

Falcon II DPG500L

- **±1% Accuracy**
- **Easy to Read 3½ Digit LCD**
- **Pressure or Vacuum Applications**
- **Rugged Extruded Aluminum Case**
- **Output Test Function**

ELECTRICAL SPECIFICATIONS

Standard ranges

±15 psi,
0-10 inH₂O,
0-1, 0-5, 0-15, 0-30, 0-50, 0-100 psi

Pressure/vacuum reference

Gauge (psig) or absolute (psia)

Optional units

Any 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, 3 readings per second nominal

Controls & location

Display zero/span, non-interactive, ±15% range;
Test calibration level, 0-100% range;
top-accessible, multiturn potentiometers
Loop 4 mA and 20 mA, internal adjustments

Accuracy (linearity, hysteresis, repeatability)

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

Temperature stability

±0.01% of span per degree C (typical)
±0.04% of span per degree C (max) 0-50°C

Loop supply voltage

Any DC supply/loop resistance that maintains 8 to 32 VDC at gauge terminals. Gauge is reverse polarity protected.

Output characteristics

True analog output, 50 milliseconds typical response time

Low loop warning

Display colon appears when gauge terminal voltage falls below approximately 7.8 VDC

Test function

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

ENVIRONMENTAL SPECIFICATIONS

Storage temperature

-45 to +75°C

Operating temperature

-10 to +70°C

Compensated temperature

0 to +60°C

Loop Powered Indicating Pressure Transmitter



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

9 oz. (approx.)

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

Brass, ¼" NPT male

Media compatibility

Compatible with air, dry gases, and most non-corrosive media
Consult factory for special media compatibility requirements

Electrical connection

3 foot long, 2-conductor 22AWG cable

Overpressure

3x rated or 200 psi, whichever is less

CECOMP
ELECTRONICS, Inc.

Digital Pressure Gauges & Instrumentation

Phone: 888-763-4884

Fax: 888-763-4892

www.cecomp-usa.com

Description

In the **DPG500L**, all operating power for the gauge is supplied by the 4-20 mA output loop. This 2-wire connection allows the **DPG500L** to be used as a digital indicating transmitter in any 4-20 mA current loop application. The loop signal is a continuous analog signal based on the transducer output rather than the display. Individual, non-interactive controls are available for the display zero/span and the output loop 4/20 mA settings. Connection to the **DPG500L** is made via a 2-conductor cable at the back of the gauge.

A front-accessible Test pushbutton, when depressed, switches the display and output loop to a preset level determined by the setting of a "Test Calibration" potentiometer. This feature allows easy testing of the display and process loop by using a preset input signal in place of the actual input. The **DPG500L** also includes "low loop" warning circuitry. This circuitry provides an indication on the display when the loop supply voltage falls below a level which may not be sufficient to drive a full 20 mA into the loop load resistance. These two proprietary features make the **DPG500L** easier to set up and maintain.

Electrical Connection

Connection to the **DPG500L** is made with the 2-wire cable at the gauge rear. Connect the loop (+) supply to the RED lead and the loop (-) supply to the BLACK lead. Reversing the connections will not harm the gauge but the **DPG500L** will not operate with wrong polarity. See the "General" section for information on the loop transmitter operation.

Operation

Mount the **DPG500L** on the pressure or vacuum system, and apply power to the loop to activate the display. The display will show the system pressure or vacuum, and the loop current will also be proportional to the system pressure/vacuum (4 mA = "zero" or low end, 20 mA = "span", "full-scale" or high end).

When the front-panel TEST button is held depressed, the display and loop current are switched, independent of the system pressure, to a test level determined by the setting of the top-accessible "Test Calibration" potentiometer. This test mode will allow setup and testing of the current loop by switching the output to this test level whenever desired without having to adjust the system pressure.

