



**REPLACEMENT FOR**

- GE/Yokogawa 180
- Sigma 1151/1251
- Westinghouse/Wechler VX252
- Modutech 6-inch meters
- Crompton 6-inch meters



## BB101P Programmable Bargraph

(Class III-Commercial/Industrial Grade)

**A** METEK Dixson “PRO” (PROgrammable) Series bargraphs are the preferred choice for new applications, or for replacement of switchboard meters, other common size indicators, and set point controllers. The “PRO” Series is feature-enhanced, and options are available to solve most common application problems. These models are easily configurable for maximum flexibility. Nuclear-qualified versions are also available (see data sheet P/N 071-40216).

### Application

AMETEK Dixson bargraphs are appropriate in any application where moving pointer meters have been used in the past, and in applications where greater accuracy, readability, and reliability are desirable. Signal sensitivities span ANSI C39.1 ranges, all conventional current loops, and voltage control signals. An optional RS-422 serial data bus allows for distributed control system applications. The instruments are suitable for local or remote, primary or redundant system indication.

The BB101P enclosure is form-factor compatible with standard, 6-inch edgewise switchboard instruments and is a direct replacement for the GE/Yokogawa 180, International Sigma Model 1151/1251, Westinghouse/Weschler VX252, and the Modutech and Crompton 6-inch meters. This simplifies retrofit into existing systems without panel modifications.

For control applications, the optional set point relay module provides on/off and differential gap control and annunciation using three set points. The optional digital display reads to 10 percent over- and underrange.

An optional temperature measurement module makes the instrument a direct-reading indicator for E, J, K, and T thermocouples or 100-ohm RTD, and an optional retransmission module simplifies distribution of the temperature parameter throughout the system.

User-programmability provides maximum versatility and minimizes the need for spares. A solid-state design with no moving parts yields a highly reliable product, especially under conditions of shock, vibration, dust and moisture. Features such as linearization, sensor power, retransmission, and min/max readings make the “PRO” Series the ideal choice for your application.

### Features

- Brilliant red LED display for excellent visibility
- Minimum 88,000-hour MTBF
- Rugged—high resistance to vibration and shock
- Microprocessor-based design
- Programmable configuration using front panel switches or PC serial link
- Available with or without program switches on front
- Input signal ranges switch-selectable
- Auto-calibration algorithm
- Linearization of input signals
- Min/max signal memory (peak/valley hold)
- Universal 6-inch rectilinear form interchangeable with all major manufacturers and panel cutouts

- Front panel mounting
- Underrange/overrange indication
- Modular design for flexibility and options

### Options

- Digital display with true minus-sign indication
- Green or amber LEDs
- On/off control using three set point relays
- Direct temperature measurement
- Auxiliary transducer power supply
- Two-wire, isolated retransmission

## BB101P Specifications

Note: for ISA S67.04 and RP67.04 Part II, consult factory for models and assistance.

### PHYSICAL CHARACTERISTICS

Number of bargraph segments 101  
Resolution 1.0%

### ENCLOSURE MATERIAL

Non-glare black Noryl or ABS case complying with UL94 V-0 or V-1

### DIGITAL DISPLAY OPTION

(True minus sign) -9999 to 9999

Number of digits 4  
Resolution 0.01% ± 1 count\*

### ENVIRONMENTAL CHARACTERISTICS

Operating temperature range (MIL-E16400G, Class 4) 0 to +60° C  
Storage temperature range -40 to +85° C

### POWER REQUIREMENTS

Either 115/230 VAC at 50, 60, 400 Hz or 5, 12, 24 or 48 VDC

Line regulation ±10%  
Power consumption (typical, depends upon options) 3.5/7.0 VA

### SENSITIVITY RANGES (Reference ANSI C39.1 Std. Sensitivities)

#### STANDARD FULL SCALE INPUTS FROM ZERO (DIP-switch selectable):

DC currents 500 µA to 50 mA  
DC voltages 1 to 250 V

#### OPTIONAL FULL SCALE INPUTS FROM ZERO

DC currents - factory configured 50 µA to 250 mA  
Plug-in modules:

RS-422 Serial Data Comm.  
DC voltages 50 mV to <1000 mV  
AC currents 1 mA to 1000 mA; 5 A  
AC voltages 250 mV to 250 V  
Thermocouple - Type E -100 to +1000° C  
Thermocouple - Type J -18 to +760° C  
Thermocouple - Type K -18 to +1370° C  
Thermocouple - Type T -160 to +400° C  
RTD (100-ohm platinum) -200 to +850° C

