

# BG Series Large BarGraphs™

The Weschler BG Series Large BarGraphs include single and multiple channel models BD101, PG101 and PG202. These large BarGraphs directly retrofit Hays, Bailey and Dixon 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

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

**Trend indication for signal direction**

**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:**

Dixon 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

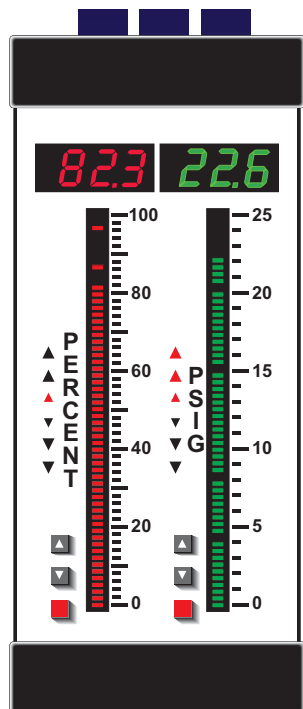
RTD 10Ω Cu or 100Ω Pt

Serial ASCII

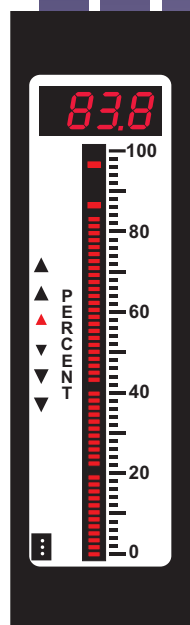
Frequency Line or mag pickup

Process Control mA, V

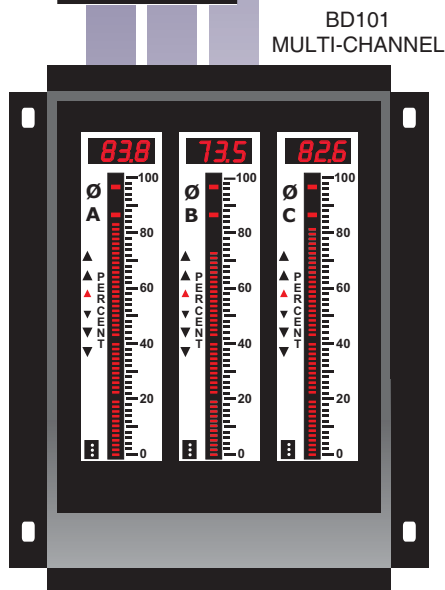
\* Model BD101 requires a hand-held button station to change functions.



PG202



BD101



BD101  
MULTI-CHANNEL



**WESCHLER  
INSTRUMENTS**  
DIVISION OF HUGHES CORPORATION

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# 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, 1 V)
DC	Differential

