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	35.0 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 mmH₂O	199.9 bar	1.000 kg/cm²
5.00 psig	80.0 oz/in²	3500 mmH₂O	350 bar	1.999 kg/cm² abs
15.00 psi abs	240 oz/in² abs	199.9 cmH₂O	19.99 kPa	1.999 kg/cm²
15.00 psig vac	240 oz/in² vac	350 cmH₂O	35.0 kPa	4.00 kg/cm²
±15.0 psig	±240 oz/in²	1000 cmH₂O	100.0 kPa abs	7.00 kg/cm² abs
15.00 psig	240 oz/in²	2100 cmH₂O	100.0 kPa vac	7.00 kg/cm²
30.0 psi abs	85.0 inH₂O	199.9 mbar	±100.0 kPa	14.00 kg/cm²
30.0 psig	140.0 inH₂O	350 mbar	100.0 kPa	19.99 kg/cm²
60.0 psig	400 inH₂O abs	1000 mbar abs	199.9 kPa abs	35.0 kg/cm²
100.0 psi abs	400 inH₂O vac	1000 mbar vac	199.9 kPa	70.0 kg/cm²
100.0 psig	±400 inH₂O	±1000 mbar	400 kPa	140.0 kg/cm²
199.9 psig	400 inH₂O	1000 mbar	700 kPa abs	199.9 kg/cm²
300 psig	850 inH₂O	1999 mbar abs	700 kPa	350 kg/cm²
500 psig	7.00 ftH₂O	1999 mbar	1500 kPa	1.000 atm abs
1000 psig	12.00 ftH₂O	4000 mbar	1999 kPa	±1.000 atm
1999 psig	35.0 ftH₂O	1.000 bar abs	3500 kPa	1.000 atm
3000 psig	70.0 ftH₂O	1.000 bar vac	5000 kPa	4.00 atm
5000 psig	140.0 ftH₂O	±1.000 bar	3.50 MPa	7.00 atm
6.00 inHg	230 ftH₂O	1.000 bar	7.00 MPa	14.00 atm
10.00 inHg	480 ftH₂O	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)
CD Factory calibration data
NC NIST traceable test report and calibration data

Display

3 readings per second nominal display update rate
Ranges up to 1999: 3½ digit LCD, 0.5" digit height
3000 psi, 5000 psi: 4½ digit LCD, 0.5" digit height, lower display for units
BBL models: Red LED backlight

Controls

B ranges up to 1999: Front pushbutton turns gauge on/off
BBL ranges up to 1999: Front pushbutton turns gauge & backlighting on/off
Front calibration potentiometers, non-interactive zero and span, ±10% range

B, **BBL** ranges of 3000 psi, 5000 ps
Front button turns gauge on, starts auto shutoff timer, and provides zero function for gauge reference ranges
Internal calibration pushbuttons

BBL ranges of 3000 psi, 5000 psi
Press button to activate backlighting for one minute while gauge is on

Auto Shutoff

5 minutes standard
Ranges up to 1999: Factory settable to 5, 10, 30 minutes, or on/off
3000 psi, 5000 psi: Factory settable to any number of minutes or hours

Batteries and Battery Life

Two AA alkaline
B ranges up to 1999: Approx. 2500 hours
B 3000 psi, 5000 psi: Approx. 2000 hours
BBL ranges up to 1999: Approx. 180 hours
BBL 3000 psi, 5000 psi: 150 to 1500 hrs depending on backlight usage

Low Battery Indication

Low battery symbol on display when batteries must be replaced

- ***±0.25% Test Gauge Accuracy***
- ***316 Stainless Steel Wetted Parts***
- ***Battery Life up to 2500 Hours***
- ***Pressure, Vacuum, Absolute or Compound***
- ***BBL Includes Backlit Display***

DPG1000B100PSIG-5
0 to 100.0 psig range

DPG1000B5000PSIG-5
0 to 5000 psig range

Mechanical Specifications

Size

3.38" W x 2.88" H x 1.65" D housing
Add approximately 0.75" to height for pressure fitting

Weight

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

Material and Color

Extruded aluminum case, epoxy powder coated
Polycarbonate cover, front and rear gaskets
Light gray body, light gray/blue front

Pressure/Vacuum Connection and Material

¼" NPT male, 316 stainless steel

Media Compatibility

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
3000 psi, 5000 psi: 112.5% out-of-range display
I – – – or **I –.–.–.–**
All others 2x rated pressure minimum

Burst Pressure

4x rated pressure minimum 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)

***RB** Rubber Boot*
Not for NEMA 4X models

Pressure

Cecomp Electronics

cecomp.com

1220 American Way Libertyville, IL 60048
Phone: 800-942-0315 Fax: 800-949-7502

Cecomp DPG1000B, DPG1000BBL Instructions

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.

OPERATION – RANGES UP TO 1999

Press the round button on the front of the gauge to activate the display. The gauge will stay on for a period of time determined by the auto-shutoff time. The gauge can be shut off at any time by pressing the button again. Display backlighting on **DPG1000BBL** models is on whenever the gauge is on. If the gauge was ordered without auto shutoff it will stay on until the button is pressed or until the batteries are depleted. Turn gauge off when not in use to conserve battery.

OPERATION – 3000 PSI, 5000 PSI RANGES

Press and hold the pushbutton for approx. 1 second. The full-scale range is indicated, display segments are tested, and the reading and units are displayed.

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

1. Make absolutely certain no pressure is applied to the gauge. The gauge port should be exposed to normal atmospheric pressure. Note that the zeroing function may only be activated at 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 and the units. 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 1 – – – or 1 –.–.–.– will be displayed depending on model.

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.

Shut-Down

To shut off the gauge manually at any time, press and hold the pushbutton until the display indicates 0 F F (about 5 seconds) and then release.

For gauges with auto shutoff, the display indicates 0 F F 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

All Falcon gauges are factory calibrated on NIST traceable calibration equipment. No calibration is required before placing the gauge into service.

Ranges up to 1999: Remove the calibration potentiometer covers on the front of the unit to access the zero and span controls. Gauge 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.

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

CALIBRATION (CONTINUED)

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.

3000 psi and 5000 psi ranges – The calibration adjustments are internal on these models. The procedure is available from **cecomp.com** or by calling to request the "F16" calibration instructions.

Absolute Reference – These models display atmospheric pressure if the gauge port is open to the ambient. It is normal for the reading to constantly change in response to atmospheric pressure changes. Vacuum generation and atmospheric pressure measurement equipment for accurate calibration and thus these are more difficult to calibrate in the field.

Gauges can be returned to Cecomp Electronics for factory certified recalibration, repairs and refurbishment. NIST traceability is available. Gauges can also be recalibrated by any metrology lab with pressure calibration equipment at least four times more accurate than the gauge.

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.

Remove the 6 Phillips head screws on the back of the unit.

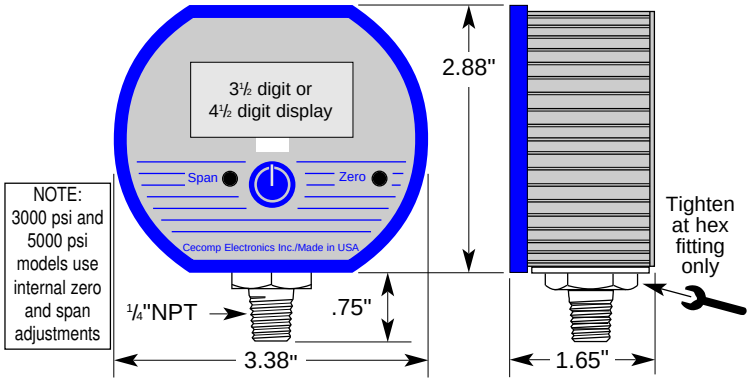
Carefully remove batteries from the holders by lifting up the positive end of the battery (opposite the spring). Take care not to bend or distort the battery retention springs.

DO NOT discard the old battery into fire, any other sources of extreme heat, or in any other hazardous manner. Please consult local authorities if there is any question about proper disposal.

Always replace both batteries at the same time with high quality alkaline batteries. Observe the polarity of the batteries when replacing them. The negative (flat) end of each battery should be inserted first, and should face the spring in the battery holder.

Replace the back cover, including the rubber sealing gasket.

