>8.75 x 8.75</td>
<td>50</td>
<td>3.5, 4.5 or 5</td>
<td>&quot; or</td>
<td>17</td>
</tr>
<tr>
<td>6&quot; Round</td>
<td>BG-251</td>
<td>3</td>
<td>7.5&quot; dia</td>
<td>50</td>
<td>3.5, 4.5 or 5</td>
<td>&quot;</td>
<td>21</td>
</tr>
<tr>
<td>8&quot; Round</td>
<td>BG-281</td>
<td>8</td>
<td>10&quot; dia</td>
<td>101</td>
<td>3.5, 4.5 or 5</td>
<td>AC Power Circular</td>
<td>21</td>
</tr>
</tbody>
</table>

#### Concentric

<table>
<thead>
<tr>
<th>Style</th>
<th>Series</th>
<th>P/N</th>
<th>Bezel Size</th>
<th>Segments</th>
<th>Digits</th>
<th>Data Sheet</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>BF6401</td>
<td>F</td>
<td>6.5 x 7.1</td>
<td>101</td>
<td>3.5 or 4.5</td>
<td>BF Series Concentric</td>
<td>33</td>
</tr>
<tr>
<td>Single</td>
<td>BF2-6402</td>
<td>F</td>
<td>6.5 x 7.1</td>
<td>101</td>
<td>5</td>
<td>Bargraph 2</td>
<td>1</td>
</tr>
<tr>
<td>Dual</td>
<td>BF6402</td>
<td>E</td>
<td>6.5 x 7.1</td>
<td>101</td>
<td>3.5 or 4.5</td>
<td>BF Series Concentric</td>
<td>33</td>
</tr>
<tr>
<td>Dual</td>
<td>BF2-6402</td>
<td>G</td>
<td>6.5 x 7.1</td>
<td>101</td>
<td>5</td>
<td>Bargraph 2</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Bowmar BarGraph

<table>
<thead>
<tr>
<th>Style</th>
<th>Series</th>
<th>P/N</th>
<th>Bezel Size</th>
<th>Segments</th>
<th>Digits</th>
<th>Data Sheet</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3&quot; Vert/Horiz</td>
<td>APM-100</td>
<td>**</td>
<td>0.62 x 4.43</td>
<td>100</td>
<td>----</td>
<td>Bowmar Series</td>
<td>35</td>
</tr>
<tr>
<td>5&quot; Vert/Horiz</td>
<td>APM-500</td>
<td></td>
<td>1.27 x 6.38</td>
<td>50</td>
<td>----</td>
<td>&quot;</td>
<td>35</td>
</tr>
<tr>
<td>5&quot; Vert/Horiz</td>
<td>APM-600</td>
<td>**</td>
<td>1.4 x 5.7</td>
<td>50</td>
<td>----</td>
<td>&quot;</td>
<td>35</td>
</tr>
<tr>
<td>10&quot; Vert/Horiz</td>
<td>APM-800</td>
<td></td>
<td>1.4 x 10.7</td>
<td>100</td>
<td>----</td>
<td>&quot;</td>
<td>35</td>
</tr>
</tbody>
</table>

**also available as BG-xxx with card edge connector

#### Chart of Available Input Types and Levels

for characters 7 & 8 of the BarGraph part number (except Bowmar, BG2)

<table>
<thead>
<tr>
<th>Input Level Matrix</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>bg selector guide</td>
<td>19</td>
</tr>
</tbody>
</table>

**WESCHLER INSTRUMENTS 440-238-2550 www.weschler.com sales@weschler.com**
# Weschler Digital BarGraph Selector Guide

## Features & Functions

<table>
<thead>
<tr>
<th>Model</th>
<th>BarGraph 2 Series</th>
<th>Tricolor Edgewise &amp; Tricolor Circular</th>
<th>Single Edgewise &amp; Large Edgewise</th>
<th>Single Circular</th>
<th>Dual Edgewise</th>
<th>BF Concentric</th>
<th>Bowmar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-2</td>
<td>1</td>
<td>1-2</td>
<td>1</td>
<td>2</td>
<td>1-2</td>
<td>1</td>
</tr>
</tbody>
</table>

### Input Channels

<table>
<thead>
<tr>
<th>DC V</th>
<th>20mV - 300V</th>
<th>20mV - 250V</th>
<th>20mV - 250V</th>
<th>20mV - 250V</th>
<th>20mV - 250V</th>
<th>20mV - 250V</th>
<th>50mV - 100V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process 4-20mA</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Process 1-5V</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>AC V</td>
<td>50mV - 300V</td>
<td>1V - 250V</td>
<td>1V - 250V</td>
<td>1V - 250V</td>
<td>1V - 250V</td>
<td>1V - 250V</td>
<td>1V - 250V</td>
</tr>
<tr>
<td>AC A</td>
<td>1mA - 5A</td>
<td>50mA - 5A</td>
<td>50mA - 5A</td>
<td>50mA - 5A</td>
<td>50mA - 5A</td>
<td>50mA - 5A</td>
<td>50mA - 5A</td>
</tr>
<tr>
<td>AC V TRMS</td>
<td>200mV - 600V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC A TRMS</td>
<td>2mA - 5A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RTD</td>
<td>Pt</td>
<td>Pt, Cu</td>
<td>Pt, Cu</td>
<td>Pt, Cu</td>
<td>Pt, Cu</td>
<td>Pt, Cu</td>
<td></td>
</tr>
</tbody>
</table>

### Pressure/Load

<table>
<thead>
<tr>
<th>Pressure Gauge</th>
<th>Strain Gauge</th>
<th>Pressure (direct)</th>
<th>Line Frequency</th>
<th>Frequency/RPM</th>
<th>Resistance</th>
<th>Potentiometer</th>
<th>Power (W, VAR, PF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1Ø, 3Ø</td>
<td>1Ø, 3Ø</td>
<td>1Ø, 3Ø</td>
<td>1Ø, 3Ø</td>
<td>1Ø, 3Ø</td>
<td>1Ø, 3Ø</td>
<td>1Ø, 3Ø</td>
<td>1Ø, 3Ø</td>
</tr>
</tbody>
</table>

### Outputs

<table>
<thead>
<tr>
<th>Setpoints/Relays</th>
<th>4</th>
<th>4</th>
<th>4 per channel</th>
<th>4</th>
<th>4 per channel</th>
<th>4 per channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog Retransmit</td>
<td>1 per channel</td>
<td>1 per channel</td>
<td>1 per channel</td>
<td>1 per channel</td>
<td>1 per channel</td>
<td>1 per channel</td>
</tr>
<tr>
<td>Protocol</td>
<td>ASCII, Modbus</td>
<td>ASCII</td>
<td>ASCII</td>
<td>ASCII</td>
<td>ASCII</td>
<td>ASCII</td>
</tr>
</tbody>
</table>

### Features

<table>
<thead>
<tr>
<th>Dimming</th>
<th>100 steps, separate bar &amp; digit adjustments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

### Power Supply

<table>
<thead>
<tr>
<th>5VDC</th>
<th>✓</th>
<th>✓</th>
<th>✓</th>
<th>✓</th>
<th>✓</th>
</tr>
</thead>
<tbody>
<tr>
<td>12VDC</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>24VDC</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>28VDC</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>48VDC</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>125VDC</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>250VDC</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>12VAC</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>24VAC</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>120VAC</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>240VAC</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

*Circular only

1/18/2019
## BARGRAPH REPLACEMENT GUIDE

<table>
<thead>
<tr>
<th>Existing Meter</th>
<th>Weschler BarGraph</th>
</tr>
</thead>
<tbody>
<tr>
<td>A&amp;M/Weston 49 Series</td>
<td>BG/BH-252</td>
</tr>
<tr>
<td>Crompton 128</td>
<td>&quot;</td>
</tr>
<tr>
<td>Dixson BB101 (All Models)</td>
<td>&quot;</td>
</tr>
<tr>
<td>GE/Yokogawa 180</td>
<td>&quot;</td>
</tr>
<tr>
<td>Sigma/International Instruments 1151</td>
<td>&quot;</td>
</tr>
<tr>
<td>Westchler/Westinghouse V/H252</td>
<td>&quot;</td>
</tr>
<tr>
<td>Dixson BB202</td>
<td>BI-1251</td>
</tr>
<tr>
<td>Sigma/International Instruments 1251</td>
<td>&quot;</td>
</tr>
<tr>
<td>Crompton 077, 078</td>
<td>BG-241</td>
</tr>
<tr>
<td>Dixson BEW51, BW051/P</td>
<td>&quot;</td>
</tr>
<tr>
<td>GE/Yokogawa AB/DB30 or AB/DB40</td>
<td>&quot;</td>
</tr>
<tr>
<td>Modutech 4SB</td>
<td>&quot;</td>
</tr>
<tr>
<td>Westchler/Westinghouse K231/241</td>
<td>&quot;</td>
</tr>
<tr>
<td>Hays Republic 3600/V5A</td>
<td>BV-5A</td>
</tr>
<tr>
<td>Bailey Draft Gauges</td>
<td>&quot;</td>
</tr>
<tr>
<td>Hayes Republic 216</td>
<td>&quot;</td>
</tr>
<tr>
<td>Foxboro 6400</td>
<td>BF6400</td>
</tr>
<tr>
<td>Foxboro 65PP</td>
<td>BW-1316</td>
</tr>
<tr>
<td>Weston 1316</td>
<td>&quot;</td>
</tr>
</tbody>
</table>

### Cross Reference - Bargraph Model to Data Sheet

<table>
<thead>
<tr>
<th>Model</th>
<th>Data Sheet</th>
<th>BarGraph 2 Series</th>
<th>Tricolor Edgewise</th>
<th>Single Edgewise</th>
<th>Tricolor Circular</th>
<th>Single Circular</th>
<th>AC Power Circular</th>
<th>Large Edgewise</th>
<th>Dual Edgewise</th>
<th>BF Series Concentric</th>
<th>Bowman</th>
<th>Gate Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACP</td>
<td>pg 1</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APM</td>
<td>pg 5</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BD101</td>
<td>pg 9</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BF6401</td>
<td>pg 13</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BF6402</td>
<td>pg 17</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BG241</td>
<td>pg 21</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BG251</td>
<td>pg 25</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BG252</td>
<td>pg 29</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BG261</td>
<td>pg 33</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BG281</td>
<td>pg 37</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BH252</td>
<td>pg 39</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BI1251</td>
<td>pg 31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BV5A</td>
<td>pg 32</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BW1316</td>
<td>pg 35</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC101</td>
<td>pg 37</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PC202</td>
<td>pg 39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PG101</td>
<td>pg 31</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PG202</td>
<td>pg 33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PH101</td>
<td>pg 34</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BG2</td>
<td>pg 26</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Page numbers refer to the Weschler [Digital Bargraph Instruments catalog](#).
BarGraph 2 Series

High Reliability Digital Bargraph Meters

- Designed for use in nuclear power plants and other severe environments
- High intensity LED display with separately adjustable bar & digit brightness
- RS-232, RS-485, Ethernet & USB communication options
- Linearization tables for normalizing non-linear signals
- Differential inputs and programmable signal averaging
- Bar separately scaled & configurable for normal, expanded scale, dual slope & point representations
- Wide power supply options with minimum 3kV isolation
- Four high-capacity relays configurable for hysteresis, fail-safe & delayed operation
- Dual analog retransmit outputs, selectable volts or mA
- Pluggable, screw anchored terminal connections

The Weschler BarGraph 2 Series High Reliability Digital Bargraphs are intended for use in applications where accurate and reliable measurement of a process value is of paramount importance. This series is designed to meet or exceed all national nuclear standards for environmental temperature and humidity extremes, seismic shock, EMI/RFI, HMI and system software V&V.

The BG2 is built for use in nuclear power plant (NPP) control rooms and other locations where physical and electrical environmental extremes may be found. The BV2-5A, BW2-1316 and BF2-6402 are housed in steel enclosures. The BG2-252 and BH2-252 use a high-impact, UV stabilized polycarbonate housing. Due to the self-shielded internal construction, no additional case shielding is required.

The BG2 Series features a five digit numeric display, that indicates to 99999 in the positive excursion and 19999 in the negative excursion. Character colors are blue, green, amber and red.

The 101 segment bar provides 1% resolution. A unique programming capability allows for fine control of set point annunciator visibility. In addition, the bar display can be configured to indicate with a single moving point, which simulates a pointer, or in standard expanded bar mode. It can also be configured in dual-slope or bipolar modes. The bar can be populated with LED’s in a single color (red, green, amber, blue), or in several different colors to provide a fixed banded mode of high color purity and brightness.

Up to four setpoint relays are available for control or alarms. These high current outputs can be programmed for either high or low action, with adjustable hysteresis, mode and delay. Red setpoint annunciators are provided when relays are specified. The trend indication option adds two red trend arrows to the front panel.

BG2-252 & BH2-252 meters are configured through the three front panel buttons. Front panel programming on the BW2-1316, BV2-5A and BF2-6402 is done with a plug-in programming module (EPM). For enhanced security, the front panel programming buttons can be disabled by configuring a setting requiring the installation of a jumper on the rear panel. When a communication option is ordered, the BG2 meters are also configurable through the RS-232, RS-485, Ethernet or USB port. Modbus and ASCII protocols are provided. With available setup software, configuration files can be created off-line and stored for uploading at a later time.