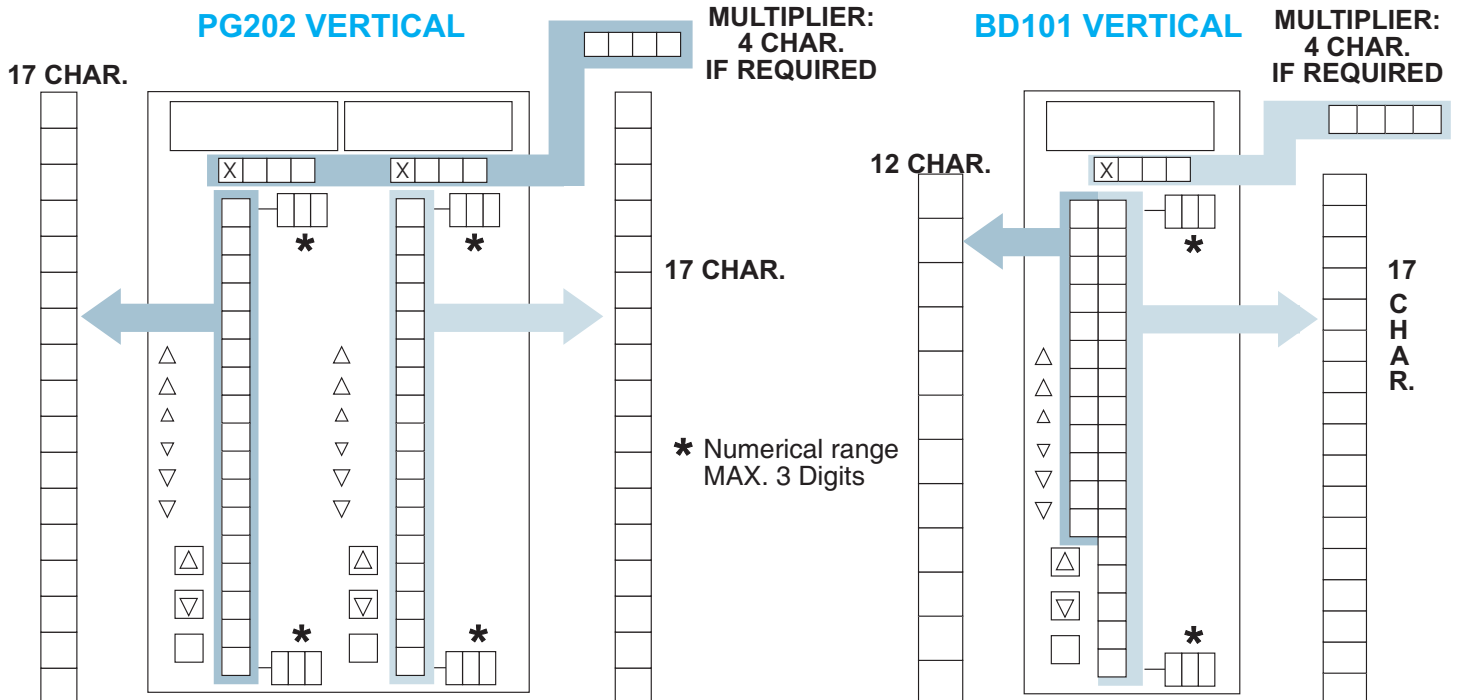
## Input Overload Ratings

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%	
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



# ORDERING GUIDE

SAMPLE PART NUMBER (SEE BOTTOM OF PAGE FOR EXAMPLE)

K H 3 N 1 P A K 1 X X P X X X

PART NUMBER

<p><b>TYPE:</b>                  K = BD101 - 10" Vertical BarGraph                  V = PG101 - Single Multipoint BarGraph                  W = PG202 - Dual Multipoint BarGraph</p> <p><b>BAR ZERO POINT:</b>                  B = Zero at Bottom                  H = Zero at 50% mid scale                  F = Zero at F.S.                  S = Special /off scale zero</p> <p><b>DIGITAL DISPLAY:</b>                  3 = 3 digit Display (PG101/202)                      3-1/2 digit Display (BD101/Multiple)                  4 = 4 digit Display (PG101/202)                      4-1/2 digit Display (BD101/Multiple)                  X = Not required                  S = Special</p> <p><b>SETPOINTS:</b>                  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</p> <p><b>SETPOINT HYSTERESIS:</b>                  1 = 1% of F.S. (standard)                  2 = 2% of F.S.                  5 = 0.5% of F.S.                  X = Not required                  S = Special</p> <p><b>INPUT TYPE:</b>                  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                  J,K,T= Thermocouple Type                  R = RTD: Specify 3 or 4 wire &amp; alpha                      <input type="checkbox"/> 100 Ohm Pt   <input type="checkbox"/> 10 Ohm Cu                  S = Special                  U = Serial ASCII (requires com. type A, B or C in Communication options)</p>	<p><b>LED COLOR:</b>                  G = Green only                  A = Amber only                  X = Red only                  M = Multicolor Special</p> <p>K = Conformal Coating                  T = Terminal Strip Connector                  A = Custom Artwork                  X = NA                  S = Special</p> <p>T = Trend Indicator                  X = NA</p> <p>P = Peak/Valley Hold                  X = NA</p> <p><b>COMMUNICATION:</b>                  A = RS232                  C = RS485 Bi-directional                  X = None</p> <p><b>RETRANSMIT:</b>                  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</p> <p><b>POWER:</b>                  1 = 120V AC                  2 = 240V AC</p> <p>A = 8-30V AC                  B = 9-36V DC                  C = 18-75V DC                  D = 110-300V DC / 85-264V AC                  E = 4.5-9VDC</p> <p><b>INPUT LEVEL:</b>                  See input Level Matrix Guide</p>
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EXAMPLE: K H 3 N 1 P A K 1 X X P X X X