DIMENSIONS



PART NUMBERS

DPG1000B range units reference - shutoff

B or **BBL**

Range (see table)

Units (see table)

Reference (see table)

G=Gauge, **A**=Absolute, **VAC**=Vacuum

Auto shutoff time

-5 = 5 minutes

-10 = 10 minutes

-30 = 30 minutes

-ON = on/off, no auto shutoff

Unit Abbreviations
psi = PSI
inHg = INHG
oz/in² = ZIN
inH_2O = INH2O
ftH_2O = FTH2O
mmHg = MMHG
torr = TORR
mmH_2O = MMH2O
kg/cm² = KGCM
g/cm² = GCM
kPa = KPA
MPa = MPA
mbar = MBAR
bar = BAR
cmH_2O = CMH2O
atm = ATM

Example: DPG1000B100PSIG-5 = Battery powered, 100.0 psig, 5 minute shutoff

Pressure

ABSOLUTE PROCESS INSTRUMENTS, Inc.
1220 American Way Libertyville, IL 60048
Phone: 800-942-0315 Fax: 800-949-7502

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	35.0 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 mmH₂O	199.9 bar	1.000 kg/cm²
5.00 psig	80.0 oz/in²	3500 mmH₂O	350 bar	1.999 kg/cm² abs
15.00 psi abs	240 oz/in² abs	199.9 cmH₂O	19.99 kPa	1.999 kg/cm²
15.00 psig vac	240 oz/in² vac	350 cmH₂O	35.0 kPa	4.00 kg/cm²
±15.0 psig	±240 oz/in²	1000 cmH₂O	100.0 kPa abs	7.00 kg/cm² abs
15.00 psig	240 oz/in²	2100 cmH₂O	100.0 kPa vac	7.00 kg/cm²
30.0 psi abs	85.0 inH₂O	199.9 mbar	±100.0 kPa	14.00 kg/cm²
30.0 psig	140.0 inH₂O	350 mbar	100.0 kPa	19.99 kg/cm²
60.0 psig	400 inH₂O abs	1000 mbar abs	199.9 kPa abs	35.0 kg/cm²
100.0 psi abs	400 inH₂O vac	1000 mbar vac	199.9 kPa	70.0 kg/cm²
100.0 psig	±400 inH₂O	±1000 mbar	400 kPa	140.0 kg/cm²
199.9 psig	400 inH₂O	1000 mbar	700 kPa abs	199.9 kg/cm²
300 psig	850 inH₂O	1999 mbar abs	700 kPa	350 kg/cm²
500 psig	7.00 ftH₂O	1999 mbar	1500 kPa	1.000 atm abs
1000 psig	12.00 ftH₂O	4000 mbar	1999 kPa	±1.000 atm
1999 psig	35.0 ftH₂O	1.000 bar abs	3500 kPa	1.000 atm
3000 psig	70.0 ftH₂O	1.000 bar vac	5000 kPa	4.00 atm
5000 psig	140.0 ftH₂O	±1.000 bar	3.50 MPa	7.00 atm
6.00 inHg	230 ftH₂O	1.000 bar	7.00 MPa	14.00 atm
10.00 inHg	480 ftH₂O	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)
CD Factory calibration data
NC NIST traceable test report and calibration data

Display

3 readings per second nominal display update rate
Ranges up to 1999: 3½ digit LCD, 0.5" digit height
3000 psi, 5000 psi: 4½ digit LCD, 0.5" digit height, lower alphanumeric display for engineering units
BBL models: Red LED backlight

Controls

B ranges up to 1999: Front pushbutton turns gauge on/off
BBL ranges up to 1999: Front pushbutton turns gauge & backlighting on/off
Front calibration potentiometers, non-interactive zero and span, ±10% range

B & **BBL** 3000 psi, 5000 psi, 4-digit ranges
Front button turns gauge on, starts auto shutoff timer, and provides zero function for gauge reference ranges
Internal calibration pushbuttons, non-interactive zero and span, ±10% range

BBL 3000 psi, 5000 psi, 4-digit ranges
Press button to activate backlighting for one minute while gauge is on

Auto Shutoff

5 minutes standard)
Ranges up to 1999: Factory settable to 5, 10, 30 minutes, or on/off
3000 psi, 5000 psi: Factory settable to any number of minutes or hours

Batteries and Battery Life

Two AA alkaline
B ranges up to 1999: Approx. 2500 hours
B 3000 psi, 5000 psi, 4-digit: Approx. 2000 hours
BBL ranges up to 1999: Approx. 180 hours
BBL 3000 psi, 5000 psi, 4-digit: Approx. 150 to 1500 hrs depending on backlight usage

Low Battery Indication

Low battery symbol on display when batteries must be replaced

- ***±0.25% Test Gauge Accuracy***
- ***316 Stainless Steel Wetted Parts***
- ***Battery Life up to 2500 Hours***
- ***Pressure, Vacuum, Absolute or Compound***
- ***BBL Includes Backlit Display***

F4B100PSIG-5
0 to 100.0 psig range

F4B5000PSIG-5
0 to 5000 psig range

Mechanical Specifications

Size

3.5" W x 3.0" H x 2.0" D housing
Add approximately 0.75" to height for pressure fitting

Weight

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

Housing

NEMA 4X
UV stabilized polycarbonate/ABS case, light gray color
Clear polycarbonate window to protect display
Gasketed rear cover, six captive stainless steel screws

Pressure/Vacuum Connection and Material

¼" NPT male, 316 stainless steel

Media Compatibility

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
3000 psi, 5000 psi, 4-digit: 112.5% out-of-range display **I** – – – or **I** –.–.–.–
All others 2x rated pressure minimum

Burst Pressure

4x rated pressure minimum 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)

Pressure

Cecomp Electronics

cecomp.com

1220 American Way Libertyville, IL 60048
Phone: 800-942-0315 Fax: 800-949-7502

ABSOLUTE PROCESS INSTRUMENTS, Inc.

api-usa.com

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.

OPERATION – RANGES UP TO 1999

Press the round button on the front of the gauge to activate the display. The gauge will stay on for a period of time determined by the auto-shutoff time. The gauge can be shut off at any time by pressing the button again. Display backlighting on **DPG1000BBL** models is on whenever the gauge is on. If the gauge was ordered without auto shutoff it will stay on until the button is pressed or until the batteries are depleted. The display backlighting will not be apparent under bright lighting conditions. Turn gauge off when not in use to conserve battery.

OPERATION – 3000 PSI, 5000 PSI, 4-DIGIT RANGES

Press and hold the pushbutton for approx. 1 second. The full-scale range is indicated, display segments are tested, and the reading and units are displayed.

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

1. Make absolutely certain no pressure is applied to the gauge. The gauge port should be exposed to normal atmospheric pressure. Note that the zeroing function may only be activated at 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.

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 O F F (about 5 seconds) and then release.

For gauges with auto shutoff, the display indicates O F F 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

All gauges are factory calibrated on NIST traceable calibration equipment. No calibration is required before placing the gauge into service.

Ranges up to 1999: Remove the calibration potentiometer covers on the front of the unit to access the zero and span controls.

Gauge 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.

CALIBRATION (CONTINUED)

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.

3000 psi, 5000 psi and 4-digit Ranges – The calibration adjustments are internal on these models. The calibration instructions are available at www.cecomp.com.

Absolute Reference – These models display atmospheric pressure if the gauge port is open to the ambient. It is normal for the reading to constantly change in response to atmospheric pressure changes. Vacuum generation and atmospheric pressure measurement equipment for accurate calibration and thus these are more difficult to calibrate in the field.

Gauges can be returned to Cecomp Electronics for factory certified recalibration, repairs and refurbishment. NIST traceability is available. Gauges can also be recalibrated by any metrology lab with pressure calibration equipment at least four times more accurate than the gauge.

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.

Remove the 6 Phillips head screws on the back of the unit.

Carefully remove batteries from the holders by lifting up the positive end of the battery (opposite the spring). Take care not to bend or distort the battery retention springs.

DO NOT discard the old battery into fire, any other sources of extreme heat, or in any other hazardous manner. Please consult local authorities if there is any question about proper disposal.

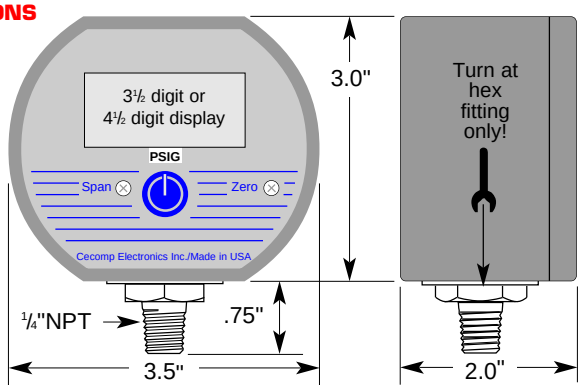
Always replace both batteries at the same time with high quality alkaline batteries.

Observe the polarity of the batteries when replacing them. The negative (flat) end of each battery should be inserted first, and should face the spring in the battery holder.

Replace the back cover, including the rubber sealing gasket.

DIMENSIONS

NOTE: 3000 psi, 5000 psi, and -400 models use internal zero and span adjustments



PART NUMBERS

F4B range units reference - shutoff

B or **BBL**

Range (see table)

Units (see table)

Reference (see table)
G=Gauge, **A**=Absolute, **VAC**=Vacuum

Auto shutoff time
-5 = 5 minutes
-10 = 10 minutes
-30 = 30 minutes
-ON = on/off, no auto shutoff

Unit Abbreviations
psi = PSI
inHg = INHG
oz/in² = ZIN
inH₂O = INH2O
ftH₂O = FTH2O
mmHg = MMHG
torr = TORR
mmH₂O = MMH2O
kg/cm² = KGCM
g/cm² = GCM
kPa = KPA
MPa = MPA
mbar = MBAR
bar = BAR
cmH₂O = CMH2O
atm = ATM

Example: DPG1000B100PSIG-5 = Battery powered, 100.0 psig, 5 minute shutoff

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.

