Cecomp Battery Powered Digital Pressure Gauges with Selectable Units and Min/Max

F22B, F22BN

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

F22B

F22BN

Specifications

Ranges and Resolution
See table below for standard ranges and units
See table on next page for available engineering units and resolution. Resolution is fixed for each engineering unit

Accuracy
Includes linearity, hysteresis, repeatability
Standard: ±0.25% of full scale ±1 least significant digit
-HA option: ±0.1% FS ±1 LSD. Not available with vacuum, compound, bipolar, absolute, or 3 psi sensor

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
Three front buttons: Zero/clear, on/off, memory (min/max)
BL models: Backlight active for 1 minute (user configurable)

Memory
Minimum and/or maximum readings stored in memory, readings cleared or stored at shutoff. User configurable.

Calibration
Zero button
Pass code protected calibration via keypad
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)

Housing Materials
F22B: Extruded aluminum case, epoxy powder coated, ABS/polycarbonate bezel, front and rear gaskets, polycarbonate label
F22BN: ABS/polycarbonate NEMA 4X case, rear gasket, polycarbonate label

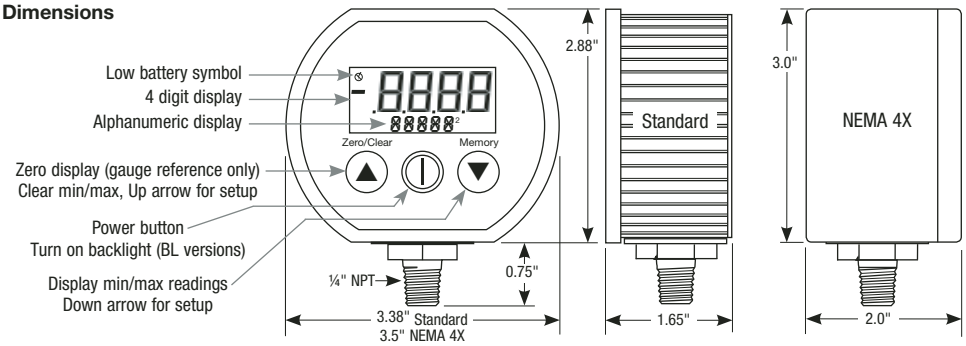
Connection, Material, Media Compatibility
1/4" NPT male fitting, 316L stainless steel
All wetted parts are 316L stainless steel

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

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)

Dimensions



Made in USA

Quick Link
cecomp.com/bat

How to Order

Other default engineering units may be ordered. See table on other side for listing of available ranges and engineering units

