DiGi MAX® Battery-Powered Min/Max Pressure Gauges

F16B F16NB F16BBL F16NBBL

F16B Battery Powered

F16NB NEMA 4X, Battery Powered

F16BBL Battery Powered, Backlit Display

F16NBBL NEMA 4X, Battery Powered, Backlit Display

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



F16B60PSIG-5
0 to 60.00 psig range



F16NB60PSIG-5
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$_2$O	199.9 bar	1.000 kg/cm²
5.00 psig	80.0 oz/in²	3500 mmH$_2$O	350 bar	1.999 kg/cm² abs
15.00 psi abs	240 oz/in² abs	199.9 cmH$_2$O	19.99 kPa	1.999 kg/cm²
15.00 psig vac	240 oz/in² vac	350 cmH$_2$O	35.0 kPa	4.00 kg/cm²
±15.00 psig	±240 oz/in²	1000 cmH$_2$O	100.0 kPa abs	7.00 kg/cm² abs
15.00 psig	240 oz/in²	2100 cmH$_2$O	100.0 kPa vac	7.00 kg/cm²
30.0 psi abs	85.0 inH$_2$O	199.9 mbar	±100.0 kPa	14.00 kg/cm²
30.0 psig	140.0 inH$_2$O	350 mbar	100.0 kPa	19.99 kg/cm²
60.0 psig	400 inH$_2$O abs	1000 mbar abs	199.9 kPa abs	35.0 kg/cm²
100.0 psi abs	400 inH$_2$O vac	1000 mbar vac	199.9 kPa	70.0 kg/cm²
100.0 psig	±400 inH$_2$O	±1000 mbar	400 kPa	140.0 kg/cm²
199.9 psig	400 inH$_2$O	1000 mbar	700 kPa abs	199.9 kg/cm²
300 psig	850 inH$_2$O	1999 mbar abs	700 kPa	350 kg/cm²
500 psig	7.00 ftH$_2$O	1999 mbar	1500 kPa	1.000 atm abs
1000 psig	12.00 ftH$_2$O	4000 mbar	1999 kPa	±1.000 atm
1999 psig	35.0 ftH$_2$O	1.000 bar abs	3500 kPa	1.000 atm
3000 psig	70.0 ftH$_2$O	1.000 bar vac	5000 kPa	4.00 atm
5000 psig	140.0 ftH$_2$O	±1.000 bar	3.50 MPa	7.00 atm
6.00 inHg	230 ftH$_2$O	1.000 bar	7.00 MPa	14.00 atm
10.00 inHg	480 ftH$_2$O	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
BBL models: Red LED backlight

Controls & Functions

Front pushbutton turns gauge on or off and cycles through functions
BBL: Press pushbutton to activate 1 minute backlighting when gauge is on

Function	Pushbutton	Prompt *(Release Button)*	Result
On	Press 1 sec	Gauge Range/Display Test	Actual Pressure
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 Zero, Off	Press/hold	HI / LO / AP ☛ clr ☛ OFF	Clear Zero, Gauge Off

Calibration

Internal calibration pushbuttons, non-interactive zero, span, & linearity, ±10% range

Auto Shutoff

5 minutes standard (**-5**), factory settable to on/off (**-ON**) or specified custom time

Batteries, Battery Life, Low Battery Indication

B: 2 AA alkaline, approx. 2000 hours
BBL: 2 AA alkaline, approx. 150 to 1500 hrs depending on backlight usage
Low battery symbol on display when batteries must be replaced

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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 & 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.

Power-Up

1. Press and hold the pushbutton for approximately 1 second.
2. The full-scale range is indicated and the display segments are tested.
3. The actual pressure and units are displayed.

Power-Up With One-Touch Zero (Gauge reference models only)

1. Be sure the gauge port is exposed to normal atmospheric pressure and no pressure is applied. The zeroing function is only activated at each power-up and the stored zero correction is erased when the gauge is shut off.
2. Press and hold the pushbutton.
3. The full-scale range is indicated and the display segments are tested.
4. Continue to press the pushbutton until 0 0 0 0 is displayed and then release the button. This indicates that the gauge has been zeroed.
5. The actual pressure is displayed.

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. The gauge must be powered down to reset the error condition.

Absolute reference gauges do not use the zero feature since they read atmospheric pressure under normal conditions.