1220 American Way Libertyville, IL 60048
Phone: 800-942-0315 Fax: 800-949-7502

F16B	*Battery Powered*
F16BN	*Battery Powered, NEMA 4X*
F16BBL	*Battery Powered, Backlit Display*
F16BNBL	*Battery Powered, NEMA 4X, Backlit Display*

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

F16B300PSIG-5
0 to 300.0 psig range

F16BN300PSIG-5
0 to 300.0 psig
NEMA 4X

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/cm² abs
–30.0 inHg/100.0 psig	200.0 inHg abs	760.0 torr abs	70.00 bar	1.000 kg/cm² vac
–30.0 inHg/200.0 psig	200.0 inHg	1600 torr abs	140.0 bar	±1.000 kg/cm²
3.000 psig	50.00 oz/in²	2100 mmH₂O	200.0 bar	1.000 kg/cm²
5.000 psig	80.0 oz/in²	3500 mmH₂O	350.0 bar	2.000 kg/cm² abs
15.00 psi abs	240.0 oz/in² abs	210.0 cmH₂O	20.00 kPa	2.000 kg/cm²
15.00 psig vac	240.0 oz/in² vac	350.0 cmH₂O	35.00 kPa	4.000 kg/cm²
±15.00 psig	±240.0 oz/in²	1000 cmH₂O	100.0 kPa abs	7.000 kg/cm² abs
15.00 psig	240.0 oz/in²	2100 cmH₂O	100.0 kPa vac	7.000 kg/cm²
30.00 psi abs	85.0 inH₂O	200.0 mbar	±100.0 kPa	14.00 kg/cm²
30.00 psig	140.0 inH₂O	350.0 mbar	100.0 kPa	20.00 kg/cm²
60.00 psig	400.0 inH₂O abs	1000 mbar abs	200.0 kPa abs	35.00 kg/cm²
100.0 psi abs	400.0 inH₂O vac	1000 mbar vac	200.0 kPa	70.00 kg/cm²
100.0 psig	±400 inH₂O	±1000 mbar	400.0 kPa	140.0 kg/cm²
200.0 psig	400.0 inH₂O	1000 mbar	700.0 kPa abs	200.0 kg/cm²
300.0 psig	850 inH₂O	2000 mbar abs	700.0 kPa	350.0 kg/cm²
500.0 psig	7.000 ftH₂O	2000 mbar	1500 kPa	1.000 atm abs
1000 psig	12.00 ftH₂O	4000 mbar	2000 kPa	±1.000 atm
2000 psig	35.00 ftH₂O	1.000 bar abs	3500 kPa	1.000 atm
3000 psig	70.00 ftH₂O	1.000 bar vac	5000 kPa	4.000 atm
5000 psig	140.0 ftH₂O	±1.000 bar	3.500 MPa	7.000 atm
6.000 inHg	230.0 ftH₂O	1.000 bar	7.000 MPa	14.00 atm
10.00 inHg	480.0 ftH₂O	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/cm² abs	135.0 atm
30.00 inHg	760.0 mmHg vac	7.000 bar	1000 g/cm²	200.0 atm
60.00 inHg abs	760.0 mmHg	14.00 bar	2100 g/cm² abs	340.0 atm
60.00 inHg	1600 mmHg abs	20.00 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)
CD Factory calibration data
NC NIST traceable test report and calibration data

Display

3 readings per second nominal display update rate
4½ digit LCD, 0.5" H, 5 character 0.25" H alphanumeric lower display
BL models: Red LED backlight

Controls & Functions

Front pushbutton turns gauge on or off and cycles through functions
BL: 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
BL: 2 AA alkaline, approx. 150 to 1500 hrs depending on backlight usage
Low battery symbol on display when batteries must be replaced

Mechanical Specifications

Size

F16B: 3.38" W x 2.88" H x 1.65" D housing
F16BN: 3.5" W x 3.0" H x 2.0" D housing
Add approximately 0.75" to height for pressure fitting

Weight

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

Material & Color

F16B: Extruded aluminum case, light gray epoxy powder coated, black ABS/polycarbonate bezel (aluminum bezel optional), front and rear gaskets, black/gold label

F16BN: 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: OL – – – or OL –.–.–.– 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)

***RB** Rubber Boot*
Not for NEMA 4X models

Pressure

Cecomp Electronics
cecomp.com

Digi Max® F16B, F16BN, F16BBL, F16BNBL Instructions

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 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 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.

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

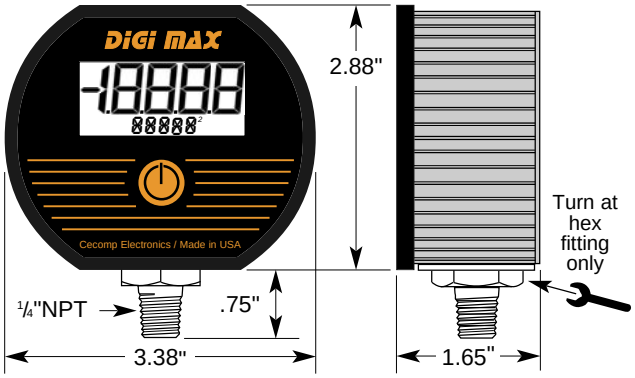
F16-series gauges use internal controls for calibration. The calibration instructions are available at cecomp.com. Gauges can be recalibrated by any metrology lab with pressure calibration equipment at least 4 times more accurate than the gauge. Gauges may also be returned for factory recalibration and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

BATTERY REPLACEMENT

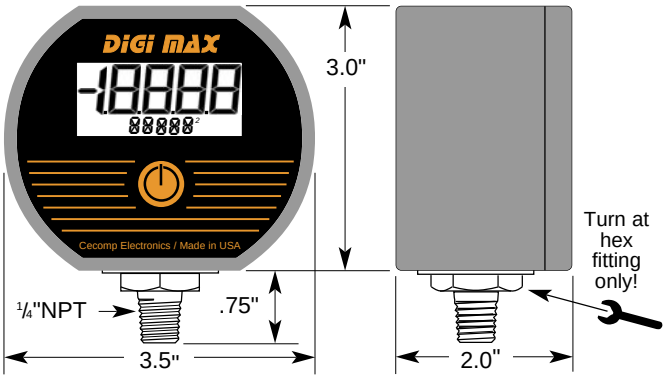
A low battery indication will be shown in the upper left-hand corner of the display when the battery voltage falls sufficiently. The battery should be replaced soon after the indicator comes on or unreliable readings may result.

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



F16BN, F16BNBL

PART NUMBERS

Model range units reference - shutoff

F16B, F16BBL, F16BN, F16BNBL

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
inH_2O = INH2O
ftH_2O = FTH2O
mmH_2O = MMH2O
kg/cm² = KGCM
g/cm² = GCM
cmH_2O = CMH2O

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

www.cecomp.com

ABSOLUTE PROCESS INSTRUMENTS, Inc.
1220 American Way Libertyville, IL 60048
Phone: 800-942-0315 Fax: 800-949-7502

For latest product information or to contact your local representative visit api-usa.com

Cecomp Battery Powered Digital Pressure Gauges with Selectable Units — F18B, F18BN

- *±0.25% Test Gauge Accuracy*
- *316 Stainless Steel Wetted Parts*
- *Capture Minimum and Maximum Readings*
- *Selectable Units*
- *Selectable Auto Shutoff Times*
- *Zero Function*

F18B100PSIG

F18BN100PSIG

Specifications

Ranges and Resolution
See table below. Any engineering units equivalent to the PSI range can be ordered as the default range.
Resolution is fixed for each engineering unit

Accuracy
Includes linearity, hysteresis, repeatability
Standard: ±0.25% of full scale ±1 least significant digit
-HA: ±0.1% FS ±1 LSD (see Options for availability)

Display
3 readings per second nominal display update rate
4 digit LCD, 0.5" H and 5 character 0.25" H alphanumeric
BL models: red LED backlight

Batteries, Battery Life, Low Battery Indication
B: 2 AA alkaline, approx. 2000 hours
BL: 2 AA alkaline, approx. 150 to 1500 hours depending on backlight usage
Low battery symbol on display

Controls & Functions
Front button turns gauge on or off, zeros gauge reference gauges, and cycles through min/max functions
Internal push buttons for calibration and selection of engineering units and auto shutoff times
BL: Front button activates backlighting for 1 minute

Min/Max Functions
Minimum and maximum readings stored 4 times per second
Front button cycles through min display, max display, clear
Configurable for min only, max only, both, or none
Configure to clear min/max at power off or retain min/max at power off

Calibration
Pass code protected calibration
Non-interactive zero, span, and linearity, ±10% of range

Auto Shutoff
User selectable 1 minute to 8 hours or front button on/off
Factory default 5 minutes, unless other time is specified

Weight
Gauge: 9 ounces (approximately)
Shipping: 1 pound (approximately)