Made in USA

16900 Foltz Parkway
Cleveland OH 44149 USA
Phone: 440-238-2550 Fax: 440-238-0660
www.weschler.com Email: sales@weschler.com
### BarGraph 2 Digital Bargraph Meters

#### Front View

- **BG2-252**
- **BH2-252**

#### Side View

- **BW2-1316**

#### Panel Cutout

- **BV2-5A**

<table>
<thead>
<tr>
<th>Number of Instruments</th>
<th>Dimension A (MIN)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inches</td>
</tr>
<tr>
<td>1</td>
<td>1.770</td>
</tr>
<tr>
<td>2</td>
<td>3.510</td>
</tr>
<tr>
<td>3</td>
<td>5.250</td>
</tr>
<tr>
<td>4</td>
<td>6.990</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Instruments</th>
<th>Dimension A (MIN)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inches</td>
</tr>
<tr>
<td>1</td>
<td>1.875</td>
</tr>
<tr>
<td>2</td>
<td>3.985</td>
</tr>
<tr>
<td>3</td>
<td>6.115</td>
</tr>
<tr>
<td>4</td>
<td>8.245</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of Instruments</th>
<th>Dimension A (MIN)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inches</td>
</tr>
<tr>
<td>1</td>
<td>1.813</td>
</tr>
<tr>
<td>2</td>
<td>3.563</td>
</tr>
<tr>
<td>3</td>
<td>5.313</td>
</tr>
<tr>
<td>4</td>
<td>7.000</td>
</tr>
</tbody>
</table>

#### Rear Panel

- Power
- Communications
- Relays
- Retransmit
- Input

Connector positions vary by model. BG2-252 shown.

All Models: Add 0.35” to depth for rear connectors.
BarGraph 2 Specifications

Environment:
Operating Temperature: 0 to 65 °C (32 to 149 °F) except 0 to 60 °C (32 to 140 °F) for BG2-252
Storage Temperature: -20 to 85 °C (-4 to 185 °F)
Humidity: 0 - 95% non-condensing

Power Sources:
AC 90 - 264 V, 47 - 440 Hz (12 VA)
12 V, 50 - 60 Hz (5.5 VA)
100 - 300 V (35 mA)
18 - 36 V (140 mA)
36 - 72 V (70 mA)
12 V (630 mA)
DC

Input Signals:
DC Amps 50 µA - 5 A
DC Volts 50 mV - 300 V
AC Amps rms 1 mA - 5 A
AC Volts rms 50 mV - 300 V
Type J Thermocouple -40 to 750 °C, -346 to 1463 °F
Type K Thermocouple -200 to 850 °C, -328 to 1562 °F
Type T Thermocouple -200 to 350 °C, -328 to 662 °F

Isolation:
Power Source DC source: ±3000 V, AC source: 3000Vrms
Re transmit ±3000 V peak
Communications ±2500 V rms
Signal AC Amps (>1A) ±2000 V
DC Differential

Response Time (one input):
AC Signals ≤ 500 mS, to within 0.2% of final value
DC Signals ≤ 250 mS

Overload Ratings:
DC Signals Volts 150% of FS, or 350 V maximum
Amps 150% of FS, or 7.5 A maximum
AC Signals Volts 150% of FS, or 350 V rms maximum
Amps 200% of FS, or 10 A rms maximum

Displays:
Numeric 5 Character, 7 Segment
Height 0.3 inch, 7.6 mm
99999 to -19999
Red, Green, Amber, or Blue color
Bar 4 inch, 101.6 mm
101 Segment, 1% Resolution
Red, Green, Amber, Blue or mixed color zones

Accuracy:
Resolvable Accuracy 0.001% of full scale ±1 count
Calibrated Accuracy:
DC Volts & Amps ±0.01% of full scale ±1 count
AC Volts & Amps ±0.10% of full scale ±1 count (50/60 Hz)
Thermocouple ±0.5°C ±1 count
Long Term Accuracy Industrial Versions
Voltage Reference ±0.005%, ±0.00125% lifetime
Long Term Accuracy Nuclear Versions
Voltage Reference ±0.001%, ±0.00125% lifetime

Temperature Coefficient:
DC Volts & Amps 0.003% / °C
AC Volts & Amps 0.01% / °C
Thermocouple 0.03% / °C

Set Point Relays:
Number 4 maximum
Type SPDT, Form C
Modes Hi, Lo, Latching Hi, Latching Lo, Failsafe
Capacity AC 1/8 HP 120/240 V
5 A, 240 VAC (resistive)
DC 5 A, 150 VDC

Communications:
RS-232 1200 - 57600 bits/s, 7 or 8 bit
RS-485 2 and 4 Wire
1200 - 57600 bits/s, 7 or 8 bit
USB* Peripheral device (front panel connection)
Ethernet 10/100Base-T
Protocol Modbus RTU/ASCII

Analog Retransmit:
Channels Two independent channels
Signal Sources Selectable from either channel, to follow numeric or bar display
Power Required None (self-powered)
Output Ranges 0 - 5 VDC, 0 - 10 VDC
Current Source programmable between 0 and 20 mA DC
Compliance Voltage 24 VDC maximum

Warranty: 5 years

Standards Used in Design and Manufacture:
ASME NQA-1a-2009
EPRI TR-102323
IEEE 603 2009
IEEE 828: 2012
IEEE 829: 2008
IEEE 830: 1998
IEEE 1008-1987 R2002
IEEE 1012: 2004
IEEE 1028: 2008

BarGraph 2 is Weschler's fourth generation digital indicator for power and process monitoring. Since we introduced our first bar graph meter in 1989, Weschler Bargraph products have outfitted thousands of installations worldwide and accumulated millions of operating hours. Based on our proven reliability in these commercial, industrial and military applications, we confidently offer a five year warranty on the new BG2 Series.

Specifications subject to change without notice. See product manual for detailed specifications.

WESCHLER INSTRUMENTS
Phone: 440-238-2550 Fax: 440-238-0660
www.weschler.com Email: sales@weschler.com

*BW2-1316 & BV2-5A only
**BarGraph 2 Configuration Guide**

### PART NUMBER (SEE BOTTOM OF PAGE FOR EXAMPLE)

**TYPE**
- A = BG2-252 (vertical)
- B = BH2-252 (horizontal)
- C = BW2-1316
- E = BV2-5A
- F = BF2-6401
- G = BF2-6402 (2 channel)

**SERIES**
- 2 = Industrial
- N = Nuclear

**FUNCTION - Channel 1**
- A = DC Amps
- V = DC Volts
- I = AC Amps
- E = AC Volts
- U = Type J Thermocouple
- 3 = Type K Thermocouple
- 4 = Type T Thermocouple
- 5 = Type T TC, Differential

**FULL SCALE - Channel 1**
- Code with 2 most significant digits. Minimum value=10. For intermediate value use next highest 2 digit value. Examples: Use 11 for 110, 13 for 125

**FULL SCALE MULTIPLIER - Channel 1**
- 6 = 10^x (0.0000 XX)
- 5 = 10^x (0.000 XX)
- 4 = 10^x (0.00 XX)
- 3 = 10^x (0.0 XX)
- 2 = 10^x (XX.00)
- 1 = 10^x (XX.X)
- 0 = 10^x (XX0.00)
- A = 10^x (XX0.000)

**FUNCTION - Channel 2 (BF2-6402 only)**
- A = DC Amps
- V = DC Volts
- I = AC Amps
- E = AC Volts
- U = Type J Thermocouple
- 3 = Type K Thermocouple
- 4 = Type T Thermocouple
- 5 = Type T TC, Differential
- X = No second channel

**FULL SCALE - Channel 2**
- Code with 2 most significant digits. Minimum value=10. For intermediate value use next highest 2 digit value. Examples: Use 11 for 110, 13 for 125, XX for no second channel

**FULL SCALE MULTIPLIER - Channel 2**
- 6 = 10^x (0.0000 XX)
- 5 = 10^x (0.000 XX)
- 4 = 10^x (0.00 XX)
- 3 = 10^x (0.0 XX)
- 2 = 10^x (XX.00)
- 1 = 10^x (XX.X)
- 0 = 10^x (XX0.00)
- A = 10^x (XX0.000)
- X = No second channel

**BAR DISPLAY**
- R = Red
- G = Green
- A = Amber
- B = Blue
- M = Mixed
- C = Red outer / Red inner *
- D = Red outer / Green inner *
- E = Red outer / Amber inner *
- F = Red outer / Blue inner *
- H = Green outer / Green inner *
- J = Green outer / Red inner *
- K = Green outer / Amber inner *
- L = Green outer / Blue inner *
- N = Amber outer / Amber inner *
- P = Amber outer / Red inner *
- Q = Amber outer / Green inner *
- T = Amber outer / Blue inner *
- U = Blue outer / Blue inner *
- V = Blue outer / Red inner *
- W = Blue outer / Green inner *
- Y = Blue outer / Amber inner *
- Z = Mixed / Mixed *
- S = Special

**OPTIONS (3 digits)**
- A = Custom artwork
- C = Conformal coating on modules
- E = Environmentally sealed panel front
- L = Current Loop Power (24 VDC) *
- M = External programming module (EPM)
- X = None

**COMMUNICATIONS**
- 1 = Isolated RS-232
- 2 = Isolated RS-485
- 3 = Isolated Ethernet
- 4 = USB (BW2-1316 & BV2-5A only, replaces EPM)
- X = None

**POWER**
- A = 12 VDC
- B = 12 VAC
- C = 18-36 VDC
- D = 90-264 VAC / 100-300 VDC
- E = 36-72 VDC

**ANTENNAS**
- R = Red bar
- D = Red digits
- L = Green outer / Blue inner *
- N = Amber outer / Amber inner *
- P = Amber outer / Red inner *
- Q = Amber outer / Green inner *
- T = Amber outer / Blue inner *
- U = Blue outer / Blue inner *
- V = Blue outer / Red inner *
- W = Blue outer / Green inner *
- Y = Blue outer / Amber inner *
- Z = Mixed / Mixed *
- S = Special

**For more information or quotes on nuclear qualified products, email: nuclear@weschler.com**
The Weschler Instruments BG "TC", TriColor BarGraphs provide the quickest way to spot problems in your process control panels with bright changing colors. Quick identification of trouble conditions can help prevent equipment damage or production loss, thus reducing downtime and maintenance costs, and improving operational safety. Each 40 segment LED (Light Emitting Diode) of the BG TC family has the ability to illuminate as Red (Danger), Yellow (Caution), or Green (Safe condition). The bar color identification can be easily changed by the user, from the front pushbuttons or through a tamper safe mode. The fully programmable Weschler BG TC BarGraph™ fits the widest range of inputs and retrofits most edgewise switchboard and panel meters. Weschler’s instruments satisfy the high quality standards set forth by the utility, OEM, and process control industries.

**FEATURES**

- **Large, high resolution 40 segment LED bar array**
- **5 digit display with resolution to 0.01%**
- **Field programmable functions**
  - Zero and full scale point location
  - Setpoint type (Hi or Low)
  - Hysteresis & latching
  - Setpoint time delay
  - 16 step dimming
  - Digital display for engineering units
  - Enable/disable front buttons
  - I.D. selection for communication
  - Bar form
  - Peak / Valley enable
  - Color zones
  - Over-range/Under-range flashing
  - Lamp test
- **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**
  - RS232/485, SCADA, DCS
- **Analog retransmit**
  - 4-20, 0-1mA DC
  - 1-5, 0-1, 0-5V DC
- **Retrofit sizes for:**
  - GE/Yokogawa 180,
  - Bailey draft gauges,
  - Crompton 128,
  - Dixson SA/BB 101 (all models),
  - Dixson BJ101, K051
  - Hays Republic 216, 3600/V5A,
  - Foxboro 65PP,
  - Sigma/International Instruments 1151
- **Versatile selection of inputs**
  - DC: Up to 5A & 250V
  - AC: Up to 5A & 250V
  - Thermocouple: J, K, T
  - RTD: 10Ω Cu or 100Ω Pt
  - Serial: ASCII
  - Frequency: Line or mag pickup
  - Process Control: V, mA
**SPECIFICATIONS**

**Bar Display**
40 segment LED
2.5% full scale resolution

**Height**
BG252, BH252, BV5A 4” (10.12mm)
BD101 10” (25.4mm)

**Digital Display**
5 digit LED
Resolution 0.01% full scale
Linearity ±1 count

**Height**
BG252, BH252, BV5A 0.3” (7.62mm)
BD101 0.56” (14.2mm)

**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**
Transformer isolated (>50mA, 1V)

**Setpoints**
Up to 4 SPDT relays with form C contacts available
Hysteresis 0.00-10.00% FS or latching
Time delay 0-10 sec.

