

Falcon DPG1000DR Digital Pressure Gauge

Low Voltage AC or DC Powered with 0-2 Volt or 4-20 mA Output

- **±0.25% Test Gauge Accuracy**
- **316 Stainless Steel Wetted Parts**
- **True Analog Output**
- **Output Test Function**
- **Rugged Extruded Aluminum Case**



DPG1000DR with 199.9 psig range

ELECTRICAL SPECIFICATIONS

Standard ranges and resolution

30.0 inHg vacuum, ±15.00 psig
3.00, 5.00, 10.00, 15.00, 19.99 psig
30.0, 50.0, 100.0, 199.9 psig
300, 500, 1000, 3000, 5000 psig
Absolute reference: 15.00, 30.0, 100.0 psia

Optional units

Convert standard ranges for other engineering units such as kPa, atm, bar, mbar, inHg, mmHg, inH₂O, ftH₂O, torr, kg/cm², cmH₂O, oz/in²

Display (type, size, update rate)

3½ digit LCD, ½" digit height
4 digit LCD, 0.4" digit height for 2000 psi or higher
3 readings per second nominal display update rate

Controls & location

Display zero/span; non-interactive, ±15% range
Test calibration level; 0-100% range
Top-accessible multiturn potentiometers
Retransmission zero and span; internal potentiometers

Accuracy (linearity, hysteresis, repeatability)

±0.25% of full scale or better, ±1 least significant digit

Temperature stability

±0.003% of span per degree C (typical)
±0.01% of span per degree C (max) 0 to 70°C

Retransmission output

True analog output, 50 milliseconds typical response time.
Current output (-I option), 4-20 mA DC
Output drive (compliance) determined by power source. See graph.
Voltage output (-V option), 0 to 2 VDC into 5K ohm or greater

Test function

Front panel TEST button, when depressed sets display and retransmission output to "test calibration" level, independent of pressure input to allow testing of system operation.
Test level is set by top-accessible multiturn potentiometer to any value from 0 to 100% of full scale.

Power

9 to 32 VDC or 8 to 24 VAC 50/60 Hz
30 mA maximum
Order optional WMPK 12 VDC wall mount power supply kit to operate gauge on 115 VAC.

ENVIRONMENTAL SPECIFICATIONS

Storage temperature -55 to +95°C

Operating temperature -20 to +85°C

Compensated temperature 0 to +70°C

MECHANICAL SPECIFICATIONS

Size

3.38"W x 2.88"H x 1.65"D (not including pressure fitting or cable strain relief). Add approximately 0.75" to height for pressure fitting and 1" to depth for strain relief and wire clearance.

Weight (approximate)

Gauge: 9 ounces
Shipping weight: 1 pound

Material

Extruded aluminum case, epoxy powder coated
Polycarbonate cover, front and rear gaskets

Color

Light gray body, light gray/blue front

Pressure/vacuum connection and material

¼" NPT male, 316 stainless steel

Media compatibility

All wetted parts are 316 SS
Compatible with most liquids and gases

Electrical connection

3 foot long, 4-conductor 22 AWG shielded cable for power and retransmission output

Overpressure

5000 psig for 3000 psig range, 7500 psig for 5000 psig range
All others; 2x rated pressure minimum

Burst pressure

4x rated pressure minimum or 10,000 psi, whichever is less



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Installation

When installing the gauge, tighten using wrench on hex fitting only. Do not attempt to tighten by turning housing or any other part of the gauge. Use fittings appropriate for the pressure range of the gauge. Do not apply vacuum to gauges not designed for vacuum operation.

Electrical Connection

The **DPG1000DR** can be powered by any 9 to 32 VDC or 8 to 24 VAC 50/60 Hz power source. An inexpensive unregulated low voltage source can be used. The magnitude of the supply voltage has negligible effect on the gauge calibration as long as it is within the stated voltage ranges. Do not allow the gauge supply voltage fall below 9 VDC or 8 VAC RMS. Operation below these values may cause erratic or erroneous readings or output.

Connection to the **DPG1000DR** is made with the 4-conductor cable at the gauge rear. This cable accommodates both the gauge power supply and retransmission output. This cable has one RED and one BLACK lead. If using a 9 to 32 VDC power source, connect the (+) supply to the RED lead and the (-) supply to the BLACK lead. If using a 8 to 24 VAC 50/60 Hz power source, connect to the RED and BLACK leads. When using low voltage AC power, there is of course, no polarity consideration.

The (+) retransmission output appears on the WHITE lead, and the (-) retransmission output appears on the GREEN lead. Use of the shield (drain) wire of the retransmission output is optional. It is not generally needed for 4-20 mA current loops unless very long cable lengths are used in electrically noisy environments.