Material
F18B: Extruded aluminum case, epoxy powder coated, ABS/ polycarbonate bezel (aluminum bezel optional), front and rear gaskets, polycarbonate label
F18BN: ABS/polycarbonate NEMA 4X case, rear gasket, polycarbonate label

Connection, Material, Media Compatibility
1/4" NPT male fitting, 316L stainless steel
All wetted parts are 316L stainless steel
Compatible with most liquids and gases

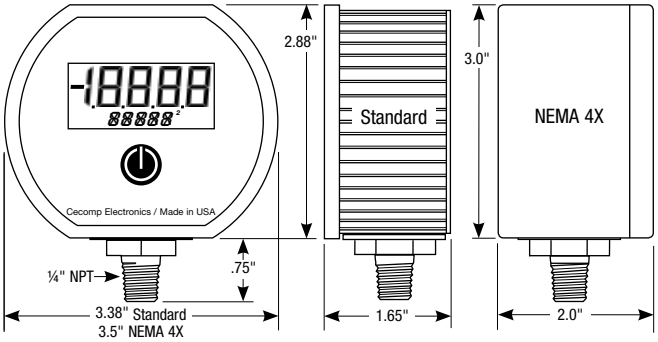
Overpressure
3000 psig range: 5000 psig
5000 psig range: 7500 psig
All others: 2 X pressure range
112.5% FS out-of-range display: i – – – or i –.–.–.–

Burst Pressure
4 X sensor pressure rating, or 10,000 psi, whichever is less

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)



How to Order

Please Specify
Model Range - Shutoff* - Options
Specify pressure or vacuum range and units. Include gauge or absolute reference as applicable.
If vacuum gauge requires a minus sign, please specify.
*Only specify if default time is to be other than 5 minutes

Model	Features
F18B	Standard housing
F18BBL	Standard housing, backlit display
F18BN	NEMA 4X housing
F18BNBL	NEMA 4X housing, backlit display

Options—add to end of model number
-HA High accuracy, ±0.1% FS ±1 LSD. Not available with vacuum, compound, bipolar, absolute, or 3 psi sensor ranges.
-PM Panel mount, 4.1" x 4.1". Not available with NEMA 4X models.
-MC Metal front cover. Machined aluminum, epoxy powder coated. Synthetic oil resistant. Not available with NEMA 4X models.
-CS Case stiffener strengthens case bottom for tire pressure applications.
-CC Conformal coating on circuit board for moisture resistance.
-SM Surface mount plate. Battery gauges only. Not available with NEMA 4X models.
-TP Top port, gauge port on top of case. Used primarily for tire pressure applications.

Accessories
RB Protective rubber boot. Not for NEMA 4X models.
CD Calibration data, 5 test points, test date.
NC NIST certificate with traceability documentation, 5 test points and date.

Range Code	Default Range	Selectable Engineering Units. See table on next page for specific ranges.																
–30V15PSIG *	–30.0 inHg to 15.0 PSIG	±PSIG	±inHg	±inH2O	±oz/in²	±g/cm²	±mmHg	±torr	±mbar	±bar		±cmH2O		±kPa	±MPa	±kg/cm²	±atm
–30V100PSIG *	–30.0 inHg to 100.0 PSIG	±PSIG	±inHg	±inH2O	±oz/in²		±mmHg	±torr		±bar				±kPa	±MPa	±kg/cm²	±atm
–30V200PSIG *	–30.0 inHg to 200.0 PSIG	±PSIG	±inHg	±inH2O	±oz/in²					±bar				±kPa	±MPa	±kg/cm²	±atm
3PSIG	0 to 3.000 PSIG		inHg	inH2O	oz/in²	g/cm²	mmHg	torr	mbar	bar	mmH2O	cmH2O	ftH2O	kPa		kg/cm²	atm
5PSIG	0 to 5.000 PSIG		inHg	inH2O	oz/in²	g/cm²	mmHg	torr	mbar	bar	mmH2O	cmH2O	ftH2O	kPa		kg/cm²	atm
15PSIA	15.00 to 0 PSIA		inHg	inH2O	oz/in²	g/cm²	mmHg	torr	mbar	bar		cmH2O		kPa	MPa	kg/cm²	atm
15PSIVAC	0 to –15.00 PSIG		inHg	inH2O	oz/in²	g/cm²	mmHg	torr	mbar	bar		cmH2O	ftH2O	kPa	MPa	kg/cm²	atm
±15PSIG	±15.00 PSIG		±inHg	±inH2O	±oz/in²	±g/cm²	±mmHg	±torr	±mbar	±bar		±cmH2O	±ftH2O	±kPa	±MPa	±kg/cm²	±atm
15PSIG	0 to 15.00 PSIG		inHg	inH2O	oz/in²	g/cm²	mmHg	torr	mbar	bar		cmH2O	ftH2O	kPa	MPa	kg/cm²	atm
30PSIA	0 to 30.00 PSIA		inHg	inH2O	oz/in²	g/cm²	mmHg	torr	mbar	bar		cmH2O		kPa	MPa	kg/cm²	atm
30PSIG	0 to 30.00 PSIG		inHg	inH2O	oz/in²	g/cm²	mmHg	torr	mbar	bar		cmH2O	ftH2O	kPa	MPa	kg/cm²	atm
60PSIG	0 to 60.00 PSIG		inHg	inH2O	oz/in²	g/cm²	mmHg	torr	mbar	bar		cmH2O	ftH2O	kPa	MPa	kg/cm²	atm
100PSIA	0 to 100.0 PSIA		inHg	inH2O	oz/in²	g/cm²	mmHg	torr	mbar	bar		cmH2O		kPa	MPa	kg/cm²	atm
100PSIG	0 to 100.0 PSIG		inHg	inH2O	oz/in²	g/cm²	mmHg	torr	mbar	bar		cmH2O	ftH2O	kPa	MPa	kg/cm²	atm
200PSIG	0 to 200.0 PSIG		inHg	inH2O	oz/in²					bar			ftH2O	kPa	MPa	kg/cm²	atm
300PSIG	0 to 300.0 PSIG		inHg		oz/in²					bar			ftH2O	kPa	MPa	kg/cm²	atm
500PSIG	0 to 300.0 PSIG		inHg							bar			ftH2O	kPa	MPa	kg/cm²	atm
1000PSIG	0 to 1000 PSIG		inHg							bar			ftH2O	kPa	MPa	kg/cm²	atm
2000PSIG	0 to 2000 PSIG		inHg							bar			ftH2O		MPa	kg/cm²	atm
3000PSIG	0 to 3000 PSIG		inHg							bar			ftH2O		MPa	kg/cm²	atm
5000PSIG	0 to 5000 PSIG									bar					MPa	kg/cm²	atm

*Compound ranges can be set up as either compound (inHg/psig only) or bipolar (±) with selectable units in pass code protected user configuration mode only.

Cecomp Electronics
Division of ABSOLUTE PROCESS INSTRUMENTS, Inc.
1220 American Way Libertyville, IL 60048
Phone: 800-942-0315 Fax: 800-949-7502

Ranges and Engineering Units, Installation Precautions

Range Codes
The range code is part of the gauge model number and indicates the default range when the gauge is ordered. Consult factory with special requirements or engineering units.

Selectable Ranges
Engineering units may be changed to any of those listed in the same Selectable Units group as shown in the table below.

Conversion
Engineering units are calculated from the factory default unit to the newly selected units. The ranges listed under Selectable Units are rounded off.

