



## CAUTION!

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

## Contents

1. Installation
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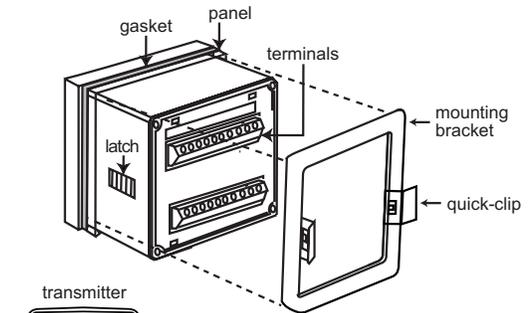
## 1. Installation

The transmitter is available in three versions: a panel mount version, an integral (pipe mount) version, and a universal assembly for installation near the sensor.

### 1.1 Panel Installation

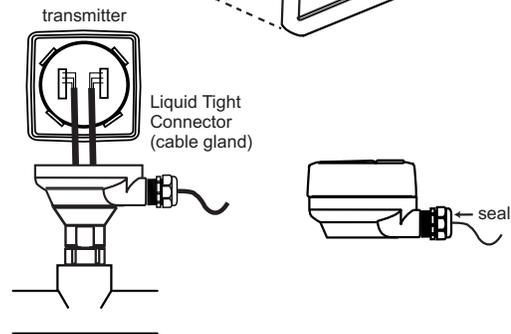
The Panel Mounting kits are supplied with the hardware to install instrumentation into panels and maintain a NEMA 4X watertight seal.

1. Punch out panel and de-burr edges. 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. Connect wires to terminals.
5. To remove, secure instrument temporarily with tape from front or grip from rear of instrument. DO NOT RELEASE. Press quick-clips outward and remove.



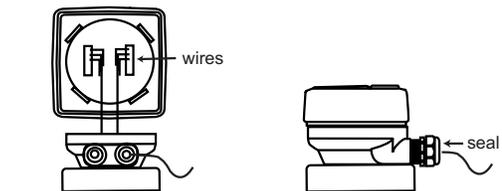
### 1.2 Integral Assembly (3-8052)

1. Punch out conduit ports if necessary.
2. Connect sensor to integral adapter. Push and twist-lock integral adapter to conduit base and secure with locking ring and screw.
3. Mount unit in pipe. Route cable through cable gland and connect to transmitter.
4. Close unit and secure. Seal cable entry.



### 1.3 Universal Assembly (3-8050)

1. Install transmitter base
2. Connect wires to transmitter.
3. Close unit and secure with push and twist lock. Seal cable entry.



## 2. Specifications

### General

Compatibility: +GF+ SIGNET 3-2350-1 or -2 Temperature Sensors

Accuracy:  $\pm 0.5^\circ\text{C}$

Enclosure:

- Rating: NEMA 4X/IP65 front
- Case: PBT
- Window: Polyurethane coated polycarbonate
- Keypad: Sealed 4-key silicone rubber
- Weight: Approx. 325g (12 oz.)

Display:

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

### Environmental

Operating temperature:  $-10$  to  $70^\circ\text{C}$  (14 to  $158^\circ\text{F}$ )

Storage temperature:  $-15$  to  $80^\circ\text{C}$  (5 to  $176^\circ\text{F}$ )

Relative humidity: 0 to 95%, non-condensing

### Standards and Approvals

- CSA, CE, UL listed
- Manufactured under ISO 9001

### Electrical

Sensor Input: Range:  $-10$  to  $100^\circ\text{C}$

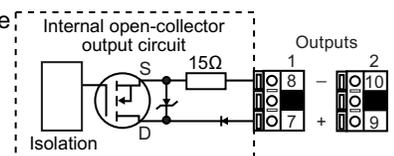
Current outputs (2):

- 4 to 20 mA, isolated, fully adjustable and reversible
- Power: 12 to 24 VDC  $\pm 10\%$ , regulated, 60 mA max current
- Max loop impedance:  $50\ \Omega$  max. @ 12 V,  $325\ \Omega$  max. @ 18 V,  $600\ \Omega$  max. @ 24V