**Sensor Power**
24V DC excitation power @ 90mA

**Retransmit Signals**
4-20mA DC
0-1mA DC
1-5V DC
0-5V DC

**Communication**
RS232
RS485 (2-wire)

**Power**
120/240V AC ±10%
50/60/400Hz (13VA)
12V DC ±10% (8W)
24V DC ±10% (8W)
28V DC ±10% (8W)
48V DC ±10% (8W)
250V DC ±10% (8W)
110-250V DC (8W)/85-264V AC, 50-440 Hz (13VA)

**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

**ARTWORK GUIDELINES**

**HORIZONTAL**

**VERTICAL**

**MULTIPLIER:**
4 CHAR.
IF REQUIRED

**Numerical range**
MAX. 4 Digits

**Non-digital units will have a centered bar display.**

**Bar Display**

**Digital Display**

**Response Time**

**Temperature**

**Input Isolation**

**Setpoints**

**Sensor Power**

**Retransmit Signals**

**Communication**

**Power**

**Input Impedance**

**Input Overload Ratings**

**Input Sensitivities [ANSI C39.1]**

**Temperature:**

**RTD**

**Frequency:**

**Line Frequency (55 to 65 Hz):**

**** Non-digital units will have a centered bar display.**
**SAMPLE PART NUMBER**

| 2 | B | Y | 4 | P | A | A | M | 1 | F | A | P | T | X | T |

**ORDERING GUIDE**

### TYPE:
- **2** = BG252 6" Vertical BarGraph
- **5** = BH252 6" Horizontal BarGraph
- **A** = BV5A 7.5" Vertical BarGraph
- **K** = BD101 10" Vertical BarGraph

### BAR ZERO POINT:
- **B** = Zero at Bottom
- **H** = Zero at 50% mid scale
- **F** = Zero at F.S.
- **S** = Special /off scale zero

### DIGITAL DISPLAY:
- **R** = Red
- **Y** = Yellow
- **G** = Green
- **S** = Special

### SETPOINT RELAYS:
- **4** = 4 relays
- **X** = No relays
- **S** = Special

### SETPOINT HYSTERESIS:
- **P** = Programmable 0-10% or latching
- **S** = Special

### INPUT TYPE:
- **A** = DC Volts
- **B** = DC Amps
- **P** = 4-20mA DC (input level AK)
- **N** = 1-5V DC (input level AV)
- **M** = 10-50mA DC (input level BA)
- **C** = AC Volts RMS
- **D** = AC Amps RMS
- **Q** = MAG Pickup Frequency
- **J,K,T** = Thermocouple
- **R** = RTD: Specify 3 or 4 wire & alpha
  - ✔️ 100 Ohm Pt
  - ☐ 10 Ohm Cu
- **S** = Special
- **U** = Serial ASCII (requires com. type A or C in Communication options)

### POWER:
- **1** = 120V AC, 50/60 Hz
- **2** = 240V AC, 50/60 Hz
- **4** = 12V DC
- **6** = 250V DC
- **7** = 24V DC
- **8** = 28V DC
- **9** = 48V DC
- **U** = 110-250V DC / 85-264V AC, 50-440 Hz

### COMMUNICATION:
- **A** = RS232
- **C** = RS485 Bi-directional
- **X** = None

### BAR COLOR:
- **T** = TriColor

### RETRANSMIT:
- **C** = 1-5V DC (or 0-5V on request)
- **D** = 0-1V DC
- **F** = 4-20mA DC, 700 Ohm max.
- **G** = 0-1mA DC
- **W** = Excitation Power 24 VDC @ 90mA
- **S** = Special

### EXAMPLE:

| 2 | B | Y | 4 | P | A | A | M | 1 | F | A | P | T | X | T |

(2) BG-252, (B) zero at bottom, (Y) Yellow, (4) Four relays, (P) Programmable setpoint hysteresis, (A) DC volts input, (AM) 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, (X) No option, (T) TriColor
**TERMINAL CONNECTIONS**

**BG-252TC and BH-252TC**

- **Front View**
- **Side View**
- **Back View**
- **Panel Cutout**

**Dimensions**

- **6.035"** 153.289 mm
- **5.675"** 144.145 mm
- **0.540"** 13.716 mm
- **5.695"** 144.653 mm
- **2.166"** 55.016 mm

**Number of Instruments**

<table>
<thead>
<tr>
<th>Instruments</th>
<th>A (Inches)</th>
<th>(Millimeters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.770</td>
<td>(45)</td>
</tr>
<tr>
<td>2</td>
<td>3.510</td>
<td>(89)</td>
</tr>
<tr>
<td>3</td>
<td>5.250</td>
<td>(133)</td>
</tr>
<tr>
<td>4</td>
<td>6.990</td>
<td>(178)</td>
</tr>
<tr>
<td>8</td>
<td>13.95</td>
<td>(354)</td>
</tr>
</tbody>
</table>

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

**BD-101TC**

- **Front View**
- **Side View**
- **Back View**
- **Panel Cutout**
- **Optional Mounting**

**Dimensions**

- **3.14"** 79.76 mm
- **7.160"** 181.86 mm
- **2.940"** 74.93 mm
- **5.560"** 141.22 mm
- **2.99"** 76mm

**Number of Instruments**

<table>
<thead>
<tr>
<th>Instruments</th>
<th>A (Inches)</th>
<th>(Millimeters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.770</td>
<td>(45)</td>
</tr>
<tr>
<td>2</td>
<td>3.510</td>
<td>(89)</td>
</tr>
<tr>
<td>3</td>
<td>5.250</td>
<td>(133)</td>
</tr>
<tr>
<td>4</td>
<td>6.990</td>
<td>(178)</td>
</tr>
<tr>
<td>8</td>
<td>13.95</td>
<td>(354)</td>
</tr>
</tbody>
</table>

**BV-5ATC**

- **Front View**
- **Side View**
- **Back View**
- **Panel Cutout**

**Dimensions**

- **1.75"** 44.450 mm
- **6.50"** 165.1 mm
- **1.75"** 44.45 mm
- **7.188"** 182.575 mm

**Number of Instruments**

<table>
<thead>
<tr>
<th>Instruments</th>
<th>A (Inches)</th>
<th>(Millimeters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.770</td>
<td>(45)</td>
</tr>
<tr>
<td>2</td>
<td>3.510</td>
<td>(89)</td>
</tr>
<tr>
<td>3</td>
<td>5.250</td>
<td>(133)</td>
</tr>
<tr>
<td>4</td>
<td>6.990</td>
<td>(178)</td>
</tr>
<tr>
<td>8</td>
<td>13.95</td>
<td>(354)</td>
</tr>
</tbody>
</table>

**RELAY CONTACTS**

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

Options and features vary by model. Contact factory for details and latest specifications.
The Weschler BG Series Edgewise BarGraphs include several 6" size and DIN-size instruments for horizontal and vertical orientations. 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 control industries.

**FEATURES**

**High resolution 101 segment LED bar array**

**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**

**Contact Weschler for 10CFR50 Nuclear Qualified models**

**Communication**
- RS-232, RS-485, SCADA, DCS

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

**Retrofit sizes for:**
- GE/Yokogawa 180,
- Crompton 128,
- Dixson SA/BB 101 (all models),
- Dixson BJ101,
- Hays Republic 3600/V5A,
- Foxboro 65PP,
- Weston 1316,
- Sigma/International Instruments 1151

**Versatile selection of inputs**
- DC  Up to 5A & 250V
- AC  Up to 5A & 250V
- Thermocouple  J, K, T
- RTD  10Ω Cu or 100Ω Pt
- Serial  ASCII
- Frequency  Line or mag pickup
- Process Control  mA, V
**SPECIFICATIONS**

**Bar Display**
- 101 segment LED
- 4.0” display
- 1% full scale resolution

**Digital Display**
- 3½ or 4½ digit LED
- **Setpoints**
  - Height: 0.3” (7.6mm)
  - Resolution:
    - 3½ digit: 0.1% full scale
    - 4½ digit: 0.01% full scale
- **Response Time**
  - DC: <600msec full scale
  - AC: <800msec full scale

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

**Sensor Power**
- 24V DC excitation power @ 90mA

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

**Communication**
- RS232
- RS485

**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
  - 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

---

**ARTWORK GUIDELINES**

- **BH-252 6” HORIZONTAL**
  - PH-101 DIN HORIZONTAL
- **BG-252 6” VERTICAL**
  - PC-101 DIN VERTICAL
  - **MULTIPLIER:**
    - 4 CHAR. IF REQUIRED

**MULTIPLIER:**
- 4 CHAR. IF REQUIRED

**Numerical range MAX. 4 Digits**

**Non-digital units will have a centered bar display.**
### ORDERING GUIDE

**SAMPLE PART NUMBER**

(see bottom of page for example)

| 2 | B | 3 | N | 1 | A | A | M | 1 | F | A | P | T | A | X |

**PART NUMBER**

| 2 | B | 3 | N | 1 | A | A | M | 1 | F | A | P | T | A | X |

**TYPE:**
- 2 = BG252 6” Vertical Bar Graph
- 5 = BH252 6” Horizontal Bar Graph
- C = PC101 DIN Size Vertical Bar Graph
- H = PH101 DIN Size Horizontal Bar Graph
- 7 = BW1316 6” Vertical Bar Graph
- A = BV5A 7.5” Vertical Bar Graph

**BAR ZERO POINT:**
- B = Zero at Bottom
- H = Zero at 50% mid scale
- F = Zero at F.S.
- S = Special or off scale zero

**DIGITAL DISPLAY:**
- 3 = 3-1/2 digit Display
- 4 = 4-1/2 digit Display
- X = None
- S = Special

**SETPOINTS:**
- N = Hi/Lo
- H = Hi/Hi-Hi
- L = Lo/Lo-Lo
- 4 = Hi-Hi/Hi/Lo/Lo-Lo
- Y = Fail Safe Hi/Hi-Hi
- Z = Fail Safe Hi/Lo
- X = None

**SETPOINT HYSTERESIS:**
- 1 = 1% of F.S. (standard)
- 2 = 2% of F.S.
- S = Special
- X = Not required

**INPUT TYPE:**
- A = DC Volts
- B = DC Amps
- P = 4-20mA DC (input level AK)
- N = 1-5V DC (input level AV)
- M = 10-50mA DC (input level BA)
- C = AC Volts RMS
- D = AC Amps RMS
- J, K, T = Thermocouple Type
- R = RTD: Specify 3 or 4 wire & alpha
- S = Special
- U = Serial ASCII (requires com type A, B or C in Communication options)

**LED COLOR:**
- G = Green only
- A = Amber only
- X = Red only

**COMMUNICATION:**
- A = RS232
- C = RS485 Bi-directional
- X = None

**RETRANSMIT:**
- A = 4-20mA DC into 250 ohms
- B = 0-1mA DC into 1000 ohms
- C = 1-5V DC
- D = 0-1V DC
- F = 4-20mA DC, 700 ohms max (isolated source*)
- G = 0-1mA (isolated source*)
- H = 10-50mA DC (isolated source*)
- W = Excitation Power 24 VDC @ 90mA
- X = None

**POWER:**
- 1 = 120V AC
- 2 = 240V AC
- A = 8-30V AC
- B = 9-36V DC
- C = 18-75V DC
- D = 110-300V DC / 85-264V AC
- E = 4.5-9VDC

**EXEMPLARY:**

Example: 2B3N1AAM1FAPTX

- (4) BG-252, (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 mADC isolated retransmit, (A) RS232 communication, (P)
- peak/valley hold, (T) trend indicator, (A) custom artwork, (X) red led color
**DIMENSIONS**

**BG-252 and BH-252**

![Front View](image)

![Side View](image)

![Back View](image)

![Panel Cutout](image)

**PC-101 and PH-101**

![Front View](image)

![Side View](image)

![Back View](image)

![Panel Cutout](image)

**BW-1316**

![Front View](image)

![Side View](image)

![Back View](image)

![Panel Cutout](image)

**BV5A**

![Front View](image)

![Side View](image)

![Back View](image)

![Panel Cutout](image)

**TERMINAL CONNECTIONS**

- **INPUT**
  - Voltage / Current
  - RTD
  - Magnetic Pickup
  - Thermocouple
  - Provided w/ flying lead and plug.

- **AC LINE FREQUENCY**
  - Hot Side (+) & Return Side (-)
  - AC Inputs have 6/32" barrier lug connections.

- **POWER**
  - Hot Side (+) & Return Side (-)

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

- **EXCITATION POWER**
  - VAC (hot side)
  - VAC (common)
  - 24 VDC +
  - 24 VDC –

- **RELAY CONTACTS**
  - N.O. = Normally Open
  - N.C. = Normally Closed
  - C. = Common

---

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

WESCHLER INSTRUMENTS
DIVISION OF HUGHES CORPORATION

16900 FOLTZ PARKWAY - CLEVELAND, OH 44149
Phone: (440) 238-2550 - Fax: (440) 238-0660
www.weschler.com e-mail: sales@weschler.com
The Weschler Instruments BG "TC", TriColor BarGraphs provide the quickest way to spot problems in your process control panels with bright changing colors. Each 50 segment LED (Light emitting diode) of the BG TC family has the ability to illuminate as Red (Danger), Yellow (Caution), or Green (Safe condition). The bar color identification can be changed by the user, from the front pushbuttons or through a tamper safe mode.

The Weschler BG Series Circular BarGraphs consist of model 241, 261 and 281. The panel footprint, shape and mounting meets direct retrofit applications for 4 ½” and 8 ¾” switchboard meters, as well as 8” pressure gauge meters. The electronics housing remains the same. Quick identification of trouble conditions can help prevent equipment damage or production loss, thus reducing down time and maintenance costs, and improving operational safety. The fully programmable Weschler BG TC BarGraph™ fits the widest range of inputs and retrofits most edgewise switchboard and panel meters. Weschler’s instruments satisfy the high quality standards set forth by the utility, OEM, and process control industries.