Standard	Standard, Backlit Display	NEMA 4X	NEMA 4X, Backlit Display	Default Range and Units
F22B±15PSIG	F22BBL±15PSIG	F22BN±15PSIG	F22BNBL±15PSIG	–14.70 to 15.00 psig
F22B30V15PSIG	F22BBL30V15PSIG	F22BN30V15PSIG	F22BNBL30V15PSIG	–30.0 inHg to 15.0 psig
F22B30V100PSIG	F22BBL30V100PSIG	F22BN30V100PSIG	F22BNBL30V100PSIG	–30.0 inHg to 100.0 psig
F22B30V200PSIG	F22BBL30V200PSIG	F22BN30V200PSIG	F22BNBL30V200PSIG	–30.0 inHg to 200.0 psig
F22B3PSIG	F22BBL3PSIG	F22BN3PSIG	F22BNBL3PSIG	0 to 3.000 psig
F22B5PSIG	F22BBL5PSIG	F22BN5PSIG	F22BNBL5PSIG	0 to 5.000 psig
F22B15PSIA	F22BBL15PSIA	F22BN15PSIA	F22BNBL15PSIA	15.00 to 0 psi Absolute
F22B15PSIGVAC	F22BBL15PSIGVAC	F22BN15PSIGVAC	F22BNBL15PSIGVAC	0 to 14.70 psig Vacuum
F22B15PSIG	F22BBL15PSIG	F22BN15PSIG	F22BNBL15PSIG	0 to 15.00 psig
F22B30PSIA	F22BBL30PSIA	F22BN30PSIA	F22BNBL30PSIA	30.00 to 0 psi Absolute
F22B30PSIG	F22BBL30PSIG	F22BN30PSIG	F22BNBL30PSIG	0 to 30.00 psig
F22B60PSIG	F22BBL60PSIG	F22BN60PSIG	F22BNBL60PSIG	0 to 60.00 psig
F22B100PSIA	F22BBL100PSIA	F22BN100PSIA	F22BNBL100PSIA	100.0 to 0 psi Absolute
F22B100PSIG	F22BBL100PSIG	F22BN100PSIG	F22BNBL100PSIG	0 to 100.0 psig
F22B200PSIG	F22BBL200PSIG	F22BN200PSIG	F22BNBL200PSIG	0 to 200.0 psig
F22B300PSIG	F22BBL300PSIG	F22BN300PSIG	F22BNBL300PSIG	0 to 300.0 psig
F22B500PSIG	F22BBL500PSIG	F22BN500PSIG	F22BNBL500PSIG	0 to 500.0 psig
F22B1000PSIG	F22BBL1000PSIG	F22BN1000PSIG	F22BNBL1000PSIG	0 to 1000 psig
F22B3000PSIG	F22BBL3000PSIG	F22BN3000PSIG	F22BNBL3000PSIG	0 to 3000 psig
F22B5000PSIG	F22BBL5000PSIG	F22BN5000PSIG	F22BNBL5000PSIG	0 to 5000 psig

Options—add to end of model number

-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. Recommended for outdoor applications.

-TP Top port, gauge port on top of case. Used primarily for tire pressure applications. Not available with NEMA 4X models.

-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.

-SM Surface mount plate. Battery gauges only. Not available with NEMA 4X models.

-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.

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Ranges and Selectable Units

Range Codes
The range code in the gauge model number indicates the default range when the gauge is ordered. Alternate default engineering units (for example, 700KPA) may be ordered.

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

Conversion
Engineering unit conversions are calculated from the factory default unit to the newly selected units.

