



CAUTION!

- Remove power to unit before wiring input and output connections.
- Follow instructions carefully to avoid personal injury.

Contents

1. Installation
2. Specifications
3. Electrical Connections
4. Menu Functions

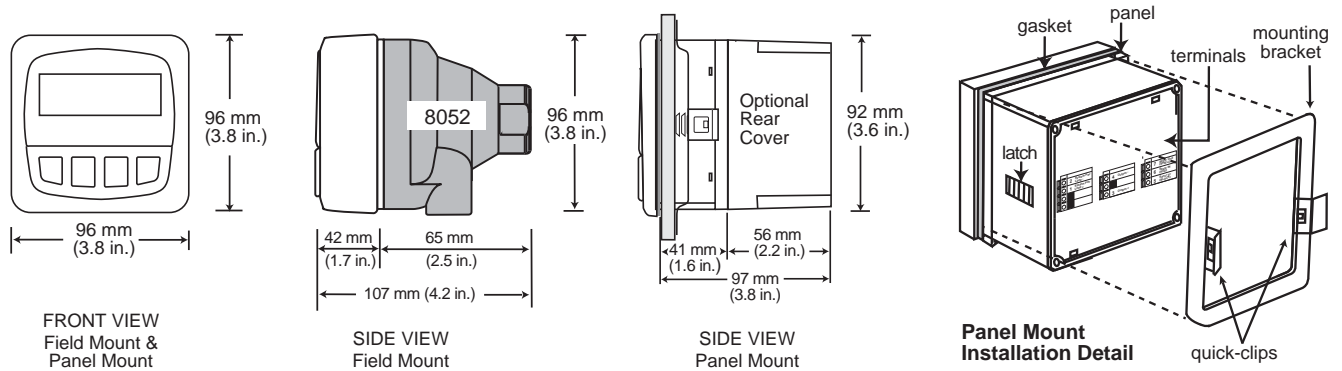


1. Installation

ProcessPro transmitters are available in two styles: panel mount and field mount. The panel mount is supplied with the necessary hardware to install the transmitter. This manual includes complete panel mounting instructions. Field mounting requires one of two separate mounting kits. The 3-8052 integral kit joins the sensor and instrument together into a single package. The 3-8050 Universal kit enables the transmitter to be installed virtually anywhere. Detailed instructions for integral mounting or other field installation options are included with the 3-8052 Integral kit or the 3-8050 Universal kit.

1.1 Panel Installation

1. The panel mount transmitter is designed for installation using a 1/4 DIN Punch. For manual panel cutout, an adhesive template is provided as an installation guide. Recommended clearance on all sides between instruments is 1 inch.
2. Place gasket on instrument, and install in panel.
3. Slide mounting bracket over back of instrument until quick-clips snap into latches on side of instrument.
4. To remove, secure instrument temporarily with tape from front or grip from rear of instrument. **DO NOT RELEASE.** Press quick-clips outward and remove.



2. Specifications

General

Compatibility: Signet 2450 Pressure Sensor

Accuracy: $\pm 1\%$ of full scale

Repeatability: $\pm 0.5\%$ of full scale

Enclosure:

- Case: PBT
- Panel case gasket: Neoprene
- Window: Polyurethane coated polycarbonate
- Keypad: Sealed 4-key silicone rubber
- Weight: Approx. 325 g (12 oz.)

