

**SIGMA  
REPLACEMENTS!**



**REPLACEMENT FOR**

- Sigma 9270 1/2-DIN Lumigraph™
- Sigma 9262

## BJ101P/BJ202P Programmable Bargraphs (Class III-Commercial/Industrial Grade)

**A** METEK Dixon “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. Class II (seismic only) and Class I (1E) versions are also available (BN101P/BN202P and SN101P/SN202P respectively).

### Application

AMETEK Dixon 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 BJ101P (single) and BJ202P (dual) are direct replacements for the Sigma 9270 1/2-DIN Lumigraph™ and 9262 mechanical models. 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 and two Form C relays. The optional digital display reads to 10 percent over- and underrange.

The 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 a PC serial link
- Available with or without program switches on front
- Switch-selectable input signal ranges
- Auto-calibration algorithm
- Linearization of input signals
- Min/max signal memory (peak/valley hold)
- 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 two set point relays
- Direct temperature measurement
- Auxiliary transducer power supply
- Two-wire, isolated retransmission
- RS-422 serial communication

## BJ101P/BJ202P Specifications

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

### PHYSICAL CHARACTERISTICS

Number of segments in each bargraph channel 101  
Resolution 1.0%

### ENCLOSURE MATERIAL

Metal

### DIGITAL DISPLAY OPTION

(True minus sign) -9999 to 9999

Number of digits in each digital display 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 to <1000 mV  
AC currents 1 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 mA DC current inputs 100-ohm compliance resistor  
For 10 to 50 mA DC 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 (two) HI; LO or High HI  
Setability 0.1%  
Hysteresis 1.0%  
Relay response time (typical):  
For DC inputs 350 ms  
For AC inputs 650 ms  
Relay contact ratings (two Form C): 3.0 A at 120 VAC  
0.6 A at 125 VDC

### RETRANSMISSION ACCURACY (4 to 20 mA)

± 0.1%

### LINEARIZATION

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

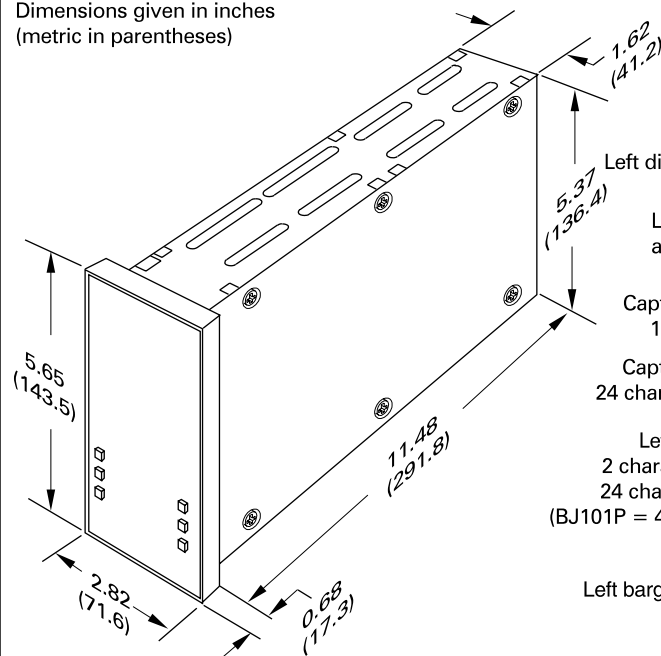
\* 1 count is defined as a ± unit value change of the right-most digit.

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

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

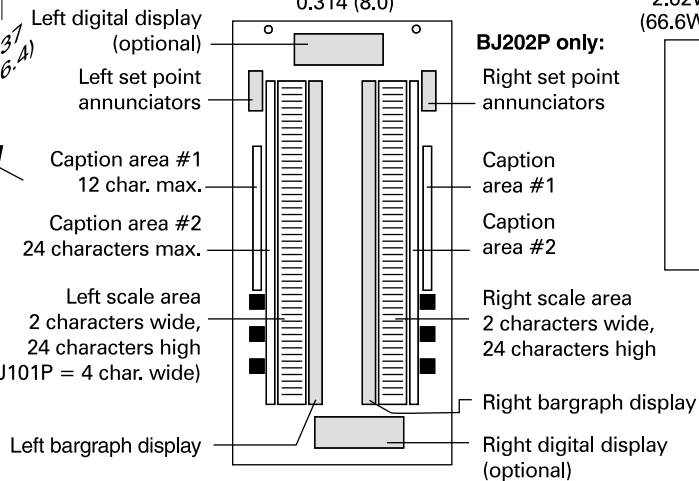
## BJ101P/BJ202P Dimensions

Dimensions given in inches  
(metric in parentheses)



### Artwork Guidelines

Digital display heights:  
0.314 (8.0)



### Panel Cutout Dimensions

2.62W X 5.37H  
(66.6W X 136.4H)