Default Range and Units	psi	kPa	MPa	mbar	bar	atm	kg/cm²	g/cm²	mmH_2O	cmH_2O	oz/in²	ftH_2O	inH_2O	mmHg	torr	inHg
–14.70 to 15.00 psig	–14.7 to 15.0	–101.3 to 103.4	–.1013 to .1034	–1013 to 1034	–1.013 to 1.034	–1.000 to 1.021	–1.033 to 1.055	–1033 to 1055		–1033 to 1055	–235.1 to 240.0	–33.90 to 34.61	–407 to 415	–760 to 7767	–760 to 776	–29.92 to 30.54
–29.9 inHg to 15.0 psig	–14.7 to 15.0	–101.3 to 103.4	–.1013 to .1034	–1013 to 1034	–1.013 to 1.034	–1.000 to 1.021	–1.033 to 1.055	–1033 to 1055		–1033 to 1055	–235.1 to 240.0	–33.90 to 34.61	–407 to 415	–760 to 776	–760 to 776	–29.92 to 30.54
–29.9 inHg to 100.0 psig	–14.7 to 100.0	–101 to 690	–.101 to .690		–1.01 to 6.90	–1.00 to 6.81	–1.03 to 7.03				–235 to 1600	–33.9 to 230.7	–407 to 2767	–760 to 5171	–760 to 5171	–29.9 to 203.6
–29.9 inHg to 200.0 psig	–14.7 to 200.0	–101 to 1379	–.101 to 1.379		–1.01 to 13.79	–1.00 to 13.61	–1.03 to 14.06				–235 to 3200	–33.9 to 461.4	–407 to 5534			–29.9 to 407.2
0 to 3.000 psig	3.000	20.68		206.8	.2068	.2041	.2109	210.9	2109	210.9	48.00	6.921	83.0	155.1	155.1	6.108
0 to 5.000 psig	5.000	34.47		344.7	.3447	.3402	.3515	351.5	3515	351.5	80.0	11.54	138.4	258.6	258.6	10.18
15.00 to 0 psi abs	15.00 abs	103.4 abs	.1034 abs	1034 abs	1.034 abs	1.021 abs	1.055 abs	1055 abs		1055 abs	240.0 abs	34.61 abs	415.1 abs	775.7 abs	775.7 abs	30.54 abs
0 to 14.70 psig vac	14.70 vac	101.3 vac	.1013 vac	1013 vac	1.013 vac	1.000 vac	1.033 vac	1033 vac		1033 vac	235.1 vac	33.90 vac	406.8 vac	760 vac	760 vac	29.92 vac
0 to 15.00 psig	15.00	103.4	.1034	1034	1.034	1.021	1.055	1055		1055	240.0	34.61	415.1	775.7	775.7	30.54
30.00 to 0 psi abs	30.00 abs	206.8 abs	.2068 abs	2068 abs	2.068 abs	2.041 abs	2.109 abs	2109 abs		2109 abs	480.0 abs	69.21 abs	830 abs	1551 abs	1551 abs	61.08 abs
0 to 30.00 psig	30.00	206.8	.2068	2068	2.068	2.041	2.109	2109		2109	480.0	69.21	830	1551	1551	61.08
0 to 60.00 psig	60.00	413.7	.4137	4137	4.137	4.083	4.218	4218		4218	960	138.4	1660	3103	3103	122.2
100.0 to 0 psi abs	100.0 abs	689.5 abs	.6895 abs	6895 abs	6.895 abs	6.805 abs	7.031 abs	7031 abs		7031 abs	1600 abs	230.7 abs	2767 abs	5171 abs	5171 abs	203.6 abs
0 to 100.0 psig	100.0	689.5	.6895	6895	6.895	6.805	7.031	7031		7031	1600	230.7	2767	5171	5171	203.6
0 to 200.0 psig	200.0	1379	1.379		13.79	13.61	14.06				3200	461.4	5534			407.2
0 to 300.0 psig	300.0	2068	2.068		20.68	20.41	21.09				4800	692.1				610.8
0 to 500.0 psig	500.0	3447	3.447		34.47	34.02	35.15					1154				1018
0 to 1000 psig	1000	6895	6.895		68.95	68.05	70.31					2307				2036
0 to 3000 psig	3000		20.68		206.8	204.1	210.9					6921				6108
0 to 5000 psig	5000		34.47		344.7	340.2	351.5									

Installation Precautions

- ✔ Read these instructions before using the gauge. Configuration may be easier before installation. Contact the factory for assistance.
- ✔ These products do not contain user-serviceable parts. Contact us for repairs, service, or refurbishment.
- ✔ Gauges must be operated within specified ambient temperature ranges.
- ✔ Outdoor or wash down applications require a NEMA 4X gauge or installation in a NEMA 4X housing.
- ✔ Use a pressure or vacuum range appropriate for the application.
- ✔ Use fittings appropriate for the pressure range 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.
- ✔ For contaminated media use an appropriate screen or filter to keep debris out of gauge port.
- ✔ Remove system pressures before removing or installing gauge.
- ✔ Install or remove gauge using a wrench on the hex fitting only. Do not attempt to turn gauge by forcing the housing.
- ✔ Good design practice dictates that positive displacement liquid pumps include protection devices to prevent sensor damage from pressure spikes, acceleration head, and vacuum extremes.
- ☒ Avoid permanent sensor damage! Do not apply vacuum to non-vacuum gauges or hydraulic vacuum to any gauges.
- ☒ Avoid permanent sensor damage! NEVER insert objects into gauge port or blow out with compressed air.
- ⚠ Gauges are not for oxygen service. Accidental rupture of sensor diaphragm may cause silicone oil inside sensor to react with oxygen.

