



MM4130 AND MM4130L

ISOLATED THERMOCOUPLE TRANSMITTERS

FEATURES

- Provides a Fully Isolated DC Output Proportional to any Thermocouple Input
- Analog and Digital Linearization Options Available
- Cold Junction Compensated
- 5 mV Minimum Input Span
- Unlimited* Choice of Input / Output Ranges
- Upscale Burnout Protection (Downscale Available)
- Choice of Power Options
- 10 Year Warranty

DESCRIPTION

The MM4130 provides a DC output voltage or current, fully isolated from input, line power and ground, proportional to a thermocouple input signal. It is useful in measuring temperatures with any type of thermocouple. Cold junction compensation is provided by a solid state temperature sensor embedded in the thermocouple terminal strip. All Wilkerson products are designed with RFI filters and lightning protection to reduce susceptibility to electrical noise and damage by lightning.

The module utilizes a feedback VCO to develop a pulse train with a duty cycle proportional to the input signal amplitude. This pulse train is coupled through an isolator where the duty cycle is converted to a proportional DC level in the output circuits. This isolated output eliminates ground loops, large common mode signals and other types of interference.

Upscale burnout protection is provided as standard. In the event the thermocouple opens, the transmitter output will go offscale high. Option B provides downscale burnout protec-

tion (transmitter output grows low).

The MM4130L provides a linearized output. Standard linearization uses analog circuitry, which has certain limitations. Its specifications are summarized in Table 1. Option LL, digital linearization, provides superior performance as listed under the specifications.

TYPICAL APPLICATIONS

Eliminates ground loops and common mode signals for temperature monitoring, control and data acquisition.

SPECIFICATIONS

INPUT RANGE

select any type thermocouple
(min span 5 mV)

OUTPUT RANGE

Voltage

select any range from -10 V to +15 V, 10 mA max load
(min. span 0.2V)

Current

select any range from 0 to 50 mA max., >24 V compliance
(1200 ohms max at 20 mA)
18 V compliance if full scale output > 20 mA

OUTPUT RIPPLE (Peak-to-Peak)

< 0.1% of span

ISOLATION

Output / Input
> 500 megohms
Breakdown Voltage
> 1000 VAC rms
Breakdown, Power / Circuitry
> 1500 VAC rms

ACCURACY

±0.1% of span at endpoints

LINEARITY, MM4130L

Standard Output / Temp - See Table

LINEARITY (Option LL)

Output / Temp
±2°C (3.6°F) or better
±0.5°C (0.9°F) for types
J, K, T, E or N if range is between
-200 and +200°C (-328 and +392°F)

COMMON MODE REJECTION

120 dB, DC to 60 Hz

OPERATING TEMPERATURE

14°F to 140°F / -10°C to 60°C

TEMPERATURE STABILITY

±(0.02% of span + 1.3 uV)/°C max

POWER

115 VAC ±10%, 50/60 Hz
(2.5 W max)

230 VAC ±10%, 50/60 Hz
(2.5 W max)

(DC Power Option)

24 VDC (limits 21-32 VDC)

12 VDC (limits 10-16 VDC)

Isolation, DC power supply to input
common: 10 megohms

* Within specified range limits.

MM4130L STANDARD LINEARIZATION ACCURACY, BASE-METAL THERMOCOUPLES			
T/C TYPE	ZERO BASED RANGES		LOW TEMP RANGES (HIGH END = 0°C)
	LIMIT FOR ±1% OF SPAN	LIMIT FOR ±2% OF SPAN	LIMIT FOR ±5% OF SPAN
E	0/500°C 32/392°F	0/1000°C 32/1832°F	-100/0°C -148/32°F
J	0/1000°C 32/1832°F	0/1200°C 32/2192°F	-100/0°C -148/32°F
K	0/800°C 32/1472°F Cannot linearize Type K Above 800°C (1472°F)		-100/0°C -148/32°F
N	0/500°C 32/932°F	0/1200°C 32/2192°F	-100/0°C -148/32°F
T	0/400°C 0/752°F	0/400°C 0/752°F	-100/0°C -148/32°F
MM4130L LINEARIZATION ACCURACY, PLATINUM THERMOCOUPLES			
T/C TYPE	ZERO BASED RANGES		ELEVATED-ZERO RANGES
B	- N.A. -		±3% of span for 500/1820°C (932/3308°F) ±1.5% of span for 800/1820°C (1472/3308°F)
R & S	±2.5% of span or better, any zero-based range		±1.5% of span or better, any range starting above 200°C (392°F)

ORDERING INFORMATION

POWER

- 115 VAC, 50/60 Hz Power
- 230 VAC, 50/60 Hz Power
- 24 VAC, 50/60 Hz Power
- 24 VDC, Power, Transformer Isolated
- 12 VDC, Power, Transformer Isolated

INPUT

Select Units

- Deg C Deg F

Enter Input

Zero Scale

Full Scale

Select Sensor

- JTC
- KTC
- RTC
- STC
- TTC
- ETC
- NTC
- BTC
- Other - Specify in Notes

Open Sensor Response

- Upscale Downscale

OUTPUT

Select Units

- VDC mADC

Enter Output

Zero Scale

Full Scale

Enter Output Logic

- Normal Acting
- Reverse Acting

OPTIONS

- Conformal Coating
- Option LL (MM4130L only)

TAGS

Specify Tag Numbers

Tag number is typed on product label at no charge.

Enter Tag Number(s)

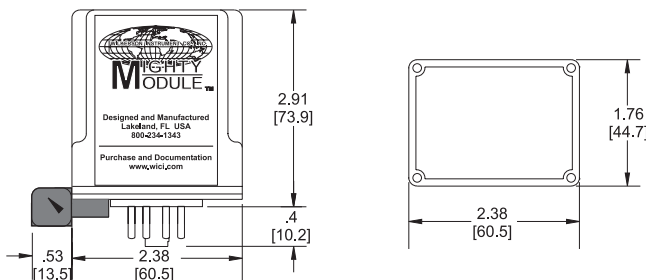
ACCESSORIES

MM4130 AND MM4130L

DR1	DIN-Rail, 35 mm Symmetrical, 39 inches (1 meter)	QTY _____
MP008	Plastic Socket, 8-pin Panel Mount or PVC Snap Track	QTY _____
TRK48	PVC Snap-Track, 4 ft. for MP008, MP011 & DMP8500	QTY _____
DMP008	DIN-Rail Mounting Socket, 8-pin, 35 mm Symmetrical Rail	QTY _____
CLP1	Holddown Assembly for MP008 and MP011	QTY _____
HKB-HK2D-8	Explosion-Proof Housing with MP008 Installed	QTY _____

DIMENSIONS

Inches [mm]



CONNECTIONS

PIN 1	Power AC L1 or DC +
PIN 2	No Connection
PIN 3	Power AC L2 or DC -
T/C Term +	Input +
T/C Term -	Input -
PIN 6	No Connection
PIN 7	Output +
PIN 8	Output -



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