

# PRESSURE MEASUREMENT

Data Sheet No. CDS2101D

## DIGITAL PRESSURE GAUGE SERIES 2100 MODELS 2101, 2102, 2106 & 2107

**Precision to 0.003% FS  
Accuracy to 0.010% FS**



### STANDARD FEATURES

- Ranges up to 10,000 psi
- High Resolution (up to 2 ppm)
- Certified with NIST traceable primary standards
- Dynamic compensation from 0 to 50°C or 15 to 45°C
- IEEE-488 communications
- 33 selectable pressure units
- Calibration protection
- Display of max. and min. readings
- Displays pressure rate
- Function keys
- Absolute, Gauge, Bidirectional, or Vacuum
- CE Compliant

### OPTIONAL FEATURES

- RS-232 communications
- BCD/Analog voltage outputs
- Carrying handle
- Carrying case
- Battery power
- Hand pump
- Rack mount kit
- Relief valves

### DESCRIPTION

The **Series 2100 Digital Pressure Gauges** are high performance digital gauges that provide accurate measurement of pressure. The front panel "function keys" improve the ease of operation and expand the capabilities of the DPG. Standard communication is IEEE-488, with RS-232 as an option.

Mensor Model	Precision	Accuracy	Compensated Range
2101	0.003% FS	0.010% FS	15 - 45°C
2102	0.006% FS	0.025% FS	15 - 45°C
2106	0.003% FS	0.010% FS	0 - 50°C
2107	0.006% FS	0.025% FS	0 - 50°C

## DIGITAL PRESSURE GAUGE MODELS 2101, 2102, 2106, 2107 SPECIFICATIONS

<i>Pressure Range — Standard</i>	
psia	0 to 5 min, 0 to 10,000 max
psig	0 to 0.36 min, 0 to 10,000 max
<i>Pressure Range — Bidirectional, Vacuum</i>	
psig	-.36 to .36 min, -atm to 10,000 max
<i>Resolution</i>	up to 2 ppm depending on range
<i>Over Pressure Limit</i>	150% FS for most ranges
<i>Calibration Stability</i>	
Zero	better than 0.01% FS for 180 days typical
Span	better than 0.01% FS for 180 days typical
<i>Dynamic Characteristics</i>	
Warm-Up	Less than 15 minutes
Storage	-20 to 70°C
Reading Rate	15.7 readings per second
Response Time	0.2 second for FS step
Orientation	Negligible
<i>Communications</i>	
Standard	IEEE-488 (GPIB). LabVIEW <sup>1</sup> drivers are available.
Optional	RS-232, BCD/Analog
<i>Physical Characteristics</i>	
Case Size	7.56" wide x 3.78" high x 9.50" deep (19.24 x 9.60 x 24.13 cm)
Panel Cutout	7.3" wide x 3.6" high (18.54 x 9.144 cm)
Weight	6 pounds
Mounting	Table model standard. Rack adapter or carrying handle optional
Media Compatibility	Non-corrosive gases compatible with aluminum, 316 stainless steel, brass, Buna N, Viton, Nylon and silicone grease
Fittings	
≤ 6000 psi	Female 7/16-20 SAE/MS straight thread port on rear of instrument. Female 1/8 inch and 1/4 inch NPT adapter fittings are included. Optional adapter fittings available.
> 6000 psi	Rear mounted fitting mates to Autoclave Engineers, Inc. No. F 250 C, High Pressure Equipment Co. No. HF4 or an equivalent
Relief Valves	Optional, mounted externally
<i>Power</i>	
Standard	Universal Adapter Removable line input cable, approximately 2.2 meters long. Input: 90 to 264V, 47 to 63 Hz Output: 12 VDC, 0 to 2.5A Direct input without adapter: 12 VDC (10 to 15 VDC) @ 0.6 max
Optional	Battery power, 8 to 10 hours operation on full charge. Low battery indicator and universal input battery charger included.
<i>Warranty</i>	One year

<sup>1</sup>Labview® is a trademark of National Instruments.

Since product improvement is a continuous process at Mensor, we reserve the right to change specifications without notice.

## FRONT PANEL INTERFACE

<b>+ / - KEYS</b>	Adjusts values
<b>CAL</b>	Allows zero offset and span adjust
<b>COMM</b>	Sets GPIB address, and optional RS-232 baud, parity, stop bits, and word length
<b>SAVE</b>	Stores changes made to various settings
<b>PEAK</b>	Displays current, maximum and minimum readings after being enabled
<b>NULL</b>	Stores current reading, then displays subsequent readings relative to stored reading
<b>RATE</b>	Displays current reading and rates of change in periods of 1 second, 1 minute, 1 hour or 3 hours
<b>UNITS</b>	Selects from 8 customer specified pressure units from the list of 33 available
Factory Standard Units:	psi, inHg @ 0°C, inH <sub>2</sub> O @ 4°C, mBar, mmHg @ 0°C, Torr, hPa, kPa set at factory unless otherwise specified
Available Pressure Units:	psi, inHg @ 0°C and 60°F, inH <sub>2</sub> O @ 4°C, 20°C and 60°F, ftH <sub>2</sub> O @ 4°C, 20°C and 60°F, mTorr, inSW, ftSW, ATM, bars, mbars, mmH <sub>2</sub> O @ 4°C, cm H <sub>2</sub> O @ 4°C, MH <sub>2</sub> O @ 4°C, mmHg @ 0°C, cmHg @ 0°C, Torr, hPa, kPa, Pa, D/cmsq, G/cmsq, Kg/cmsq, MSW, OSI, PSF, TSF, TSI, μHg @ 0°C
<b>DISPLAY</b>	2 line 20 alpha-numeric characters/line 0.36 inch character height (9.2 mm)
<b>REMOTE</b>	Indicates remote operation mode

**Accuracy** includes the following uncertainties in the pressure reading: repeatability, pressure hysteresis, creep, linearity, and temperature effects over the compensated range.

**Precision** is the ability of an instrument to repeat an output when measuring a given quantity under identical conditions.

Per ANSI/NCSS Z540-2 (U.S Guide to the Expression of Uncertainty in Measurement) that "*the term precision should not be used for accuracy*".

These models are calibrated with primary standards traceable to NIST. The calibration program at Mensor is compliant to ANSI/NCSS Z540-1.

For more details on calibration of Mensor products see Technical Note entitled "*Accuracy Specifications for Mensor Products*" (available on our web site [www.mensor.com](http://www.mensor.com)).

## REPRESENTED BY