



- F16AD** AC/DC Powered
- F16ADN** AC/DC Powered, NEMA 4X
- F16ADBL** AC/DC Powered, Backlit Display
- F16ADNBL** AC/DC Powered, NEMA 4X, Backlit Display

- ±0.25% Test Gauge Accuracy
- 316 Stainless Steel Wetted Parts
- Capture Minimum and Maximum Readings
- Push Button Zero

**Electrical Specifications**

**Ranges and Resolution**

abs: Absolute reference (atmospheric pressure to zero at full vacuum)  
 vac: Vacuum gauge, minus sign not used unless specified  
 Resolution is fixed as indicated in table below  
 Contact factory for engineering units not listed

-30.0 inHg/15.0 psig	120.0 inHg	1600 mmHg	35.00 bar	1.000 kg/cm <sup>2</sup> abs
-30.0 inHg/100.0 psig	200.0 inHg abs	760.0 torr abs	70.00 bar	1.000 kg/cm <sup>2</sup> vac
-30.0 inHg/200.0 psig	200.0 inHg	1600 torr abs	140.0 bar	±1.000 kg/cm <sup>2</sup>
3.000 psig	50.00 oz/in <sup>2</sup>	2100 mmH <sub>2</sub> O	200.0 bar	1.000 kg/cm <sup>2</sup>
5.000 psig	80.0 oz/in <sup>2</sup>	3500 mmH <sub>2</sub> O	350.0 bar	2.000 kg/cm <sup>2</sup> abs
15.00 psi abs	240.0 oz/in <sup>2</sup> abs	210.0 cmH <sub>2</sub> O	20.00 kPa	2.000 kg/cm <sup>2</sup>
15.00 psig vac	240.0 oz/in <sup>2</sup> vac	350.0 cmH <sub>2</sub> O	35.00 kPa	4.000 kg/cm <sup>2</sup>
±15.00 psig	±240.0 oz/in <sup>2</sup>	1000 cmH <sub>2</sub> O	100.0 kPa abs	7.000 kg/cm <sup>2</sup> abs
15.00 psig	240.0 oz/in <sup>2</sup>	2100 cmH <sub>2</sub> O	100.0 kPa vac	7.000 kg/cm <sup>2</sup>
30.00 psi abs	85.0 inH <sub>2</sub> O	200.0 mbar	±100.0 kPa	14.00 kg/cm <sup>2</sup>
30.00 psig	140.0 inH <sub>2</sub> O	350.0 mbar	100.0 kPa	20.00 kg/cm <sup>2</sup>
60.00 psig	400.0 inH <sub>2</sub> O abs	1000 mbar abs	200.0 kPa abs	35.00 kg/cm <sup>2</sup>
100.0 psi abs	400.0 inH <sub>2</sub> O vac	1000 mbar vac	200.0 kPa	70.00 kg/cm <sup>2</sup>
100.0 psig	±400 inH <sub>2</sub> O	±1000 mbar	400.0 kPa	140.0 kg/cm <sup>2</sup>
200.0 psig	400.0 inH <sub>2</sub> O	1000 mbar	700.0 kPa abs	200.0 kg/cm <sup>2</sup>
300.0 psig	850 inH <sub>2</sub> O	2000 mbar abs	700.0 kPa	350.0 kg/cm <sup>2</sup>
500.0 psig	7.000 ftH <sub>2</sub> O	2000 mbar	1500 kPa	1.000 atm abs
1000 psig	12.00 ftH <sub>2</sub> O	4000 mbar	2000 kPa	±1.000 atm
2000 psig	35.00 ftH <sub>2</sub> O	1.000 bar abs	3500 kPa	1.000 atm
3000 psig	70.00 ftH <sub>2</sub> O	1.000 bar vac	5000 kPa	4.000 atm
5000 psig	140.0 ftH <sub>2</sub> O	±1.000 bar	3.500 MPa	7.000 atm
6.000 inHg	230.0 ftH <sub>2</sub> O	1.000 bar	7.000 MPa	14.00 atm
10.00 inHg	480.0 ftH <sub>2</sub> O	2.000 bar abs	14.00 MPa	20.00 atm
30.00 inHg abs	150.0 mmHg	2.000 bar	20.00 MPa	35.00 atm
30.00 inHg vac	260.0 mmHg	4.000 bar	35.00 MPa	70.00 atm
±30.00 inHg	760.0 mmHg abs	7.000 bar abs	1000 g/cm <sup>2</sup> abs	135.0 atm
30.00 inHg	760.0 mmHg vac	7.000 bar	1000 g/cm <sup>2</sup>	200.0 atm
60.00 inHg abs	760.0 mmHg	14.00 bar	2100 g/cm <sup>2</sup> abs	340.0 atm
60.00 inHg	1600 mmHg abs	20.00 bar	2100 g/cm <sup>2</sup>	

