

FEATURES

- Low-Cost 4/20mA Isolator/Booster
- Input drops only 1-1/4 volts (62 ohms)
- Output drives up to 1,200 ohms
- Applications Include Loop-Splitting
- Full 5000 Series Accuracy, Lower Cost
- DIN-Rail Mount, 1 Inch Wide
- AC or DC Power Options



DESCRIPTION

The Model JH5050 Process Current Isolator takes a 4/20mA dc input and provides an equal but isolated 4/20mA output. Isolation eliminates many ground loop and noise problems, while its 24-volt output drive capability “boosts” the signal to drive high-resistance loops. The input is filtered to minimize high-frequency noise and transients.

Although not a dual-output device, the JH5050 often can be used to split 4/20mA current loops at a cost lower than standard loop splitters. See the application note on back of this page.

This transmitter is a low-cost, single-range version of our full-featured JH5000 Series transmitter line. For other ranges or additional options, please refer to other JH5000 Series products.

HOW TO ORDER

Model Number: JH5050

Power:

Add suffix A (Model JH5050A) for AC power, D for DC power. Specify 115Vac, 230Vac, 12Vdc or 24Vdc.

Input Range:

4/20mA dc only.

Output Range:

4/20mA dc only.

Other Options:

Please see the rest of our JH5000 Series transmitters for a complete selection of ranges and options.

INSTALLATION

Model JH5050 snaps onto 35mm DIN rail. Connections are made to the front-panel terminals. The terminal strip unplugs to facilitate calibrating or replacing the transmitter.

CONNECTIONS

Connections to the 8 terminals (top to bottom) are:

- 1: Input plus.
- 2: Input minus.
- 3: No connection.
- 4: No connection.
- 5: Output plus.
- 6: Output minus.
- 7: Power (AC or, if DC power option, DC plus).
- 8: Power (AC or, if DC power option, DC minus).

QUICK-CHECK LEDs

Red-green Quick-Check LEDs give a quick indication of the relative output. Red is brighter at the low end, green at high, while at mid-scale both are approximately equal. Red-only indicates offscale low while green-only indicates offscale high.

SPECIFICATIONS

Input Range:

4/20mA dc. (62 ohms input resistance. 1.25V drop at 20mA.)

Output Range:

4/20mA dc. Output drive capability, 24V (1,200 ohms max. at 20mA output).

Accuracy: +/-0.1% of span.

Adjustability:

Zero and span each are adjustable approx. +/-15% of span.

Linearity:

+/-0.05% of span or better.

Response Time:

Under 100 milliseconds.

Isolation:

3-way (Power/Input/Output)
1,500Vac rms (2,100V peak).

Operating Temperature:

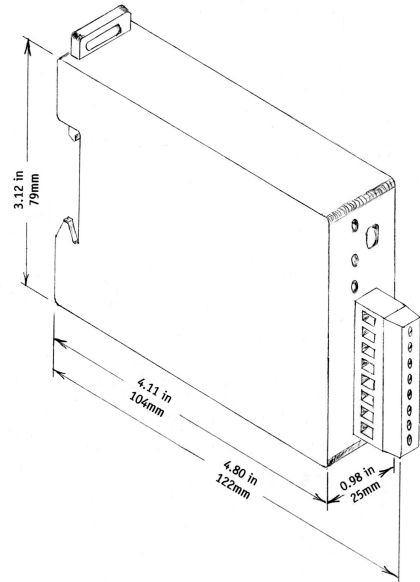
-10 to +60°C (14 to 140°F).

Temperature Stability:

+/-0.02% of span per °C, or better.

Power Requirements:

AC, 115 or 230Vrms, 50/60Hz,
2.5V-A. DC, 12 or 24V, 2.5W.



APPLICATION NOTE: SPLITTING LOOPS WITH THE JH5050

Users often specify dual-output 4/20mA loop splitters in their system applications. Common reasons include:

- The need for an output boost to drive several loads at once.
- The need to run simultaneous isolated current loops to two different systems.

These needs often can be met, and at lower cost, using the single-output JH5050. Here are two examples.

Figure 1 uses the JH5050 to duplicate the output of a standard current-sourcing transmitter. Its input, wired in series with the transmitter's output loop, requires only a 1-1/4 volt drop at 20mA. Most of the transmitter's output drive remains available for loop #1. The JH5050's output provides a second isolated current loop (loop #2) capable of driving up to 1,200 ohms (24 volts at 20mA).

Figure 2 boosts and splits a 2-wire transmitter's output. This example includes an intrinsic safety barrier for hazardous (explosive) area protection; however, the concept is equally valid without the barrier. The JH5050's input is wired in series with the 2-wire loop. The safety barrier forces the 2-wire loop to be grounded and limits the total load drive available. The second loop, provided from the JH5050, is fully isolated and capable of driving up to 1,200 ohms.

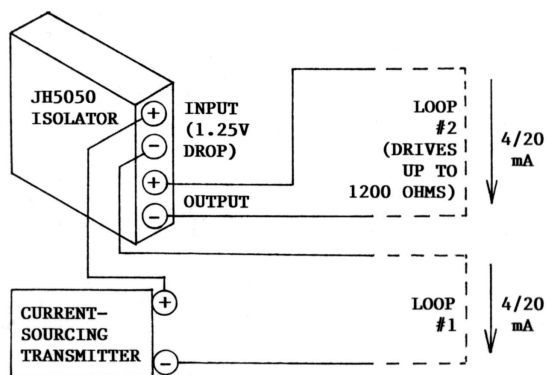


Figure 1: Powered Transmitter

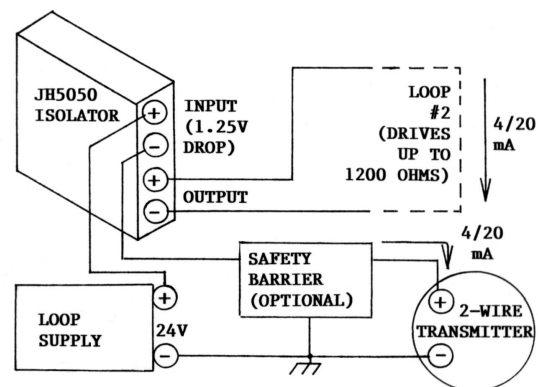


Figure 2: 2-Wire Transmitter

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