MM4100 & MM4100L THERMOCOUPLE TRANSMITTERS

The MM4100 is used to provide output voltages or currents proportional to a thermocouple (T/C) input signal. The basic model MM4100 provides an output proportional to the millivolt signal from the thermocouple, while linearized model MM4100L corrects the thermocouple's nonlinearity to provide an output proportional to temperature.

Both models provide cold-junction compensation via a solid-state sensor embedded in the thermocouple terminal strip.

Upscale or downscale burnout indication is provided. Upscale is standard and is provided if burnout protection is not specified.

MODEL NUMBERS

These instructions cover the following model numbers:

MM4100: Not linearized
- output proportional to input millivolts.

MM4100L: Linearized
- output proportional to measured temperature.

OPTIONS

The following options are available on the MM4100 and MM4100L:

DC Power Inverter-isolated 12 V or 24 V power

B (Thermocouples only) Standard burnout protection is upscale. Option B provides downscale output on burn-out.

U All circuit boards conformal coated for protection against moisture.

ISO Models MM4130 and MM4130L, described in separate instructions, provide optically-coupled input-output isolation.

CONTROLS

Two controls, ZERO and SPAN, are accessible from the top of the module. Additional controls inside the module are factory adjustments which should not be reset.

CALIBRATION

The MM4100 and MM4100L are shipped precalibrated, if there is a need to recalibrate, proceed as follows:

Refer to the instrument's label to determine your instrument's supply voltage and input and output ranges. Refer to the "Block Diagram and Pin Connections" for pin connections. Connect a precision DC voltage or current meter to the output.

Connect a calibration input to the terminal strip on the side of the module. If a thermocouple simulator is available, use it to provide the calibration input, connection it to the transmitter with the appropriate pair of thermocouple wires. Otherwise, use copper wires to connect a precision DC millivolt source to the input.

When a millivolt source and copper wires are used it will be necessary to measure and correct for the temperature at the transmitter's input connection. Using standard tables for your thermocouple, find the millivolt level corresponding to the temperature, subtract this voltage from the voltage given by the thermocouple table. Remember, calibration accuracy will be no better than the accuracy of this temperature measurement.

Using standard thermocouple tables, set the input to the low-end of the input range and adjust the ZERO control for the low-end output voltage or current. Increase the input to full scale and adjust the SPAN control for the full-scale output. Repeat until both readings are correct.

SPECIFICATIONS

INPUT IMPEDANCE
10 megohms

INPUT SPAN LIMITS
5 mV min; 3.5 V max

OUTPUT LIMITS
Voltage
-10 to +15 V, 10 mA
Current
50 mA, 24 V compliance

LINEARITY
In/Output, Non-linearized
±0.01% of span

LINEARIZER
(L version) J, K Thermocouple
better than 1°C
T Thermocouple
better than 1.5°C

TEMPERATURE STABILITY
±0.04% of span per °C

COMMON MODE REJECTION
120 dB, DC to 60 Hz

TEMPERATURE, OPERATING
0°C to 60°C/32°F to 140°F

POWER OPTIONS
115 or 230 VAC, 50 or 60 Hz
12 or 24 VDC
2.5 W max

MOUNTING

The module is designed to plug into a standard 8 pin relay socket. Power and output connections are made through the socket. The thermocouple input connects to the small terminal block on the side of the module (red wire to negative).

(MP008) is a molded plastic socket that can be mounted on a flat surface or snapped into 2¾ inch wide PVC track (TRK 48).