(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) 4/20mADC (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

**ORDERING INFORMATION: LEFT SIDE**

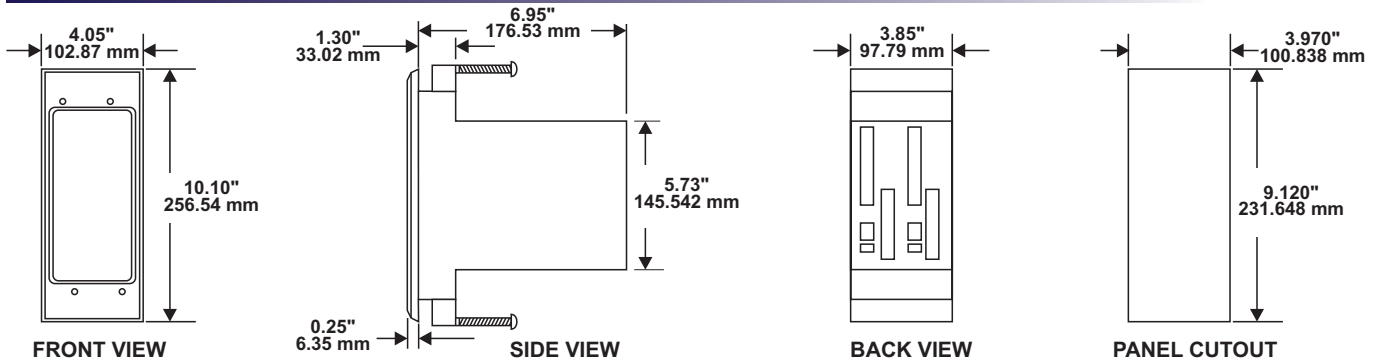
Input: \_\_\_\_\_ to \_\_\_\_\_ Eng. Units: \_\_\_\_\_  
 Bar Display\*: \_\_\_\_\_ to \_\_\_\_\_  
 (\*State % of bar for each different color)  
 Digital Display \_\_\_\_\_ to \_\_\_\_\_ Color \_\_\_\_\_  
 legend \_\_\_\_\_

**ORDERING INFORMATION: RIGHT SIDE**

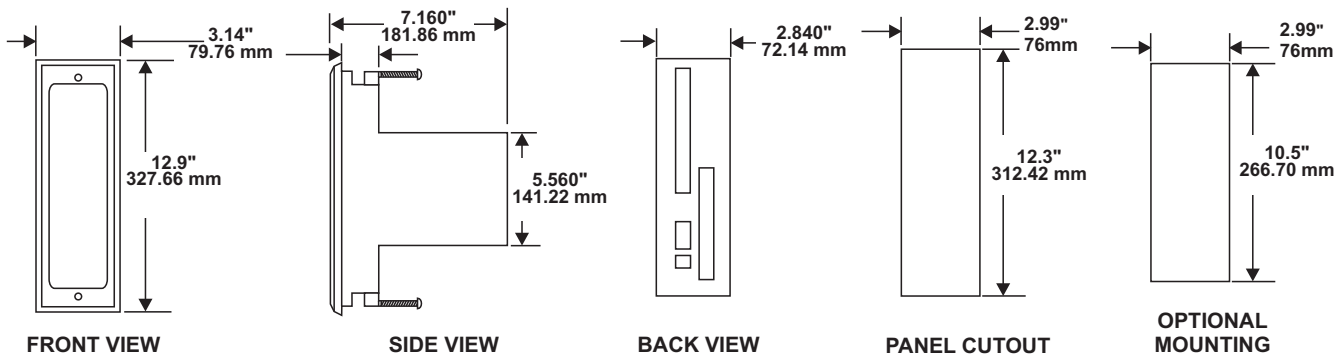
Input: \_\_\_\_\_ to \_\_\_\_\_ Eng. Units: \_\_\_\_\_  
 Bar Display\*: \_\_\_\_\_ to \_\_\_\_\_  
 (\*State % of bar for each different color)  
 Digital Display \_\_\_\_\_ to \_\_\_\_\_ Color \_\_\_\_\_  
 legend \_\_\_\_\_

