

Process Indicator



Micro Motion

FISHER-ROSEMOUNT™ Managing The Process Better.™

PI 4-20 Process Indicator

The Micro Motion® PI 4-20 Process Indicator is a simple, compact digital converter for indication of flow, density, or temperature when used with any Micro Motion Coriolis flowmeter. The PI 4-20 converts the 4-20 mA analog output signal from the transmitter to a scaled digital readout on a 3½-digit liquid crystal display (LCD) that is ½ inch (13mm) high.

The PI 4-20 is powered by the 4-20 mA current in the wiring loop. No other power is required. The readout can be scaled to any desired engineering unit of measure, with zero based at 4 mA. The decimal point can be set to any position.

The PI 4-20 is available in a standard housing that fits a 2¼-inch (57mm) square cutout in a panel of any thickness. An explosion-proof housing is optional.

Specifications

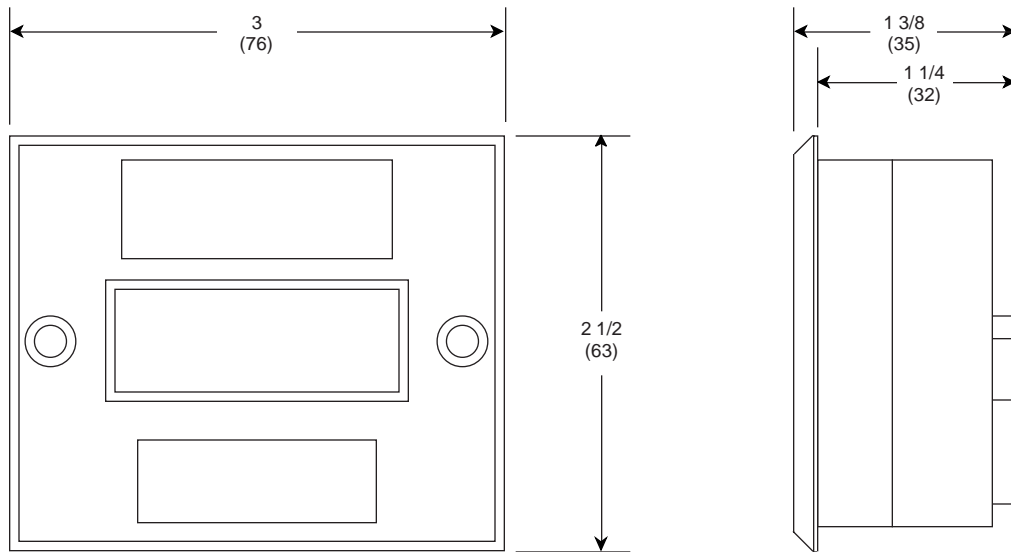
Display	3½-digit, ½ inch (13mm) high
Input signal	4 to 20 mA calibrated range 2 to 30 mA functional range
Input resistance	Equivalent to 250 ohm load (5V drop at 20 mA)
Output	LCD
Output range adjustability	0-200 to 0-1999 counts
Output zero adjustability	0 ±10% of output range
Linearity	±1 count
Operating temperature	32 to 130°F (0 to 55°C)
Storage temperature	–40 to 212°F (–40 to 100°C)
Power	Provided by 4-20 mA input signal from transmitter
Certification	
CSA	When housed in explosion-proof enclosure: Class I, Groups B, C, and D Class II, Groups E, F, and G Class III
Shipping weight	1 lb (0.45 kg)

PI 4-20 Installation

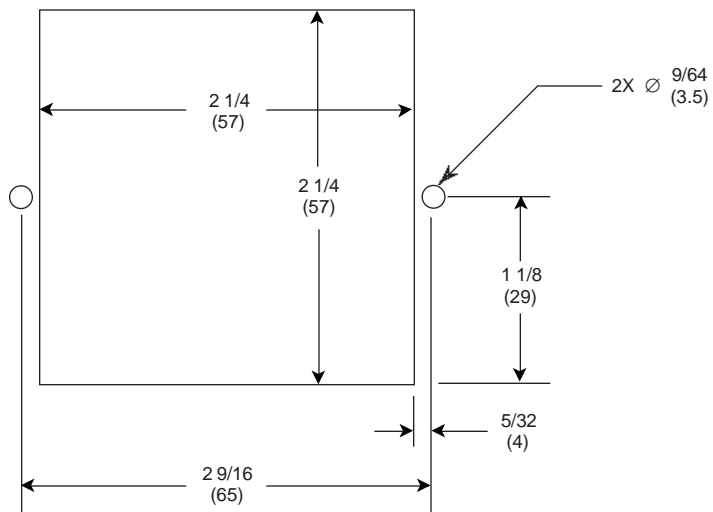
The PI 4-20 can be mounted in a panel of any thickness. Mounting dimensions are shown in Figure 1. Two self-tapping screws are provided for installation.