Display:

- Alphanumeric: 2 x 16 LCD
- Update rate: 1 second
- Contrast: User selected, 5 levels

Electrical

Sensor Input:

- Range: 0-250 psig, 0-17 bar, 0-1700 kPa

Current output:

- 4 to 20 mA, isolated, fully adjustable and reversible
- Power: 12 to 24 VDC $\pm 10\%$, regulated, 21 mA max current
- Max loop impedance: 50 Ω max. @ 12 V
325 Ω max. @ 18 V
600 Ω max. @ 24 V

- Update rate: 100 ms
 - Accuracy: ± 0.03 mA
- Relay outputs (2 sets mechanical SPDT contacts):
- Maximum voltage rating: 5 A @ 30 VDC, or 5 A @ 250 VAC resistive load
 - Hi or Lo programmable with adjustable hysteresis
 - Pulse programmable (maximum 400 pulses/minute)
 - Hysteresis: User adjustable

Environmental

- Operating temperature: -10 to 70 °C (14 to 158 °F)
- Storage temperature: -15 to 80 °C (5 to 176 °F)
- Relative humidity: 0 to 95%, non-condensing
- Maximum altitude: 2000 m (6562 ft)
- Insulation category: II
- Rating: NEMA 4X/IP65 front

Standards and Approvals

- CE, UL listed
- Immunity: EN50082-2
- Emissions: EN55011 Class B
- Manufactured under ISO 9001 for Quality and ISO 14001 for Environmental Management

China RoHS (Go to www.gfsignet.com for details)

3. Electrical Connections



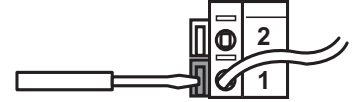
Caution: Failure to fully open terminal jaws before removing wire may permanently damage instrument.

Wiring Procedure

1. Remove 0.5 - 0.625 in. (13-16 mm) of insulation from wire end.
2. Press the orange terminal lever downward with a small screwdriver to open terminal jaws.
3. Insert exposed (non-insulated) wire end in terminal hole until it bottoms out.
The terminals will accommodate conductors from 14 to 22 AWG.
4. Release orange terminal lever to secure wire in place. Gently pull on each wire to ensure a good connection.

