

# Operating Instructions

## ASHCROFT® Digital Pressure Gauge

### Type D1005PS

# ASHCROFT®

#### DISPLAY

The gauge has a two-line display with backlight option. The top line is a 4½-digit seven segment, numeric display with a minus sign, and the bottom line has five alpha-numeric characters. There is also a battery icon which will display the battery power level with three segments:

- No segments filled: less than 10% battery life remaining
- One segment filled: 10% to 25% battery life remaining
- Two segments filled: 25% to 50% battery life remaining
- Three segments filled: 50% to 100% battery life remaining

#### Notes:

(1.) When the batteries get too weak for the gauge to operate reliably, the gauge will shut off. If the gauge is turned on with batteries in this condition, the version and range display will show momentarily, but the gauge will again shut off. If the batteries are too weak the gauge will not turn on.

(2.) Over/Under pressure conditions:

If pressure is applied that exceed the gauges full scale pressure the display will read:

- top line: actual pressure to 105% (Not Blinking) a series of dashes if over 105% of full scale.
- lower line: OVER (blinking)

If vacuum is applied that exceed the gauges vacuum range the display will read:

- top line: actual pressure (Not Blinking)
- lower line: UNDER (blinking)

#### KEYPAD

There are five buttons on the keypad, which function as follows:

#### On/Off:

This button manually turns the unit on or off without regard to mode of operation.

When the unit is turned on, the gauge will display, in 1 second intervals, the following start up sequence:

- firmware version
  - top line: numerical firmware rev number
  - bottom line: VER
- pressure range (Note: compound ranges shall also display the vac range.
- measure mode
  - top line: Full Scale pressure range
  - bottom line: units of measure to which the unit was calibrated.
  - top line: numerical value of the pressure currently being sensed by the gauge
  - bottom line: current "selected / default" units of measure:

If the "On/Off" button is pressed and held for three seconds, a menu will appear, which can be scrolled through by pressing the "On/Off" button. The menu will offer the following selections, which will be blinking to indicate a selectable option:

- NEVER (default) – The gauge will stay on until the "On/Off" button is pushed again.



Shown with optional protective boot.

- 5 MIN – The gauge will turn off five minutes after it is turned on.
- 10 MIN – The gauge will turn off 10 minutes after it is turned on.
- 20 MIN – The gauge will turn off 20 minutes after it is turned on.

A selection is made by pressing the "On/Off" button for three seconds while an option is blinking. Once a selection is made, or scrolled past "20 MIN," the gauge will return to measure mode.

#### Zero/Clear:

With the gauge in the measure mode (measuring pressure), this button will zero the display provided the reading is below the lesser of 50 psi or ±5% of the pressure range (e.g. between -5 and 5 psi on a 100 psi gauge).

#### Min/Max:

Pressing this button will display the maximum pressure the gauge has sensed since being turned on, in the top line of the display. The bottom line will read "MAX".

Pressing the button again will display the minimum pressure the gauge has sensed since being turned on, and show "MIN". Pressing a third time will revert the gauge back to the measurement mode. The "MAX" or "MIN" values will be cleared by depressing the ZERO/CLEAR button with value displayed. Both values will be cleared when the gauge is turned off (manually or automatically).



#### Light (optional):

This button toggles the display backlight on and off. However, if this button is held for three seconds a menu will appear which can be scrolled through by pressing the "Light" button. The menu will offer the following selections, which will be blinking to indicate a selectable option:

- IMMED – The backlight will only be on while the "Light" button is being pressed.
- 30 SEC – The backlight will turn off 30 seconds after the "Light" button is no longer being pressed.

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- 1 MIN – The backlight will turn off one minute after the “Light” button is no longer being pressed.
- 5 MIN – The backlight will turn off five minutes after the “Light” button is no longer being pressed.
- NEVER (factory default) – The backlight will stay on until the “Light” button is pressed again.

**Note:** If while in the menu, the “Light” button is not pressed for three seconds (to either scroll or select), the gauge will revert back to the measurement mode. While in this menu, pressing the “Zero/ Clear” button will also bring the gauge back to the measurement mode. The backlight option selected will be saved when the gauge is turned off.