Normal Operation

Following the start-up initialization, the display indicates the pressure reading updated approximately 3 times per second. The auto shutoff timer starts when the gauge is powered up or whenever the button is pushed, unless the gauge was ordered without an auto shutoff time (**-ON** option).

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 I – – – or I –.–.–.– will be displayed depending on model.

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.

Display Backlighting (BBL models only)

Display backlighting can be turned on by momentarily pressing the button whenever the gauge is on. The backlighting will turn on for one minute and then automatically shut off. This also restarts the auto shutoff timer. The display backlighting will not be apparent under bright lighting conditions.

Shut-Down

To shut off the gauge manually at any time, press and hold the pushbutton until the display indicates OFF (about 5 seconds) and then release.

For gauges with auto shutoff, the display indicates OFF five seconds prior to auto shutoff. The pushbutton can be pressed to keep the gauge on. The auto shutoff and backlight (if equipped) timers are reset whenever the pushbutton is pressed and released.

If the gauge was ordered without auto shutoff (**-ON** option) it will stay on until manually shut off or until the batteries are depleted. Turn gauge off when not in use to conserve battery life.

Calibration

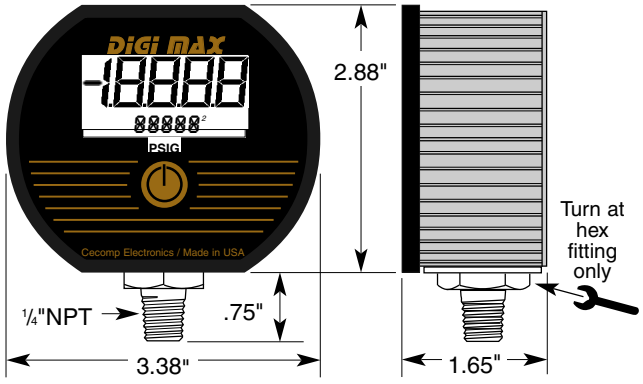
F16-series gauges use internal controls for calibration. The procedure is available online or by calling to request the **F16** calibration instructions. Gauges can be recalibrated by any metrology lab with pressure calibration equipment at least 4 times more accurate than the gauge. Gauges may also be returned for factory recalibration and refurbishment. NIST traceability is available.

Battery Replacement

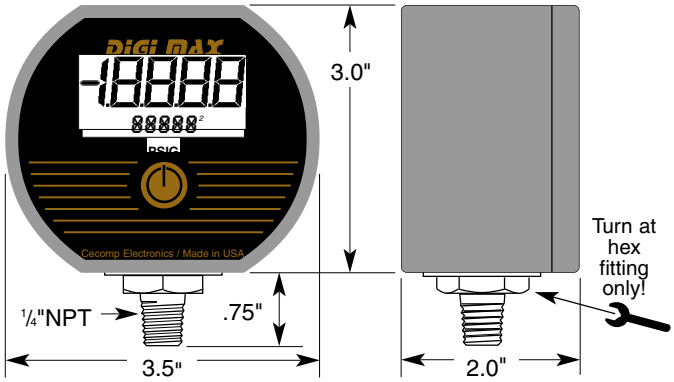
A low battery indication will be shown in the upper left-hand corner of the display when the battery voltage falls sufficiently. The battery should be replaced soon after the indicator comes on or unreliable readings may result.

1. Remove the 6 Phillips head screws on the back of the unit.
2. Remove batteries by lifting up the positive end of the battery (opposite the spring) taking care not to bend the battery holder spring.
3. Discard old batteries properly, DO NOT discard into fire, sources of extreme heat, or in any other hazardous manner.
4. Always replace both batteries at the same time with high quality alkaline batteries. Install batteries with correct orientation. The negative (flat) end of each battery should be inserted first facing the battery holder spring.
6. Replace the back cover, including the rubber sealing gasket.

Dimensions



F16B, F16BBL



F16NB, F16NBBL

Part Numbers

Model range units reference - shutoff

F16B, F16BBL,
F16NB, F16NBBL
Range (see table)
Units (see table)
Reference (see table for availability)
G = Gauge, **A** = Absolute, **VAC** = Vacuum
Auto shut off time
-5 5 minutes (standard) or specify time in minutes
-xH Specify time in **H**ours
-ON On/Off via pushbutton, no auto shutoff

Example: F16B100PSIG-10
F16, Battery powered, 100.0 psig, 10 minute shutoff

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

Pressure

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