
Our *classic* 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.

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

Technician 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 Unit 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

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.

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.

% 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.

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 psi.

General Specifications

Available Ranges

	Gauge	Vacuum	Absolute	Differential*
0-0.03 psig	0-100 psig	0 to -1 psig	0-15 psia	0-1 psid
0-1 psig	0-300 psig	0 to -5 psig	0-30 psia	0-5 psid
0-5 psig	0-1000 psig	0 to -15 psig	0-50 psia	0-30 psid
0-7.2 psig	0-1500 psig			0-50 psid
0-15 psig	0-3000 psig			
0-30 psig	0-5000 psig			

All ranges come standard with eight engineering units, readout selection, keypad selectable by the operator (in H₂O, inHg, PSI, kPA, mmHg, mBar, cmH₂O, Bars, plus a user defined scale).

*Maximum static pressure, 200 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 + 1 digit

Approval (optional): classified by GSA 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):

- a. Single—psig/ABS/vacuum
- b. Dual—psig/ABS/vacuum (any combination)
- c. 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:

- a. Operating: 0 to 50°C
- b. Effect on accuracy: none, over operating range

- c. Storage: -30°C to 5000, with batteries; -30°C to 7000 without batteries

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" W.C. 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: NiCd (four AA cells); 50 hours nominal at 2500, rechargeable

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

Real World Know-HowSM

We're BETA Calibrators. Our unique combination of high accuracy and high productivity features has made BETA Calibrators the calibrators of choice worldwide.

The BETA line includes calibrators that address virtually every process instrument and calibration requirement:

- BetaFLEX™ modular universal documenting calibrators.
- Multifunction calibrators that address temperature, dc, frequency, and pressure.
- BetaGauge 320, BetaGauge 370 and BetaGauge II pressure calibrators covering ranges from 10"W.C. to 15,000 PSI (1,000 Bar).
- Eight CALTool™ single-function calibrators.
- MasterCAL™ Calibration System Software (MCSS), a Windows-based system for automating calibration plant-wide and documenting instrument performance for ISO-9000 and regulatory compliance.

Want to ensure that all the measurement and control devices in your process and plant operate at their engineered performance levels? Maintain them with Beta Calibrators.



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