### DC INPUT PARAMETERS

Linearity 0.02% of span ± 1 count\*  
Accuracy 0.04% of span ± 1 count\*†  
Zero stability <0.01% per °C  
Gain stability <0.02% per °C  
Input impedance:  
For voltage inputs >200 k ohms  
For 4 to 20 mADC current inputs 100-ohm compliance resistor  
For 10 to 50 mADC current inputs 40-ohm compliance resistor  
For all other current inputs Consult factory  
Response time (typical) 175 ms  
Overload (signal) 200% or 250 VDC maximum

### AC INPUT PARAMETERS (true RMS-reading)

Linearity 0.4% of span \*\*  
Accuracy 0.5% of span \*\*  
Zero stability <0.04% per °C  
Gain stability <0.04% per °C  
Input impedance for voltage inputs >200 k ohms  
Response time (typical) 325 ms  
Overload (signal) 200% or 250 VAC maximum

### SET POINT OPTION (internal module)

Standard set points LO and HI  
Configurable alarm HI/HI (default) or LO/LO  
Stability 0.1%  
Hysteresis 1.0%  
Relay response time (typical):  
For DC inputs 350 ms  
For AC inputs 650 ms  
Relay contact ratings (three Form C): 0.4 A at 125 VAC  
2 A at 30 VDC

### RETRANSMISSION ACCURACY (4 to 20 mA)

± 0.1%

### LINEARIZATION

8<sup>th</sup>-order polynomial (nine terms). Refer to "PRO" Series Interface Kit.

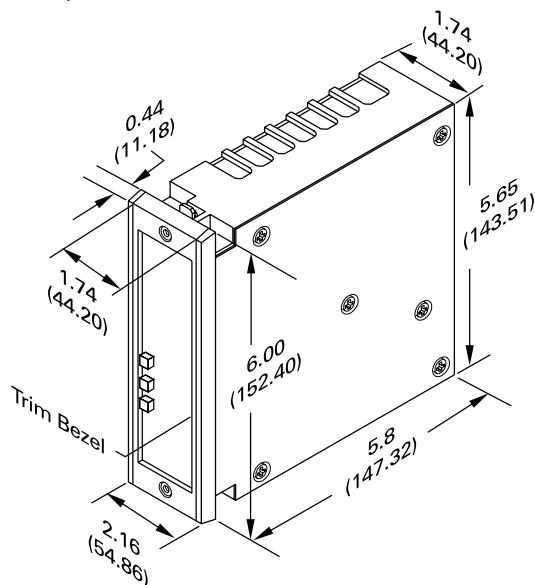
\* 1 count is defined as a ± unit value change of the right-most digit.

† Call factory for thermocouple, RTD, and square root input accuracy information.

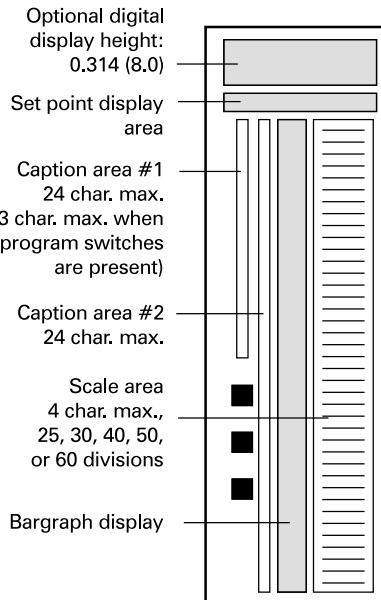
\*\* Except for first 5% of span.

## BB101P Dimensions

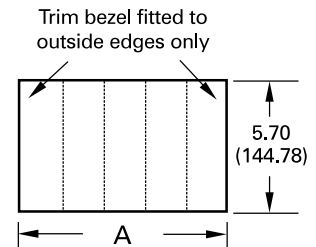
Dimensions given in inches  
(metric in parentheses)



### Artwork Guidelines



### Panel Cutout Dimensions



Dimension "A"	+0.03 -0.00	+0.76 -0.00
# Units	Inches	mm
1	1.77	44.96
2	3.52	89.41
3	5.26	133.60
4	6.99	177.55
5	8.73	221.74