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

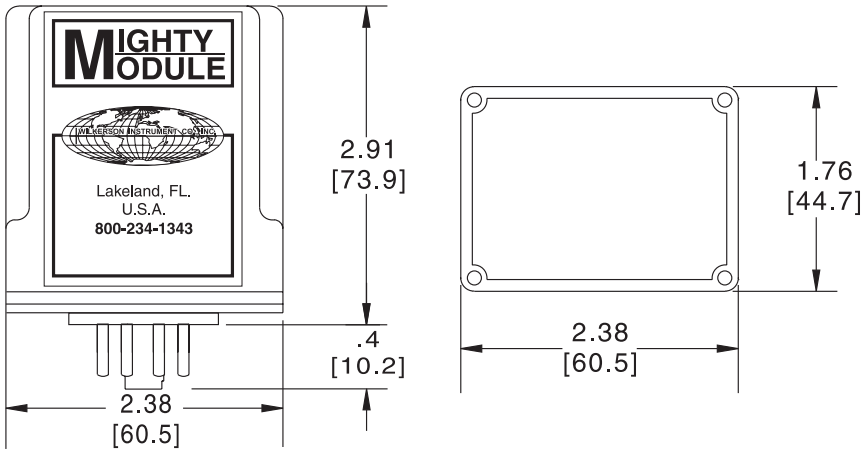
A DIN-rail mounted socket (DMP008) is available for 35mm symmetrical rail.

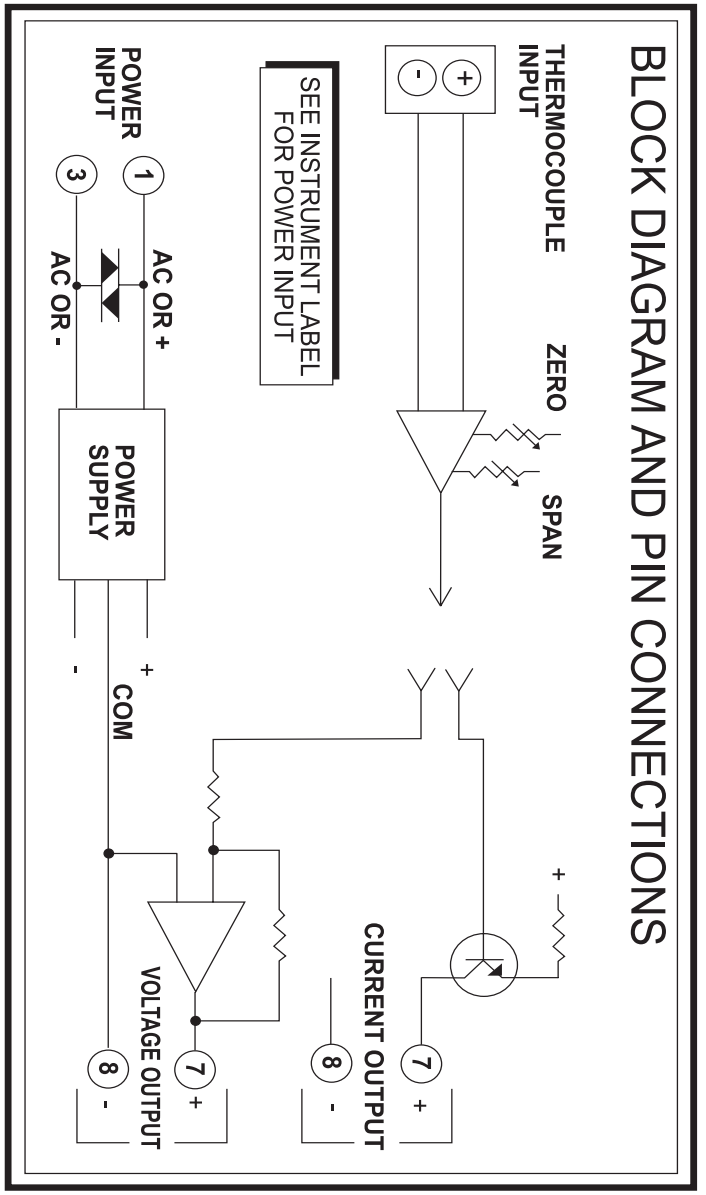
WARRANTY

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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