DiGi MAX® Low Voltage-Powered Min/Max Pressure Gauges

F16AD F16NAD F16ADBL F16NADBL

F16AD *AC/DC Powered*

F16NAD *NEMA 4X, AC/DC Powered*

F16ADBL *AC/DC Powered, Backlit Display*

F16NADBL *NEMA 4X, AC/DC Powered, Backlit Display*

- ***±0.25% Test Gauge Accuracy***
- ***316 Stainless Steel Wetted Parts***
- ***Capture Minimum and Maximum Readings***
- ***One-Touch Zero™***



F16AD60PSIG
0 to 60.00 psig range



F16NAD60PSIG
0 to 60.00 psig range
NEMA 4X

Electrical Specifications

Ranges and Resolution

Bold: standard ranges, price adder for all others
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	35.0 bar	1.000 kg/cm² abs
–30.0 inHg/100.0 psig	199.9 inHg abs	760 torr abs	70.0 bar	1.000 kg/cm² vac
–30.0 inHg/199.9 psig	**199.9 inHg**	1600 torr abs	140.0 bar	±1.000 kg/cm²
3.00 psig	50.0 oz/in²	2100 mmH_2O	199.9 bar	1.000 kg/cm²
5.00 psig	80.0 oz/in²	3500 mmH_2O	350 bar	1.999 kg/cm² abs
15.00 psi abs	240 oz/in² abs	199.9 cmH_2O	19.99 kPa	1.999 kg/cm²
15.00 psig vac	240 oz/in² vac	350 cmH_2O	35.0 kPa	4.00 kg/cm²
±15.00 psig	±240 oz/in²	1000 cmH_2O	100.0 kPa abs	7.00 kg/cm² abs
15.00 psig	240 oz/in²	2100 cmH_2O	100.0 kPa vac	7.00 kg/cm²
30.0 psi abs	85.0 inH_2O	199.9 mbar	±100.0 kPa	14.00 kg/cm²
30.0 psig	140.0 inH_2O	350 mbar	100.0 kPa	19.99 kg/cm²
60.0 psig	400 inH_2O abs	1000 mbar abs	199.9 kPa abs	35.0 kg/cm²
100.0 psi abs	400 inH_2O vac	1000 mbar vac	199.9 kPa	70.0 kg/cm²
100.0 psig	±400 inH_2O	±1000 mbar	400 kPa	140.0 kg/cm²
199.9 psig	400 inH_2O	1000 mbar	700 kPa abs	199.9 kg/cm²
300 psig	850 inH_2O	1999 mbar abs	700 kPa	350 kg/cm²
500 psig	7.00 ftH_2O	1999 mbar	1500 kPa	1.000 atm abs
1000 psig	12.00 ftH_2O	4000 mbar	1999 kPa	±1.000 atm
1999 psig	35.0 ftH_2O	1.000 bar abs	3500 kPa	1.000 atm
3000 psig	70.0 ftH_2O	1.000 bar vac	5000 kPa	4.00 atm
5000 psig	140.0 ftH_2O	±1.000 bar	3.50 MPa	7.00 atm
6.00 inHg	230 ftH_2O	1.000 bar	7.00 MPa	14.00 atm
10.00 inHg	480 ftH_2O	1.999 bar abs	14.00 MPa	19.99 atm
30.0 inHg abs	150.0 mmHg	1.999 bar	19.99 MPa	35.0 atm
30.0 inHg vac	260 mmHg	4.00 bar	35.0 MPa	70.0 atm
±30.0 inHg	760 mmHg abs	7.00 bar abs	1000 g/cm² abs	135.0 atm
30.0 inHg	760 mmHg vac	7.00 bar	1000 g/cm²	199.9 atm
60.0 inHg abs	760 mmHg	14.00 bar	2100 g/cm² abs	340 atm
60.0 inHg	1600 mmHg abs	19.99 bar	2100 g/cm²	

Accuracy (linearity, hysteresis, repeatability)

Standard: ±0.25% of full scale ±1 least significant digit
Optional:
-HA ±0.1% FS ±1LSD (most ranges)
-4A ±0.4% FS ±1LSD
CD Factory calibration data
NC NIST traceable test report and calibration data

Display (update rate, type, size)