#### Units:

This button accesses a scrollable menu of pressure measurement “unit” options: psi, Bar, kg/cm<sup>2</sup>, kPa, mPa, ftH<sub>2</sub>O, in. Hg, mmHg, cmHg.

**Note:** Unit options will vary, depending on the full scale gauge pressure. Except for vacuum only gauges, a vacuum will be displayed in “in. Hg” and cannot be changed.

Pressing the “Units” button once will show the first selection (blinking). Pressing the button again will show the next blinking entry, and so on until the menu is completed. Upon completion of the menu, pressing the button again will exit the menu and use the last selected units. Selection of a units option is made by pressing the “Units” button for three seconds while the option is being displayed. If while in the menu, the “Units” button is not depressed in three seconds (to either scroll or select) the unit will revert back to the measurement mode. While in this menu, pressing the “Zero/Clear” button will also bring the unit back to the measurement mode. The units option selected will be saved when the gauge is turned off.

#### Field Calibration:

There is one additional feature of the gauge accessible with the keypad – field calibration.

**Note:** ¼% gauges should be returned to the factory for calibration.

**Note:** The gauge under calibration must be configured and calibrated as a psi unit. If at any time the calibrator wishes to exit this mode depress the “Zero/Clear” button. If this process is not fully completed, No data will be stored or used in the calculations for displaying pressure. While in any Input mode, if no buttons are pushed within 60 seconds, the unit will revert back to the “measurement” mode. With the unit in the “On” state depress the “Max.”, “Units” and “Zero/Clear” buttons simultaneously for 3 seconds. This will begin the “Field Calibration” routine.

**Note:** The calibration function is only available in the units in which the gauge was supplied. For example, if the gauge was shipped as a PSI gauge, this function will not appear if the user has changed the units of the gauge (for example to Bar).

**Note:** The following procedure is also applicable to straight vacuum units. Straight vacuum units display pressure in inHg (by default), however, they must be calibrated in PSI.

#### Step 1: top line:

“0” bottom line: Flash between “INPUT” and “PSI” Apply zero psi and depress the “Units” key.

#### Step 2: top line: “full scale pressure (or vacuum)”

bottom line: Flash between “INPUT” and “PSI” Apply Full Scale psi and depress the “Units” key.

#### Step 3: top line: “mid scale pressure (or vacuum)”

bottom line: Flash between “INPUT” and “PSI” Apply mid point psi and depress the “Units” key.

**Note:** For a compound range unit (e.g. Vac to 100 psi), proceed to Step 4, else skip to Step 5.

#### Step 4: top line: “full scale vacuum”

bottom line: Flash between “INPUT” and “PSI” Apply Full Scale vacuum and depress the “Units” key.

#### Step 5: top line: Blank

bottom line: Flash “RECAL”.

**Step 6:** Depress and hold the “Max.”, “Units” and “Zero/ Clear” buttons, the gauge will store “Field Calibration” data and return to measure mode, approximately 3 seconds. The unit will now return to the measure mode and use “Field Calibration” data to display pressure.

#### Restore Factory Calibration:

**Note:** The gauge to be restored must be configured as a psi unit. If this process is not fully completed, No data will be re-stored for use in the calculations of displayed pressure. While in any Input mode, if no buttons are pushed within 60 seconds, the unit will revert back to the “measurement” mode.

With the unit in the “Off” State depress the “Max.”, “Units” and depress the “On/Off” button, once the gauge begins to initialize, release the “On/Off” key, but continue to hold the “Max.”, “Units” buttons until the unit powers up. This will begin the “Factory Restore” routine.

#### Step 1: top line: Blank

bottom line: Flash “RESTR”.

**Step 2:** Depress and hold the “Max.”, “Units” and “On/Off” buttons, the gauge will “Re-Store” the Factory Calibration data and return to measure mode, approximately three seconds.

**Important:** The accuracy of the gauge, throughout its range, will be affected by how accurate the pressure supply is during this calibration process. To keep the 0.5% accuracy, your supply pressure should be at least within 0.1% of the gauge’s rated (maximum) pressure.