Range Codes	Selectable Units
3PSIG	0 to 3.000 psig
6INHGG	0 to 6.000 inHg
85INH2OG	0 to 85.0 inH2O
50ZING	0 to 50.00 oz/in²
210GCMG	0 to 210.0 g/cm²
150MMHGG	0 to 150.0 mmHg
150TORRG	0 to 150.0 torr
200MBARG	0 to 200.0 mbar
200CMH2OG	0 to 200.0 cmH2O
2000MMH2OG	0 to 2000 mmH2O
7FTH2O	0 to 7.000 ftH2O
20KPAG	0 to 20.00 kPa
Range Codes	**Selectable Units**
5PSIG	0 to 5.000 psig
10INHGG	0 to 10.00 inHg
140INH2OG	0 to 140.0 inH2O
80ZING	0 to 80.0 oz/in²
350GCMG	0 to 350.0 g/cm²
260MMHGG	0 to 260.0 mmHg
260TORRG	0 to 260.0 torr
350MBARG	0 to 350.0 mbar
350CMH2OG	0 to 350.0 cmH2O
3500MMH2OG	0 to 3500 mmH2O
12FTH2O	0 to 12.00 ftH2O
35KPAG	0 to 35.00 kPa
Range Codes	**Selectable Units**
15PSIA	15.00 to 0 psia
30INHGA	30.00 to 0 inHg abs
400INH2OA	400.0 to 0 inH2O abs
240ZINA	240.0 to 0 oz/in² abs
1000GCMA	1000 to 0 g/cm² abs
760MMHGA	760.0 to 0 mmHg abs
760TORRA	760.0 to 0 torr abs
1000MBARA	1000 to 0 mbar abs
1000CMH2OA	1000 to 0 cmH2O abs
100KPAA	100.0 to 0 kPa abs
0.1MPAA	.1000 to 0 MPa abs
1BARA	1.000 to 0 bar abs
1KGCMA	1.000 to 0 kg/cm² abs
1ATMA	1.000 to 0 atm abs
Range Codes	**Selectable Units**
15PSIVAC	0 to 15.00 psig vacuum
30INHGVAC	0 to 30.00 inHg vacuum
400INH2OVAC	0 to 400 InH2O vacuum
240ZINVAC	0 to 240.0 oz/in² vacuum
1000GCMVAC	0 to 1000 g/cm² vacuum
760MMHGVAC	0 to 760.0 mmHg vacuum
760TORRVAC	0 to 760.0 torr vacuum
1000MBARVAC	0 to 10000 mbar vacuum
1000CMH2OVAC	0 to 10000 cmH2O vacuum
100KPAVAC	0 to 100.0 kPa vacuum
0.1MPAVAC	0 to .1000 MPa vacuum
1BARVAC	0 to 1.000 bar vacuum
1KGCMVAC	0 to 35.00 kg/cm² vacuum
1ATMVAC	0 to 1.000 atm vacuum
Range Codes	**Selectable Units**
15PSIG	0 to 15.00 psig
30INHGG	0 to 30.00 inHg
400INH2OG	0 to 400.0 inH2O
240ZING	0 to 240.0 oz/in²
1000GCMG	0 to 1000 g/cm²
760MMHGG	0 to 760.0 mmHg
760TORRG	0 to 760.0 torr continued ▲

Range Codes	Selectable Units
1000MBARG	0 to 1000 mbar continued ▲
1000CMH2OG	0 to 1000 cmH2O
35FTH2O	0 to 35.00 ftH2O
100KPAG	0 to 100.0 kPa
0.1MPAG	0 to .1000 MPa
1BARG	0 to 1000 bar
1KGCMG	0 to 1000 kg/cm²
1ATMG	0 to 1000 atm
Range Codes	**Selectable Units**
±15PSIG	–15.00 to 15.00 psig
–30INHG/15PSIG	–30.00 inHg to 15.00 psig
±30INHGG	–30.00 to 30.00 inHg
±400INH2OG	–400 to 400 inH2O
±240ZING	–240.0 to 240.0 oz/in²
±1000GCMG	–1000 to 1000 g/cm²
±760MMHGG	–760 to 760 mmHg
±760TORRG	–760 to 760 torr
±1000MBAR	–1000 to 1000 mbar
±1000CMH2OG	–1000 to 1000 cmH2O
±100KPAG	–100.0 to 100.0 kPa
±0.1MPAG	–.1000 to .1000 MPa
±1BARG	–1.000 to 1.000 bar
±1KGCMG	–1.000 to 1.000 kg/cm²
±1ATMG	–1.000 to 1.000 atm
Range Codes	**Selectable Units**
30PSIA	30.00 to 0 psia
60INHGA	60.00 to 0 inHg abs
850INH2OA	850 to 0 inH2O abs
480ZINA	480.0 to 0 oz/in² abs
2100GCMA	2100 to 0 g/cm² abs
1600MMHGA	1600 to 0 mmHg abs
1600TORRA	1600 to 0 torr abs
2000MBARA	2000 to 0 mbar abs
2100CMH2OA	2100 to 0 cmH2O abs
200KPAA	200.0 to 0 kPa abs
0.2MPAA	0 to .2000 to 0 MPa abs
2BARA	0 to 2.000 to 0 bar abs
2KGCMA	0 to 2.000 to 0 kg/cm² abs
2ATMA	0 to 2.000 to 0 atm abs
Range Codes	**Selectable Units**
30PSIG	0 to 30.00 psig
60INHGG	0 to 60.00 inHg
850INH2OG	0 to 850 inH2O
480ZING	0 to 480.0 oz/in²
2100GCMG	0 to 2100 g/cm²
1600MMHGG	0 to 1600 mmHg
1600TORRG	0 to 1600 torr
2000MBARG	0 to 2000 mbar
2100CMH2OG	0 to 2100 cmH2O
70FTH2O	0 to 70.00 ftH2O
200KPAG	0 to 200.0 kPa
0.2MPAG	0 to .2000 MPa
2BARG	0 to 2.000 bar
2KGCMG	0 to 2.000 kg/cm²
2ATMG	0 to 2.000 atm
Range Codes	**Selectable Units**
60PSIG	0 to 60.00 psig
120INHGG	0 to 120.0 inHg
1660INH2OG	0 to 1660 inH2O
960ZING	0 to 960 oz/in2
4200GCMG	0 to 4200 g/cm²
3100MMHGG	0 to 3100 mmHg
3100TORRG	0 to 3100 torr continued ▲

Range Codes	Selectable Units
4100MBARG	0 to 4100 mbar continued ▲
4200CMH2OG	0 to 4200 cmH2O
140FTH2O	0 to 140.0 ftH2O
400KPAG	0 to 400.0 kPa
0.4MPAG	0 to .4000 MPa
4BARG	0 to 4.000 bar
4KGCMG	0 to 4.000 kg/cm²
4ATMG	0 to 4.000 atm
Range Codes	**Selectable Units**
100PSIA	100.0 to 0 psia
200INHGA	200.0 to 0 inHg abs
2770INH2OA	2770 to 0 inH2O abs
1600ZINA	1600 to 0 oz/in² abs
7000GCMA	7000 to 0 g/cm² abs
5200MMHGA	5200 to 0 mmHg abs
5200TORRA	5200 to 0 torr abs
7000MBARA	7000 to 0 mbar abs
7000CMH2OA	7000 to 0 cmH2O abs
700KPAA	700.0 to 0 kPa abs
0.7MPAA	0 to .7000 to 0 MPa abs
7BARA	0 to 7.000 to 0 bar abs
7KGCMA	0 to 7.000 to 0 kg/cm² abs
7ATMA	0 to 7.000 to 0 atm abs
Range Codes	**Selectable Units**
–15V100PSIG	–15.0 to 100.0 psig
–30INHG/100PSIG	–30.0 inHg to 100.0 psig
–30V200INHGG	–30.0 to 200.0 inHg
–400V2770INH2OG	–400 to 2770 inH2O
240V1600ZING	–240 to 1600 oz/in²
760V5200MMHGG	–760 to 5200 mmHg
760V5200TORRG	–760 to 5200 torr
–100V700KPAG	–100 to 700 kPa
–0.1V0.7MPAG	–.100 to .700 MPa
–1V7BARG	–1.00 to 7.00 bar
–1V7KGCMG	–1.00 to 7.00 kg/cm²
–1V7ATMG	–1.00 to 7.00 atm
Range Codes	**Selectable Units**
100PSIG	0 to 100.0 psig
200INHGG	0 to 200.0 inHg
2770INH2OG	0 to 2770 inH2O
1600ZING	0 to 1600 oz/in²
7000GCMG	0 to 7000 g/cm²
5200MMHGG	0 to 5200 mmHg
5200TORRG	0 to 5200 torr
7000MBARG	0 to 7000 mbar
7000CMH2OG	0 to 7000 cmH2O
230FTH2O	0 to 230.0 ftH2O
700KPAG	0 to 700.0 kPa
0.7MPAG	0 to .7000 MPa
7BARG	0 to 7.000 bar
7KGCMG	0 to 7.000 kg/cm²
7ATMG	0 to 7.000 atm
Range Codes	**Selectable Units**
–15V200PSIG	–15.0 to 200.0 psig
–30INHG/200PSIG	–30.0 inHg to 200.0 psig
–30V400INHGG	–30.0 to 400.0 inHg
400V5500INH2OG	–400 to 5500 inH2O
240V3200ZING	–240 to 3200 oz/in²
–100V1400KPAG	–100 to 1400 kPa
–0.1V1.4MPAG	–.100 to 1.400 MPa
–1V14BARG	–1.00 to 14.00 bar
–1V14KGCMG	–1.00 to 14.00 kg/cm²
–1V 14ATMG	–1.00 to 14.00 atm