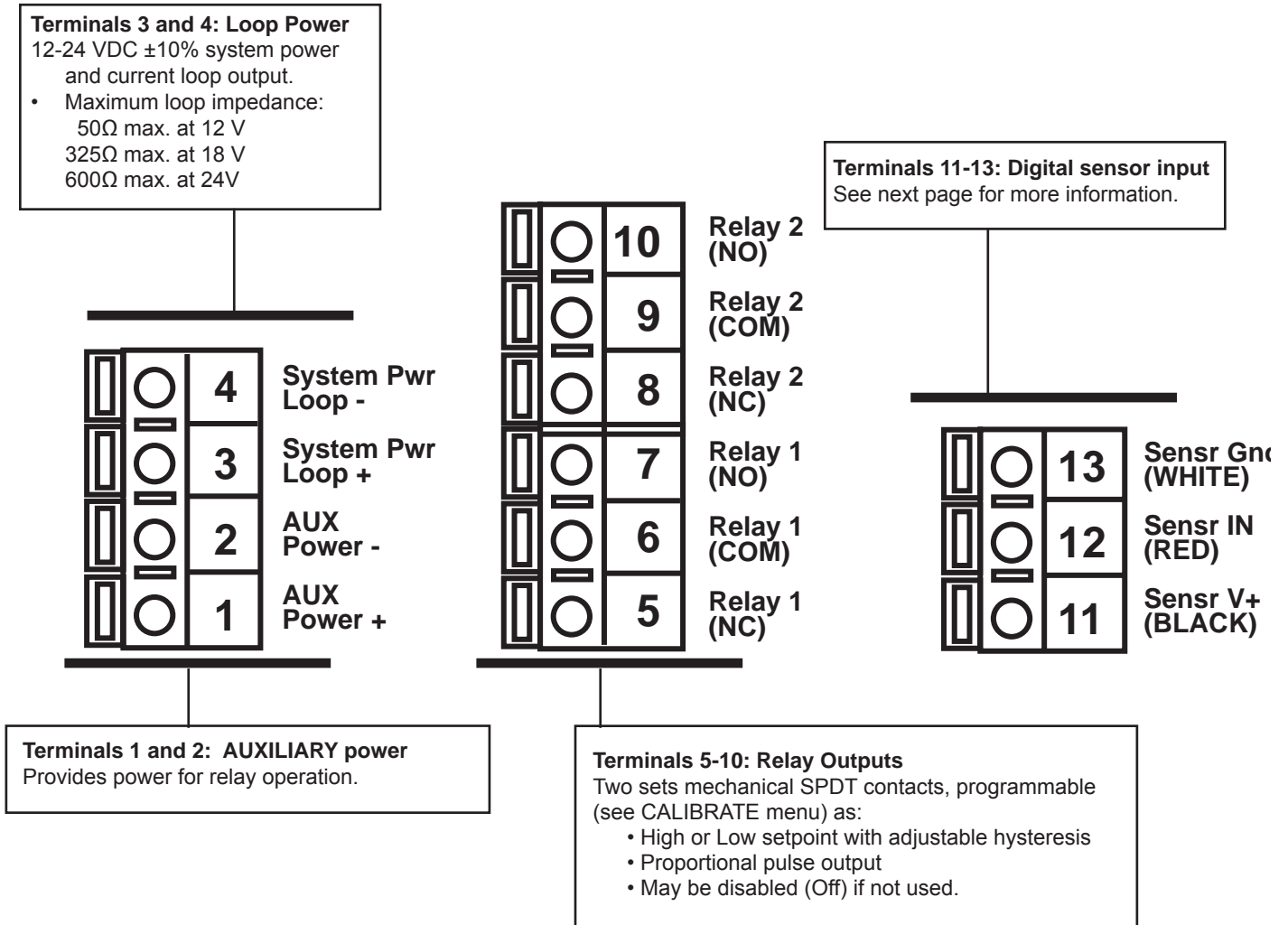
Wiring Removal Procedure

1. Press the orange terminal lever downward with a small screwdriver to open terminal jaws.
2. When fully open, remove wire from terminal.



Wiring Tips:

- Do not route sensor cable in conduit containing AC power wiring. Electrical noise may interfere with sensor signal.
- Routing sensor cable in grounded metal conduit will help prevent electrical noise and mechanical damage.
- Seal cable entry points to prevent moisture damage.
- Only one wire should be inserted into a terminal. Splice double wires outside the terminal.
- The cable length from the sensor to the transmitter must not exceed 400 ft. (122 m)
- For best performance, ground the sensor SHIELD wire to a local earth ground at a point near the sensor.
(Experiment with connecting the sensor shield wire to different local ground points to identify best signal quality.)



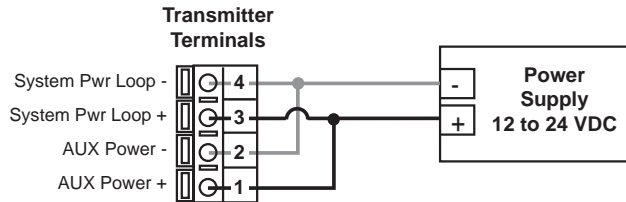
3.1 Sensor Input Connections



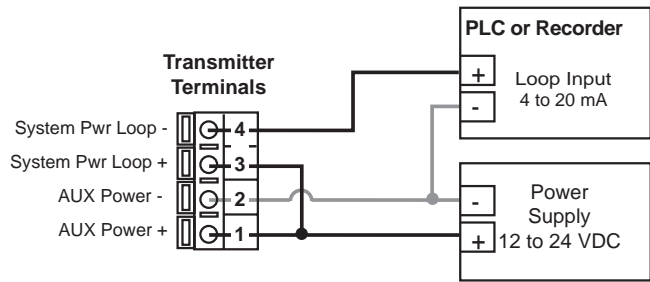
3.2 System Power/Loop Connections

Note: AUX (auxiliary) Power is required to power the Relays.