Power-Up and Normal Operation

Your gauge is ready to use. It was factory calibrated just prior to shipment with batteries installed.

Press and hold the center power button for approximately 1 second. The display is tested.

The full-scale range in the factory default units is indicated. If the units were changed by the user, then the full scale range in the selected engineering units is displayed.

The display test is briefly shown again.

The actual pressure and units are displayed. The gauge is ready for use.

Occasional flashing of the minus sign is normal and indicates the gauge is at zero pressure.

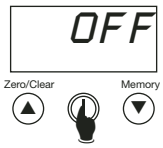
Following the start-up initialization, the display indicates the pressure reading updated approximately 3 times per second.

Shutoff

The auto shutoff timer starts when the gauge is powered and resets whenever any button is pressed. The factory default time is 5 minutes. The setup procedure allows setting it to a variety of times, or disabling it for on/off operation.

When an auto shutoff timer is used, the display indicates *OFF* five seconds prior to auto shutoff. Press the power button to keep the gauge on.

To shut the gauge off manually, press and hold the center power button until *OFF* is displayed.



Display Backlighting (BL Models Only)

Display backlighting can be turned on by momentarily pressing the power button whenever the gauge is on. This also restarts the auto shutoff timer.

The backlighting will turn on for 1 minute and then automatically shut off. The factory default on-time is 1 minute, but the setup procedure allows setting it to 1 to 255 minutes, or to 0 to disable display backlighting.

The red LED display backlighting will not be apparent under bright lighting conditions.

Zero the Display

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 is in the normal operating mode. The gauge port must be exposed to normal atmospheric pressure with no pressure or vacuum applied.

Press and hold the Zero/Clear button.

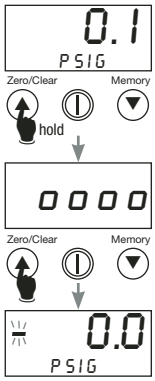
Continue to press the Zero/Clear button until *0000* is displayed.

Release the button.

The gauge in now zeroed.

Occasional flashing of the minus sign with zero pressure/vacuum is normal.

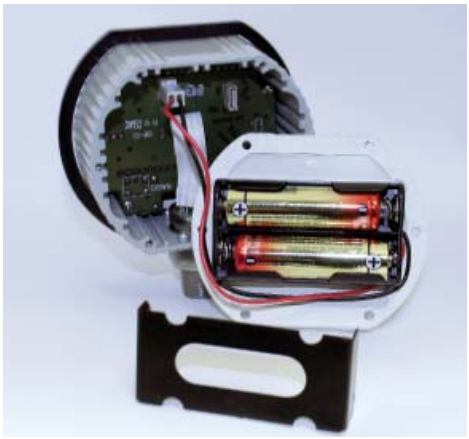
The stored zero correction is erased when the gauge is shut off.



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 batteries should be replaced soon after the indicator comes on or unreliable readings may result.

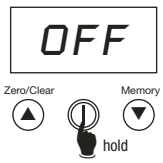
1. Remove the 6 Phillips screws on the back of the unit.
2. Remove the battery retainer. Remove batteries by lifting up the positive end of the battery (opposite the spring) taking care not to bend the battery holder spring.
3. Discard old batteries properly, do not discard into fire, sources of extreme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



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

Shut Down

To shut off the gauge manually at any time, press and hold the center power button until the display indicates *OFF* (about 3 seconds) and then release.



When an auto shutoff timer is used, the display indicates *OFF* five seconds prior to auto shutoff. Press the power button to keep the gauge on.

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.

Error Indications

Attempting to zero the gauge with pressure greater than approximately 3% of full-scale pressure or vacuum applied will result in an error condition

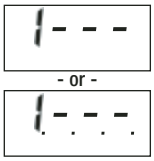
The display will alternately indicate *Err 0* and the actual pressure.

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

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.

Over Pressure Indications

If excessive pressure is applied (112.5% over range), an out-of-range indication of 1 – – – or 1.–.–.– will be displayed depending on model.