Range Codes	Selectable Units
200PSIG	0 to 200.0 psig
400INHGG	0 to 400.0 inHg
5500INH2OG	0 to 5500 inH2O
3200ZING	0 to 3200 oz/in²
480FTH2O	0 to 480.0 ftH2O
1400KPAG	0 to 1400 kPa
1.4MPAG	0 to 1.400 MPa
14BARG	0 to 14.00 bar
14KGCMG	0 to 14.00 kg/cm²
14ATMG	0 to 14.00 atm
Range Codes	**Selectable Units**
300PSIG	0 to 300.0 psig
610INHGG	0 to 610.0 inHg
4800ZING	0 to 4800 oz/in²
700FTH2O	0 to 700.0 ftH2O
2000KPAG	0 to 2000 kPa
2MPAG	0 to 2.000 MPa
20BARG	0 to 20.00 bar
20KGCMG	0 to 20.00 kg/cm²
20ATMG	0 to 20.00 atm
Range Codes	**Selectable Units**
500PSIG	0 to 500.0 psig
1020INHGG	0 to 1020 inHg
1150FTH2O	0 to 1150 ftH2O
3500KPAG	0 to 3500 kPa
3.5MPAG	0 to 3.500 MPa
35BARG	0 to 35.00 bar
35KGCMG	0 to 35.00 kg/cm²
35ATMG	0 to 35.00 atm
Range Codes	**Selectable Units**
1000PSIG	0 to 1000 psig
2040INHGG	0 to 2040 inHg
2300FTH2O	0 to 2300 ftH2O
7000KPAG	0 to 7000 kPa
7MPAG	0 to 7.000 MPa
70BARG	0 to 70.00 bar
70KGCMG	0 to 70.00 kg/cm²
70ATMG	0 to 70.00 atm
Range Codes	**Selectable Units**
2000PSIG	0 to 2000 psig
4070INHGG	0 to 4070 inHg
4600FTH2O	0 to 4600 ftH2O
14MPAG	0 to 14.00 MPa
140BARG	0 to 140.0 bar
140KGCMG	0 to 140.0 kg/cm²
140ATMG	0 to 140.0 atm
Range Codes	**Selectable Units**
3000PSIG	0 to 3000 psig
6100INHGG	0 to 6100 inHg
6900FTH2O	0 to 6900 ftH2O
20MPAG	0 to 20.00 MPa
200BARG	0 to 200.0 bar
200KGCMG	0 to 200.0 kg/cm²
200ATMG	0 to 200.0 atm
Range Codes	**Selectable Units**
5000PSIG	0 to 5000 psig
35MPAG	0 to 35.00 MPa
350BARG	0 to 350.0 bar
350KGCMG	0 to 350.0 kg/cm²
340ATMG	0 to 340.0 atm

Installation Precautions

- ✔ Read these instructions before installing the gauge. The configuration options may be easier to set up before the gauge is installed.
- ✔ Due to the hardness of 316 stainless steel, it is recommended that a thread sealant be used to ensure leak-free operation.
- ✔ Install or remove gauge using a wrench on the hex fitting only.
- ✔ For contaminated media use an appropriate screen or filter to keep debris out of gauge port.
- ✘ Do not attempt to turn by forcing the housing.
- ⚠ Use fittings appropriate for the pressure range of the gauge.
- ✘ Do not apply vacuum to gauges not designed for vacuum 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.

Cecomp Electronics
Division of ABSOLUTE PROCESS INSTRUMENTS, Inc.
1220 American Way Libertyville, IL 60048
Phone: 800-942-0315 Fax: 800-949-7502

cecomp.com

Power-Up
Press and hold the front button for approximately 1 second.

The display segments are tested.

The full-scale range is indicated and the display segments are briefly shown again.

The actual pressure and units are displayed.

Power-Up With Zero
This applies to gauge reference models only. Absolute reference gauges do not use the zero feature since they read atmospheric pressure under normal conditions.

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.

Press and hold the front button.

The display segments are tested.

Continue to press the button until oooo is displayed.

Release the button. The gauge in now zeroed.

The full-scale range is indicated and the display segments are briefly shown again.

The actual pressure and units are displayed.

Attempting to zero the gauge with pressure greater than approximately 3% of full-scale pressure or vacuum 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.

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 shutoff time was set to zero for on/off operation.

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 (BL models only)
Display backlighting can be turned on by momentarily pressing the front 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.

Minimum and Maximum Readings
Gauges are normally configured with minimum and maximum capture functions enabled. One or both can be disabled in the User Configuration mode.

Minimum and maximum readings are continuously stored and updated whenever the gauge is on. The stored readings can be manually cleared if desired. The MAX and MIN memory is also cleared whenever the gauge is off unless configured to save the readings.

Press and hold the button for about 1 second until MAX is displayed alternating with the units. The maximum reading will be continuously updated. The gauge may be left in this mode.

After MAX is displayed, press and hold the button for about 1 second until MIN is displayed alternating with the units. The minimum reading will be continuously updated. The gauge may be left in this mode. If excessive vacuum is applied to a pressure-only gauge while in this mode, the display will indicate -Err until the MAX/MIN readings are cleared.

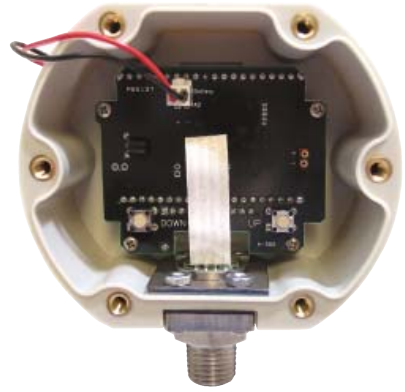
After MIN is displayed, press and hold the button again for about 1 second until * * * * is displayed. The MAX and MIN memory is not erased and the gauge returns to normal operation with the display indicating the current reading.

Press and continue to hold the button until the display indicates clr MX/MN (about 3 seconds total) and then release the button. Both maximum and minimum values are cleared and the gauge returns to the normal mode and displays the current pressure.

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

When an auto shutoff timer is used, the display indicates OFF five seconds prior to auto shutoff. The button can be pressed to keep the gauge on. The auto shutoff and backlight (if equipped) timers are reset whenever the button is pressed and released.

If the gauge set up without auto shutoff (on/off operation) 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.



Engineering Unit Selection
Engineering unit selection is done via internal buttons to help prevent accidental or unauthorized changes. The selected engineering unit is stored in non-volatile memory and will be retained even with the gauge off or batteries removed. The available engineering units depend on the sensor range and display resolution.

Compound (inHg/PSIG) gauges must be changed to display single-unit vacuum/pressure readings in the Advanced Configuration mode before different engineering units can be selected.

The default engineering units are mathematically converted to the newly selected engineering unit. When the gauge is powered up, the originally configured range is displayed and then the conversion with the selected engineering unit is displayed.

To change engineering units remove the rear cover to gain access to the two internal buttons located near the lower right and left corners of the circuit board.

With the gauge powered up, press and hold the UP button. Release the button when the engineering units begin to flash.

Use the UP and DOWN buttons to scroll through the list of engineering units available for the pressure range of the sensor.

When the desired units are displayed, press and release the front button to save the selection and return to normal operation.

Note: The gauge will automatically revert to normal operation if no buttons are operated for approximately 15 seconds.

Replace the rear cover taking care not to pinch the power wires between the cover and the case.

Auto Shutoff Time Selection
Auto shutoff time selection is done via internal buttons to help prevent accidental or unauthorized changes. The selected shut off time is stored in non-volatile memory and will be retained even with the battery off or batteries removed.

Remove the rear cover to gain access to the two internal buttons located near the lower right and left corners of the circuit board.

With the gauge powered up, press and hold the DOWN button. Release the button when the auto shutoff time is displayed on the upper section.

The lower display segments will indicate AST M if the time displayed is in minutes, and AST H if it in hours.

An auto shutoff time of 0 signifies that the auto shutoff feature is disabled and the front button turns the gauge on and off.

Use the UP and DOWN buttons to select 0, 1, 2, 5, 10, 15, 20 or 30 minutes, or 1, 2, 4, or 8 hours.

When the desired time is displayed, press and release the front button to save the selection and return to normal operation.

Note: The gauge will automatically revert to normal operation if no buttons are operated for approximately 15 seconds.

Replace the rear cover taking care not to pinch the power wires between the cover and the case.

Advanced Configuration

User Configuration
User configuration allows requires a pass code for access and allows more features to be configured.

Remove the rear cover to gain access to the buttons located near the lower right and left corners of the circuit board.

With the gauge off, press and hold the UP button. Then press the front button. Release all buttons when the display indicates CFG and the program version then the full-scale range is indicated and the display segments are tested.

The display then indicates _ _ _ _ with the first underscore blinking, and with CFGPC (configuration pass code) on the character segments.

Note: The gauge will automatically revert to normal operation if no buttons are operated for approximately 15 seconds. To cancel and return to normal operation, press and release the front button without entering any pass code characters.

User Configuration Pass Code Entry
The factory default is 3510, but this may be changed by the user under the Pass Code Configuration section.

1. Use the UP or DOWN buttons to set the left-most digit to 3.
2. Press and release the front button to move to the next position. The 3 will remain, and the second position will be blinking.
3. Use the UP or DOWN buttons to select 5.
4. Press and release the front button to index to the next position. 35 will remain, and the third position will be blinking.
5. Use the UP or DOWN buttons to select 1.
6. Press and release the front button to index to the next position. 351 will remain, and the fourth position will be blinking.
7. Use the UP or DOWN buttons to select 0.
8. Press and release the front button to proceed with configuration procedures.

If an incorrect pass code is entered, the gauge will return to the start of the pass code entry sequence.

Factory/User Configuration
The upper display section will be blank, and the lower section will display either USER_ or FCTRY.

If USER_ is selected, the user configuration can be modified as described in the following steps.