- Update rate: 200 ms
- Accuracy:  $\pm 0.03\ \text{mA}$

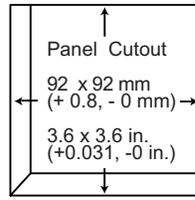
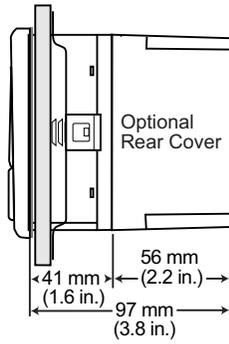
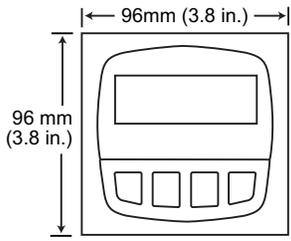
Open-collector outputs (2 each): Hi, Lo, Pulse Programmable

- Open-collector, isolated, 50 mA sink or source, 30 VDC max. pull-up voltage
- Hysteresis: User adjustable

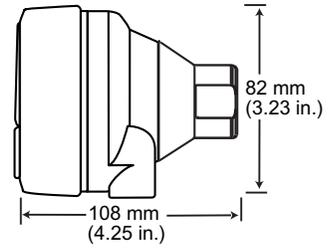
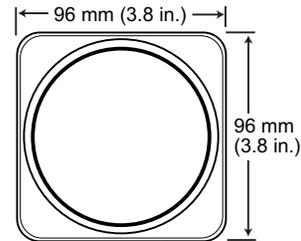


## Dimensions

### Panel Mount



### Field Mount



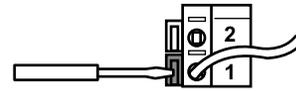
## 3. Electrical Connections



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.
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.

Terminals	Description
1. AUX 1+	12-24 VDC
2. AUX 2-	

### System Power/Loop

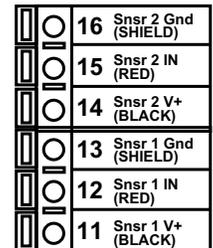
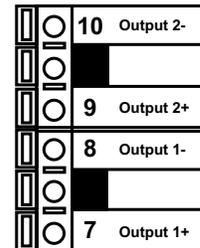
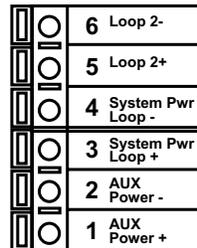
3. System Power/Loop 1 + 12-24 VDC  $\pm 5\%$ , system power and current loop connections.
4. System Power/Loop 1- Max. loop impedance: 50  $\Omega$  max @ 12 V, 325  $\Omega$  max @ 18 V
5. Loop 2+
6. Loop 2- 600  $\Omega$  max. @ 24 V.

### Open Collector Output

7. Output 1+
  8. Output 1 -
  9. Output 2+
  10. Output 2-
- Open-collector transistor output programmable as:
- High/Low alarm with adjustable hysteresis
  - Proportional pulse output (0-400 pulses/min)
  - Disable (Off) selection

### Preamplifier/Sensor Input

11. Black (Sensr 1 V+)
12. Red (Sensr 1 IN)
13. Silver (Sensr 1 Gnd)
14. Black (Sensr 2 V+)
15. Red (Sensr 2 IN)
16. Silver (Sensr 2 Gnd)

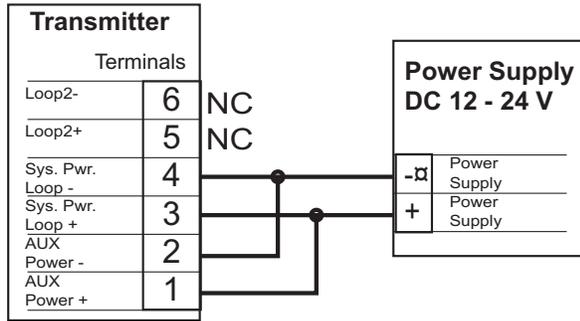


### Wiring Tips:

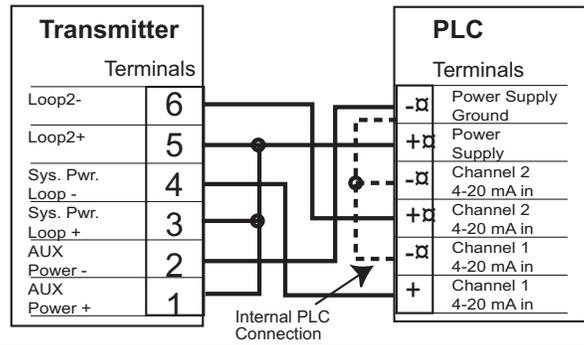
- Do not route sensor cable in conduit containing AC power wiring - electrical noise may interfere with sensor signal.
- Routing sensor cabling in grounded metal conduit may prevent moisture damage, electrical noise, and mechanical damage.
- Seal cable entry points to prevent moisture damage.
- When placing two wire ends into a single terminal, solder or crimp ends together.