**Accuracy** (linearity, hysteresis, repeatability)

Standard: ±0.25% of full scale ±1 least significant digit  
 Optional: **-HA** ±0.1% FS ±1LSD (most ranges)  
**CD** Factory calibration data  
**NC** NIST traceable test report and calibration data

**Display**

3 readings per second nominal display update rate  
 4 1/2 digit LCD, 0.5" H, 5 character 0.25" H alphanumeric lower display  
**ADBL** models: Red LED backlight whenever power to gauge is on

**Controls and Functions**

Front pushbutton turns gauge on or off and cycles through functions

Function	Pushbutton	Prompt (Release Button)	Result
One Touch Zero	Press/hold	0000	Zeroed Actual Pressure
Hi Reading	Press/hold	HI	HI & max. reading
Lo Reading	Press/hold	LO	LO & min. reading
Exit Hi/Lo	Press/hold	AP	Actual Pressure
Clear Hi/Lo	Press/hold	HI / LO / AP  CLR	Actual Pressure
Clear Hi/Lo/Zero	Press/hold	Full Scale Reading	Actual Pressure, not Zeroed

**Calibration**

Internal calibration pushbuttons  
 Non-interactive zero, span, and linearity, ±10% range

**Power**

Any AC source of 8 to 24 VAC 50/60 Hz or any DC source of 9 to 32 VDC  
 non-BL approx 5 mA  
 BL: approx 80 mA  
 Order optional **WMPSK** 12 VDC wall mount power supply kit for 115 VAC operation  
 All models are designed for continuous operation

**F16AD300PSIG**  
0 to 300.0 psig range



**F16ADN300PSIG**  
0 to 300.0 psig range  
NEMA 4X



**Mechanical Specifications**

**Size**

**F16AD:** 3.38" W x 2.88" H x 1.65" D housing  
**F16ADN:** 3.5" W x 3.0" H x 2.0" D housing  
 Add approximately 0.75" to height for pressure fitting  
 Add approximately 1" to depth for strain relief and wire clearance

**Weight**

Gauge: 9 ounces (approx)  
 Shipping weight: 1 pound (approx)

**Material and Color**

**F16AD:** Extruded aluminum case, light gray epoxy powder coated, black ABS/polycarbonate bezel (aluminum bezel optional), front and rear gaskets, black/gold label  
**F16ADN:** Light gray ABS/polycarbonate NEMA 4X case, rear gasket, black/gold label

**Pressure/Vacuum Connection Size, Material, Media Compatibility**

1/4" NPT male, all wetted parts are 316 SS, compatible with most liquids and gases

**Overpressure**

3000 psig range and metric equivalents: 5000 psig  
 5000 psig range and metric equivalents: 7500 psig  
 All others: 2 x sensor pressure  
 112.5% out-of-range display: | - - - or | -.-.- depending on model

**Burst Pressure**

4 times sensor pressure rating, or 10,000 psi, whichever is less

**Environmental**

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)



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## INSTALLATION AND PRECAUTIONS

Install or remove gauge 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.

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

**NEVER** connect the gauge wires directly to 115 VAC or permanent damage not covered by warranty will result.

Do not use a common 24 VAC transformer. These transformers can supply over 32 VAC unless they are loaded to 80% of rated capacity. Since the gauge current is only in the milliamp range, the overvoltage may result in damage not covered by warranty.

The **F16AD, F16ADN, F16ADBL, and F16ADNBL** can be powered by

**AC source: 8 to 24 VAC 50/60 Hz or DC source: 9 to 32 VDC**

The type and magnitude of the supply voltage have negligible effects on the gauge calibration as long as it is within the voltage ranges stated above. No recalibration is needed, and no jumpers need to be moved to use either AC or DC power within the specified range. No polarity needs to be observed when connecting a DC supply. The gauges can be used with inexpensive unregulated low voltage AC or DC power sources in applications requiring a continuous pressure display.

After the gauge is installed, route the wires away from heat sources and moving equipment and connect the low voltage power supply to the gauge cable. Lastly connect the low voltage power supply to an appropriate power source.

Make sure that the gauge supply voltage does not fall below 8 VAC RMS if AC power is used, or 9 VDC if DC power is used. Operation with less than these values may cause erratic or erroneous readings.

If your application requires operation of multiple gauges from the same power supply, consult the factory for wiring recommendations.

## OPERATION

When a supply voltage is applied, the gauge will display the gauge range, test all LCD segments, then display the actual pressure reading updated approximately 3 times per second along with the units.

If excessive vacuum is applied to a pressure-only gauge, the display will indicate **-Err** until the vacuum is released. Applying vacuum to a gauge designed for pressure may damage the pressure sensor. If excessive pressure is applied (112.5% over range), an out-of-range indication of **|- - -** or **|- - . - -** will be displayed depending on model.

Display backlighting on **ADBL** models is on whenever the gauge has power. The display backlighting will not be apparent under bright lighting conditions.

**Push Button Zero** – This applies only to gauge reference models. Absolute reference gauges do not use the zero feature since they read atmospheric pressure under normal conditions.