Figure 1

Dimensions in inches
(mm)



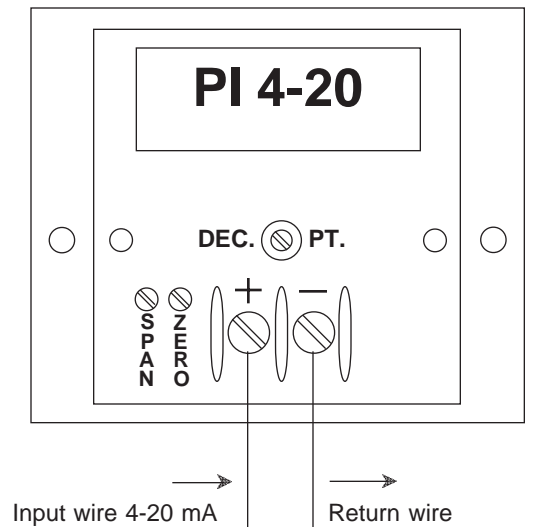
Panel cut-out



PI 4-20 Wiring

Connect a wire between the two screw terminals on the back of the PI 4-20 and the transmitter's 4-20 mA output terminals. Make sure to connect the input wire to the positive (left) terminal, and the return wire to the negative (right) terminal to ensure proper operation (Figure 2). Reversing the input and output connections will not damage the PI 4-20; however, the unit will not display.

Figure 2



Calibration

The factory calibrates the PI 4-20 if calibration information is supplied with the order. The factory also supplies the appropriate unit-of-measure labels for the PI 4-20 front panel. The PI 4-20 may be set to display the following range of numbers: 0-200 up to 0-1999. Indication always corresponds to the 4-20 mA input. Calibration adjustments are made by turning the span and zero potentiometers on the back of the PI 4-20.

Follow these steps if recalibration is necessary:

1. Apply 4 mA DC to the PI 4-20 and set the zero.
2. Apply 20 mA DC to the PI 4-20.
3. Adjust the span potentiometer until the LCD displays the desired full scale number.
4. Apply 4 mA DC to the indicator and check the zero reading. If you need to rezero, repeat steps 2 and 3.
5. Adjust the decimal point location using the switch on the back of the unit.

For example, assume the PI 4-20 is connected to a flowmeter and the flow rate is 0-4000 grams/minute. The 3½-digit indicator may be set to display 0-4.00 kilograms/minute. Apply 4 mA and set the zero. Apply 20 mA and set the display to 400. Verify the zero. Locate the decimal point to the right of the numeral 4 (i.e., 4.00).

If the 4 mA value of the display will represent a value other than zero for the process variable, such as density or temperature, the PI 4-20 must be specially ordered.

