

# JH6010I/6020I

## PLUG-N-PLAY AC INPUT TRANSMITTERS

### FEATURES

- Translates AC Voltages or Currents to DC
- Input Ranges from 50mV to 250Volts, 1mA to 5 Amps
- True-RMS Response Option Available
- Expanded Input Ranges Available
- Input/Output Isolation is Standard
- Quick-Check Red/Green Output LEDs
- AC or DC Power Options



### DESCRIPTION

JH6010I/6020I Series transmitters provide an isolated DC output proportional to an AC voltage or current input. Applications range from power monitoring to millivolt-level AC signals from sensors. Input/output isolation is standard to guard against shock hazards in power measurements and against ground loop errors. Input ranges may be zero based or may be expanded (for example, 50-150Vac).

The standard transmitter is average responding, calibrated to provide accurate RMS readings with sine wave inputs. Accuracy is better than 0.5% of span, but will be degraded with nonsinusoidal waveforms such as from SCR/Triac speed and power controllers or pulse-modulated motor drives. For accurate readings with nonsinusoidal waveforms use the true-RMS style.

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

### HOW TO ORDER

#### Model Numbers:

JH6010I: AC Voltage Input  
JH6010IR: AC Voltage Input,  
True RMS  
JH6020I: AC Current Input  
JH6020IR: AC Current Input,  
True RMS

#### Power:

Add suffix -AC for AC power or  
-DC for DC power. (Example:  
JH6020IR-AC.) Specify 115Vac,  
230Vac, 12Vdc or 24Vdc.

#### Input Range:

Specify any AC voltage or current  
range allowed by the "Input  
Capabilities" spec (see back).

#### Output Range:

Specify any DC voltage or current  
range allowed by the "Output  
Capabilities" spec (see back).

#### 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 provide 24Vdc loop  
excitation. Specify Option LPO.

#### Urethane Coating:

Specify Option U.

## INSTALLATION

These transmitters plug into any standard 8-pin circular (“octal”) relay socket. JH Technology offers part # DS008 for DIN-rail or Snap-Track mounting.

## CONNECTIONS

**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:** AC signal input.

**Pin 6:** AC signal input.

**Pin 7:** Output plus.

**Pin 8:** Output minus.

## TRUE-RMS OPTION

Standard transmitters use average-responding AC/DC converter circuitry calibrated for RMS sine wave response. Pure AC power and other sine wave inputs will be highly accurate. Nonsinusoidal waveforms, however, such as from SCR/Triac power or speed controllers (pulsed), will produce appreciable errors.

The true-rms option gives correct readings regardless of the waveform’s shape.

## CURRENT TRANSFORMER INPUTS

When monitoring the output of a current transformer *never* use current-input Model JH6020I. Unplugging the module will remove the transformer’s secondary load, resulting in potentially damaging or dangerous voltage spikes (up to several hundred volts).

Instead, use voltage-input Model JH6010I with an appropriate precision external shunt resistor. For 0/5 amps we recommend specifying a 0/250mVac input range with a 0.05 ohm, 0.1% 3 watt external shunt. We offer Part No. R0.05/DS008, a precision shunt resistor assembly preassembled to socket DS008. The socket snaps onto DIN rail or may be surface mounted using screws.

## 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

### Voltage Input Capabilities:

Model JH6010I/6010IR: 50mV rms minimum span, 250V maximum input. Offset ranges are allowed. (Input Impedance: 200kohms or greater.)

### Current Input Capabilities:

Model JH6020I/6020IR: 1mA rms minimum span, 5 Amps maximum input. Offset ranges are allowed. (Input voltage drop typically 0.1V at full scale. For exact specification for your range, contact factory.)

**Warning – see application note above regarding current transformer inputs.**

### Input Frequency:

40 to 1,000 Hz for specified accuracy.

### Voltage Output Capabilities:

1 volt minimum output span, -10 to +15V absolute limit. Offset ranges are allowed. Maximum output load, 10mA (1Kohm at 10V output).

### Current Output Capabilities:

1mA minimum output span, 0 to

+25mA absolute limit. Positive offsets are allowed, negative outputs are not. Output drive capability, 24V (1,200 ohms max. at 20mA output).

### Accuracy:

+/-0.5% of span or better.

### Adjustability:

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

### Response Time:

Under 200 milliseconds.

### Isolation:

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

### Operating Temperature:

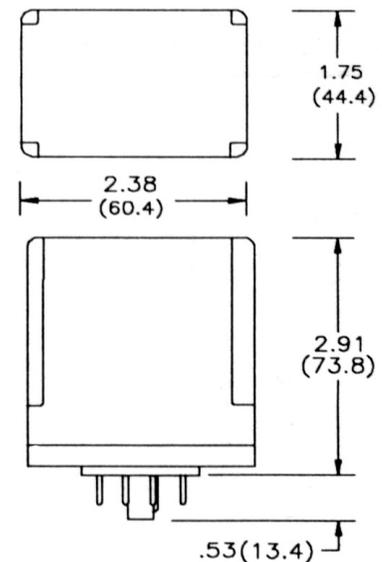
-10 to +60°C (14 to 140°F).

### 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.



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