# DIMENSIONS

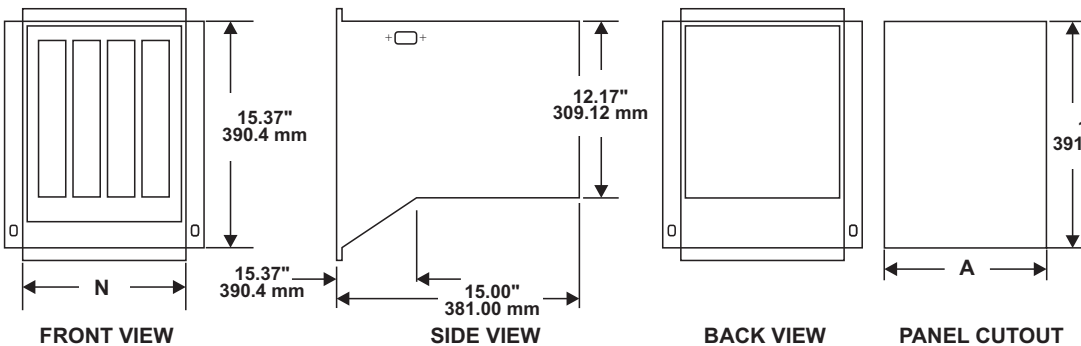
## PG-101/202



## BD-101



## BD-101 Multiple Channel

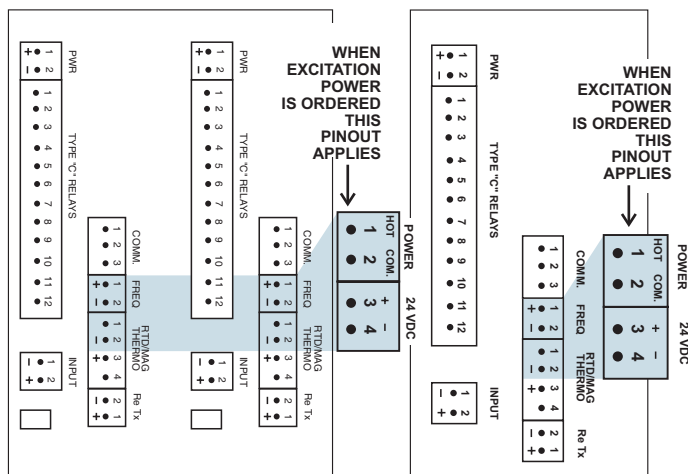


Number of Instruments	A Inches	(Millimeters)
4	11.15	(283.21)
5	13.47	(342.14)
6	15.65	(397.51)
9	22.46	(570.48)

Number of Instruments	N Inches	(Millimeters)
4	11.12	(282.45)
5	13.44	(341.38)
6	15.62	(396.75)
9	22.43	(569.72)

# TERMINAL CONNECTIONS



PG101/202

BD101

### INPUT

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

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

MAGNETIC PICKUP  
(2) Lead 1 (-) (3) Lead 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 (-)

### COMMUNICATIONS

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

### EXCITATION POWER

(1) VAC (hot side)  
(2) VAC (common)  
(3) 24 VDC +  
(4) 24 VDC -

### 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