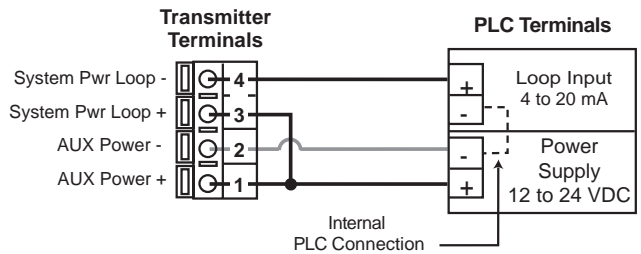
Stand-alone application, no current loop used



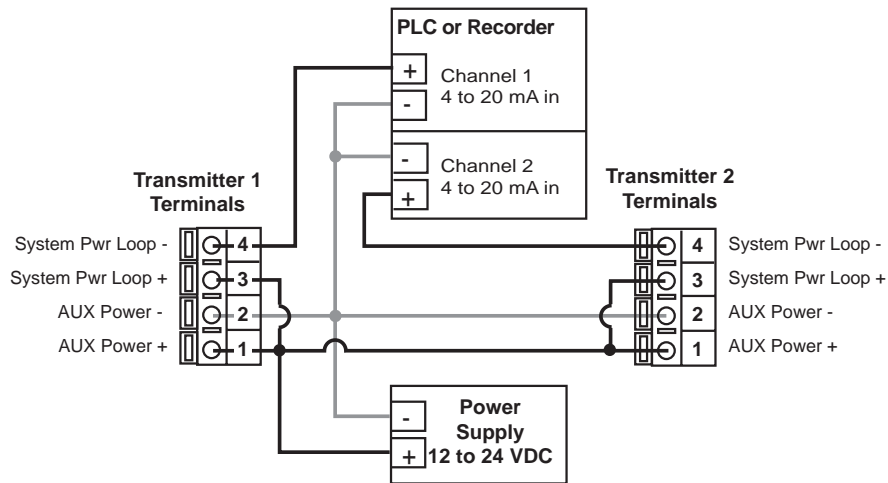
Connection to a PLC/Recorder, separate supply



Connection to a PLC with built-in power supply



Example: Two transmitters connected to PLC/Recorder with separate power supply



3.3 Relay Output

The relay output can be used as a switch that responds when the process value moves above or below a setpoint.

- **Low:**

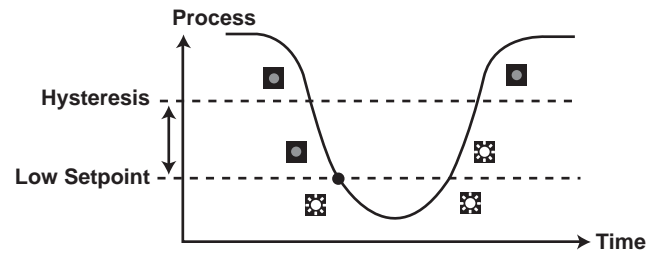
Output energizes when process variable is less than the setpoint. The output will be de-energized when the process variable moves above the setpoint plus the hysteresis value.



- **High:**

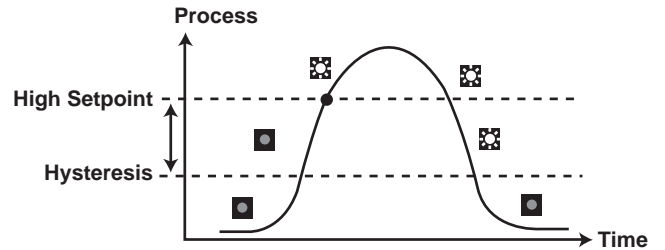
Output energizes when process variable is greater than the setpoint. The output will be de-energized when the process variable moves below the setpoint plus the hysteresis value.

- **Off**

The relays may be disabled if not being used.