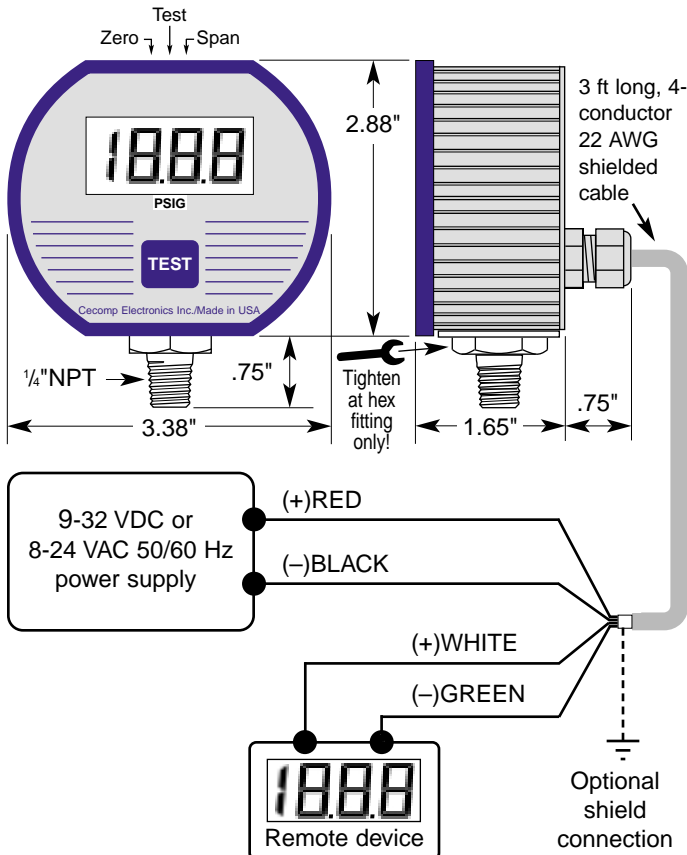
Using the Analog Output

The output is a continuous analog signal based on the transducer output rather than the display. This output is filtered to improve noise immunity and has a response time of about 50 milliseconds.

For 0-2 volt output models, do not allow the resistive load on the output to fall below 5K ohms. Also, avoid large capacitive loads (greater than 1000 pF) such as those caused by long runs of shielded cable.

For 4-20 mA models, be sure to observe the output compliance (voltage drive) capabilities of the gauge. The compliance, and therefore the maximum loop resistance the output can drive, is a function of the supply voltage to the gauge. Consult the graph shown at right for maximum loop resistance vs. gauge supply voltage. Too large a loop resistance will cause the gauge output to "limit" or saturate before reaching its full 20 mA output.

The power supply (-) lead is tied to the retransmission output ground. Therefore, if a DC supply is used, the power supply (-) lead should be considered common with regard to the retransmission output (-) connection.



Operation

The gauge is powered ON whenever a supply voltage is applied. Warm-up time is negligible. In normal operation, the system pressure is displayed on the gauge LCD. When held depressed, the TEST button will switch the display and retransmission output to a test level, independent of the system pressure, determined by the setting of the top-accessible Test potentiometer. This feature will allow testing of the retransmission loop and any external device(s) connected to it. To set the Test output level, press and hold the front panel TEST button and adjust the Test potentiometer on the top to set the display and retransmission output to the desired test level.

Calibration

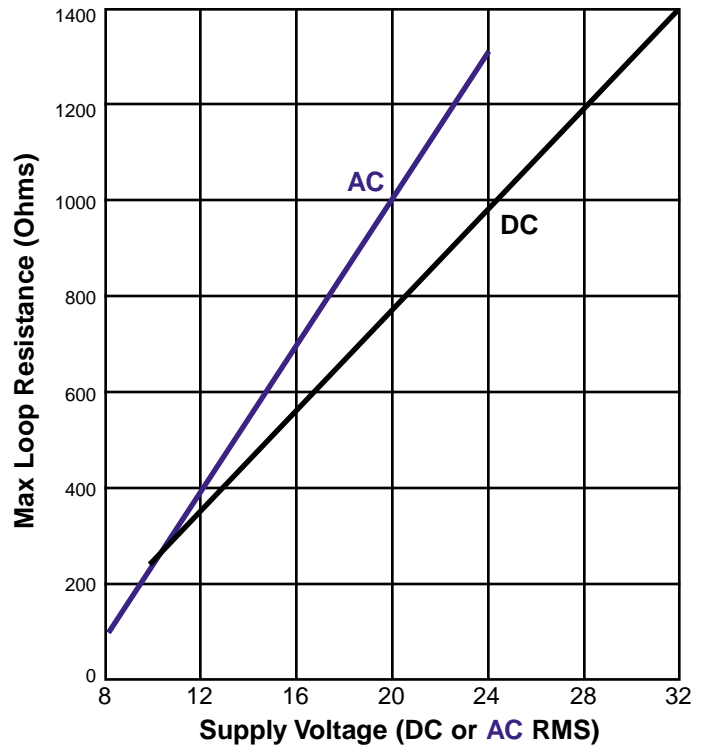
Lift calibration label on the top of the unit to access individual controls to adjust the zero and span of the display.

GAUGE reference units may be re-zeroed without affecting the span calibration. The gauge port must be open to the ambient with no pressure or vacuum applied. Adjust the Zero control until the gauge reads zero with the minus (-) sign occasionally flashing.

Span calibration should only be attempted if the user has access to a pressure reference of known accuracy. The quality of the calibration is only as good as the accuracy of the calibration equipment and ideally should be at least four times the gauge accuracy. Zero calibration must be done before span calibration. Apply full-scale pressure (or vacuum) to the gauge port and adjust the Span control for the correct reading.

ABSOLUTE reference gauges require vacuum generation and atmospheric pressure measurement equipment for accurate calibration and thus are more difficult to calibrate in the field. Gauges may be returned to Ccomp Electronics for factory certified recalibration. N.I.S.T. traceability is available.

Voltage Compliance for Current Retransmission Output



Cecomp Electronics maintains a constant effort to upgrade and improve its products, therefore specifications are subject to change.

MODEL DESIGNATION

DPG1000DR range units ref - output

Pressure/Vacuum Range → Units → G=Absolute, V=Vacuum → I = 4-20 mA V = 0-2 volts

Example: **DPG1000DR100PSIG-I** = DPG1000, 4-20 mA output, 100.0 psig