**FEATURES**

Large, high resolution 50 segment LED bar array

5 digit display with resolution to 0.01%

Field programmable functions
- Zero and full scale point location
- Setpoint type (Hi or Low)
- Hysteresis & latching
- Setpoint time delay
- 16 step dimming
- Digital display for engineering units
- Enable/disable front buttons
- I.D. selection for communication
- Bar form
- Peak / Valley enable
- Color zones
- Over-range/Under-range flashing
- Lamp test

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
- RS232/485, SCADA, DCS
- Analog retransmit
  - 4-20, 0-1mA DC
  - 1-5, 0-1, 0-5 V DC

Retrofit sizes for:
- GE/Yokogawa AB/DB 40, 4½” and AB/DB 16 8¾” switchboard meters
- Crompton 075/07, 4½” and 8¾” switchboard meters
- Ashcroft, Heise 8” gauges
- Dixon BW051/P
- Weschler K241, K261

Versatile selection of inputs
- DC
  - Up to 5A & 250V
- AC
  - Up to 5A & 250V
- Thermocouple
  - J, K, T
- RTD
  - 10Ω Cu or 100Ω Pt
- Serial
  - ASCII
- Frequency
  - Line or mag pickup
- Process Control
  - V, mA
**SPECIFICATIONS**

**Bar Display**
- 50 segment LED
- 2% full scale resolution
- Circular display:
  - BG-241: 285°
  - BG-261/281: 255°

**Digital Display**
- 5 digit
- Resolution: 0.01% full scale
- Linearity: ±1 count
- Height:
  - BG-241: 0.4” (10.16mm)
  - BG-261/281: 0.8” (20.32mm)

**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**
- 24VDC (excitation power) @ 90mA DC

**Setpoints**
- Up to 4 SPDT relays with form C contacts available
- Hysteresis: 0.00-10.00% FS or latching
- Time delay: 0-10 sec.

**Retransmit Signals**
- 4-20mA DC
- 0-1mA DC
- 1-5V DC
- 0-5V DC

**Communication**
- RS232
- RS485 (2-wire)

**Power**
- 120, 240V AC (13VA)
- 12, 24, 28, 48, 125, 250V DC (8W)

**Input Impedance**
- DC: 50 microamp - 5A
- Voltage: 50mV - 250V
- Accuracy: 0.1% of full scale ± 1 count

**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: 100Ω Pt -260 to 700 -436 to 1292
- Accuracy: 0.00385 & °C standard
- Other Alpha ratings available

**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

**ARTWORK GUIDELINES**

![Artwork Guidelines Diagram]
## ORDERING GUIDE

### SAMPLE PART NUMBER

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>BG241 4-1/2&quot; Square BarGraph</td>
</tr>
<tr>
<td>6</td>
<td>BG261 8-3/4&quot; Square BarGraph</td>
</tr>
<tr>
<td>8</td>
<td>BG281 8&quot; Circle BarGraph</td>
</tr>
</tbody>
</table>

### BAR ZERO POINT:

- **B**: Zero at Bottom
- **H**: Zero at 50% mid scale
- **F**: Zero at F.S.
- **S**: Special / off scale zero

### DIGITAL DISPLAY:

- **R**: Red
- **Y**: Yellow
- **G**: Green
- **S**: Special

### SETPOINT RELAYS:

- **4**: 4 Relays
- **X**: No relays
- **S**: Special order

### SETPOINT HYSTERESIS:

- **P**: Programmable
- **S**: Special
- **X**: Not required

### INPUT TYPE:

- **A**: DC Volts
- **B**: DC Amps
- **P**: 4/20 mADC (input level AK)
- **N**: 1/5 VDC (input level AV)
- **M**: 10/50 mADC (input level BA)
- **C**: AC Volts RMS
- **D**: AC Amps RMS
- **F**: Line Frequency
- **Q**: MAG Pickup Frequency
- **J,K,T**: Thermocouple Types
- **R**: RTD: Specify 3 or 4 wire & alpha
- **S**: Special
- **U**: Serial ASCII (requires com type A, B or C in Communication options)

### BAR COLOR:

- **T**: TriColor

### COMMUNICATION:

- **A**: RS232
- **C**: RS485 Bi-directional
- **X**: None

### RETRANSMIT:

- **C**: 1-5V DC (or 0-5V on request)
- **D**: 0-1V DC
- **F**: 4-20mA DC, 700 ohm max.
- **G**: 0-1mA DC
- **W**: Excitation Power 24 VDC @ 90mA
- **S**: Special
- **X**: None

### POWER:

- **1**: 120V AC ±15% 50/60Hz
- **2**: 240V AC ±15% 50/60Hz
- **4**: 12V DC ±10% *
- **6**: 250VDC ±10%
- **7**: 24V DC ±10%
- **8**: 28V DC ±10%
- **9**: 48V DC ±10%
- **U**: 110-250V DC / 85-264V AC, 50-440Hz

### EXAMPLE:

```
4 B Y 4 P A A M 1 F A P T T T
```

(4) BG-241, (B) zero at bottom, (Y) Yellow, (4) 4 relays, (P) Programmable setpoint hysteresis, (A) DC volts input, (AM) 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, (T) TriColor
**DIMENSIONS**

**BG-241TC**

- 4.421" (112.293 mm)
- 3.960" (100.584 mm)
- 0.315" DIA. (X4) 8.001 mm

**BG-261TC**

- 8.750" (222.25 mm)
- 3.960" (100.584 mm)
- 0.315" DIA. (X4) 8.001 mm

**BG-281TC**

- 4.0" DIA. 101.6 mm
- 1.687" 42.850 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) AL 1 N.O. (2) AL 1 C.
- (3) AL 1 N.C. (4) AL 2 N.O.
- (5) AL 2 C. (6) AL 2 N.C.
- (7) AL 3 N.O. (8) AL 3 C.
- (9) AL 3 N.C. (10) AL 4 N.O.
- (11) AL 4 C. (12) AL 4 N.C.

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

**1/4-28x5/8" mounting studs**

**Mounting Torque Requirements**
- 65-70 inch-pounds maximum.

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

For AC power measurements see the terminal connections & wiring diagrams on the BG-AC Power Circular BarGaphs.
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 8¾" 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 8¾” 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

---

16900 FOLTZ PARKWAY - CLEVELAND, OH 44149
Phone: (440) 238-2550 - Fax: (440) 238-0660
www.weschler.com e-mail: sales@weschler.com
SPECIFICATIONS

ARTWORK GUIDELINES

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
0-5V DC

Communication
RS232
RS485

Power
120, 240V AC (6VA)
12, 24, 28, 48, 125, 250V DC (3W)

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

ARTWORK GUIDELINES

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
### ORDERING GUIDE

**SAMPLE PART NUMBER** (see bottom of page for example)

<table>
<thead>
<tr>
<th>4</th>
<th>B</th>
<th>3</th>
<th>N</th>
<th>1</th>
<th>A</th>
<th>A</th>
<th>M</th>
<th>1</th>
<th>F</th>
<th>A</th>
<th>P</th>
<th>T</th>
<th>T</th>
<th>X</th>
</tr>
</thead>
</table>

**PART NUMBER**

<table>
<thead>
<tr>
<th>TYPE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

**BAR ZERO POINT:**

- B = Zero at Bottom
- H = Zero at 50% mid scale
- F = Zero at F.S.
- S = Special /off scale zero

**DIGITAL DISPLAY:**

- 3 = 3-1/2 digit Display
- 4 = 4-1/2 digit Display
- 5 = 5 digit Display
- X = Not required

**SETPOINTS:**

- N = Hi/Lo
- H = Hi/Hi-Hi
- L = Lo/Lo-Lo
- 4 = Hi-Hi/Hi/Lo/Lo-Lo
- X = Not required
- S = Special
- P = Programmable Hi or Lo (not available with LED Color X)

**SETPOINT HYSTERESIS:**

- 1 = 1% of F.S. (standard)
- 2 = 2% of F.S.
- 5 = 0.5% of F.S.
- X = Not required
- S = Special
- P = Programmable 0-10% or Latching (requires Setpoints P)

**INPUT TYPE:**

- A = DC Volts
- B = DC Amps
- P = 4-20mA DC (input level AK)
- M = 10-50mA DC (input level BA)
- C = AC Volts RMS
- D = AC Amps RMS
- F = Line Frequency
- Q = MAG Pickup Frequency
- J,K,T= Thermocouple Types
- R = RTD: Specify 3 or 4 wire & alpha
- S = Special
- U = Serial ASCII (requires com type A, B or C in Communication options)

**RETRANSMIT:**

- A = 4-20mA DC into 250 ohms
- B = 0-1mA DC into 1000 ohms
- C = 1-5V DC
- D = 0-1V DC
- F = 4-20mA DC, 700 ohms max. (isolated source*)
- G = 0-1mA (isolated source*)
- H = 10-50mA DC (isolated source*)
- W = Excitation Power 24 VDC @ 90mA
- X = None

*isolated outputs must have AC power

**LED COLOR:**

- G = Green only *
- A = Amber only *
- X = Red only (not available on 251)
- M = Multi-color Display *
- B = Enhanced Red *
- P = Superbright red or amber *

*includes 2 step dimming

**COMMUNICATION:**

- A = RS232
- C = RS485 Bi-directional
- X = None
- P = Peak/Valley Hold
- X = NA
- T = Trend Indicator
- X = NA
- K = Conformal Coating
- T = Terminal Strip Connector
- A = Custom Artwork
- X = None
- Y = Spraylight Front/Rear (BG241/261)
- Z = Spraylight Front (BG241/261)

**POWER:**

- 1 = 120V AC ±15% 50/60Hz
- 2 = 240V AC ±15% 50/60Hz
- 4 = 12V DC ±10%*
- 6 = 250VDC ±10%
- 7 = 24V DC ±10%
- 8 = 28V DC ±10%
- 9 = 48V DC ±10%
- U = 110-250V DC / 85-264V AC, 50-440Hz

*Max ambient 45°C

**INPUT LEVEL:**

See input Level Matrix Guide

**EXAMPLE:**

4 B 3 N 1 A A M 1 F A P T T X

(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 mADC 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**
- **SIDE VIEW**
- **BACK VIEW**

**BG-261**

- **FRONT VIEW**
- **SIDE VIEW**
- **BACK VIEW**

**BG-251 / 281**

- **FRONT VIEW**
- **SIDE VIEW**

**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

Mounting Torque Requirements

65-70 inch-pounds maximum.

**PANEL CUTOUT**

(All Models)

1/4-28x5/8” mounting studs

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

WESCHLER INSTRUMENTS
DIVISION OF HUGHES CORPORATION

16900 FOLTZ PARKWAY - CLEVELAND, OH 44149
Phone: (440) 238-2550 - Fax: (440) 238-0660
www.weschler.com e-mail: sales@weschler.com

2/1/19
These Weschler BG Series Circular BarGraphs are optimized for AC power measurements. The ACP4 series BarGraphs utilize self contained Current Transformers (CT) and accurate solid state circuitry to measure both single and poly phase systems.

Weschler BarGraphs combine the visual indication of an analog meter with the precision of a digital instrument. Large digits and a wide viewing angle allow operators to easily monitor the signal from a distance. Four case sizes and two versions (standard or enhanced) offer a broad choice of features and functions.

Weschler BarGraph Watt and Varmeters can replace analog instruments such as the Weschler/Westinghouse KP-241, KP-261, KV-241 and KV-261. The analog backplate option duplicates the Westinghouse terminal stud connections. The BG-241 and BG-261 panel footprint and mounting also match other 4½" and 8½" switchboard meters such as the GE AB40, DB40, AB16 and DB16. The BG-251 and BG-281 sizes match Ashcroft 6” and 8” gauges.

Weschler BarGraph instruments are housed in a rugged steel case. They are designed for long life in utility switchboards and other control applications.

**FEATURES**

- High resolution digital display
- Signal Trend arrows
- Adjustable setpoints
- Form C relay outputs
- Peak and Valley hold
- Analog retransmit
- Rugged steel case

The Weschler ACP4 Power Series BarGraph is a self-contained instrument. No external current transformers, voltage transformers or phase shifters are required to measure up to 240V and 10A. However correct installation is critical. Consult the phaser diagrams to determine the proper configuration and phase orientation for the application, particularly in retrofit situations. Note that some three phase analog VAR meters may have been specified as a Wattmeter with a VAR scaleplate and 90 degree phase shifter. The ACP4 only supports an external phase shifter in 4-wire systems.
## Wattmeters and Varmeters

<table>
<thead>
<tr>
<th>Feature</th>
<th>Standard</th>
<th>Enhanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement Range</td>
<td>± 19,999 ± 9,999</td>
<td>-9,999 to 50,000 (Neg Autoscale)</td>
</tr>
<tr>
<td>Potential Range</td>
<td>120, 240 V rms</td>
<td>120, 240 V rms</td>
</tr>
<tr>
<td>Self-Contained Current Maximum</td>
<td>10 A rms</td>
<td>10 A rms</td>
</tr>
<tr>
<td>Numeric Display Characters</td>
<td>4½ Digit</td>
<td>4½ Digit</td>
</tr>
<tr>
<td>Numeric Display Color</td>
<td>Red</td>
<td>Red, Green or Amber</td>
</tr>
<tr>
<td>Bar Color</td>
<td>Red</td>
<td>Red, Green or Amber</td>
</tr>
<tr>
<td>Bar Segments</td>
<td>101</td>
<td>101</td>
</tr>
<tr>
<td>Bar Resolution</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Display Brightness</td>
<td>Fixed</td>
<td>Two Level Programmable</td>
</tr>
<tr>
<td>Alarm Hysteresis</td>
<td>0.5, 1 &amp; 2% FS</td>
<td>0.0-10.0% FS</td>
</tr>
<tr>
<td>Relays</td>
<td>2 or 4 Form C</td>
<td>2 or 4 Form C</td>
</tr>
<tr>
<td>Relay Latching Mode</td>
<td>N/A</td>
<td>Yes</td>
</tr>
<tr>
<td>Relay Fail-safe Mode</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>HI - LO Alarms</td>
<td>2 HI, 2 LO</td>
<td>Individually Programmable</td>
</tr>
<tr>
<td>Analog Retransmit</td>
<td>256 Step Resolution</td>
<td>65,000 Step Resolution</td>
</tr>
</tbody>
</table>

## Inputs

### Potential (Voltage)
- **Nominal**: 120, 240 Vac
- **Maximum Continuous**: 150, 300 Vac
- **Momentary Overload**: 175, 325 Vac
- **Input Impedance**: 1MΩ

### Current
- **Nominal**: 10 A
- **Maximum Continuous**: 12.5 A
- **Momentary Overload**: 100 A for 500 ms
- **Input Impedance**: Internal CT, 0.1
- **Frequency**: 50/60 Hz
- **Response Time**: 1 sec.

