

MM4300A

ISOLATED DC TO DC TRANSMITTER



FUNCTION

The MM4300A provides a DC output, fully isolated from input, line power and ground, proportional to a DC input. It is useful in eliminating ground loops and common mode signals.

The module includes filtering and conditioning to reduce susceptibility to transients and noisy operations. They utilize pulse width modulation to develop a pulse train with a duty cycle proportional to the input signal amplitude. This pulse train is coupled through a pulse transformer where the duty cycle data is converted to a proportional DC level in the output circuit.

TYPICAL APPLICATIONS

Eliminates ground loops and large common mode signals. Use for voltage/current scaling and conversion with isolation for buffering and noise reduction.

CALIBRATION CONTROLS

The MM4300A Isolator contains two calibration controls, zero and span (gain). These controls are accessed through the holes at the top of the Mighty Module case, and are screw driver adjusted.

ADJUSTMENTS

The isolated transmitter is precisely calibrated at the factory and does not normally require user calibration. If there is a need to recalibrate, proceed as follows:

Connect a calibrated source to the module input [**terminals 5 (+) and 6 (-)**].

Monitor the output of the module [**terminals 7 (+) and 8 (-)**] with an accurate digital meter.

Set the input signal to its low end, or zero, value and adjust the ZERO control to the proper low end output.

Increase the input signal to its full scale value and adjust the SPAN control for the high end output signal.

Repeat the procedure once or twice, the controls may interact slightly.

SPECIFICATIONS

INPUT RANGES

4/20mA or 0/10VDC

INPUT IMPEDANCE

Voltage
200 kilohms
Current
50 ohms

OUTPUT RANGE

Voltage
0/+10 VDC,
2 kilohms minimum load
Current
4/20 mA,
24 V compliance*

RESPONSE TIME

£100 ms

OUTPUT RIPPLE

(peak-to-peak)
<0.1% of span

ACCURACY

±0.1% of span

LINEARITY

±0.05% of span

COMMON MODE REJECTION

120 dB, DC to 60 Hz

ISOLATION, OUTPUT/INPUT BREAKDOWN

>500 megohms,
>1000 VAC rms

BREAKDOWN, POWER/CIRCUITRY

>1500 VAC rms

OPERATING TEMPERATURE

14°F to 140°F/
-10°C to 60°C

TEMPERATURE STABILITY

±0.02% of span
+30 µV/°C max

POWER

115 VAC ±10%,
50 or 60 Hz (2.5 W max)
24 VAC ±10%,
50 or 60 Hz (2.5 W max)
230 VAC ±10%,
50 or 60 Hz (2.5 W max)
24 VAC ±10%,
50 or 60 Hz (2.5 W max)
(DC Power Option)
12 VDC
(limits 10 VDC to 15 VDC)
(2.5 W max)
24 VDC
(limits 21 VDC to 32 VDC)
(2.5 W max)

*Compliance:

The Sum of all voltage drops in the output loop cannot exceed 24 V at rated current (1200 ohms @ 20 mA).

MOUNTING

The module is designed to plug into a standard 8-pin relay socket. (MP008) is a molded plastic socket suitable for mounting on a flat surface or snap into a 2 3/4 inch wide PVC track (TRK48).

A spring hold-down clip (CLP1) is available for installation where vibration may be a problem.

A DIN rail mounted socket (DMP008) is available for 35mm symmetrical DIN rail.

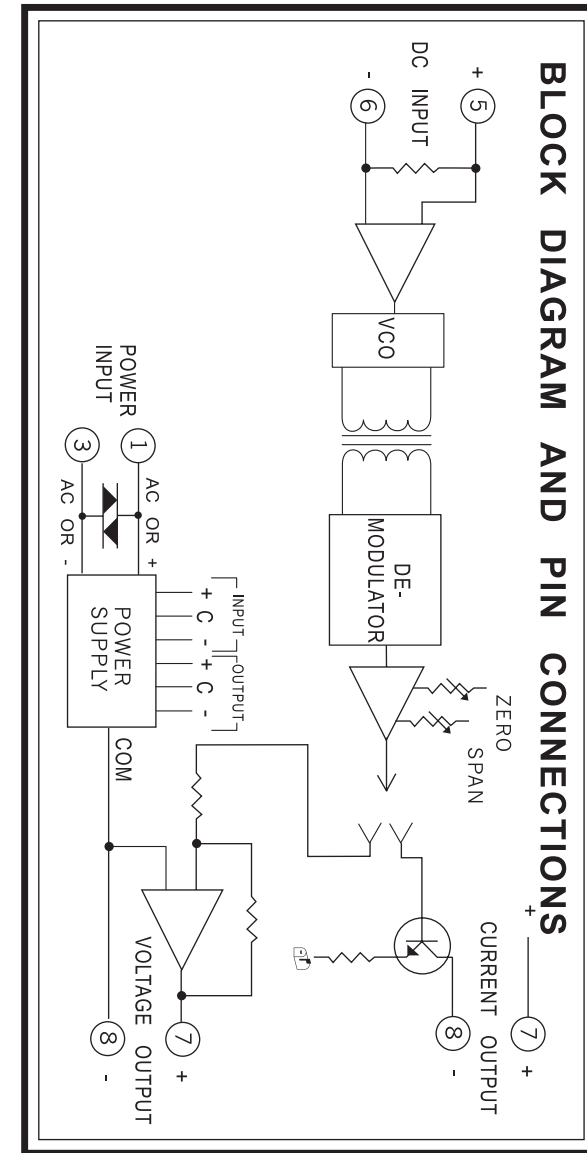
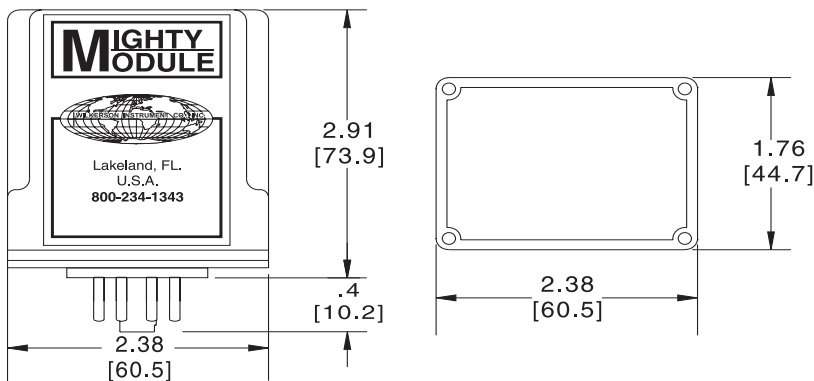
A Killark HK Series explosion-proof housing with dome and 8-pin socket is available (HKB-HK2D-8).

WARRANTY

The Mighty Module Series of products carry a limited warranty of 10 + 5 years. In the event of a failure due to defective material or workmanship, during the 10 year period, the unit will be repaired or replaced at no charge. For a period of 5 years after the initial 10 year warranty, the unit will be repaired, if possible, for a cost of 10 % of the original purchase price.

Relays are not covered by the warranty.

CASE DIMENSIONS INCHES [mm]



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