

## **DC INPUT SQUARE/SQUARE ROOT TRANSMITTERS PLUG-IN MODULES, FIXED RANGE**



**JH4430I: Square Function, Input/Output Isolated**

**JH4440I: Square Root Function, Input/Output Isolated**

- Take the Square or Square Root of a DC Signal
- Quick-Check Red/Green Output LEDs
- Industry Standard Pinouts (8-Pin Socket)
- Input and Output Ranges Need Not be Equal
- Input/Output Isolation Standard
- AC or DC Power Options

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The JH4430/4440 Series provides DC outputs proportional to the square or square root of the input. The square root function is most commonly used to linearize differential pressure flow signals. The input and output ranges need

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not be the same; for example, the input could be 0/10Vdc while the output could be 4/20mA. These are fixed-range devices, precisely calibrated to your specified ranges at the factory.

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.

Input/output isolation is standard. Available options include AC or DC power choices and reverse-action Option RT (decreasing output with increasing input).

### UNDERSTANDING THE INPUT FUNCTIONS

The square and square root are calculated on a percent-of-span basis. For example, using the square root function with a 4/20mA input range and 0/10V output range, if the input is at 0.5, or 50% (12mA) the output will be the square root of 0.5 which is 0.707 (70.7% of 10V), or 7.07 volts.

### ORDERING INFORMATION

**Model Number:**

**Select your model number from the list above. Add suffix –AC for AC power**

**Input Range:**

**Specify any DC voltage or current range allowed by the "Input Capabilities"**

**Output Range:**

**Specify any DC voltage or current range allowed by the "Output Capabilities"**

**Power:**

**Specify 115Vac, 230Vac, 12Vdc or 24Vdc.**

**Reverse-Acting Transmitter (decreasing output with increasing input)**

**Specify Option RT.**

**Loop-Powered Output:**

**4/20mA "current sink" output stage for connection to devices whose inputs p**

**Urethane Coating:**

**Specify Option "U".**

## INSTALLATION AND CONNECTIONS

These transmitters plug into any standard 8-pin circular ("octal") relay socket. JH Technology offers a socket suitable for DIN-rail or surface mounting (see the [Accessories](#) page). Pin connections are:

**Pin 1:** Power (AC or, if DC power option, DC plus).

**Pin 2:** No connection.

**Pin 3:** Power (AC or, if DC power option, DC minus).

**Pin 4:** No connection.

**Pin 5:** Input plus.

**Pin 6:** Input minus.

**Pin 7:** Output plus.

**Pin 8:** Output minus.

## DETAILED SPECIFICATIONS

**Voltage Input Capabilities:**

**100mV minimum span, +/-20V maximum input. Offset ranges are allowed.  
(Input Impedance: 200kohms or greater.)**

**Current Input Capabilities:**

**1mA minimum span, +/-100mA maximum input. Offset ranges are allowed.  
(Input Resistance: Varies with input range. Contact factory for details)**

**Voltage Output Capabilities:**

**1 volt minimum output span, -10 to +15V absolute limit. Offset ranges are allowed.**

**Current Output Capabilities:**

**1mA minimum output span, 0 to +25mA absolute limit. Positive offsets are allowed.**

**Accuracy (factory calibration)**

**+/-0.2% of span or better. For Model JH4440 (square root function) the input**

**Adjustability:**

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

**Response Time:**

**Under 100 milliseconds.**

**Isolation:**

**Power, 1,500Vac rms (2,100V peak). Input/Output 1,000Vac rms (1,400V peak).**

**Guaranteed Operating Temperature:**

**-10 to +60 deg. C (14 to 140 deg. F).**

**Temperature Stability:**

**+/-0.02% of span per deg. C, or better.**

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### **Power Requirements:**

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