### Uncertainty
- **Display (W or VAr)**: ± 0.5% Full Scale, ± 1 count
- **Setpoints**: ± 0.1% Full Scale, ± 1 count
- **Temperature Coefficient**
  - **Standard**: ± 1.3 ppm / °C
  - **Enhanced**: ± 0.5 ppm / °C

### Bar Display
- **Scale Length**
  - BG-241: 285°
  - BG-261/281: 270°
  - BG-251: 270°/345°

### Digital Display
- **Resolution**
  - **Standard**: 0.005%
  - **Enhanced**: 0.002%
- **Height**
  - BG-241: 0.4” (10.16 mm)
  - BG-261/281: 0.8” (20.32 mm)
  - BG-251: 0.56” (14.22 mm)

### Communications
- **RS-232**: 9600 baud, 1 start bit, 1 stop bit, no parity, no flow control
- **RS-485**: Half duplex, 9600 baud, 1 start bit, 1 stop bit, no parity, no flow control
- **Protocol**: Party Line
- **AC Sensing Method**: Electronic

## Setpoint Relays
- **Quantity**: 2 or 4
- **Type**
  - **Standard**: SPDT (Form C)
  - **Enhanced**: All programmable HI or LO
- **Contact Arrangement**
- **Contact Ratings**
  - 5A, 120/240 Vac or 30 Vdc resistive
  - 1/14 HP 120/240 Vac inductive
  - MOV clamp
- **Hysteresis**: Selectable for all setpoints collectively
- **Operating Temperature**
  - **Standard**: -20 to 60°C
  - **Enhanced**: -20 to 50°C
- **Humidity**: 0-95% non-condensing. Condensation allowed with conformal coating option.
- **Storage Temperature**: -40 to 85°C

## Analog Retransmit
- **Standard**: 256 step resolution, voltage source
- **Enhanced**: 65,000 step resolution, current source

## Meter Power
- **Nominal Current (Maximum)**
  - **Standard**: 225 ma, 825 ma
  - **Enhanced**: 125 ma, 420 ma
  - **Contact Ratings**
    - 10-15 V: 125 ma, 420 ma
    - 18-36 V: 100 ma, 350 ma
    - 36-72 V: 65 ma, 210 ma
    - 250 V DC ± 10%: 12 ma, 25 ma
    - 120 V AC ± 10% (50/60 Hz): 2.5 VA, 12.5 VA
    - 240 V AC ± 10% (50/60 Hz): 1.3 VA, 12.3 VA
    - 110-250V DC / 85-264V AC: 6 VA (3 W), 13 VA (8W)
- **Fuse**: Plug-in, rear panel accessible

## Connections
- **BG Backplate**: Phoenix plug in connectors for Relays, Analog Retransmit & Communications (mating connector supplied)
- **RS-232**: 9600 baud, 1 start bit, 1 stop bit, no parity, no flow control
- **RS-485**: Half duplex, 9600 baud, 1 start bit, 1 stop bit, no parity, no flow control
- **Protocol**: Party Line
- **AC Sensing Method**: Electronic
PART NUMBER

ORDERING GUIDE

Specify scale markings and legend when ordering

DIGIT COLOR**: B = Enhanced Red  X = Standard Red (BG-241 only)  G = Enhance Green  A = Enhanced Amber  M = Red with Multi-color bar *  S = Special

*Enhanced only

Y = Spraytight Front & Rear (241/261)  Z = Spraytight Front (241/261)  K = Conformal Coating  A = Custom Artwork  X = NA

T = Trend Indicator  X = NA

P = Peak/Valley Hold  X = NA

COMMUNICATION:  A = RS232  C = RS485 Bi-directional  X = None

RETRANSMIT:  A = 4-20mA DC into 250Ω  B = 0-1mA DC into 1000Ω  C = 1-5V DC  D = 0-1V DC  F = 4-20mA DC, 700 Ω max. (isolated)  G = 0-1mA (isolated)  T = 0-10V across 500Ω (isolated) *  K = 0-1V across 500Ω (isolated) *  M = 1-5V across 250Ω (isolated) *  X = None

**bar color matches digit color unless specified on order

*Enhanced only. Isolated requires AC power

POWER:  1 = 120V AC 50/60Hz  2 = 240V AC 50/60Hz  4 = 12V DC *  6 = 250V DC  7 = 24V DC  8 = 28V DC  9 = 48V DC  U = 110-250V DC / 85-264V AC, 50-440Hz

*Max ambient 45°C

INPUT LEVEL:

12 = Single phase two wire 1 element  13 = Single phase three wire 2 element  33 = Three phase three wire 2 element  34 = Three phase four wire 2 ½ element  3E = Three phase four wire 3 element

**bar color matches digit color unless specified on order

EXAMPLE:  4 B 4 N 1 H 3 1 F A P T Y X

(4) BG-241, (B) zero at bottom, (4) 4-1/2 digit Standard display, (N) Hi/Lo setpoint, (1) 1% of F.S. setpoint hysteresis, (H) Watts, poly phase, (3) Three phase three wire, (1)120 VAC 50/60 Hz power, (F)14-20 mA DC isolated retransmit, (A) RS232 communication, (P) peak/valley hold, (T) trend indicator, (Y) spray tight face, (X) red LED color

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

**BG-241**

Front View

- 4.421" (112.3 mm)
- 0.69" (17.5 mm)
- 1/4-28 x 5/8" studs

Side View

- 3.96" (100.6 mm)

**BG-261**

Front View

- 8.75" (222.25 mm)

Side View

- 3.96" (100.6 mm)

**BG-251 / 281**

Front View

- BG-251 = 7.562" (192.1 mm)
- BG-281 = 10.062" (255.6 mm)

Side View

- 1.05" (26.7 mm)
- 3.96" (100.6 mm)

**TERMINAL CONNECTIONS**

**3φ 3Wire Wattmeter**

- C B A
- BarGraph Power
- MV-832

**3φ 4Wire Wattmeter**

- C B A
- BarGraph Power
- MV-832

**3φ 4Wire Varmeter (3 element)**

- C B A
- BarGraph Power
- MV-832

**1φ 2Wire Wattmeter**

- C B A
- BarGraph Power
- MV-832

**3φ 3Wire Wattmeter (Analog Back)**

- C B A
- BarGraph Power
- MV-832

**3φ 4Wire Varmeter with Phase Shifter (Analog Back)**

- C B A
- BarGraph Power
- MV-832

**See Manual for other configurations**

Mounting Torque 65-70 inch-pounds max.

BG-251 = 6.88" DIA.
BG-251 = 5.1-6.55" DIA.
BG-281 = 9.508" DIA.
BG-281 = 5.1-8.91" DIA.

A = 5.15" (130.8 mm). Add 0.6" (15 mm) for screw terminals or 0.85" (22 mm) for backplate studs on analog backplate.
The Weschler BG Series Large BarGraphs include single and multiple channel models BD101, PG101 and PG202. These large BarGraphs directly retrofit Hays, Bailey and Dixson draft gauges. Bars are available in red, green or amber for easy viewing. Weschler’s LED BarGraphs combine the visual indication of an analog instrument with the precision of a digital instrument.

The BD101 BarGraph has a 12" edgewise display with 101 bar segments. Large digits and a wide viewing angle allow operators to easily monitor the signal from a distance. The BD101 can be ordered as a single channel unit or ganged into a multi-channel unit to simplify installation.

The PG Series BarGraphs have a 10" edgewise display with a 51 segment LED bar. One and two channel models are available. Setpoints and other parameters on the PG101/202 are easily entered from the front panel. Analog retransmit and digital communications are optional.

Weschler BarGraphs can be configured for a wide range of input signals. These instruments satisfy the high quality standards of the utility, OEM and process control industries.

**FEATURES**

- **High resolution 51 or 101 segment LED bar array**
- **3 and 4 digit displays with resolution up to 0.01%**.
- **Programmable functions**
  - Zero point location
  - Setpoint location
  - Hysteresis (setpoint, trend)
  - Span and zero
  - Digital display for engineering units
  - 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**
- **Serial ASCII communication**
  - RS232, RS485, SCADA, DCS
- **Analog retransmit**
  - 4-20, 10-50, 0-1mA DC
  - 0-1, 0-5, 1-5V DC
- **Retrofit sizes for**
  - Dixson K051
  - Hays Republic 216
  - Bailey PG Series Draft Gauges
- **Versatile selection of inputs**
  - DC
    - Up to 5A & 250V
  - AC
    - Up to 5A & 250V
  - Thermocouple
    - J, K, T
  - RTD
    - 10Ω Cu or 100Ω Pt
  - Serial
    - ASCII
  - Frequency
    - Line or mag pickup
  - Process Control
    - mA, V

* Model BD101 requires a hand-held button station to change functions.
SPECIFICATIONS

Bar Display
BD101  101 segment LED, 10” display 1% full scale resolution
PG101/202  51 segment LED, 5.1” display 2% full scale resolution

Digital Display
BD101  3½ or 4½ digit Linearity ±1% count Resolution 0.1% full scale (3½d) Resolution .01% full scale (4½d) Height 0.56”
PG101/202  3 digit or 4 digit Linearity ± 1 count Resolution 0.1% full scale Height 0.56”

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

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

Communication
RS232
RS485 bi-directional

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).

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

Power (each channel)
120/240V AC ±15%
50/60/400 Hz (6.0 VA)
8-30V AC (3VA max)
4.5-9V DC (600mA max)
9-36V DC (300mA max)
18-75V DC (150mA max)
110-300V DC (35mA max) / 85-264V AC (47-440Hz, 7VA max)

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

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

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%

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

ARTWORK GUIDELINES

PG202 VERTICAL

MULTIPLIER: 
4 CHAR. IF REQUIRED

BD101 VERTICAL

MULTIPLIER: 
4 CHAR. IF REQUIRED

17 CHAR.

17 CHAR.

17 CHAR.

* Numerical range MAX. 3 Digits

26
**ORDERING GUIDE**

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

<table>
<thead>
<tr>
<th>K</th>
<th>H</th>
<th>N</th>
<th>L</th>
<th>P</th>
<th>A</th>
<th>K</th>
<th>1</th>
<th>X</th>
<th>X</th>
<th>P</th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
</table>

**PART NUMBER**

**TYPE:**
- K = BD101 - 10" Vertical BarGraph
- V = PG101 - Single Multipoint BarGraph
- W = PG202 - Dual Multipoint BarGraph

**BAR ZERO POINT:**
- B = Zero at Bottom
- H = Zero at 50% mid scale
- F = Zero at F.S.
- S = Special / off scale zero

**DIGITAL DISPLAY:**
- 3 = 3 digit Display (PG101/202)
- 4 = 4 digit Display (PG101/202)
- X = Not required
- S = Special

**SETPOINTS:**
- N = Hi/Lo
- H = Hi/Hi-Hi
- L = Lo/Lo-Lo
- 4 = Hi-Hi/Hi/Lo/Lo-Lo
- Z = Fail Safe Hi/Lo
- X = Not required

**SETPOINT HYSTERESIS:**
- 1 = 1% of F.S. (standard)
- 2 = 2% of F.S.
- 5 = 0.5% of F.S.
- X = Not required

**POWER:**
- 1 = 120V AC
- 2 = 240V AC
- A = 8-30V AC
- B = 9-36V DC
- C = 18-75V DC
- D = 110-300V DC / 85-264V AC
- E = 4.5-9VDC

**INPUT TYPE:**
- A = DC Volts
- B = DC Amps
- P = 4-20mA DC (input level AK)
- N = 1-5V DC (input level AV)
- M = 10-50mA DC (input level BA)
- C = AC Volts RMS
- D = AC Amps RMS
- F = Line Frequency
- Q = MAG Pickup Frequency
- R = J,K,T = Thermocouple Type
- S = RTD: Specify 3 or 4 wire & alpha
- 100 Ohm Pt
- 10 Ohm Cu
- U = Special
- Serial ASCII (requires com. type A, B or C in Communication options)

**ORDERING INFORMATION: LEFT SIDE**

Input:
- Bar Display*: to
- Digital Display: to
- (*State % of bar for each different color)

**ORDERING INFORMATION: RIGHT SIDE**

Input:
- Bar Display*: to
- Digital Display: to
- (*State % of bar for each different color)

**LED COLOR:**
- G = Green only
- A = Amber only
- X = Red only
- M = Multicolor Special

**COMMUNICATION:**
- K = Conformal Coating
- T = Terminal Strip Connector
- A = Custom Artwork
- X = NA
- S = Special

**RETRANSMIT:**
- A = 4-20mA DC into 250 ohms
- B = 0-1mA DC into 1000 ohms
- C = 1-5V DC
- D = 0-1V DC
- F = 4-20mA DC, 700 ohms max. (isolated source*)
- G = 0-1mA (isolated source*)
- H = 10-50mA DC (isolated source*)
- W = Excitation Power 24 VDC @ 90mA
- X = None

*isolated outputs must have AC power

**EXAMPLE:**

(K) BD101, (H) zero at 50% mid scale, (3) 3-1/2 digit, (N) Hi/Lo setpoint, (1) 1% of F.S. setpoint hysteresis, (P) 4/20mA (input level AK), (1) 120 VAC 50/60 Hz power, (X) no retransmit, (X) no communication, (P) peak valley/hold, (X) no trend indicator, (X) na, (X) red led color

**INPUT LEVEL:**

See input Level Matrix Guide

---

27
BD-101 Multiple Channel

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

TERMINAL CONNECTIONS

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

EXCITATION POWER
(1) VAC (hot side) (2) VAC (common) (3) 24 VDC + (4) 24 VDC –

RELAY CONTACTS*

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

Options and features vary by model. Contact factory for details and latest specifications.
Weschler’s 101 segment LED BarGraphs combine the best of analog and digital solid state instrumentation. The BI125 and PC202 Dual BarGraphs have two independent 101 segment indicator bars that fit easily into standard 6” edgewise and DIN size panel cutouts. Bars are available in red, green or amber.