Output energized 
Output de-energized 

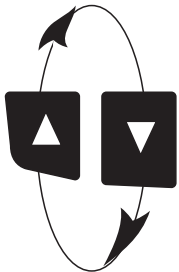


VIEW menu

- During normal operation, the ProcessPro displays the VIEW menu.
- When using the CALIBRATE or OPTIONS menus, the ProcessPro will return to the VIEW menu if no activity occurs for 10 minutes.
- To select the item you want displayed, press the UP or DOWN arrow keys. The items will scroll in a continuous loop.
- Changing the display selection does not interrupt system operations.
- No keycode is necessary to change display selection.
- Output settings cannot be edited from the VIEW menu.



View Menu



| Display | Description |
|---|--|
| Pressure: 60 PSI | Monitor the pressure input from the sensor. This is the permanent display. |
| The displays below are temporary. After 10 minutes the display returns to the permanent display. | |
| Loop Output: 12.00 mA | Monitor the 4 to 20 mA Loop output. |
| Last CAL: 02-10-09 | Monitor date for scheduled maintenance or date of last calibration. (See description in Calibrate Menu.) |

ProcessPro Editing Procedure:

Step 1. Press and hold ENTER key:

- 2 seconds to select the CALIBRATE menu
- 5 seconds to select the OPTIONS menu.

Step 2. The Key Code is UP-UP-UP-DOWN keys in sequence.

- After entering the Key Code, the display will show the first item in the selected menu.

Step 3. Scroll menu with UP or DOWN arrow keys.

Step 4. Press RIGHT ARROW key to select menu item to be edited.

- The first display element will begin flashing.

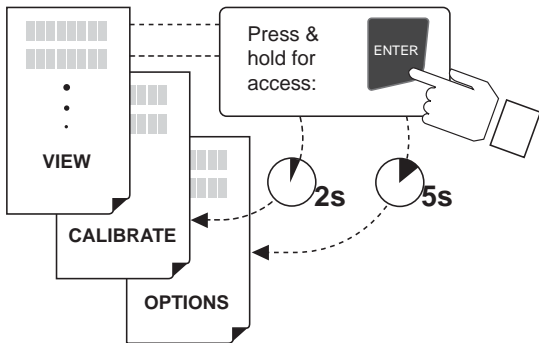
Step 5. Press UP or DOWN keys to edit the flashing element.

- RIGHT ARROW key advances the flashing element.

Step 6. Press ENTER key to save the new setting and return to Step 3.

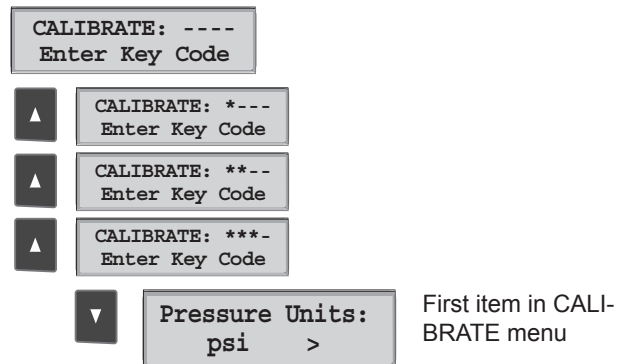
Notes on Step 1:

- The View Menu is normally displayed.
- The CALIBRATE and OPTIONS menus require a KEY CODE.




Notes on Step 2:

If no key is pressed for 5 minutes while display is showing "Enter Key Code", the display will return to the VIEW menu.

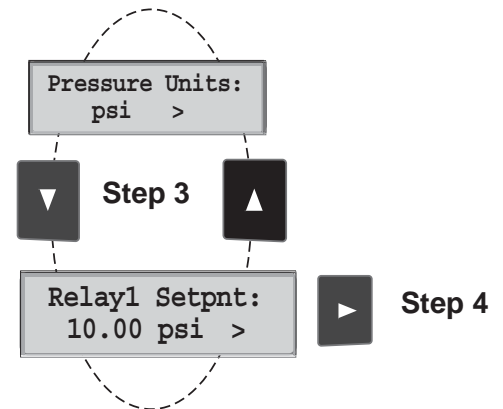


Notes on Steps 3 and 4:

- Refer to pages 6 and 7 for complete listing of menu items and their use.
- From the Step 3 display, pressing the UP and DOWN keys simultaneously will return the display to the VIEW menu.
- If no key is pressed for 10 minutes, display will also return to the VIEW menu.