To select USER_, press and release the DOWN button.

The lower display will indicate USER_.

Press and release the front button to continue.

If FCTRY is selected, the existing user configuration will be replaced by the original factory configuration.

To select FCTRY, press and release the UP button.

The lower display will indicate FCTRY.

Press and release the front button to restore the factory configuration and restart the gauge.

Max/Min Configuration
Use the UP and DOWN buttons to select from the following:

MX/MN	Both highest and lowest values will be captured
MX/---	Only highest value will be captured
--/MN	Only lowest value will be captured
--/--	Capture feature is disabled

Press and release the front button to move to the next parameter.

Max/Min Memory
The upper display section will indicate clr.

Use the UP and DOWN buttons to select from the following:

AUTO	Automatically clear max. and min. values when the gauge is powered off
MAN	Manually clear max. and min. values

Press and release the front button to move to the next parameter.

Gauge Type Configuration
This will only appear with 15, 100, or 200 psig ranges that were originally ordered as compound gauges.

Use the UP and DOWN buttons to select from the following:

-/+EU	Vacuum is indicated as negative pressure in the selected engineering units
CMPND	Vacuum is negative INHG, pressure is PSIG. This setting will disable engineering unit selection.

Press and release the front button to save the user configuration and restart the gauge.

Replace the rear cover taking care not to pinch the power wires between the cover and the case.

1220 American Way Libertyville, IL 60048
Phone: 800-942-0315 Fax: 800-949-7502

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 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 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 gasket.

Calibration

Setup

Gauges are calibrated at the factory using equipment traceable to NIST. There is no need to calibrate the gauge before putting it into service. Calibration intervals depend on your quality control program requirements, although many customers calibrate annually.

Calibration should only be performed by qualified individuals using appropriate calibration standards and procedures. The calibration equipment should be at least four times more accurate than the gauge being calibrated.

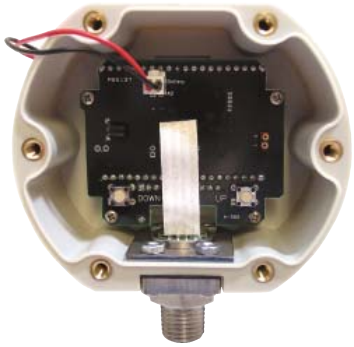
The calibration system must be able to generate and measure pressure/vacuum over the full range of the gauge.

A vacuum pump able to produce a vacuum of 10 microns (0.01 torr or 10 millitorr) or lower is required for vacuum gauges. Warning: application of vacuum to non-vacuum models may result in irreparable damage to the sensor.

Allow the gauge to acclimate to ambient temperature for 20 minutes.

Install fresh batteries.

Remove the rear cover to gain access to the UP and DOWN buttons located near the lower right and left corners of the circuit board.



Entering Calibration Mode

With the gauge off, press and hold the DOWN button. Then press the front button. Release all buttons when the display indicates CAL.

The display begins by indicating the full-scale positive pressure rating of the gauge in the engineering units as configured by the factory, and then shows all display segments.

Before the gauge enters the Calibration Mode, the display initially indicates _ _ _ _ with the first underscore blinking, and with CALPC (calibration pass code) on the lower display.

Note: The gauge will automatically revert to normal operation if no buttons are operated for approximately 15 seconds. To cancel and return to normal operation, press and release the front button without entering any pass code characters.

Enter the User-Modifiable Pass Code

The factory default is 3510, but this is user changeable.

1. Use the UP or DOWN buttons to set the left-most digit to 3.
2. Press and release the front button to move to the next position. The 3 will remain, and the second position will be blinking.
3. Use the UP or DOWN buttons to select 5.
4. Press and release the front button to index to the next position. 35 will remain, and the third position will be blinking.
5. Use the UP or DOWN buttons to select 1.
6. Press and release the front button to index to the next position. 351 will remain, and the fourth position will be blinking.
7. Use the UP or DOWN buttons to select 0.
8. Press and release the front button to proceed with configuration procedures.

If an incorrect pass code is entered, the gauge will return to the start of the pass code entry sequence.

Calibration Mode

The gauge enters and remains in the calibration mode until restarted manually or power is removed. Features not related to calibration are disabled and compound range models are set for the same engineering units for pressure and for vacuum.

The calibration may be performed in any of the available engineering units as well as percent (PCT). For greatest accuracy, use the UP and DOWN buttons to select engineering units for calibration with highest resolution (highest number of display counts). Press and release the front button when the appropriate engineering units are displayed. Suggested units are listed below.

Sensor	Suggested units for calibration
5 PSI	5.000 PSI
15 PSI	775.7 MMHG (TORR)
30 PSI	61.08 INHG
50 PSI	50.00 PSI
60 PSI	60.00 PSI
100 PSI	7.031 KG/CM2
200 PSI	407.2 INHG
300 PSI	610.8 INHG
500 PSI	500.0 PSI
1000 PSI	70.31 KG/CM2
2000 PSI	4072 INHG
3000 PSI	6108 INHG
5000 PSI	5000 PSI
Any	100.00 PCT (percent)

The display will then indicate the currently applied pressure in the engineering units selected for calibration.

UP and DOWN Button Operation

Each time one of the calibration buttons is pressed and released quickly, a small change is made to the digitized pressure signal. It may take more than one of these small changes to result in a single digit change on the display.

To make larger changes, press and hold the appropriate calibration button. After about one second, the display will begin to change continuously. Release the button to stop. Then make fine adjustments by pressing and quickly releasing the calibration buttons as previously described.

Gauge Reference Pressure Gauges

Apply zero pressure by venting the gauge port to atmosphere. The character display will alternate between ZERO and CAL. Adjust for a display indication of zero using the UP and the DOWN buttons.

Apply full-scale pressure. The character display will alternate between +SPAN and CAL. Adjust for a display indication of full-scale pressure using the UP and the DOWN buttons.

Apply 50% full-scale pressure. The character display will alternate between +MID and CAL. Adjust for a display indication equal to 50% of full-scale pressure using the UP and the DOWN buttons.

Gauge Reference Vacuum Gauges

Apply zero pressure by venting the gauge port to atmosphere. The character display will alternate between ZERO and CAL. Adjust for a display indication of zero using the UP and the DOWN buttons.

Apply full-scale vacuum. The character display will alternate between +SPAN and CAL. Adjust for a display indication of full-scale vacuum using the UP and the DOWN buttons.

Apply 50% full-scale vacuum. The character display will alternate between +MID and CAL. Adjust for a display indication equal to 50% of full-scale vacuum using the UP and the DOWN buttons.

Absolute Reference Gauges

Apply full vacuum to the gauge. The character display will alternate between ZERO and CAL. Press the UP and DOWN buttons to obtain a display indication of zero.

Apply full-scale pressure. The character display will alternate between +SPAN and CAL. Press the UP and DOWN buttons to obtain a display indication equal to full-scale pressure.

Apply 50% of full-scale pressure. The lower display will alternate between +MID and CAL. Press the UP and DOWN buttons to obtain an indication equal to 50% of full-scale pressure.

Compound and Bipolar Gauges

In addition to the steps described above for pressure gauges, apply full-scale vacuum. The character display will alternate between -SPAN and CAL. Adjust for a display indication of actual applied vacuum using the UP and the DOWN buttons.

For bipolar and –30.00inHg/+15.00psig compound range models only, apply 50% full-scale vacuum. The character display will alternate between -MID and CAL. Adjust for a display indication equal to 50% of full-scale vacuum using the UP and the DOWN buttons.

Save Calibration

Once the adjustments are complete, press and hold the front button until the display indicates ---- then release the button to store the calibration parameters in non-volatile memory and restart the gauge.

Verify the pressure indications at 0%, 25%, 50%, 75% and 100% of full scale.

Replace the rear cover taking care not to pinch the wires between the cover and the case.

User-Defined Pass Code Configuration

Remove the rear cover to access the buttons located near the lower right and left corners of the circuit board.

View or change user configuration pass code
With the unit off, press and hold the UP button, then press the front button.

Release all buttons when the display indicates CFG.

View or change user calibration pass code
With the unit off, press and hold the DOWN button, then press the front button.

Release all buttons when the display indicates CAL.

Enter access code 1220

Before the unit enters the view or change pass code mode, the display initially indicates ' _ _ _ _ ' with the first underscore blinking, and with CFGPC or CALPC on the character display.

Note: The gauge will automatically revert to normal operation if no buttons are operated for approximately 15 seconds.

To cancel and return to normal operation, press and release the POWER button without entering any pass code characters.

1. Use the UP and DOWN buttons to set the left-most digit to 1.
2. Press and release the front button to move to the next position. The 1 will remain, and the second position will be blinking.
3. Use the UP and DOWN buttons to select 2.
4. Press and release the front button to index to the next position. 12 will remain, and the third position will be blinking.
5. Use the UP and DOWN buttons to select 2.
6. Press and release the front button to move to the next position. 1 2 2 will remain, and the fourth position will be blinking.
7. Use the UP and DOWN buttons to select 0.
8. Press and release the front button to proceed.

