

# Application Note

Application Note: 101405B

**KAYDEN**<sup>®</sup>  
I N S T R U M E N T S

## Displaying the 4-20 mA via Panel Meter on the CLASSIC 800

**Application** How to demonstrate the 4-20 mA analog output feature on the Kayden CLASSIC 800 series using a panel meter

**Product** Kayden CLASSIC 800 Series Thermal Dispersion Flow, Level, Interface & Temperature Switch & Transmitter

- The Kayden CLASSIC supports an analog output current loop (4-20 mA). This signal is an analog representation of the thermal signal as displayed on the Thermal Signal Bar Graph on the Display Panel of the Kayden CLASSIC.
- Please note that the 4 - 20 mA output signal corresponds to the scaled thermal signal view as determined by the range (LED - 0 and LED - 100 pointers).
- The 4-20 mA signal may be displayed either as forward-acting (ascending 4-20 mA) or reverse-acting (descending 20-4 mA).
- To view or adjust the 4-20 mA output current mode: (refer to the Quick Setup Guide or Product Manual)
  1. Press and release the SET button until the Fault LED is flashing & the Run Mode LED is off.
  2. The Thermal Signal Bar Graph now shows the 4-20 mA Output Mode.
    - a. For forward-acting/ascending (0% = 4 mA) the 0 - 25% LEDs are illuminated.
    - b. For reverse-acting/descending (100% = 4 mA) the 75 - 100% LEDs are illuminated.

**Connect a Panel Meter to display the 4-20 mA analog output feature on the Kayden CLASSIC 800. (This step is required only when connecting a meter to demonstrate the 4-20 mA analog output signal. These instructions are not part of the setup for the Kayden CLASSIC 800.)**

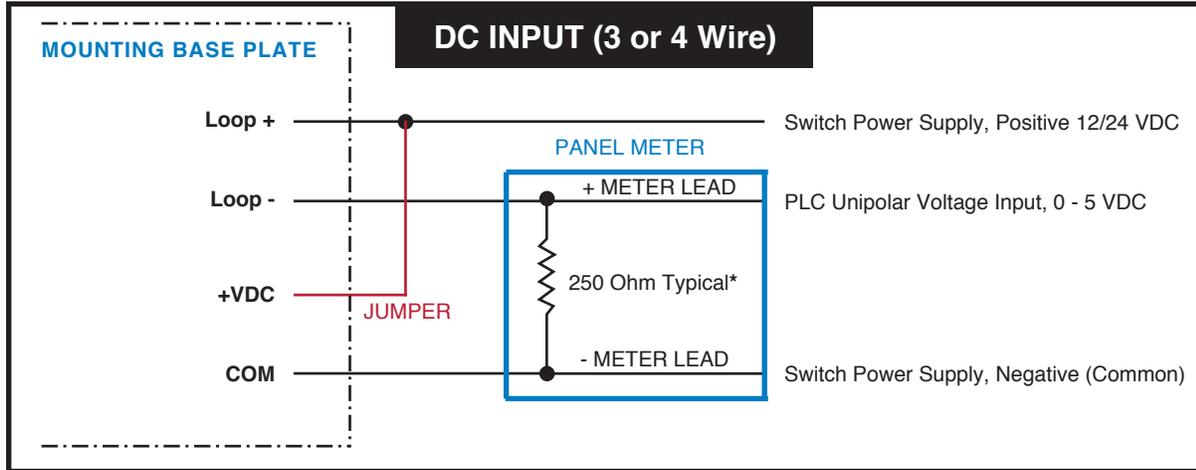
**To demonstrate the 4-20 mA analog output feature of the Kayden CLASSIC 800 you will need:**

1. A Kayden CLASSIC 800 with the DC input power adapter.
2. The Quick Setup Guide or Product Manual for the CLASSIC 800. (May be downloaded from [kayden.com/documentation](http://kayden.com/documentation).)
3. A small (3-4") length of (22 g.) insulated wire for a jumper.
4. Any small panel meter that reads mA (250 ohm load).

**Connect your panel meter as follows:**

1. Remove the Kayden CLASSIC Electronics Module from the enclosure to permit access to the wiring terminals in the base plate inside the enclosure.
2. Connect the jumper wire between LOOP+ and +VDC.
3. Connect the positive lead from the panel meter to LOOP-.
4. Connect the negative lead from the panel meter to -COMMON.
5. Re-install the Electronics Module:

- a. With the enclosure right-side-up (conduit connection facing down), tuck the excess cable behind the LEFT SIDE of the base plate starting at the top.
- b. Making sure that all wires and the cable are not covering the connectors, give the Electronics Module 1/4 turn ccw to keep the cable between the connectors.
- c. GENTLY push the Kayden CLASSIC Electronics Module into place. You should feel it click home with minimal force. If it will not seat, check the cable.



1. 4-20 mA output is passive (opto-isolated)
2. \* 4-20 mA output current may be measured as a 1-5V voltage across a 250 Ohm resistor.



Display Panel

**Display Panel Indicators:**

- Relay 1** On steady when Relay 1 is energized
- Relay 2** On steady when Relay 2 is energized
- Fault** Indicates a self-test error or fault condition
- Set Point 1** On steady when viewing Set Point 1
- Set Point 2** On steady when viewing Set Point 2
- Run Mode** Flashing when switch is operating
- Bypass** Flashing when the Start-up Bypass Timer is active
- Thermal Signal** Displays Thermal Signal

**The Thermal Signal increases as:**

- Flow** The flow rate increases
- Level** The sensor is submerged
- Interface** The sensor is submerged by the second liquid of greater thermal conductivity

**Applicable CLASSIC® 800 Models**



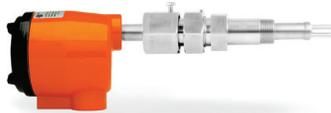
**CLASSIC® 810**



**CLASSIC® 812**



**CLASSIC® 814**



**CLASSIC® 816**



**CLASSIC® 830**



**CLASSIC® 832**

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