Step 3: Finished Editing?
Press the UP and DOWN keys simultaneously after saving the last setting to return to normal operation.




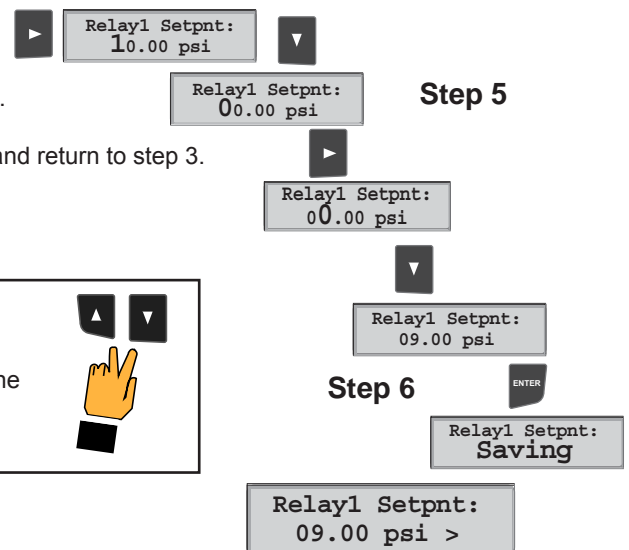
Notes on Steps 5 and 6:

- All output functions remain active during editing.
- Only the flashing element can be edited.
- RIGHT ARROW key advances the flashing element in a continuous loop.
- Edited value is effective immediately after pressing ENTER key.
- If no key is pressed for 10 minutes unit will restore the last saved value and return to step 3.
- Step 6 (pressing ENTER key) always returns you to Step 3.
- Repeat steps 3-6 until all editing is completed.

Step 5: Made an Error?

Press the UP and DOWN keys simultaneously while any element is flashing. This will recall the last saved value of the item being edited and return you to Step 3.





Calibrate Menu

| Display (Factory settings shown) | Description |
|---|---|
| Pressure Units: psi > | Select Pressure units for both input channels: psi, bar or kPa. |
| Set: Pressure | Provides a maximum 5 psi offset to match 8450 to external reference. Enter "-999" to restore the original Factory calibration value. Changes to this setting will become effective when the display exits the Calibrate menu. |
| Loop 1 Range: psi 0.0 → 100.0 > | Check the 2450 Sensor instructions for the range capability of your sensor. Be sure to modify this setting if you change the Pressure Units. |
| Relay 1 Mode: Low > | Select the desired mode of operation for the relay #1 output. Options available are High or Low. The signal may be disabled (Off) if not used. |
| Relay 1 Setpnt: 10.0 psi > | In Low or High Mode, the relay output #1 will be activated when the pressure reaches this value. Be sure to modify this setting if you change the Pressure Units. |
| Relay 1 Hys: 5 > | The relay output will be de-energized at Setpoint ± Hysteresis, depending on High or Low Setpoint selection. |
| Last CAL: 2-10-09 | Use this "note pad" to record important dates, such as annual recertification or scheduled maintenance. |

All relay settings repeat for Relay 2.