Min/Max Memory

The gauge may be configured to capture both maximum and minimum values, the maximum value only, or the minimum value only. Only the configured values will be displayed when the memory button is pressed.

Depending on the user configuration, the readings may be erased when the gauge powers down or retained in memory.

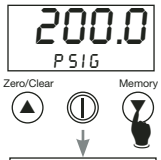
The Min/Max setup procedure is described in the User Configuration section.

The Min/Max readings are captured at the rate of 3 times per second. The readings are captured any time the gauge is on and not in the configuration or calibration mode.

Note that if a brief pressure deviation occurs, it may not be captured.

Press and release the Memory button to view the maximum stored value.

The center power button may be pressed at any time to return to the normal display mode.



The gauge may be left in the maximum display mode if desired. The maximum reading will be continuously displayed, stored and updated.

Press and release the Memory button to view the minimum stored value.

The gauge may be left in the minimum display mode if desired. The minimum reading will be continuously displayed, stored and updated.

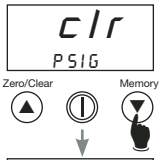
Press and release the center power button to return to the normal display mode.

Manually Clear Min or Max

While in the Max or Min display mode, a captured maximum or minimum value can be cleared.

Press and hold the Zero/Clear button while the value to be cleared is being displayed.

Release the button when *clr* is displayed.



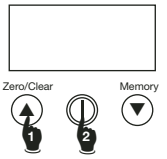
To effectively use the minimum function it may be necessary to have the gauge at the normal operating pressure and then clear the minimum stored reading (usually zero).

Press and release the center power button to return to normal readings.

Enter Gauge Configuration Mode

The gauge is designed to use a 4 digit pass code to enter the configuration modes. This is to prevent unauthorized changing of settings.

With the gauge off, press and hold the ▲ button. Then press the center power button.

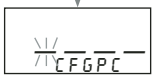


Release all buttons when the display indicates *CFG*. The gauge firmware version is also displayed.

The gauge then goes through the normal power up sequence.

power up sequence

The display prompts for entry of the configuration pass code (*CFGPC*), with the first underscore blinking.

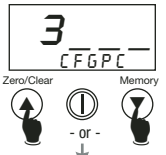


Note: The gauge will automatically revert to normal operation if no buttons are pressed for approximately 15 seconds. To cancel and return to normal operation, press and release the power button without entering any pass code characters.

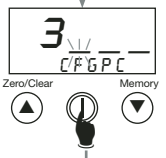
Enter Configuration Pass Code

Enter the pass code. 3510 is the factory default, but it is user-modifiable.

Use the ▲ or ▼ buttons to set the left-most digit to 3.



Press and release the power button to index to the next position. The 3 will remain, and the second position will be blinking.

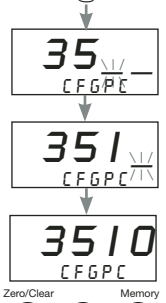


Use the ▲ or ▼ buttons to select 5.

Press and release the power button to index to the next position. 3 5 will remain, and the third position will be blinking.

Use the ▲ or ▼ buttons to select 1.

Press and release the power button to index to the next position. 3 5 1 will remain, and the fourth position will be blinking.



Use the ▲ or ▼ buttons to select 0.

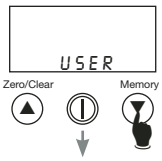
Press and release the power button to proceed with configuration procedures.

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

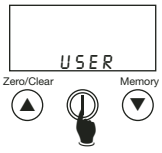
Gauge Configuration—User or Factory

Upon successful pass code entry, the lower display will indicate *USER*.

If *USER* is not displayed. Press and release the ▼ button. With *USER* selected, the gauge configuration can be modified as described in the following sections.



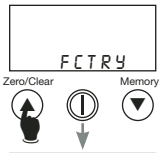
Press and release the power button to continue with *USER* configuration.



