**Electrical Specifications**

**Ranges and Resolution**

<table>
<thead>
<tr>
<th>Ranges (psi)</th>
<th>Resolution (psi)</th>
<th>Precision (%)</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-150</td>
<td>±0.25%</td>
<td>±1 LSD</td>
<td>Bar</td>
</tr>
<tr>
<td>0-300</td>
<td>±0.1%</td>
<td>±1 LSD</td>
<td>Bar</td>
</tr>
<tr>
<td>0-600</td>
<td>±0.1%</td>
<td>±1 LSD</td>
<td>Bar</td>
</tr>
<tr>
<td>0-1000</td>
<td>±0.1%</td>
<td>±1 LSD</td>
<td>Bar</td>
</tr>
<tr>
<td>0-1500</td>
<td>±0.1%</td>
<td>±1 LSD</td>
<td>Bar</td>
</tr>
<tr>
<td>0-2000</td>
<td>±0.1%</td>
<td>±1 LSD</td>
<td>Bar</td>
</tr>
<tr>
<td>0-3000</td>
<td>±0.1%</td>
<td>±1 LSD</td>
<td>Bar</td>
</tr>
<tr>
<td>0-5000</td>
<td>±0.1%</td>
<td>±1 LSD</td>
<td>Bar</td>
</tr>
<tr>
<td>0-10000</td>
<td>±0.1%</td>
<td>±1 LSD</td>
<td>Bar</td>
</tr>
</tbody>
</table>

**Accuracy**

- Standard: ±0.25% of full scale ±1 least significant digit
- HA option: ±0.1% FS ±1LSLD (most ranges)
- 4A option: ±0.4% FS ±1LSLD

**Display**

- 3 readings per second nominal display update rate
- Ranges up to 1999:
  - 3½ digital LCD, ¾ digit height
  - 4 digital LCD, 0.4” digit height

**Controls**

- Non-interactive zero and span, ±10% range
- Test calibration level: 0-100% range
- Retransmission zero and span: Internal potentiometers

**Loop Supply Voltage**

- Any DC supply/loop resistance that maintains 8 to 32 VDC at gauge terminals.
- Gauge is reverse polarity protected.
- 3 ft long, 2-conductor 22 AWG cable

**Low Loop Indication**

- Below approximately 7.8 VDC
- Ranges up to 1999:
  - None
  - All decimal points flash

**Output Characteristics**

- True analog output, 50 millisecond typical response time
- If gauge terminal voltage falls below approx. 7.8 VDC erratic operation may occur

**Test Function**

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

**Environmental Specifications**

- Storage Temperature: -40 to 203°F (-40 to 95°C)
- Operating Temperature: -4 to 185°F (-20 to 85°C)
- Compensated Temperature: 32 to 158°F (0 to 70°C)
Description
The Falcon Digi Pro® series is a versatile family of industrial pressure and vacuum gauges featuring a rugged NEMA 4X case. This type of enclosure, when properly installed, is suitable for indoor or outdoor non-hazardous locations and provides a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, hose-directed water, corrosion and ice formation.

The F4L is a two-wire 4-20 mA loop-powered pressure transmitter with indication. All operating power is supplied by the 4-20 mA current loop. The 2-wire connection allows the F4L to be used as a pressure transmitter in any 4-20 mA current loop application where local indication is desirable.

Installation and Precautions
Install or remove gauge using wrench on hex fitting only. Do not 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. Due to the hardness of 316 stainless steel, it is recommended that a thread sealant be used to ensure leak-free operation. NEVER insert objects into the gauge port or blow out with compressed air. Permanent damage not covered by warranty will result to the sensor.

Electrical Connection
Connection to the F4L is made with the 2-wire cable at the gauge rear. Connect the loop positive (+) supply to the RED lead and the loop negative (–) supply to the BLACK lead. Reversing the connections will not harm the gauge but the F4L will not operate with incorrect polarity. NEVER connect the gauge wires to voltage greater than 32 VDC or damage not covered by warranty will result.

Loop Voltage
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. For correct operation and to avoid erratic or erroneous readings, the gauge terminal voltage must not fall below 8 VDC. Too large a loop resistance will cause the gauge output to “limp” or saturate before reaching its full 20 mA output. The minimum loop supply voltage may be calculated from the formula:

\[ V_{\text{min}} = 8V + (20mA \times \text{Total loop resistance}) \]

If the terminal voltage of the gauge falls below about 7.8 VDC erratic operation may occur. This is an indication that the loop supply/resistance may not allow adequate headroom for reliable operation. This should never occur in normal use. If it does, examine the loop supply/resistance.

Operation
The F4L is designed for continuous operation. Warm-up time is negligible. The display indication and the loop current will be proportional to the system pressure/vacuum; 4 mA = Zero or low end, 20 mA = Span, full-scale or high end. The output is a continuous analog signal based on the transducer output rather than the display. The output is filtered to improve noise immunity and has a response time of about 50 milliseconds.

TEST Button
The TEST pushbutton on the front of the gauge, when depressed, switches the display and output loop to a preset level determined by the setting of a Test potentiometer. This test mode will allow setup and testing of the current loop by switching to this test level whenever desired without having to alter the system pressure.

To set the test output level, see gauge label for location of Test potentiometer. Press and hold the front-panel TEST button and adjust the Test potentiometer to set the display and loop current to the desired test level.

Calibration
See gauge label for location of individual controls to adjust the zero and span of the display.

GUAGE 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. Record readings at three to five points over the range of gauge and adjust span control to minimize error and meet specifications.

Dimensions

Part Numbers

Model
Range
Units
Reference
Options

Example: F4L30INHGVAC = Falcon NEMA 4X, Loop powered, inches Hg vacuum