### 3.1 System Power/Loop Connections

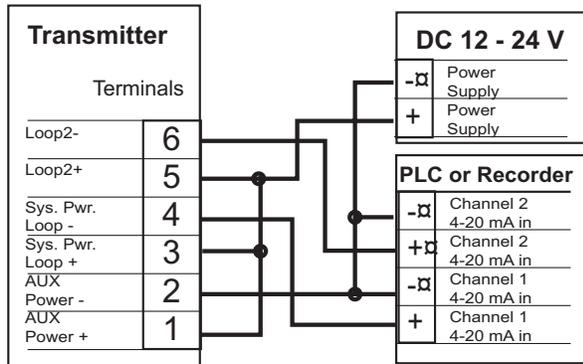
Stand-alone application, no current loop used



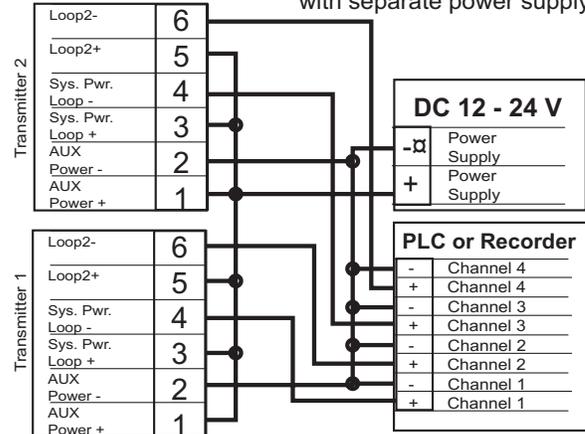
Connection to a PLC with built-in power supply



Connection to a PLC/Recorder, separate supply



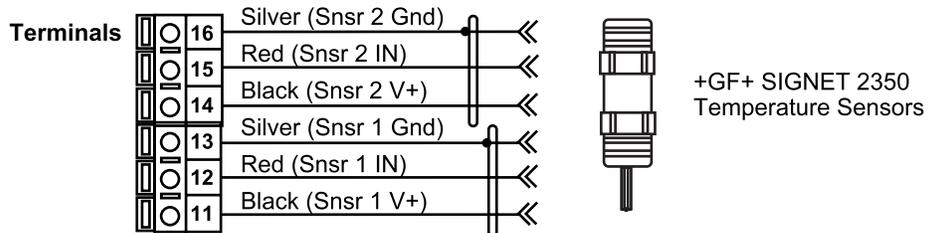
Example: Two transmitters connected to PLC/Recorder with separate power supply



### 3.2 Sensor Input Connections

Wiring Tip:

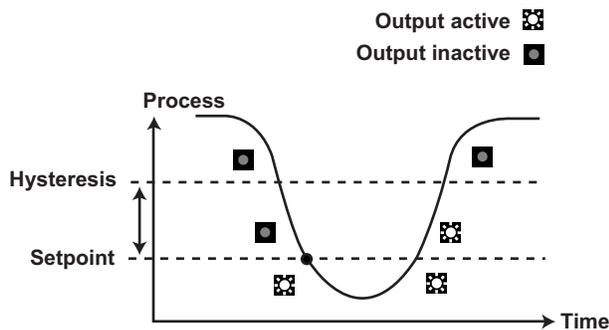
Do not route sensor cable in any conduit containing AC power wiring - electrical noise may interfere with the signal.



### 3.3 Open Collector Functions

- **Low:** Output triggers when process variable is less than setpoint.
- **High:** Output triggers when process variable is higher than setpoint.

Example: In Low Alarm Mode Operation, the output becomes active when the process drops below the setpoint, and becomes inactive when the process rises above the setpoint plus hysteresis. The opposite is true for High Alarm Mode.

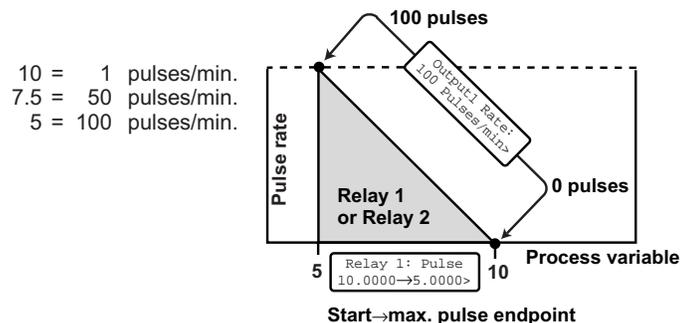


- **Off:** Disables output pulse.