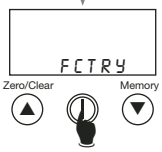
- or -

If Factory (*FCTRY*) is selected, the user configuration will be replaced by the configuration as it left the factory.

To select Factory, press and release the ▲ button. The lower display will indicate *FCTRY*.



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



Min/Max Setup

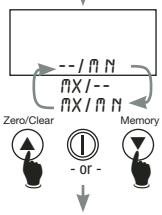
After the center power button is pressed when in user configuration mode, the display indicates *MX/MN*.

Use the ▲ or ▼ buttons to select the desired configuration.

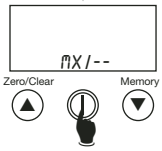
MX/MN to capture both maximum and minimum readings.

--/MN to capture minimum readings only.

MX/-- to capture maximum readings only.



Press and release the power button to save the user configuration and move to the next setup parameter.



Min/Max Memory

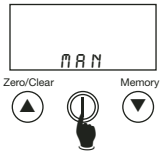
After the center power button is pressed when in user *MX/MN* configuration mode, the upper display indicates *clr*.

Use the ▲ button to select *AUTO* and the or ▼ button to select *MAN*.

When the lower display indicates *MAN*, the maximum and/or minimum readings will be retained in memory after the gauge is powered off. The readings can be cleared manually.

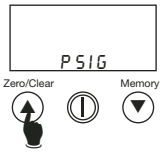
When the lower display indicates *AUTO*, the maximum and/or minimum readings will be automatically cleared when the gauge is powered off.

Press and release the power button to save the user configuration and move to the next setup parameter.



Engineering Unit Selection

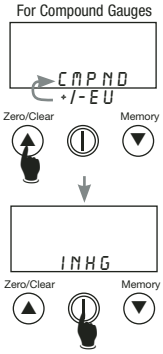
With the gauge in the user configuration mode, the upper display will be blank with the engineering units in the lower display.



Use the ▲ and ▼ buttons to navigate through the list of engineering units. Available engineering units depend on the sensor range.

For Compound Gauges

If the gauge was ordered as a compound gauge, the lower display will indicate *+/-EU* or *CMPND*.



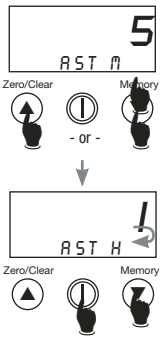
Selecting *CMPND* will set the gauge for inHg for vacuum and PSIG for pressure.

Selecting *+/-EU* and then pressing the center button will allow selection of engineering units.

When the desired units are displayed, press and release the power button to save your selection and move to the next parameter.

Auto Shutoff Time Selection

The auto shutoff time is shown on the upper display. The lower display will indicate *AST M* if the time displayed is in minutes or *AST H* if it is in hours.



Use the ▲ and ▼ buttons to select 0 (manual shutoff), 1, 2, 5, 10, 15, 20, or 30 minutes, or 1, 2, 4, or 8 hours.

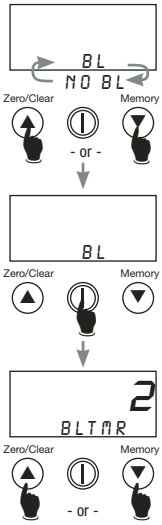
A setting of zero disables the auto shutoff timer. This requires using the power button to shut the gauge off.

If the gauge was ordered with a custom shutoff time it will become unavailable if the time is changed. Reset the gauge to the original factory configuration as described previously to restore the custom time.

When the desired time is displayed, press and release the power button to save your selection and move to the next parameter.

Backlight Time Selection

The the upper display will be blank. The lower display will indicate *BL* if the display backlight is enabled or *NO BL* if display backlight is disabled.



Use the ▲ button to enable backlighting and the ▼ button to disable backlighting.

Press the power button to save the setting.

If *NO BL* was selected the user setup is complete and the gauge will restart and be ready for use with the new configuration.

If *BL* was selected the current backlight auto shutoff time is displayed in minutes. 1 minute is the factory default.

