



BetaGauge 320



**INTRINSICALLY
SAFE
MODEL
AVAILABLE**

World's best-selling portable pressure calibrator.

The tremendous popularity that our BetaGauge Model 320 enjoys can be summed up in one word: value. BetaGauge successfully combines accuracy, versatility, ease of use, and reliability, critical factors that contribute most to the performance of the instruments being calibrated and to the technicians doing the calibrating.

Accuracy is the pivotal parameter. The ability of instrumentation, or for that matter the entire process, to operate continuously at design performance is dependent upon calibration accuracy. At .075% of reading with a full five digits of readout resolution, BetaGauge delivers exceptional precision.

Calibrator versatility and ease of use are more subjective. But they are no less crucial to how well, how productively, and yes, how accurately a technician does the job.

Reliability speaks for itself. Without it, there can be no confidence in any of the other criteria.

In all these areas, BetaGauge has proven itself where it counts most. By delivering value to field technicians, who have in turn made it the world's best-selling portable pressure gauge.



**INTRINSICALLY SAFE
& NON-INCENDIVE,
CLASS I, DIV. 1, GROUPS A-D
(OPTIONAL)**



BetaGauge gives you the keys to fine tune your process instrumentation.

BetaGauge enhances the efforts of every field technician. With calibrator features and functions that simplify procedures, maximize convenience, and put critical data right at your fingertips.

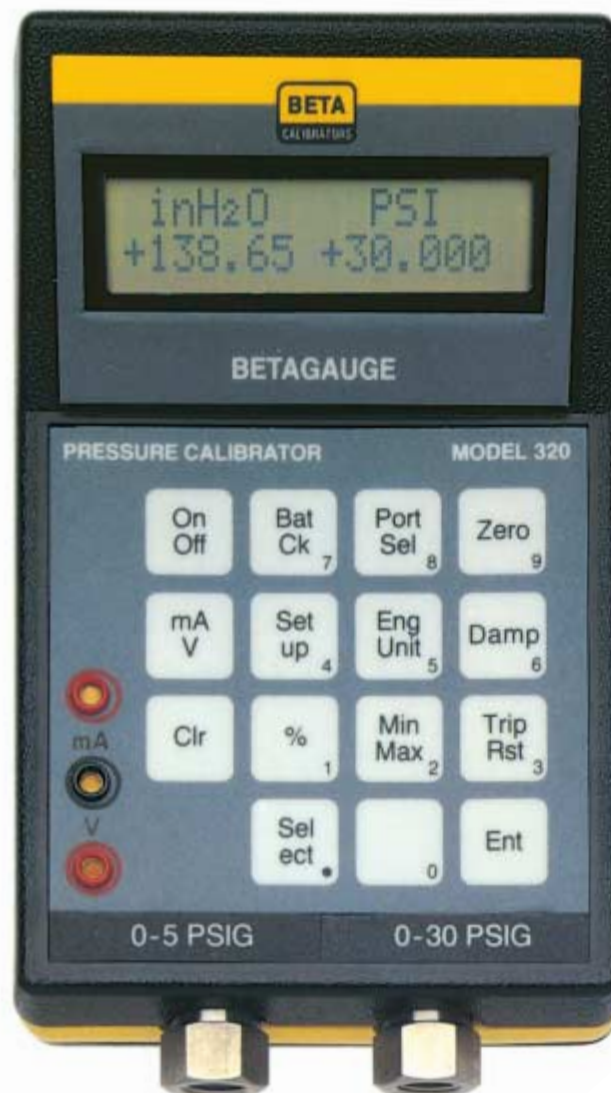
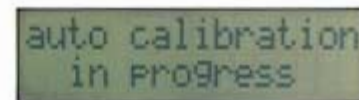
20 Available Ranges. Low pressure, high pressure, vacuum, absolute pressure, and differential pressure—20 ranges in all—from 10 inH₂O to 5000 psig.

Single or Dual Sensor Configurations. With dual sensors, ranges as diverse as 0-5 psig and 0-5000 psig can be specified on the same unit. If a pneumatic transmit-

ter is to be calibrated, pressure input can be read on one sensor and pressure output on the other.