#### • Proportional Pulse Mode Operation

The output emits a 100 mS pulse (simulated contact closure) at rate defined by the Output, Pulse Range, Output Rate, and the process condition (0 to 400 pulses/minute, as programmed)

Example: As the process falls below 10 the output will start pulsing in relation to the process value, the max pulse endpoint and the programmed pulses/min. Pulse rate will increase as the process approaches the programmed endpoint.



### 3.4 Differential Mode (2 Sensor Inputs Required)

The selected open-collector or current output is based on the difference of Sensor 1 minus Sensor 2. To enable differential mode, the selected output's "Source" selection must be set to differential mode "DF", "DT", or "DP".

Sensor 1 - Sensor 2 = Difference

1. Unit of measure is based on Sensor 1.
2. Decimal is based on Sensor 2. Sensor 2 should be the smallest unit measured or negative values will be generated.
3. Difference calculated in units only; not percentage.

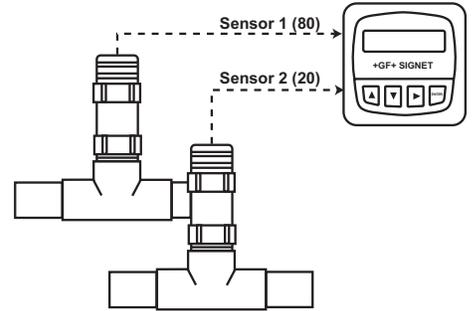


For pressure and temperature transmitters ensure Sensor 1 is equal to ID 1:

Sensor 1 - Sensor 2  
Difference = 60

Example: 4-20 mA  
Loop1 Range: 0-120  
Loop1: = 12.00 mA

Example: Output  
Output1 Mode: Low  
Output1 Setpoint: 70  
Output1 = ON



## 4. Menu Functions

**VIEW Menu:** is displayed during standard operation.

- Press UP or DOWN buttons to view process parameters.
- Press UP and DOWN buttons at the same time, to exit any other display and return to VIEW menu.
- Display will return to VIEW menu in 10 minutes unless a key is pressed.

**CALIBRATE Menu:** contains display setup and output parameters. A security code feature prevents unauthorized tampering. To access CALIBRATE menu:

- Press ENTER button for 2 seconds to display:
- Press UP, UP, UP, DOWN buttons in sequence to display:

CALIBRATE: ----  
Enter Key Code

CALIBRATE: XXXX  
Enter Key Code

**OPTIONS Menu:** contains setup and display features for minor display or output adjustments. To access OPTIONS menu:

- Press ENTER button for 5 seconds to display:
- Press UP, UP, UP, DOWN buttons in sequence to display:

OPTIONS: ----  
Enter Key Code

OPTIONS: XXXX  
Enter Key Code

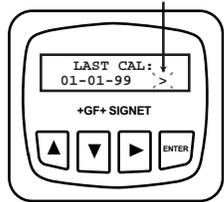
### Menu Tips

- Right button scrolls to right, from top to bottom row, and allows editing when ">" symbol is shown.
- In CALIBRATE or OPTIONS menus, the transmitter will continue to measure and control outputs. When > is pressed, the input value is held at the last measured process value.
- When sensor is not connected, unit will display CHECK SENSOR and any output controlled by sensor will be at 3.6 mA or OFF.

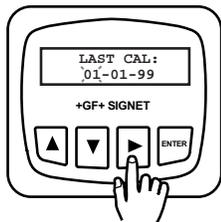
### Example

To change date, first enter CALIBRATE menu (Press ENTER button for 2 seconds; Press UP, UP, UP, DOWN buttons in sequence) Once in CALIBRATE menu, press UP button 1 time.

1. Display shows right arrow



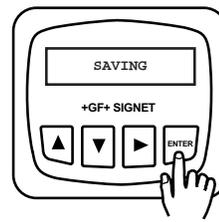
2. Press RIGHT button to display "01" blinking



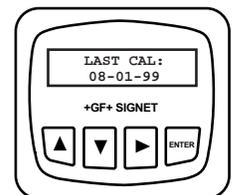
3. Press buttons to scroll through numbers.



4. Press ENTER button to save



5. Display now reads new date









## **+GF+ SIGNET**

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