1. Be sure the gauge port is exposed to normal atmospheric pressure and no pressure is applied. The zeroing function is only activated by following this sequence and the stored zero correction is erased when the gauge power is removed.
2. Press and hold the pushbutton until **o o o o** is displayed and then release the button.
5. This indicates that the gauge has been zeroed and the actual pressure is then displayed with a small correction factor for the zero offset.

Attempting to zero the gauge with pressure greater than approximately 3% of full-scale applied will result in an error condition, and the display will alternately indicate **Err 0** and the actual measured pressure. Follow the One-Touch Zero procedure again to correct the error condition.

**Reset** – To clear the stored zero correction and the min and max readings press and hold the pushbutton until the display indicates **clr** for about 5 seconds total and then release. The gauge returns to the normal mode and displays the current reading.

## MINIMUM AND MAXIMUM READINGS

Minimum and maximum readings are continuously stored and updated whenever gauge is on. The stored readings can be manually cleared if desired. The **HI** and **LO** memory is also cleared whenever the gauge is off.

Press and hold the pushbutton for about 1 second until **HI** is displayed. The maximum stored value is displayed.

After **HI** is displayed, press and hold the pushbutton again for about 1 second until **LO** is displayed. The minimum stored value is displayed.

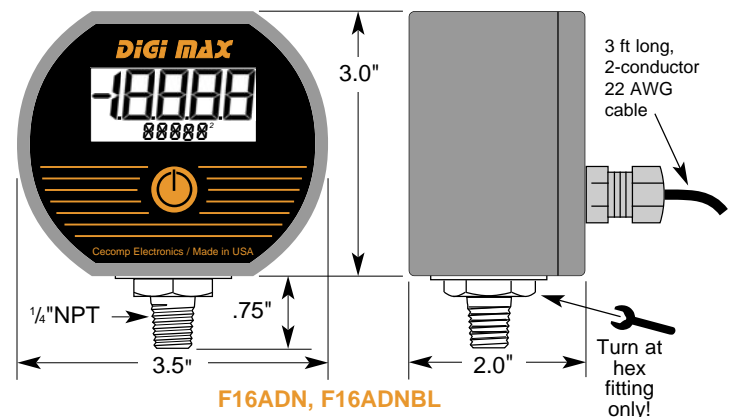
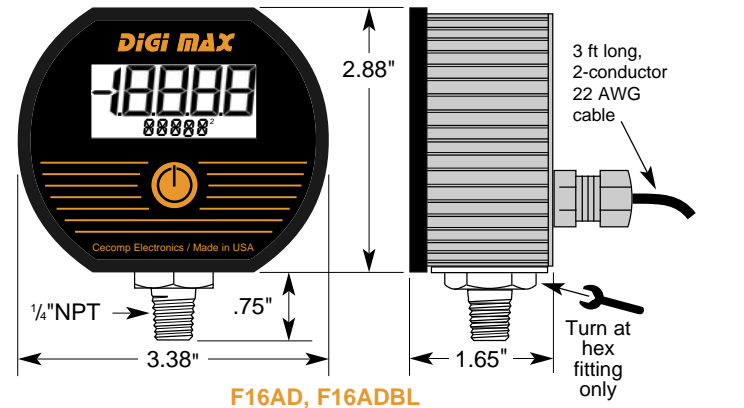
After **LO** is displayed, press and hold the pushbutton again for about 1 second until **AP** (Applied Pressure) is displayed. The **HI** and **LO** memory is not erased and the gauge returns to normal operation with the display indicating the current pressure.

Press and continue to hold the pushbutton until the display indicates **clr HI/LO** (about 3 seconds total) and then release the pushbutton. Both **HI** and **LO** values are cleared and the gauge returns to the normal mode and displays the current pressure.

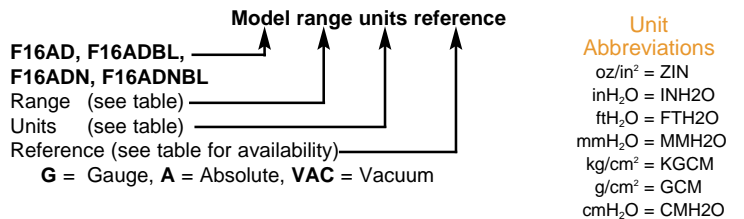
## CALIBRATION

**F16-series** gauges use internal controls for calibration. The calibration instructions are available at [www.cecomp.com](http://www.cecomp.com). Gauges can be recalibrated by any metrology lab with pressure calibration equipment at least 4 times more accurate than the gauge. Gauges may also be returned for factory recalibration and refurbishment. NIST traceability is available.

## DIMENSIONS



## PART NUMBERS



**Example:** **F16AD100PSIG**  
F16AD, Low Voltage-Powered, 100.0 psig

[www.cecomp.com](http://www.cecomp.com)

Cecomp maintains a constant effort to upgrade and improve its products. Specifications are subject to change without notice. Consult factory for your specific requirements.