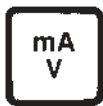
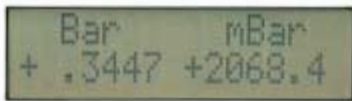
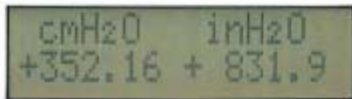
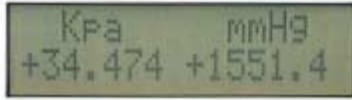
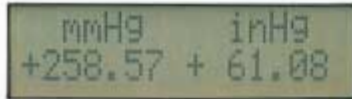
Operator Prompting. BetaGauge is very technician-friendly with complete and continuous prompting on its LCD display for virtually every test procedure.

Automatic Internal Calibration/Keypad Recalibration. With every power-on sequence, BetaGauge performs a series of internal tests and will display a fault message if there is a failure. Field recalibration can be done easily through the keypad using appropriate pressure standards.

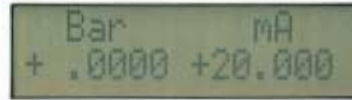




Readout in Eight Different Engineering Units. Keypad selections include inH₂O, inHg, PSI, kPA, mmHg, Mbar, cmH₂O, and bars. One user-defined scale can also be programmed. Temperature for scaling on water column measurements is selectable between 4°C, 20°C, and 60°F.



Measurement of mA/Vdc. Will read 0-20 or 0-50 mA or 0-30 volts dc.



Minimum/Maximum Measurement Memory. Can be easily set up to automatically retain the lowest and highest values in any procedure. These values can be recalled with just a keystroke.



Trip Detect. Greatly facilitates the accurate setting of pressure switches. When trip detect is active, BetaGauge will monitor the electrical measurement for a significant change of state (10% change in V) and will freeze the last pressure measurement on the display.



% Error Display. BetaGauge has the unique ability to display input versus output as a % error. This feature allows difficult pressure calibrations to be performed without maintaining exact or steady test pressures.



Battery Check. Upon request, BetaGauge will display its current battery voltage level (or the battery voltage of the optional loop power supply).



Port Select. Dual sensor models can display either the left or right pressure port or both ports simultaneously.



Zero. Eliminates zero offset.



Damping. Useful when measuring pressures that are pulsating or otherwise unstable. BetaGauge makes two to three measurements per second. It updates the display each time a measurement is made—the value is the average of the last 16 measurements (rather than the instantaneous value).



Setup. These menus allow a variety of valuable *custom* operations to be performed.

Battery save — selection will ensure that the calibrator turns itself off if there is no keypad activity for 30 minutes.

User-defined engineering unit — entry of a custom engineering unit conversion.

Percent function — for specifying the zero and full scale values for a calibration.

H₂O reference temperature — provides a choice of the temperature correction for water column measurements.

Ownership — for entering owner's name or other identification into non-volatile memory.

User calibration — for adjustment of all parameters except temperature compensation during field recalibrations by qualified personnel using suitable metrology standards.



Optional 24 Vdc Loop Power Supply. For powering a two-wire transmitter under test. Provides 20 mA at 24 volts dc for up to six hours. Automatically turns itself on or off. Can be conveniently stored in BetaGauge's carrying case.

Standard Equipment

BetaGauge is a microprocessor-based, software-intensive calibrator with 8K of memory, packaged in a compact housing made of lightweight, yet rugged ABS plastic. The keypad is entirely digital, with feedback provided visually and tactilely. Its full five-digit (50,000 count resolution) LCD simultaneously indicates pressure and electrical (mA or Vdc) variables. BetaGauge has a rechargeable, internal Nicad battery (four AA cells) with a life of 50 hours. A 115 Vac, 50/60 Hz wall mount battery charger is standard.

BetaGauge also comes with a handy carrying case, test leads, and instruction

manual. It can be used inside the case, which has a strap for hanging and pouches to hold accessories.

