

*Calibration Technology Starts Here*

*Hazardous Area Use  
Pressure Calibrator*

*Highest Precision &  
Accuracy Available  
in a Hand-Held  
Instrument*



## The BetaGauge 311A-EX/321A-EX

Whichever you choose, the single sensor BetaGauge 311A-EX, or the dual sensor BetaGauge 321A-EX, 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-EX. Create a custom configuration by selecting from any two ranges. The BetaGauge 311A-EX can be configured by selecting from any range. 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.

### Approval Details



Ex ia IIB T3 Gb (Ta=-10... +45°C)  
KEMA 10 ATEX 0168X 0344  
Ex ia IIB T3 Gb (Ta=-10... +45°C)  
II 2 G IECEx CSA 10.0013X

### General Features

- Single or dual pressure sensors with up to  $\pm 0.025\%$  F.S. accuracy
- 25 available pressure ranges
- Temperature-compensation ensures accuracy in the field applications
- Pt100 RTD input for temperature measurement, accurate to 0.1°C (0.2°F)
- Measure 4-20 mA input
- ClearBrite™ 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 19 engineering units
- Switch test on Pressure 1 or Pressure 2
- 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) Alkaline AA batteries



**BetaGauge 321A-EX**  
Dual Sensor



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

#### Ranges

##### Available Pressure

###### Isolated Gauge (PSIG):

0 to 15 (0 to 1 Bar), 0 to 30 (0 to 2 Bar), 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 (-20 to 20 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 100 (-0.8 to 7 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 300 (0 to 20 Bar)

###### Non Isolated Differential (PSID):

-0.4 to 0.4 (-20 to 20 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 100 (-0.8 to 7 Bar)

mA 0 to 24.000 mA

RTD -40°C to 105°C (-40°F to 220°F)

#### Engineering Units

psi, bar, mbar, kPa, kgcm2, cmH2O@4°C, cmH2O@20°C,  
mH2O@4°C, mH2O@20°C, inH2O@4°C, inH2O@20°C,  
inH2O@60°F, mmHg@0°C, inHg@0°C, ftH2O@4°C,  
ftH2O@20°C, ftH2O@60°F

Plus up to 2 user specified custom units

#### Accuracy

##### Pressure

0.4 psi ±0.1 % FS  
1.0 psi ±0.05 % FS  
15 to 3000 psi ±0.025 % FS  
5, 7.2, 5000, 10000 psi ±0.035 % FS

mA ±0.015% of rdg ±0.002mA

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 ±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  
RTD

Intrinsic Safety - see certificate info to the right

Included Accessories soft case, batteries, manual, NIST-traceable certificate, and test leads

### BetaGauge 311A-EX Single Sensor



### BetaGauge 311A-EX / 321A-EX Ordering Information

Part Number	Description and Range
1919915	BetaGauge 311A-EX-[range]-[style]
1919916	BetaGauge 311A-EX-SS-[range]-[style] (high strength stainless steel manifold)
1919854	BetaGauge 321A-EX-[range1]-[style]-[range2]-[style]
1919914	BetaGauge 321A-EX-SS-[range1]-[style]-[range2]-[style] (high strength stainless steel manifold)
1919913	BetaGauge 311A-EX-KIT-[range]-[style] (custody transfer calibration kit w/RTD probe)
1919912	BetaGauge 321A-EX-Kit-[range1]-[style]-[range2]-[style] (custody transfer calibration kit w/RTD probe)
Ranges	See specifications at left
Styles	C=compound, G=gauge, A=absolute, D=differential*

\*Differential only available on BetaGauge 311A-EX

### Approval Details



Ex ia IIB T3 Gb (Ta=-10... +45°C)

KEMA 10 ATEX 0168X 0344

Ex ia IIB T3 Gb (Ta=-10... +45°C)

II 2 G IECEx CSA 10.0013X

## techniCAL

**Toll Free:** 1-866-327-8731 1-86-MEASURE-1  
**Tel:** 905-575-1941  
**Fax:** 905-575-0386  
**E-mail:** sales@technical-sys.com  
**web-site:** www.technical-sys.com

Martel Electronics Corporation

Copyright 2011 Martel Electronics;  
All trademarks are the property of  
their respective owners. 1104R1CD-321/311-EX  
Specifications subject to change without notice.