3 readings per second nominal display update rate
4½ digit LCD, 0.5" digit height, lower display for engineering units
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
AD: approx 5 mA
ADBL: approx 80 mA
Order optional **WMPSK** 12 VDC wall mount power supply kit for 115 VAC operation
All models are designed for continuous operation

Mechanical Specifications

Size

F16: 3.38" W x 2.88" H x 1.65" D housing
F16N: 3.5" W x 3.0" H x 2.0" D housing
Add approximately 0.75" to height for pressure fitting

Weight (approximate)

Gauge: 9 ounces
Shipping weight: 1 pound

Material and Color

F16: Extruded aluminum case, light gray epoxy powder coated, black ABS/ polycarbonate bezel (aluminum bezel optional), front and rear gaskets, black/gold label
F16N: Light gray ABS/polycarbonate NEMA 4X case, rear gasket, black/gold label

Pressure/Vacuum Connection Size, Material, Media Compatibility

¼" 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: 1 – – – or 1 –.–.–.– depending on model

Burst Pressure

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

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)

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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, F16NAD, F16ADBL,** and **F16NADBL** 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 **1 – – –** or **1 –.–.–.–** 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.

One-Touch 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 **0 0 0 0** 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 display alternates between **HI** and the maximum stored value.

Press and hold the pushbutton again for about 1 second until **LO** is displayed. The display alternates between **LO** and the minimum stored value.

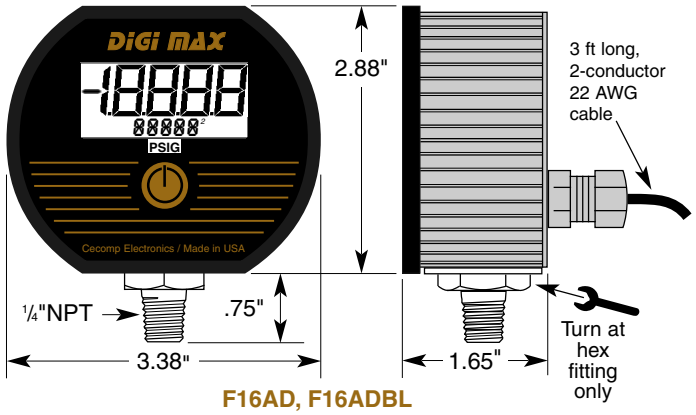
Press and hold the pushbutton again for about 1 second until **AP** (Applied Pressure) is displayed. The **HI** and **LO** memory is not erased and the gauge returns to normal operation with the display indicating the current pressure.

While in the **HI** or **LO** mode, the min/max memory can be reset. Press and continue to hold the pushbutton until the display indicates **clr** (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.

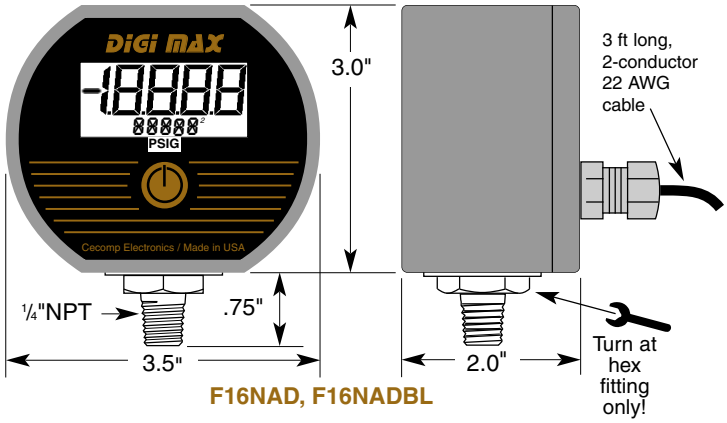
Calibration

F16-series gauges use internal controls for calibration. The procedure is available online or by calling to request the **F16** calibration instructions. 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



F16AD, F16ADBL



F16NAD, F16NADBL

Part Numbers

Model range units reference

F16AD, F16ADBL,
F16NAD, F16NADBL
Range (see table)
Units (see table)
Reference (see table for availability)
G = Gauge, **A** = Absolute, **VAC** = Vacuum

Unit Abbreviations
oz/in² = ZIN
inH₂O = INH2O
ftH₂O = FTH2O
mmH₂O = MMH2O
kg/cm² = KGCM
g/cm² = GCM
cmH₂O = CMH2O

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

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