Use the ▲ and ▼ buttons to select the minutes for backlight shutoff time.

A setting of zero disables the auto shutoff timer and the backlight will be on whenever the gauge is on. The maximum setting is 255 minutes. The gauge auto shutoff time will override the backlight time.

When the desired time is displayed, press and release the power button to save your selection and restart the gauge.

Setup Complete

Once you have cycled through the setup parameters (min/max setup, min/max memory, engineering units, shutoff time, backlight time), the gauge will restart with the new settings and be ready for use. The settings can be changed at any time by entering the pass code and following the setup sequence.

Calibration

Setup and Preparation

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 should only be performed by qualified individuals using appropriate calibration standards and procedures. Calibration intervals depend on your quality control program requirements, although many customers calibrate annually.

The calibration system must be able to generate and measure pressure/vacuum over the full range of the gauge and should be at least four times more accurate than the gauge being calibrated.

A vacuum pump able to produce a vacuum of 100 microns (0.1 torr or 100 millitorr) or lower is required for vacuum gauges. Warning: application of vacuum to non-vacuum models will result in damage to the sensor.

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

Install fresh batteries.

Entering Calibration Mode

With the gauge off, press and hold the ▼ button. Then press the power 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.

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.

Enter the 3510 pass code as described in the Configuration Pass Code section.

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 ▲ and ▼ buttons to select engineering units for calibration with highest resolution (highest number of display counts).

Press and release the Power button when the appropriate engineering units are displayed. Suggested units are listed below.

Sensor	Suggested units for calibration
3 PSI	6.921 FTH2O
5 PSI	5.000 PSI
15 PSI	775.7 MMHG or TORR
30 PSI	61.08 INHG
60 PSI	60.00 PSI
100 PSI	7.031 KG/CM2
200 PSI	5534 INH2O
300 PSI	610.8 INHG
500 PSI	500.0 PSI
1000 PSI	6895 KPA
3000 PSI	6921 FTH2O
5000 PSI	5000 PSI

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

▲ and ▼ Button Operation

Each time one of the ▲ or ▼ 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 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 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 ▲ and ▼ 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 ▲ and ▼ 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 ▲ and ▼ 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 ▲ and ▼ buttons.

Calibration—continued

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

Absolute Reference Gauges

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

Apply full-scale pressure. The character display will alternate between *+SPAN* and *CAL*. Press the ▲ and ▼ 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 ▲ and ▼ 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 ▲ and ▼ 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 ▲ and ▼ buttons.

Save Calibration

Press and hold the power 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.

User-Defined Pass Code Configuration

The factory default pass code 3510 may be changed to a different value for configuration and/or calibration.

Configuration Pass Code

With the unit off, press and hold the ▲ button to view and/or change the user configuration pass code. Then press the Power button. Release all buttons when the display indicates *CFG*.

Calibration Pass Code

With the unit off, press and hold the ▼ button to view and/or change the user calibration pass code. Then press the Power button. Release all buttons when the display indicates *CAL*.

Change Pass Code Mode

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 segments.

Note: The unit 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.

Enter access code 1220:

Use the ▲ and ▼ buttons to set the left-most digit to 1.

Press and release the Power button to index to the next position. The 1 will remain, and the second position will be blinking.

Use the ▲ and ▼ buttons to select 2.

Press and release the Power button to index to the next position. 1 2 will remain, and the third position will be blinking.

Use the ▲ and ▼ buttons to select 2.

Press and release the Power button to index to the next position. 1 2 2 will remain, and the fourth position will be blinking.

Use the ▲ and ▼ buttons to select 0.

Press and release the Power button to proceed.

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

Change Pass Code

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.

Press the ▲ or ▼ button to select the first character of the new pass code.

When the correct first character is being displayed, press and release the Power button to proceed to the next pass code character.

Repeat above until the entire pass code is complete.

To exit the User Defined Pass Code change mode, press and hold the power button.

Release the button when the display indicates - - - - to restart the gauge.