Each bar gives the operator a quick view of the measured signal and the control setpoints. The 101 segment bar provides 1% display resolution. Setpoint LEDs provide an added visual indication of control/alarm status. Signal direction is indicated by two trend indicators for each display. Dual 3-1/2 or 4 digit displays on the PC202 provide precise readouts of the signal variables. Setpoints and other parameters on the PC202 are easily entered from the front panel. The BI1251 uses an external button station to program the setpoints.

The Weschler Dual BarGraph instruments accept DC process inputs, either voltage or current. Other BarGraph models can be configured for a wide variety of input signals. Retrofit sizes are available for most panel and switchboard meters in use today. These instruments satisfy the high quality standards set forth by the utility, OEM and process control industries.

**FEATURES**

- **High resolution 101 segment LED bar**
- **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 @ 250VAC
    - 5A, resistive @ 28VDC
  - Normally Closed
    - 3A, resistive @ 250VAC
    - 2A, resistive @ 28VDC
- **Peak and Valley hold**
- **Trend indication for signal direction.**
- **Retrofit sizes for:**
  - Dixson BB202, BG202
  - Sigma/International Instruments 1251
- **3½ or 4 digit display with resolution up to 0.01%**
- **Process Control DC inputs up to 5 amps and 250V**
**SPECIFICATIONS**

**Bar Display**
101 segment LED
4.0” display
1% full scale resolution

**Digital Display**
(PC202 only)
4 digit
- Linearity ± 1 count
- Resolution 0.01% full scale
- Height 0.3”

Digital display not available on BI1251

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

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

**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).

**Retransmit Signals**
(one side on 202 only)
0-1 mADC
1-5 VDC
4-20mADC

**Power**
(each side)
120/240V AC ±15%
50/60/400 Hz (6.0 VA)
8-30V AC (3VA max)
4.5-9V DC (600mA max)
9-36V DC (300mA max)
18-75V DC (150mA max)
110-300V DC (35mA max) / 85-264V AC (47-440Hz, 7VA max)

**Communication**
(one side on 202 only)
RS232
RS485 bi-directional

**Input Impedance**
2Mohm @ >4V DC
250ohm @ 4-20mA DC
100ohm @ 10-50mA DC

**Input Overload Ratings**
200%, not to exceed 10A
200%, not to exceed 250V

**Input Isolation**
DC Differential

**DC Input Sensitivities**
Current 50 microamp - 5A
Voltage 50mV - 250V
Accuracy 0.04% of full scale ± 1 count

---

**ARTWORK GUIDELINES**

**PC202**

**MULTIPLIER:**
4 CHAR. IF REQUIRED

**BI1251**

**20 CHAR.**

* Numerical range MAX. 3 Digits
**ORDERING GUIDE**

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

<table>
<thead>
<tr>
<th>D</th>
<th>B</th>
<th>3</th>
<th>N</th>
<th>1</th>
<th>A</th>
<th>A</th>
<th>M</th>
<th>1</th>
<th>X</th>
<th>X</th>
<th>P</th>
<th>X</th>
<th>X</th>
<th>X</th>
</tr>
</thead>
</table>

**PART NUMBER**

**TYPE:**
- D = PC202 DIN Size Dual BarGraph
- X = BI1251 6" Vertical BarGraph

**BAR ZERO POINT:**
- B = Zero at Bottom
- H = Zero at 50% mid scale
- F = Zero at F.S.
- S = Special /off scale zero

**DIGITAL DISPLAY:**
- 3 = 3-1/2 Digit Display
- 4 = 4 digit Display
- X = None
- S = Special

**SETPOINTS:**
- N = Hi/Lo
- H = Hi/Hi-Hi
- L = Lo/Lo-Lo
- Z = Fail Safe Hi/Lo
- X = None
- S = Special

**SETPOINT HYSTERESIS:**
- 1 = 1% of F.S. (standard)
- 2 = 2% of F.S.
- 5 = 0.5% of F.S.
- X = Not required
- S = Special

**INPUT TYPE:**
- A = DC Volts
- B = DC Amps
- P = 4-20 mA DC (input level AK)
- N = 1-5V DC (input level AV)
- M = 10-50mA DC (input level BA)
- S = Special

**LED COLOR:**
- G = Green only
- A = Amber only
- X = Red only

K = Conformal Coating
T = Terminal Strip Connector
A = Custom Artwork
X = NA
S = Special

**COMMUNICATION:**
- A = RS232
- C = RS485 Bi-directional
- X = None

**RETRANSMIT:**
- A = 4-20 mA DC into 250 ohm
- B = 0-1 mA DC into 1000 ohm
- C = 1-5 VDC
- D = 0-1 VDC
- F = 4-20 mA DC, 700 ohm max. (isolated)
- X = None

**POWER:**
- 1 = 120V AC
- 2 = 240V AC
- A = 8-30V AC
- B = 9-36V DC
- C = 18-75V DC
- D = 110-300V DC / 85-264V AC
- E = 4.5-9VDC

**EXAMPLE:**

(D) PC202, (B) zero at bottom, (3) 3-1/2 digit, (N) Hi/Lo setpoint, (1) 1% of F.S. setpoint hysteresis, (A) DC volts input, (AM) full scale is 0.05 volts, (1) 120 VAC 50/60 Hz power, (X) not required, (X) not required, (P) peak/valley hold, (X) not required, (X) red led color

**ORDERING INFORMATION: LEFT SIDE**

Input: __________ to __________
Bar Display: __________ to __________
Digital Display __________ to __________

Legend: __________

**ORDERING INFORMATION: RIGHT SIDE**

Input: __________ to __________
Bar Display: __________ to __________
Digital Display __________ to __________

Legend: __________

**INPUT LEVEL:**

See input Level Matrix Guide

**POWER:**

120V AC
240V AC
8-30V AC
9-36V DC
18-75V DC
110-300V DC / 85-264V AC
4.5-9VDC

**RETRANSMIT:**

4-20 mA DC into 250 ohm
0-1 mA DC into 1000 ohm
1-5 VDC
0-1 VDC
4-20 mA DC, 700 ohm max. (isolated)
None

**LED COLOR:**

Green only
Amber only
Red only

**COMMUNICATION:**

RS232
RS485 Bi-directional
None

**SETPOINTS:**

Hi/Lo
Hi/Hi-Hi
Lo/Lo-Lo
Fail Safe Hi/Lo
None
Special

**SETPOINT HYSTERESIS:**

1% of F.S. (standard)
2% of F.S.
0.5% of F.S.
Not required
Special

**INPUT TYPE:**

DC Volts
DC Amps
4-20 mA DC (input level AK)
1-5 VDC
10-50mA DC (input level BA)
Special

**BAR ZERO POINT:**

Zero at Bottom
Zero at 50% mid scale
Zero at F.S.
Special /off scale zero

**ORDERING INFORMATION: LEFT SIDE**

Input: __________ to __________
Bar Display: __________ to __________
Digital Display __________ to __________

Legend: __________

**ORDERING INFORMATION: RIGHT SIDE**

Input: __________ to __________
Bar Display: __________ to __________
Digital Display __________ to __________

Legend: __________

**NOTES:**

Available on one side only. Isolated retransmit requires AC power.
**DIMENSIONS**

**BI-1251**

**FRONT VIEW**

**SIDE VIEW**

**BACK VIEW**

**PANEL CUTOUT**

**PC-202**

**FRONT VIEW**

**SIDE VIEW**

**BACK VIEW**

**PANEL CUTOUT**

**TERMINAL CONNECTIONS**

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

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

**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) LoLo N.O.
- (11) LoLo C.
- (12) LoLo 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.
The BF6400 family of Bargraph Meters provide either one or two channels of signal conditioning and display in a rugged metal case. For maximum flexibility, each channel is configured separately and operates totally independently. These units provide large, bright displays to replace Foxboro mechanical indicators or other large analog gauges. In addition to replicating the Foxboro 0-50mA DC input, a wide selection of DC, AC, temperature and frequency inputs can be ordered. Adjustable setpoints and up to four relay outputs provide the capability for control and alarm based on signal level. Custom scales can be specified to duplicate existing gauge markings.

The front panel has no operator accessible controls, so configuration settings cannot be accidentally changed. Either the digital interface or optional Attachable Button Station can be used to setup or reconfigure each channel. The digital displays provide precise measurements of process parameters. The optional analog retransmit can be used for remote display or connection to a plant SCADA system. The BF6400 provides many other features of the popular Weschler BG252, including adjustable bar zero location, bar span, digital decimal point, digital full scale and flashing overrange.

Key Specifications

- Outer Bar: 101 segment Red, Green or Amber LED, 5” (127mm) dia.
- Inner Bar: 101 segment Red LED, 3.5” (89mm) dia.
- Digital Display: 7 Segment LED, 0.4” (10mm) high, color matches bar.
  3½ digit resolution 0.1% of full scale.
  4½ digit resolution 0.01% of full scale.
- Input Sensitivity: 50μA-5ADC, 50mV-250VDC, 50mA-5AAC, 1-250VAC.
- Line frequency 55-65Hz, Freq 50-20kHz.
- Input Overload: 200%, not to exceed 250V or 10A.
- Setpoint Relays: 2 or 4 Form C, single pole (SPDT)
  Normally Open contacts: 5A@250VAC or 28VDC, resistive.
  Normally Closed contacts: 3A@250VAC or 28VDC resistive.
- Connections: Phoenix style standard (mating connectors supplied), terminal strips optional.
- Dimensions: Front Bezel: 6-7/16”W x 7-1/8”H (164x181mm), protrudes 1/2”.
  Case: 5-15/16”W x 6-1/8”H (143x156mm).
  Depth: 6-5/8” (168mm) behind panel; add 1/2” (13mm) for connectors.
- Operating Temperature: 0 to 50ºC, <95% RH, non-condensing.
- Storage Temperature: -40ºC to 85ºC.
- Weight: 5.2 lbs. (2.36kg)

See BG Series Edgewise data sheet for more complete input specifications.

