

### The BetaGauge 321A/311A

Whichever you choose, the single sensor BetaGauge 311A, or the dual sensor BetaGauge 321A, you'll have everything you need for calibrating pressure anywhere. Gas custody transfer is the ideal application for the accuracy and capabilities of the BetaGauge 321A. Select from two standard configurations: 15 psi/1500 psi, or 30 psi/3000 psi, or create a custom configuration by selecting between any two ranges. The BetaGauge 311A can be configured by selecting from any range from 0.4, 1, 5, 7, 15, 30, 50, 100, 150, 300, 500, 1000, 1500, 3000, 5000, or 10000 psi. Both are supplied with soft case, AA batteries, manual, NIST-traceable certificate, and test leads. Both are available in kits including the Pressure Calibrator, Pt100 RTD Probe, AA batteries, manual, NIST-traceable certificate, test leads, and hard-sided carrying case. The improved 'A' version provides enhanced features over the predecessor, including a Power-Tool-Tough case, custom engineering units, user-adjustable resolution, and enhanced stability.



**BetaGauge 321A  
Dual Sensor**

#### General Features

- For intrinsically safe applications choose the 311A-Ex or 321A-Ex versions
- Two isolated, stainless steel, pressure sensors with 0.025% F.S. accuracy (one on 311A)
- 27 available pressure ranges
- Temperature-compensation ensures accuracy in the field applications
- External pressure module connection supports all BetaPort-P pressure modules (27 ranges) for even more measurement capability (unavailable on Ex unit)
- Pt100 RTD input for temperature measurement, accurate to 0.1°C (0.2°F)
- Measure 4-20 mA input
- Internal 24 V Loop Power Supply can power a transmitter under test (unavailable on Ex unit)
- Measure up to 30 V DC (unavailable on Ex unit)
- Large graphic style LCD with backlight can be configured to display up to 3 inputs simultaneously (i.e. pressure 1, pressure 2, and RTD or any combination of inputs)
- Ideal for gas flow calibration (custody transfer) applications
- Pressure displayed in the user's choice of 17 engineering units plus custom
- Switch test on Pressure 1, Pressure 2, or external pressure module
- Operating mode layers support simple measurements to complex applications
- Up to five frequently used setups can be stored; last setup automatically recalled on power-up
- % Error and damping functions
- Small, rugged compact design operates on four (4) standard AA batteries

**BetaGauge 311A  
Single Sensor**



## Specifications (15 °C to 35 °C, unless otherwise noted)

### Ranges (see table at right)

RTD input range

(Pt100-385) -40°C to 105°C (-40°F to 220°F)

Temperature Effect

No effect on accuracy on all functions from 15°C to 35°C Add  $\pm 0.002\%$  F.S./°C for temps outside of 15°C to 35°C

Engineering Units

psi, bar, mbar, kPa, kg/cm<sup>2</sup>, cmH<sub>2</sub>O@4°C, cmH<sub>2</sub>O@20°C, mmH<sub>2</sub>O@4°C, mmH<sub>2</sub>O@20°C, inH<sub>2</sub>O@4°C, inH<sub>2</sub>O@20°C, inH<sub>2</sub>O@60°F, mmHg@0°C, inHg@0°C, MPa, FT H<sub>2</sub>O@60°C plus 2 custom at time of order

### Accuracy

Pressure

0.4 psi  $\pm 0.1\%$  FS

1.0 psi  $\pm 0.05\%$  FS

15 to 3000 psi  $\pm 0.025\%$  FS

5.7, 5000, 10000 psi  $\pm 0.035\%$  FS

mA

$\pm 0.015\%$  of reading  $\pm 0.002$ mA

Volts

$\pm 0.015\%$  of reading  $\pm 0.002$ V

RTD input range (Pt100-385)  $\pm 0.01^\circ\text{C}$

Temperature Effect

No effect on accuracy on all functions from 15°C to 35°C Add  $\pm 0.002\%$  F.S./°C for temps outside of 15°C to 35°C

### General

Instrument Setup Recall 5; last used on power-up

Environmental

Operating Temperature -10 °C to +50 °C

Storage Temperature -20 °C to +60 °C

Power Requirements

6.0 VDC

Battery

Four (4) standard AA cells

Battery Life

>35 hours, typical usage

Physical

Dimensions 8.3" H x 3.9"W x 1.8"D  
(21.082 x 9.906 x 4.572 cm)

Weight

1 lbs, 4 oz. (0.567 kg)

Connectors/Ports Pressure

Two, 1/8" NPT

External BetaPort-P pressure module;

RTD

## Available Ranges

### Ranges:

#### Isolated Gauge (PSIG):

0 to 1000 (0 to 70 Bar), 0 to 1500 (0 to 100 Bar),  
0 to 3000 (0 to 200 Bar), 0 to 5000 (0 to 340 Bar),  
0 to 10000 (0 to 700 Bar)

#### Non Isolated Compound (PSIG):

-0.4 to 0.4 (-25 to 25 mBar), -1 to 1 (-70 to 70 mBar),  
-5 to 5 (-350 to 350 mBar), -7.2 to 7.2 (-500 to 500 mBar),  
-15 to 15 (-1 to 1 Bar), -15 to 30 (-1 to 2 Bar)

#### Isolated Compound (PSIG):

-12 to 50 (-0.8 to 3.5 Bar), -12 to 100 (-0.8 to 7 Bar),  
-12 to 150 (-0.8 to 10 Bar), -12 to 300 (-0.8 to 20 Bar),  
-12 to 500 (-0.8 to 35 Bar)

#### Isolated Absolute (PSIA):

0 to 15 (0 to 1 Bar), 0 to 30 (0 to 2 Bar), 0 to 100 (0 to 7 Bar),  
0 to 150 (0 to 10 Bar), 0 to 300 (0 to 20 Bar)

#### Non Isolated Differential (PSID):

-0.4 to 0.4 (-25 to 25 mBar), -1 to 1 (-70 to 70 mBar),  
-5 to 5 (-350 to 350 mBar), -12 to 30 (-0.8 to 2 Bar),  
-12 to 50 (-0.8 to 3.5 Bar), -12 to 100 (-0.8 to 7 Bar)

## BetaGauge 311A-321A Ordering Information

Part Number	Description
1919299	BetaGauge 311A, specify range from table above except for 10,000 psi/700 bar
1919689	BetaGauge 311A with high strength stainless steel manifold for 10,000 psi/700 bar range or specify range from table above
1919275	BetaGauge 321A-15/1500 with 15 psi/1 bar & 1500 psi/100 bar internal ranges
1919243	BetaGauge 321A-30/3000 with 30 psi/2 bar & 3000 psi/200 bar internal ranges
1919276	BetaGauge 321A with custom ranges from table above except for 10,000 psi/700 bar
1919550	BetaGauge 321A with high strength stainless steel manifold for 10,000 psi/700 bar range, specify ranges from table above
	<b>All units above include</b>
	<ul style="list-style-type: none"> <li>• Batteries</li> <li>• Test leads</li> <li>• NIST traceable calibration certificate</li> <li>• User guide</li> <li>• Soft sided carrying case</li> </ul>
	<b>Custody Transfer Calibration Kits</b>
1919307	BetaGauge 311A, specify range from table above
1919280	BetaGauge 321A-15/1500 calibrator as above
1919281	BetaGauge 321A-30/3000 calibrator as above
1919282	BetaGauge 321A with custom ranges from table above
	<b>All custody transfer calibration kits include</b>
	<ul style="list-style-type: none"> <li>• Hard sided carrying case</li> <li>• LTP-100A 100Ω RTD probe</li> </ul>