Optional Equipment

In addition to the optional loop power supply, several other valuable accessories are available. A special 12 Vdc battery charger can be used to recharge BetaGauge from an automobile. A number of hand pumps are also available: a vacuum hand pump; a low pressure hand pump, 0-150 psig; a high pressure hydraulic hand pump, 0-5000 psig (distilled water); and a combo pump, -20 inHg to 500 psig.

Overpressure:

Operating, without damage or calibration shift:

0-15* psi	400% of sensor range
30-250 psig	300% of sensor range
300-5000 psi	150% of sensor range

*200 inWc is 300% of sensor range

Pressure Fittings: 1/8" FNPT 316 SS

Electrical Connections: miniature recessed banana jacks

Display: simultaneous pressure and electrical on a two-line alphanumeric LCD display

Battery: Nicad (four AA cells); 50 hours nominal at 25°C, rechargeable

Battery Charger: 115 Vac, 50/60 Hz, wall mount; 12-14 hours for full charge; optional 12 Vdc charger available

General Specifications

Available Ranges

	Gauge	Vacuum	Absolute	Differential*
0-0.3 psig	0-100 psig	0 to -1 psig	0-15 psia	0-1 psid
0-1 psig	0-150 psig	0 to -5 psig	0-30 psia	0-5 psid
0-5 psig	0-300 psig	0 to -15 psig	0-50 psia	0-30 psid
0-7.2 psig	0-1000 psig			0-50 psid
0-10 psig	0-1500 psig	*Maximum static pressure, 200 psig.		
0-15 psig	0-3000 psig	All ranges come standard with eight engineering units, readout selection, keypad selectable by the operator (inH ₂ O, inHg, PSI, kPa, mmHg, mbar, cmH ₂ O, bars, plus a user-defined scale).		
0-30 psig	0-5000 psig			
0-50 psig				

Special ranges available upon request.

Accuracy:

Range (PSI)

0.3	0.07% of reading + 0.03% of scale + 1 digit
1	0.07% of reading + 0.03% of scale + 1 digit
5-100	0.05% of reading + 0.02% of scale + 1 digit
300-1500	0.06% of reading + 0.03% of scale + 1 digit
above 1500	0.1% of full scale

Approval (optional): classified by CSA as intrinsically safe for hazardous locations Class I, Div. 1, Groups A, B, C, and D; test report LR92907-3

Electrical:

0-10 Vdc	0.025% of range + 1 digit
0-30 Vdc	0.1% of range + 1 digit
0-20/50 mA	0.025% of range + 1 digit

Sensor Configuration (specify):

- Single—psig/ABS/vacuum
- Dual—psig/ABS/vacuum (any combination)
- Single—differential

Resolution: 50,000 counts maximum (depends on range and engineering units)

Media Compatibility: clean, dry, non-corrosive air or gases for low pressure ranges through 100 psi; for 300 psi and higher, any media that is compatible with 316 SS

Temperature:

- Operating: 0 to 50°C
- Effect on accuracy: none, over operating range
- Storage: -30°C to 50°C, with batteries; -30°C to 70°C without batteries

We make calibrators as if your process depends on them.

We're BETA Calibrators, a unit of Martel Electronics Corporation. Together we are the largest maker of instrument calibrators and calibration systems in North America. Our combination of high performance, productivity and reliability have made ours the calibrators of choice world-wide.

The BETA line includes calibrators that address virtually every requirement:

- Multi-function calibrators that efficiently combine measurement and simulation capabilities for T/Cs, RTDs, frequency, DC current and voltage and even pressure.
- Documenting calibrators like the BetaFLEX® with HART™ and Honeywell DE™ protocol for "smart" instrumentation.
- Modular BetaGauge // pressure calibrators.
- Easy to use and value priced CALTool® single function calibrators for T/Cs, RTDs, DC current and voltage, frequency and pressure.

BETA documenting calibrators are compatible with a wide variety of software including Cornerstone CAL Station and Base Station and others using industry standard FCINTF interfaces.

REPRESENTED BY:



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