Calibration

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

For GAUGE reference units the setting of the "Zero" control is correct when the gauge reads zero, with the "-" sign occasionally flashing, when the pressure port is open to the ambient. Accurate calibration of the "Span" control requires an accurate pressure reference and 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 better than $\pm 0.3\%$ for full accuracy of the **DPG500L**. If "Span" calibration is attempted, the "Zero" calibration should be done first. Then, apply full-scale pressure to the pressure port and adjust the "Span" control for the correct reading.

Calibration of ABSOLUTE reference units is more difficult and is not recommended in the field, unless the user has access to the special equipment required to calibrate absolute-reference units, especially vacuum generation or atmospheric pressure measurement equipment.

To set the "Test Cal" level, press and hold the front-panel TEST button and adjust the "Test Calibration" potentiometer on the top to set the display and loop current to the desired test level.

Users who do not have the required calibration equipment should return the gauge to Cecomp Electronics for certified recalibration. N.I.S.T. traceability is available.

General

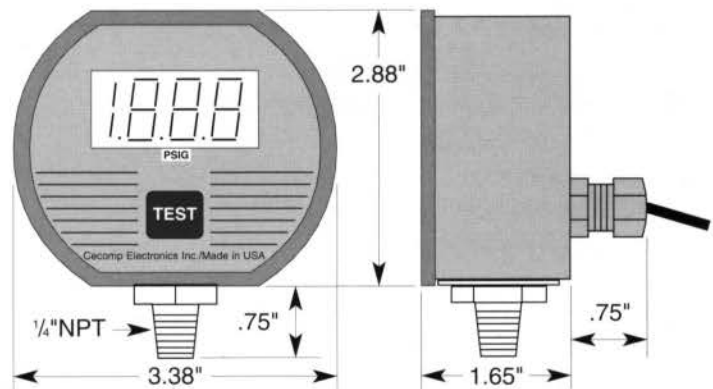
The most important consideration in successful application of the **DPG500L** is to ensure that the gauge terminal voltage does not fall below 8 VDC. Select a loop power supply voltage and total loop resistance so that when the loop current is 20 mA, the gauge will have at least 8 VDC at its terminals. Operation with less than 8 V may cause erratic or erroneous readings.

The minimum loop supply voltage may be calculated from the formula:

$$V_{min} = 8V + (20mA)(Total\ loop\ R)$$

To help prevent loop supply problems, the **DPG500L** has "low loop" warning circuitry. This circuitry will activate the colon, ":" in the center of the display if the terminal voltage of the gauge falls below about 8 VDC. This is an indication that the loop supply/resistance may not allow adequate "headroom" for reliable operation. The low-loop warning indicator should never appear in normal use. If it does, the loop supply/resistance should be examined.

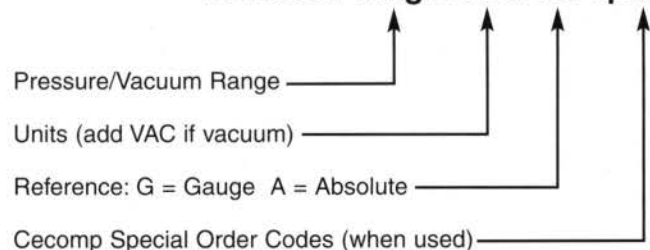
The **DPG500L** has internal controls that adjust the "agreement" between the displayed value and the 4-20 mA loop current. These are carefully set at the factory and should not normally be adjusted. Should the user feel this adjustment is necessary, the display zero and span must be accurately set first. Then, after removing the rear cover, the "loop zero" and "loop span" controls may be trimmed for 4.00 mA of loop current at the low end of the range, and 20.00 mA at the high end of the range, respectively. Accurate pressure generation and measurement, and current measurement equipment, are required to successfully complete this calibration.



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

MODEL NUMBERING SYSTEM

DPG500L range units ref-special



Example: DPG500L15PSIA = DPG500, Loop powered, 0-15 psia (absolute)