Contact Weschler for 10CFR50 Nuclear Qualified models

Mounting hardware attaches to top & bottom or sides
**ORDERING GUIDE**

**OUTER CHANNEL**

| TYPE: | E = BF6402 Dual Channel | F = BF6401 Single Channel |

| BAR ZERO POINT: | B = Zero at Bottom | H = Zero at 50% Mid scale | F = Zero at Full Scale | S = Special |

**INNER CHANNEL**

| DIGITAL DISPLAY: | 3 = 3½ digit | 4 = 4½ digit | X = None |

| SETPOINTS: | N = Hi / Lo | H = Hi / Hi-Hi | L = Lo / Lo-Lo | Z = Fail Safe Hi / Lo | X = None | S = Special |

| SETPOINT HYSTERESIS: | 1 = 1% of Full Scale | 2 = 2% of Full Scale | 5 = 0.5% of Full Scale | X = None | S = Special |

**INPUT:**

| A = DC Volts | B = DC Amps | P = 4-20mA DC (use input level AK) | N = 1-5V DC (use input level AV) | M = 10-50mA DC (use input level BA) |
| C = AC Volts RMS (terminal strip connections incl.) | D = AC Amps RMS (terminal strip connections incl.) | F = Line Frequency | Q = Mag Pickup Frequency | R = 3 or 4 wire RTD (specify 100Ω Pt or 10Ω Cu) |
| T = Thermocouple (specify J, K, or T) |
| U = Serial ASCII (communication option required) | S = Special |

**RETRANSMIT:**

| A = 4-20mA DC into 250Ω | B = 0-1ma DC into 1000Ω | C = 1-5V DC | D = 0-1V DC | F = 4-20mA DC, 700Ω max. (isolated source*) |
| G = 0-1mA DC (isolated source*) | H = 10-50mA DC (isolated source*) | W = 24VDC@90mA Excitation Power (not available with F, G or H) | X = None | * unit must be AC powered |

**POWER:**

| 1 = 120VAC 50/60Hz | 2 = 240VAC 50/60Hz |
| A = 8-30V AC | B = 9-36V DC |
| C = 18-75V DC | D = 110-300V DC / 85-264V AC |
| E = 4.5-9V DC |

**COMMUNICATION:**

| A = RS232 | C = RS485 (2 wire bi-directional) | X = None |

**TERMINAL CONNECTIONS**

- **INPUT:**
  - A = DC Volts
  - B = DC Amps
  - P = 4-20mA DC (use input level AK)
  - N = 1-5V DC (use input level AV)
  - M = 10-50mA DC (use input level BA)
  - C = AC Volts RMS (terminal strip connections incl.)
  - D = AC Amps RMS (terminal strip connections incl.)
  - F = Line Frequency
  - Q = Mag Pickup Frequency
  - R = 3 or 4 wire RTD (specify 100Ω Pt or 10Ω Cu)
  - T = Thermocouple (specify J, K, or T)
  - U = Serial ASCII (communication option required)
  - S = Special

- **AC LINE FREQUENCY:**
  - (1) Hot Side (+)
  - (2) Return Side (–)
  - AC Inputs have 6/32" barrier lug connections.

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

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

- **EXCITATION POWER:**
  - (1) VAC (hot side)
  - (2) VAC (common)
  - (3) 24 VDC +
  - (4) 24 VDC –

- **Note:** Single Channel units can be configured with either the inner or outer bar. Specify when ordering.
The Weschler Bowmar Series Single Edgewise BarGraphs feature bright, easy-reading 3" to 10" LED bars for OEM and process applications. The Bowmar Series offer 51 or 101 segment bar displays with 2% or 1% resolution. Choose from red, green or amber LEDs on most larger models. Colors can also be mixed within the bar to provide permanent indication zones. A rear panel low/high brightness selection terminal changes the LED intensity for operator and control room conditions. Standard white on black or custom black on white scales can be provided. Expanded scales can also be ordered to view the most important part of a measurement in greater detail.

Screw terminal connectors are standard on the APM series. Connections to the BG series are made to a rear panel card edge connector. Front panel, mounting and performance are identical in both series.

The Bowmar BarGraph instruments accept DC process inputs, either voltage or current. Other BarGraph models can be configured for a wide variety of input signals. Retrofit sizes can be available for most panel and switchboard meters in use today. These instruments satisfy the high quality standards set forth by the utility, OEM and process control industries.

**FEATURES**

- 51 or 101 segment LED bar array
- Red, green, yellow, blue, white or mixed color bar
- Selectable LED brightness
- DC inputs to 10A and 100V
- Differential input
- Harsh environment enclosures

WESCHLER INSTRUMENTS
DIVISION OF HUGHES CORPORATION
16900 FOLTZ PARKWAY - CLEVELAND, OH 44149
Phone: (440) 238-2550 - Fax: (440) 238-0660
www.weschler.com e-mail: sales@weschler.com
**SPECIFICATIONS**

**Bar Display**
APM500, APM600, BG500, BG600
51 segment LED plus underrange and overrange
5" display

APM100, BG100
101 segment LED plus underrange and overrange
3" display

APM800, BG800
100 segment LED plus underrange and overrange
10" display

**Input Type**
DC Volts 50mV to 100V
DC Amps 10mV to 10A

**Response Time**
25msec full scale, damping to 1sec available

**Temperature**
Operation 0 to 50°C
Storage -60 to 71°C

**Shock**
to 8.5 G’s

**Humidity**
0 to 95% RH, non-condensing

**Weight**
6 to 27 oz.

**Calibration**
NIST traceable factory calibration. Some models may be field adjusted
± 20% at Zero and Full Scale

**Power Requirement**
5VDC ± 0.25V, 400mA typical

**Input Impedance**
>100kohms typical, 50mV current shunt for most ammeters

**Linearity**
0.5% (from 0 to 50°C)

**Gain Temperature Coefficient**
± 0.015%/°C maximum

**Zero Temperature Coefficient**
± 0.01%/°C maximum

**Under-range**
150% of input

**Over-range**
250% of input

**Display Modes**
Bar and Point

**Power Supply Sensitivity**
± 0.1%/volt maximum

**Input Bias Current**
100 nA typical

**Common Mode Rejection**
60dB typical

**Standard Scales**
0-10
0-50
0-100
-10/0/+10
-50/0/+50
-100/0/+100
Available with % signs
Over 2300 scales available

**Connections**
APM: Terminal studs
BG: Card edge (mating connector included)

---

**OPTIONS MATRIX GUIDE**

<table>
<thead>
<tr>
<th>Option Code</th>
<th>100</th>
<th>150</th>
<th>500</th>
<th>600</th>
<th>800</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>●</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Differential Input, DC volts</td>
</tr>
<tr>
<td>F</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>Increased Damping</td>
</tr>
<tr>
<td>G</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>Custom Input Range</td>
</tr>
<tr>
<td>Z</td>
<td>●</td>
<td>●</td>
<td></td>
<td></td>
<td></td>
<td>Black Metal Bezel</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
<td>Drip Proof Bezel</td>
</tr>
<tr>
<td>P</td>
<td></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
<td>Red Filter</td>
</tr>
<tr>
<td>Gr</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>Green Display</td>
</tr>
<tr>
<td>YL</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>Yellow Display</td>
</tr>
<tr>
<td>MX</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>Mixed Display (Red, Green, Yellow)</td>
</tr>
<tr>
<td>BL</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>Blue Display</td>
</tr>
<tr>
<td>WH</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>White Display</td>
</tr>
<tr>
<td>UN</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>Sunlight Readable</td>
</tr>
<tr>
<td>S</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>Library Scales (Scale #)</td>
</tr>
</tbody>
</table>

● = Available
**ORDERING GUIDE**

**SAMPLE PART NUMBER**

(SEE BOTTOM OF PAGE FOR EXAMPLE)

<table>
<thead>
<tr>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>APM100VV010S1</td>
</tr>
</tbody>
</table>

**TYPE:**

- APM1 = 3" LED BarGraph
- APM5 = 5" LED BarGraph, with bezel
- APM6 = 5" LED BarGraph
- APM8 = 10" LED BarGraph
- BG1 = 3" LED BarGraph
- BG6 = 5" LED BarGraph

**INPUT TYPE:**

- 00 = DC
- 50 = Center Zero (APM only)

**INPUT SENSITIVITY:**

- VV = Volts
- MV = Millivolts
- AA = Amps
- MA = Milliamps
- UA = Microamps

**INPUT LEVEL:**

Example 4/20, 10, 150
Indicate Full Scale Value

**SCALE NUMBER:**

(Consult factory for exact need)

<table>
<thead>
<tr>
<th>VERTICAL</th>
<th>HORIZONTAL</th>
<th>RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>S12</td>
<td>S13</td>
<td>0-10</td>
</tr>
<tr>
<td>S8</td>
<td>S11</td>
<td>0-50</td>
</tr>
<tr>
<td>S3</td>
<td>S1</td>
<td>0-100</td>
</tr>
<tr>
<td>S3P</td>
<td>S1P</td>
<td>0-100%</td>
</tr>
<tr>
<td>S136</td>
<td>S137</td>
<td>-10, 0, +10</td>
</tr>
<tr>
<td>S113</td>
<td>S112</td>
<td>-50, 0, +50</td>
</tr>
<tr>
<td>S4</td>
<td>S2</td>
<td>-100, 0, +100</td>
</tr>
<tr>
<td>S242</td>
<td>S10</td>
<td>Tick Marks Only</td>
</tr>
<tr>
<td>Sbnk</td>
<td>Sbnk</td>
<td>Blank</td>
</tr>
<tr>
<td>SH</td>
<td>SH</td>
<td>Custom Artwork</td>
</tr>
</tbody>
</table>

**OPTIONS:**

If more than one option is required, continue placing each respective option letter after each other.
See Options Matrix Guide on previous page or consult factory.

**ACCESSORIES:**

- ACC-001 Card Edge Connectors (BG/BGD)
- ACC-002 Screw Type Barrier Strip (BG/BGD)

**EXAMPLE:**

APM1 3" LED BarGraph, (00) DC input, (VV) Volts input sensitivity, (010) 0-10 input level, (S1) 0-100 horizontal scale.
Options and features vary by model. Contact factory for details and latest specifications.
FEATURES

- Simultaneous Position & Limit Display
- Bright 50 Segment TriColor Bar
- Volt or mA Inputs
- Optional Alarm Relay Outputs
- Rugged Metal Case

The Weschler TriColor BarGraph Gate Position Indicator (GPI) provides a rapid visual display of gate position and gate limit. The GPI also gives a precise digital readout of either signal or their difference. Bar colors for position and limit are user selectable (red, green or yellow). Overlap defaults to the third color. Two relay outputs are available. One is tied to the gate limit value. The second is user adjustable and indicated by front panel annunciators. Optional trend LEDs show the direction of gate movement.

A rugged metal case is standard on the Weschler GPI. An optional splash-proof bezel provides additional environmental protection. Analog retransmit of the gate position is available for connection to SCADA systems. Units can be ordered with custom dial scales and legends.
ORDERING GUIDE

PART NUMBER | B | X | X | T
---|---|---|---|---

**TYPE:**
4 = BG241 4½" Square BarGraph
6 = BG261 8½" Square BarGraph
8 = BG281 8" Circular BarGraph

**BAR ZERO POINT:**
B = Zero at Bottom

**DIGITAL DISPLAY:**
R = Red
Y = Yellow
G = Green
S = Special

**SETPOINT RELAYS:**
2 = 2 Relays
X = No relays
S = Special order

**SETPOINT HYSTERESIS:**
P = Programmable
S = Special

**INPUT (both channels):**
GP1 = 0-10V DC
GP2 = 4-20mA DC
GP3 = 0-1mA DC

**EXAMPLE:** 4 B Y 2 P G 1 F X X T T T

(4) BG-241, (B) zero at bottom, (Y) Yellow, (2) 2 relays,
(P) Programmable hysteresis, (GP1) 0-10V DC input,
(1) 120V AC 50/60Hz power, (F) 4-20 mA DC isolated retransmit,
(X), (X), (T) trend indication, (T) terminal strip connector,
(T) TriColor

**MISCELLANEOUS OPTIONS:**
A = Analog Backplate
K = Conformal Coating
T = Terminal Strip Connector
A = Custom Artwork
Y = Spraytight Face

**RETRANSMIT:**
C = 1-5V DC
D = 0-1V DC
F = 4-20mA DC
G = 0-1mA
X = None

**POWER:**
1 = 120V AC ±15% 50/60Hz
2 = 240V AC ±15% 50/60Hz
4 = 12V DC ±10% *
6 = 250VDC ±10%
7 = 24V DC ±10%
8 = 28V DC ±10%
9 = 48V DC ±10%
U = 110-250V DC / 85-264V AC, 50-440Hz

*Max ambient 45°C

DIMENSIONS & CONNECTIONS

See BGTC Circular Data Sheet for dimensions of BG261 and BG281
# BG Series BarGraph Input Level Matrix Guide

**NOTE:** If full scale level is not listed, use next highest full scale value.  
Example: Input Type = A (DC volts), input level required = 7 volts. Use code AW and list 0 to 7 volts.

<table>
<thead>
<tr>
<th>Code</th>
<th>P</th>
<th>M</th>
<th>N</th>
<th>R</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>F</th>
<th>Q</th>
<th>J*</th>
<th>K*</th>
<th>T*</th>
<th>E</th>
<th>L</th>
<th>V</th>
<th>G</th>
<th>H</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>.000020</td>
<td>AA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.000050</td>
<td>AB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.005100</td>
<td>AC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.000200</td>
<td>AD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.000250</td>
<td>AE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.000500</td>
<td>AF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.001</td>
<td>AG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.002</td>
<td>AH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.005</td>
<td>AI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.01</td>
<td>AJ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.02</td>
<td>AK</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.025</td>
<td>AL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.05</td>
<td>AM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.1</td>
<td>AN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>AO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.25</td>
<td>AP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.5</td>
<td>AQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>AR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>AS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>AT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>AU</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>AV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>AW</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.5</td>
<td>AX</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>AY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>AZ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>BA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>BB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>BC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>125</td>
<td>BD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>BE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>BF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>BG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>300</td>
<td>B1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400</td>
<td>BH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>500</td>
<td>BI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>600</td>
<td>B4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>800</td>
<td>BJ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td>BK</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5000</td>
<td>BL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10000</td>
<td>BM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20000</td>
<td>BN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-0.05</td>
<td>EA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-0.1</td>
<td>EB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-0.2</td>
<td>EC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-0.25</td>
<td>ED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-0.5</td>
<td>EF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td>EG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2</td>
<td>EH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2.5</td>
<td>EI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-5</td>
<td>EJ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-10</td>
<td>EK</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-12.5</td>
<td>EL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-20</td>
<td>EM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-25</td>
<td>EN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-50</td>
<td>EO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-100</td>
<td>EP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-125</td>
<td>EQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-200</td>
<td>ER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-250</td>
<td>ES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Thermocouple temperatures are listed in °C; minimum span 100° (C or F).*

Enter this 2 character code for Input Level in part number.
Special Configurations

In addition to the many configuration choices shown on our ordering guides, Weschler can customize Bargraph meters for special situations. Here are several modifications that are now available as standard options:

**Super Bright Display**

A super bright display is now available on larger size circular Bargraph meters. With 5 times the luminous intensity of the standard bar display, this option is ideal for use outdoors or in other highly lit areas. In wet environments, it can be combined with the spray-tight cover option. The super bright display is available on Weschler BG251 (5" circular), BG281 (8" circular) and BG261 (8.5" square) meters. A super bright yellow bar can also be specified.