Note: If an incorrect access code was entered, the gauge will return to the start of the access code entry sequence.

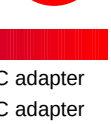
Once the access code has been entered correctly, the display will indicate the existing user-defined pass code with CFGPC or CALPC on the character segments.

1. Operate the UP or DOWN button to select the first character of the new pass code.
2. When the correct first character is being displayed, press and release the front button to proceed to the next pass code character.
3. Repeat above until the entire pass code is complete.
4. To exit, press and hold the front button. Release the button when the display indicates ---- to restart the gauge.
5. Replace the rear cover taking care not to pinch the power wires between the cover and the case.

- ***±0.25% Test Gauge Accuracy***
- ***316 Stainless Steel Wetted Parts***
- ***760 to 0 Torr Absolute***
- ***BBL Includes Backlit Display***

Applications

- **Replace Mercury Manometers in Fume Hoods**
- **Monitor Vacuum Systems and Pumps**
- **Vacuum Packaging**



Model	Version	Power
ARM760AD	DC powered	115 VAC/12 VDC adapter
ARM760ADBL	DC powered, backlit display	115 VAC/12 VDC adapter
ARM760B	Battery-powered	2 AA batteries
ARM760BBL	Battery, backlit display	2 AA batteries

ARM760AD

ARM760B

Electrical Specifications

Range and Resolution
760 to 0 torr absolute, 1 torr resolution

Optional Units and Ranges
Visit cecomp.com or consult factory or for a complete list of models and ranges

Display
3½ digit LCD (3 digits are used for this range), 0.5" digit height
3 readings per second nominal display update rate

Controls and Location
Front On/Off pushbutton
Display zero/span, non-interactive, ±10% range
Front-accessible multiturn potentiometers

Accuracy (linearity, hysteresis, repeatability)
Standard: ±0.25% of full scale ±1 least significant digit
Optional: **CD** Factory calibration data
NC NIST traceable test report and calibration data

Power ARM760AD and ARM760ADBL
Includes 115VAC/12VDC wall mount power supply
Gauge will operate on any DC source of 9 to 32 VDC or any AC source of 8 to 24 VAC 50/60 Hz
ARM760AD power consumption approximately 5 mA
ARM760ADBL power consumption approximately 75 mA

Electrical Connection ARM760AD and ARM760ADBL
6 foot long, 2-conductor cable with female 3.5 mm socket
Power supply; 6 foot long, 2-conductor cable with male 3.5 mm plug

Power ARM760B and ARM760BBL
Includes 2 AA alkaline batteries
ARM760B battery life is approximately 2500 hours
ARM760BBL battery life is approximately 180 hours
30 minute auto shutoff

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)

***RB** Rubber Boot*
Not for NEMA 4X models

Mechanical Specifications

Size
3.38" W x 2.88" H x 1.65" 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
Extruded aluminum case, epoxy powder coated, light gray
Polycarbonate cover, blue, Polycarbonate front label
Front and rear gaskets

Pressure/Vacuum Connection and Material
¼" NPT male, 316 stainless steel

Media Compatibility
All wetted parts are 316 SS, Compatible with most liquids and gases

Overpressure
2x rated pressure minimum

Burst Pressure
4x rated pressure minimum

Cecomp Electronics
cecomp.com
1220 American Way Libertyville, IL 60048
Phone: 800-942-0315 Fax: 800-949-7502
api-usa.com

DESCRIPTION

The **ARM760AD** and **ARM760ADBL** models are designed for applications where a continuous display of vacuum is required. This makes it ideal for monitoring vacuum systems and pumps.

The **ARM760B** and **ARM760BBL** models are designed for portable applications such as monitoring portable vacuum pumps or for vacuum packaging applications.

INSTALLATION AND PRECAUTIONS

Install or remove gauge using a wrench on the hex fitting only. Do not attempt to tighten by turning housing or any other part of the gauge.

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 ARM760AD AND ARM760ADBL

The **ARM760AD** and **ARM760ADBL** models include 6 feet of cable with a female connector and a 115VAC/12VDC adapter with 6 feet of cable with plug. After the gauge is installed, route the wires away from heat sources and moving equipment and connect the AC adapter's plug to the gauge cable connector. Lastly, plug the AC adapter into a 115 VAC outlet.

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

The **ARM760AD** and **ARM760ADBL** models can operate on any AC source of 8 to 24 VAC 50/60 Hz, or any DC source of 9 to 32 VDC. These models can be used with inexpensive unregulated low voltage AC or DC power sources. 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 polarity needs to be observed when connecting a DC supply.

The only important consideration is to ensure 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 several gauges from the same power supply, consult factory for wiring recommendations.

OPERATION ARM760AD AND ARM760ADBL

If the gauge display is off, press the center button to power up the gauge.

If the gauge was in the power-on state when the power was disconnected, the gauge will automatically turn on when power is reapplied.

If the gauge was turned off using the push button and then the power was turned off, the gauge will not power up until the power is reapplied and the center button is pressed again.

OPERATION ARM760B AND ARM760BBL

When the center button is pressed, the gauge will power up and be ready to use. The gauge will stay on for 30 minutes or until the button is pushed again.

To conserve battery life, turn gauge off when not needed. This is is especially important with the **ARM760BBL** model with display backlighting. The display backlighting will not be apparent under bright lighting conditions.

BATTERY REPLACEMENT ARM760B AND ARM760BBL

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.

Remove the 6 Phillips head screws on the back of the unit.

Carefully remove batteries from the holders by lifting up the positive end of the battery (opposite the spring). Take care not to bend or distort the battery retention springs.

DO NOT discard the old battery into fire, any other sources of extreme heat, or in any other hazardous manner. Please consult local authorities if there is any question about proper disposal.

Always replace both batteries at the same time with high quality alkaline batteries. Observe the polarity of the batteries when replacing them. The negative (flat) end of each battery should be inserted first, and should face the spring in the battery holder.

Replace the back cover, including the rubber sealing gasket.

CALIBRATION

All Cecomp gauges are factory calibrated on NIST traceable calibration equipment. No calibration is required before placing the gauge into service.

An absolute reference gauge will display atmospheric pressure if the gauge port is open to the ambient. It is normal for the reading to constantly change in response to atmospheric pressure changes.

Absolute reference gauges require vacuum generation and atmospheric pressure measurement equipment for accurate calibration and thus are more difficult to calibrate in the field. Calibration should only be attempted if the user has access to an absolute 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.

Calibration intervals depend on the severity of the application, the user's quality guidelines, and calibration history of the product as established by the user. For many applications a six month or an annual calibration interval may be found to be adequate.

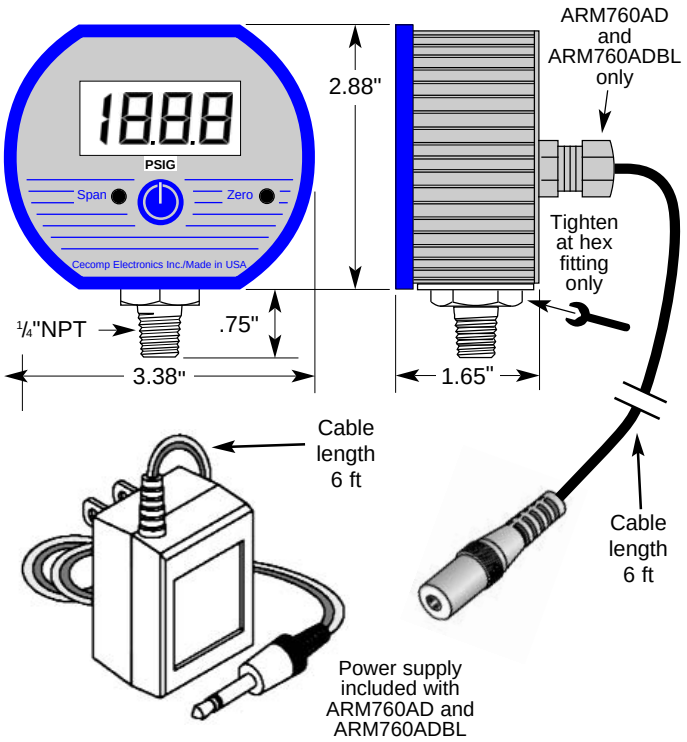
If recalibration is be required, remove the calibration plugs from the front of the gauge to access the individual zero and span controls. Allow the gauge to adjust to ambient temperature if needed.

The gauge may be re-zeroed without affecting the span calibration. The gauge must be connected to a vacuum pump with the ability to maintain 0.1 torr absolute vacuum or less. 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 an absolute pressure reference of known accuracy. Zero calibration must be done before span calibration. Record readings at three or more points over the range of the gauge and adjust span control to minimize error over the range of the gauge.

Gauges may be returned to Cecomp Electronics for factory certified recalibration. NIST traceability is available.

DIMENSIONS



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.

ABSOLUTE PROCESS INSTRUMENTS, Inc.
1220 American Way Libertyville, IL 60048
Phone: 800-942-0315 Fax: 800-949-7502