Load Limitations

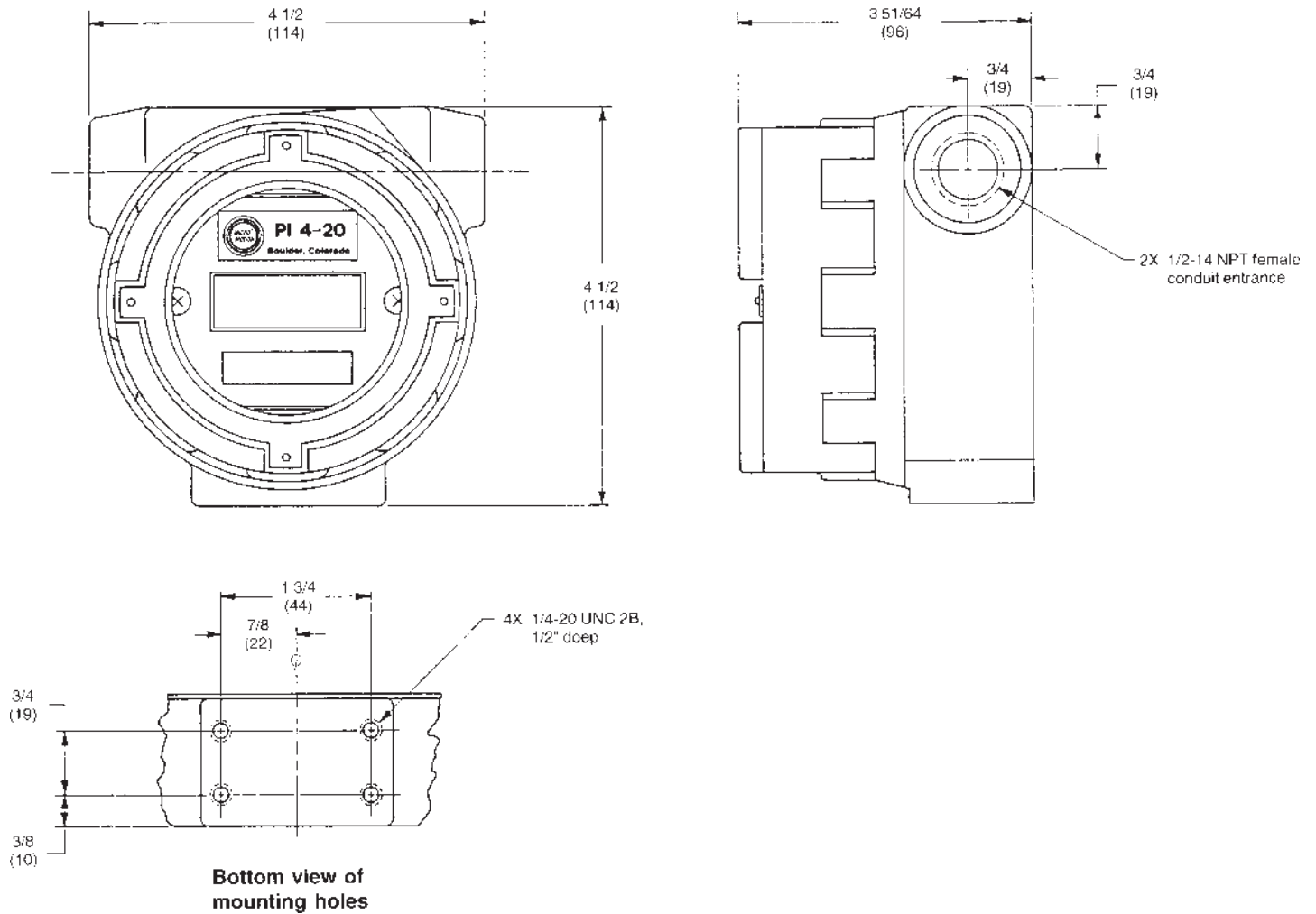
Because the PI 4-20 runs off the 4-20 mA loop and does not require a separate power supply, it uses some of the loop's voltage. It is equivalent to a 250 ohm load resistor in a 4-20 mA loop, dropping a maximum of 5 volts at 20 mA. If the transmitter's 4-20 mA output does not supply at least 5 volts to a load at full scale, then the PI 4-20 will not work properly.

PI 4-20 optional housing

The PI 4-20 may be housed in an optional explosion-proof NEMA 4 (IP65) housing, approved by CSA for installation in Class I, Groups B, C, and D; Class II, Groups E, F, and G; and Class III hazardous areas. The explosion-proof housing has two ½-inch NPT conduit entrances, which may be used to support the housing. If additional support is desired, four ½-inch-deep holes are located on the base for attaching a mounting bracket. The dimensions are shown in Figure 3.

Figure 3

Dimensions in inches
(mm)



PI 4-20 model number matrix

Model code	Housing code	Approval code	Description
PI4-20			PI 4-20 Process Indicator
	S		Standard
	E		NEMA 4 (IP65) explosion-proof housing
		M	Micro Motion standard (no approvals)
		C	CSA (available only with housing code E)
Example*			
PI4-20	E	M	

* Example: PI4-20 E M = Standard PI 4-20 Process Indicator; NEMA 4 (IP65) explosion-proof housing; no approvals.

Due to Micro Motion's commitment to continuous improvement of our products, all specifications are subject to change without notice.

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