![Super Bright Display](image)

**Analog Backplate**

The standard backplate on Weschler bargraph meters has plug-in terminals for all connections. For more secure wire attachment, a terminal strip option on the circular meters is available. This option changes the input, power and some of the other connections to screw terminals. A third termination option on certain circular bargraph models is the analog backplate. Here all connections are made to threaded studs. This is particularly useful when replacing an old Westinghouse style analog meter.

![Analog Backplate](image)

**Shipboard Bargraph Meters**

These meters meet the requirement for a highly visible readout in harsh shipboard environments. They are available in the standard 4½" switchboard size and the large 8½" size viewable from more than 30 feet. Both versions feature a rugged metal case, spray tight front/rear and shock resistant internal construction. These units are also suitable for use in pump rooms, drilling platforms and other wet or high shock locations. Three front panel buttons access setup and operating functions. Brightness is easily adjusted for day or night viewing. The digital readout is available in red, yellow or green. The bar can be ordered in red, yellow, green or tricolor. Custom scale factor, markings and legend tailor the readout to the application.

![Shipboard Bargraph Meters](image)

**Draft Gauge Array**

Large BarGraph models such as the BD101 easily replace old analog draft gauges. Weschler can install meters in a housing to match an existing panel arrangement. In some arrangements, the individual meter cases are omitted to reduce the spacing between channels. Here the front panel is tilted to duplicate the existing gauges' viewing angle.

Pressure transducers can be mounted on the rear of the enclosure or located close to the pressure source. The photo shows a 10 bay unit. Sizes for 3 to 14 gauges are available.

Weschler can also install meters in fiberglass enclosures for indoor or outdoor applications.
Weschler carries a variety of accessories for use with Bargraph and digital panel meters. Select a transducer, sensor or signal conditioner to meet your measurement requirements. Then configure the digital meter with the matching input type and range.

**DC Current Shunts**

Sizes from 1 amp to 10,000 amps.  
50 or 100 mV output.

**AC Current Transformers**

Window diameters from 1 inch to more than 8 inches.  
Primary from 50 to 5,000 amps.  
5 amp secondary standard, 1 amp available.  
Burden 1.5 to 200 VA.  
Solid core, split core or flexible core styles.  
Variety of mountings.

**Voltage (Potential) Transformers**

120V AC output.  
Burden to 150 VA.  
Inputs to 600V standard, higher available.

**AC Current Transducers**

Input 2 - 2000 amps full scale.  
DC Output 0-5V, 0-10V or 4-20mA.  
Average or TRMS sensing.  
Solid and split core styles.  
Self-powered, loop powered or externally powered.

**Transducers**

Output 4-20mA or 0-1mA for easy interface to a meter.  
Input:

- DC Volts
- AC Voltage
- AC Current
- AC Line Frequency
- AC Watts
- AC VAR
- Power Factor
- Phase Angle

Single phase 2 or 3 wire, three phase 3 or 4 wire.

**Signal Conditioners**

Wide selection of input types.  
Single or multi-function.  
Fixed or adjustable range.  
DIN rail or plug-in socket mounting.
Temperature

**Thermocouple**
Type J, K, E, T or N
Bendable sheath, diameter 1/16” to 3/8”
Sheath length and cable length to order.
Standard or miniature thermocouple plug.

**RTD**
3 or 4 wire Pt100, 385 alpha
Bendable sheath, diameter 1/16” to 3/8”
Sheath length and cable length to order.

Pressure

Full scale 2 to 20,000 psig.
1/8” to 1/2” process connection.
0-10V, 0-5V or 4-20mA output.
Loop, DC or battery powered.
Optional local readout.

Flow

Differential pressure, thermal,
magneto-inductive or paddle wheel sensing.
1 GPH to 600 GPM.
Pipe sizes to 3 inches.

Speed / Rotation

Tach generators to 100,000 RPM
Optical speed sensors to 250,000 RPM

Level

Detect solids or liquids.
Range up to 65 ft.
Radar or ultrasonic sensing.

Position, humidity and other types of sensors also available.

Enclosures & Assemblies

Fiberglass, polycarbonate, stainless steel and explosion-proof enclosures for indoor & outdoor use. Sizes up to 20”x20”x10”.

Weschler’s Meter Modification Center can assemble instruments into a panel, rack or enclosure. Products from several manufacturers can be combined to meet the application requirements.

Infrared Non-Contact

Sensing to 500°C (900°F).
Fixed or adjustable emissivity.
4:1, 10:1 or 13:1 optics.

Test Instruments

Weschler also offers a selection of test equipment to aid meter setup, maintenance and general electrical troubleshooting. Well known brands provide years of reliable operation.

Shown here are three of the most common test tools: process calibrator, digital multimeter, clamp multimeter.
Single, dual, and triple displays

- Field Configurable
- Measures True RMS Current and Voltage
- Accuracy: ±0.2% of Rdg, ±0.1% FS
- Displays MIN/MAX Values
- Scaling to 1250:1 for Potential Transformers, 5000:1 for Current Transformers
- Available for Single and Three-Phase Systems
- High-Resolution, High-Intensity LED Display
- Fits Standard ANSI Panel Cutout
- Non-Volatile Memory Stores All Setup Parameters
- Options Include Modbus Communications, Analog Output, DC Auxiliary Power Supply

See Power Series Plus catalog for complete specifications.

Made in USA

AC AMP/VOLT/FREQUENCY  SINGLE FUNCTION

To Order—Insert Number Code for Each Letter to Select Catalog Number.
Order Example: 2491-11-01-1-AHD-1-3

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2491</td>
<td>Single Function</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Function</td>
<td>Watts AC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Amp AC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Volts AC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>81</td>
<td>Frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>AC Input Rating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>1 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05</td>
<td>5 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>150 Volt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>300 Volt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>600 Volt</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>50/60 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>400 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Analog Output</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AAA</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AFA</td>
<td>0 to 1 mA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHD</td>
<td>4 to 20 mA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>RS-485 Protocol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>ASCII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Modbus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Auxiliary Power</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>120/240 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>24 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>48 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>125 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

AC WATT/VAR  SINGLE FUNCTION

To Order—Insert Number Code for Each Letter to Select Catalog Number.
Order Example: 2491-53-11-1-AHD-1-3

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2491</td>
<td>Single Function</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Function &amp; Connection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>Watt 1P2W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52</td>
<td>Watt 1P3W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>Watt 3P3W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>Watt 3P4W (2/3 Element)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>Watt 3P4W (3 Element)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>Vars 1P2W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>Vars 1P3W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>Vars 3P3W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>Vars 3P4W (2/3 Element)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>65</td>
<td>Vars 3P4W (3 Element)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>Power Factor 1P2W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>72</td>
<td>Power Factor 1P3W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>73</td>
<td>Power Factor 3P3W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>74</td>
<td>Power Factor 3P4W (2/3 Element)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>Power Factor 3P4W (3 Element)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91</td>
<td>Phase Angle 1P2W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>92</td>
<td>Phase Angle 1P3W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>93</td>
<td>Phase Angle 3P3W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>94</td>
<td>Phase Angle 3P4W (2/3 Element)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>95</td>
<td>Phase Angle 3P4W (3 Element)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>AC Input Rating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>120 Volt/1 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>120 Volt/5 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>240 Volt/1 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>240 Volt/5 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>480 Volt/1 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>480 Volt/5 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>50/60 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>400 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Analog Output</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AAA</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AFA</td>
<td>0 to 1 mA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHD</td>
<td>4 to 20 mA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHF</td>
<td>12 ±8 mA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>RS-485 Protocol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>ASCII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Modbus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Auxiliary Power</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>120/240 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>24 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>48 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>125 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### DUAL AC VOLTS/AMP AND VOLT/FREQUENCY

To Order—Insert Number Code for Each Letter to Select Catalog Number.
Order Example: 2492-12-51-1-AHD-1-1

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>2492</td>
<td>Dual Display</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B Function</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Volt/Amp AC</td>
<td>22</td>
<td>Volt/Hz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C Input Rating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>150 Volt/1 Amp AC</td>
<td>10</td>
<td>150 Volt AC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>150 Volt/5 Amp AC</td>
<td>20</td>
<td>300 Volt AC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>300 Volt/1 Amp AC</td>
<td>30</td>
<td>600 Volt AC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>600 Volt/1 Amp AC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>600 Volt/5 Amp AC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D Frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>50/60 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>400 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E Analog Output</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AAA</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AFA</td>
<td>0 to 1 mA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHD</td>
<td>4 to 20 mA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F RS-485 Protocol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>ASCII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Modbus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G Auxiliary Power Supply</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>120/240 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>24 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>48 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>125 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TRIPLE AC VOLTS/AMP

To Order—Insert Number Code for Each Letter to Select Catalog Number.
Order Example: 2492-12-51-1-AHD-1-1

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>2493</td>
<td>Triple Display</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B Connections</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Volt/Var 1P2W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Volt/Var 1P3W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Volt/Var 3P3W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Volt/Var 3P4W (2½ Element)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Volt/Var 3P4W (3 Element)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C AC Input Rating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>120 Volt/1 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>120 Volt/5 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>240 Volt/1 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>240 Volt/5 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>480 Volt/1 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>480 Volt/5 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D Frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>50/60 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>400 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E Analog Output</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AAA</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AFA</td>
<td>0 to 1 mA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHD</td>
<td>4 to 20 mA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F RS-485 Protocol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>ASCII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Modbus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G Auxiliary Power Supply</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>120/240 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>24 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>48 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>125 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### AC WATT/VAR/POWER FACTOR

To Order—Insert Number Code for Each Letter to Select Catalog Number.
Order Example: 2493-34-11-1-AFA-1-1

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>2492</td>
<td>Dual Display</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B Function/Connection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Watt/Var 1P2W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Watt/Var 1P3W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Watt/Var 3P3W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Watt/Var 3P4W (2½ Element)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Watt/Var 3P4W (3 Element)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C AC Input Rating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>120 Volt/1 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>120 Volt/5 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>240 Volt/1 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>240 Volt/5 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>480 Volt/1 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>480 Volt/5 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D Frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>50/60 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>400 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E Analog Output</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AAA</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AFA</td>
<td>0 to 1 mA DC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHD</td>
<td>4 to 20 mA DC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F RS-485 Protocol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>ASCII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Modbus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G Auxiliary Power Supply</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>120/240 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>24 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>48 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>125 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TRIPLE AC VOLT/AMP/Hertz

To Order—Insert Number Code for Each Letter to Select Catalog Number.
Order Example: 2493-08-51-1-AHD-1-1

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>2493</td>
<td>Triple Display</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B Connections</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Volt/Amp 1P2W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Volt/Amp 1P3W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Volt/Amp 3P3W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Volt/Amp 3P4W (2½ Element)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Volt/Amp 3P4W (3 Element)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C AC Input Rating</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>120 Volt/1 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>120 Volt/5 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>240 Volt/1 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>240 Volt/5 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>480 Volt/1 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>480 Volt/5 Amp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D Frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>50/60 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>400 Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E Analog Output</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AAA</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AFA</td>
<td>0 to 1 mA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AHD</td>
<td>4 to 20 mA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F RS-485 Protocol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>ASCII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Modbus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G Auxiliary Power Supply</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>120/240 VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>24 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>48 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>125 VDC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

WESCHLER INSTRUMENTS

16900 FOLTZ PARKWAY  CLEVELAND OH 44149
Phone: (440) 238-2550  Fax: (440) 238-0660
www.weschler.com  e-mail: sales@weschler.com

46
**Weschler BarGraph Meters**

- **Digital Precision**
- **Visual Trend Indication**
- **Large Bright Displays**
- **Transducer Inputs**
- **Relay Outputs**
- **Adjustable Setpoints**

**DIRECT REPLACEMENTS FOR ANALOG GAUGES**

Measure and Display: DC/AC Volts, DC/AC Amps, Watts, VArS, Power Factor, RPM, Frequency, Quadrature, Load, Strain, Pressure Resistance, Temperature, pH and more.

**TYPICAL APPLICATIONS**

- Power measurements
- Control room displays
- Process indicators
- Shipboard engine monitors
- Backup power supply status
- Pot line monitors
- Gate position indicators
- Turbine indicators
- Boiler draft gauges
- Tank/drum level indicators

Display, control & backup for DCS systems

**Your Best Source for Measurement, Control & Test Equipment**

**75 Years of Power and Process Measurements**

16900 Foltz Parkway, Cleveland OH 44149   440-238-2550   Fax: 440-238-0660

www.weschler.com   e-mail: sales@weschler.com