Options Menu

| Display (Factory settings shown) | Description |
|-------------------------------------|--|
| Contrast: 3 > | Adjust the LCD contrast for best viewing. A setting of 1 is lowest contrast, 5 is highest. Select lower contrast if the display is in warmer ambient surroundings. |
| Decimal ***** > | Set the decimal to the best resolution for your application. The display will automatically scale up to this resolution. Select *****, *****, **.*, *.*** or *.**** |
| Averaging Off > | OFF provides the quickest output response to changes in pressure. Longer averaging period produces more stable display and output response. |
| Loop Adjust 4.00 mA > | Adjust the minimum and maximum current output. Use this setting to match the system output to any external device. The display value represents the precise current output. Adjustment limits: • 3.80 mA < 4.00 mA > 5.00 mA • 19.00 mA < 20.00 mA > 21.00 mA |
| Loop Adjust 20.00 mA > | |
| Test Loop: > | Press UP or DOWN keys to manually order any output current value from 3.6 mA to 21.00 mA to test current loop output. |
| Test Relay 1: > | Press UP or DOWN keys to manually toggle the state of Relay 1. |
| Test Relay 2: > | Press UP or DOWN keys to manually toggle the state of Relay 2. |

Troubleshooting

| Display Condition | Possible Causes | Suggested Solutions |
|-----------------------------------|--|--|
| Check Sensor? | <ul style="list-style-type: none"> • Sensor not wired properly. • Sensor connected to 8450 while power is on. • Defective sensor. | <ul style="list-style-type: none"> • Correct sensor wiring. • Recycle power with all sensors connected. • Replace defective sensor. |
| Too much error CHECK SENSOR | The value entered in Set Pressure field is greater than 5 psi deviation from sensor input. (The 8450 allows a maximum of 5 psi calibration offset.). | <ul style="list-style-type: none"> • Confirm calibration values. • Remove sensor from installation, check 8450 reading (should be zero). If necessary, Set Pressure to zero, reinstall sensor, then recalibrate. |
| Reset to Factory Calibration | Value in SET PRESSURE field is -999. | Entering "-999" in this field will remove all user calibration input and restore the factory values. |
| Relay is always activated | <ul style="list-style-type: none"> • Hysteresis value too large • Defective transmitter | <ul style="list-style-type: none"> • Change the hysteresis value • Replace transmitter |
| SETUP READ ERROR Press Any Key | Memory fault occurred. | <ul style="list-style-type: none"> • Press any key to reload factory presets. • Reprogram all setpoints. • If this message appears again, replace the 8450. |

Ordering Information

| Mfr. Part No. | Code | Description |
|---------------|-------------|--|
| 3-8450-1 | 159 000 041 | Pressure transmitter, Field mount |
| 3-8450-1P | 159 000 042 | Pressure transmitter, Panel mount |
| 3-8450-2 | 159 000 043 | Pressure transmitter, Field mount with relays |
| 3-8450-2P | 159 000 044 | Pressure transmitter, Panel mount with relays |
| 3-8450-3 | 159 000 045 | Pressure transmitter, Field mount with dual input/output |
| 3-8450-3P | 159 000 046 | Pressure transmitter, Panel mount with dual input/output |

Accessories

| Mfr. Part No. | Code | Description |
|---------------|-------------|---|
| 3-8050 | 159 000 184 | Universal mounting kit |
| 3-8052 | 159 000 188 | 3/4 in. Integral mounting kit |
| 3-8052-1 | 159 000 755 | 3/4 in. NPT mount junction box |
| 3-8050.395 | 159 000 186 | Splashproof rear cover |
| 3-8050.396 | 159 000 617 | RC Filter kit (for relay use) |
| 3-0000.596 | 159 000 641 | Heavy duty wall mount bracket |
| 3-5000.598 | 198 840 225 | Surface Mount Bracket |
| 3-9000.392 | 159 000 368 | Liquid tight connector kit for rear cover (includes 3 connectors) |
| 3-9000.392-1 | 159 000 839 | Liquid tight connector kit, NPT (1 piece) |
| 3-9000.392-2 | 159 000 841 | Liquid tight connector kit, PG13.5 (1 piece) |



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