

## BetaGauge 311 Single Sensor Advanced Pressure Calibrator Product Data Sheet

### General Description

The BetaGauge 311 is a general purpose, high accuracy pressure calibrator with special features intended to facilitate calibration of mass flow computers. With one internal pressure range and an available adapter for external BetaPort-P pressure modules, the possibilities are extensive. In addition, the 311 has a port to connect a precision RTD probe for the temperature factor calibration required for electronic flow meters (EFMs).

### Available Ranges and Engineering Units

The available internal sensor ranges (in PSI) are: 5, 15, 30, 100, 300, 500, 1000, 1500, 3000, 5000 and 10000.

Pressure may be displayed in the user's choice of engineering units, which include PSI, Bar, mBar, kPa, MPa, kg/cm<sup>2</sup>, cm H<sub>2</sub>O @ 4°C, cm H<sub>2</sub>O @ 20°C, cm H<sub>2</sub>O @ 60°F, m H<sub>2</sub>O @ 4°C, m H<sub>2</sub>O @ 20°C, m H<sub>2</sub>O @ 60°F, in H<sub>2</sub>O @ 4°C, in H<sub>2</sub>O @ 20°C, in H<sub>2</sub>O @ 60°F, ft H<sub>2</sub>O @ 4°C, ft H<sub>2</sub>O @ 20°C, ft H<sub>2</sub>O @ 60°F, mm Hg, in Hg and one USER defined unit.

### Major Features

- One isolated, stainless steel pressure sensor
- Temperature compensation to ensure field use accuracy
- External pressure module connection supports all BetaPort-P pressure modules (25 ranges)
- Pt100 RTD input for temperature measurement
- Internal 24 V DC loop power supply
- Measure 24 mA or 30 V DC
- Large, backlit, configurable display for 1, 2 or 3 variables
- Switch test on Pressure (internal or external)
- Five (5) frequently used setups and be stored and recalled
- % error and damping functions
- RS-232 port for remote operation
- Compact handheld design
- Powered by 4 AA Alkaline batteries

### Performance

#### Pressure Accuracy

15 PSI to 3000 PSI      ±0.025% FS  
5, 5000 and 10,000 PSI    ±0.035% FS

#### DC Measurement Accuracy

mA    ±0.015% of rdg ± 0.002 mA  
Volts ±0.015% of rdg ±0.002 V

#### Temperature (RTD) Accuracy

RTD    ±0.015% of rdg ±0.02 Ohms or  
±0.1°C at 0°C for Pt100

#### Temperature Effect

No effect on accuracy for all functions from 15° to 35°C  
Add ±0.002% FS/°C for temperatures outside range



### General Specifications

#### Environmental

Operating Temperature      -10° to +50°C  
Storage Temperature        -20° to +60°C

#### Power

Battery            Four (4) AA Alkaline cells  
Battery Life      >35 hours continuous typical usage

#### Physical

#### Dimensions

8.3" H x 3.9" W x 1.8"D  
21 cm H x 10 cm W x 4.6 cm D

#### Weight

1 lb., 4 oz. (0.57 kg)

#### Connectors/Ports

Pressure, (1) ? " FNPT, BetaPort-P pressure module, RTD (up to 4 wire), std. banana jacks for mA and V.

#### Included Accessories

Soft case, batteries, manual, NIST traceable calibration certificate, test leads