



MAXIFLEX 8TC/mV Module

Model M1432 Individually Isolated 8 way Thermocouple Input Module.

DATASHEET



FEATURES

- Fits in any MAXIFLEX base I/O slot
- 8 individually Isolated Thermocouple/millivolt Inputs
- High isolation voltage rating for industrial applications
- Intelligent Module provides direct conversion to Temperature.
- Internal or external Cold Junction Compensation
- Four alarm set-points per input
- Removable Terminal Blocks
- Hot Plug-in
- In system automatic module detection

The M1432A 8TC module provides 8 thermocouple or millivolt inputs. The inputs are individually galvanically isolated. This intelligent module is software configurable, and allows each input to be configured for a different input type and range.

For temperature applications, the module will convert the thermocouple reading directly into degrees C or F to a resolution of 0.1 degrees. Thermocouple upscale/downscale burnout can be selected by setting a configuration bit in the module.

For millivolt inputs, the millivolt value can be read as either a scaled percentage value or the actual mV value as a signed integer to 2 decimal places. I.e 0.00% to 100.00% or -10.00 to +80.00mV. Over-range and under-range inputs are read as -32768 and 32767 respectively.

Each input has four software settable alarm/trip setpoints and a deadband value. The status of the alarm/trip signals is available as derived digital inputs

from the module.

High inter-channel galvanic isolation allows inputs to be connected to high common mode voltage sources without detrimental effect.

With the aid of an accurate DC millivolt source and the M1432A calibration software, the module can be field calibrated by the user if required. (Calibration of the internal thermocouple Cold Junction Compensation requires the removal of the LED cover, but is not normally required after factory calibration.)

The module may be inserted into any I/O slot in a Maxiflex system.

Inputs are terminated on plug-in screw terminals.

The module can be inserted or removed while the system is powered.

Auto-detection capability allows the CPU to recognise the presence of this module in the system.



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SPECIFICATIONS

Inputs

Quantity	8 isolated inputs Individually configurable for thermocouple or millivolts
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Thermocouple Inputs

Thermocouples	Each channel may be individually selected from the following types: Type E: -50°C to 1000°C Type J: -200°C to 750°C Type K: -200°C to 1300°C Type T: -150°C to 400°C Type N: -0°C to 1200°C Type B: 400°C to 1800°C Type R: -50°C to 1600°C Type S: -50°C to 1600°C
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Resolution	0.1°C/°F
Output Reading	Direct temperature in °C or °F (software configurable)
Cold Junction Compensation (CJC)	Selectable as internal or programmable
Internal CJC Measurement Error	0.75°C over 0 to 60°C typical 1.75°C maximum
Amplifier Drift	100ppm/°C typical

Thermocouple Burnout Detection	Upscale or Downscale (software configurable)
Thermocouple Linearisation Technique	Software breakpoint with linear interpolation

Reading Accuracy	Type	Typical	Maximum
	B	2.50°C	4.00°C
	E	0.80°C	0.83°C
	J	0.47°C	0.84°C
	K	1.10°C	1.20°C
	N	1.00°C	1.12°C
	R	1.83°C	3.90°C
	S	2.45°C	4.40°C
	T	0.96°C	1.21°C

Millivolt Inputs

Input measurement range	-10mV to +80mV max.
Accuracy	Millivolts: 0.04% of span
Resolution	10 microVolts
Temperature Drift	100ppm/°C typical
Output Reading	Millivolts or % to 2 decimal places.

Response Time

Step Input 10% to 90%	Reading settles to within 3% in 200ms maximum (all inputs set to thermocouple °F)
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Isolation

Inputs to System Logic	1500Vac rms
Input to Input	500Vac rms

Insulation Resistance

Input to system logic	>20Mohms at 500Vdc
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Interference Rejection

CMRR @ 50Hz	No effect up to 400Vac rms
NMRR @ 50Hz	50dB

Input Impedance

Any input type	1Mohm typical
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LED Indication

CPU OK	ON = operating correctly Flashing = Module failure OFF = No Power or module failure
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Output Termination

Types	Screw clamp Plug-in Terminal Blocks and 20 way ribbon header
Screw Terminal Wire Size	2.0mm ² maximum For manageable wiring to the module, 0.5 mm ² is recommended with 2mm overall outside diameter

Environmental

Operating Temperature	0°C to +60°C (32°F to +140°F)
Storage Temperature	-40°C to +85°C (-40°F to +185°F)
Humidity	5% to 95% 40°C (104°F) non-condensing.
Protection	Electronics conformally coated

Logic Power Consumption

From Logic Power Supply	300mA maximum from 5Vdc
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Auto Identification Codes

Module ID	41
Scan Code	41

Mass

Excluding Packaging	419g (14.8oz)
Including Packaging	505g (17.8oz)

Ordering Information

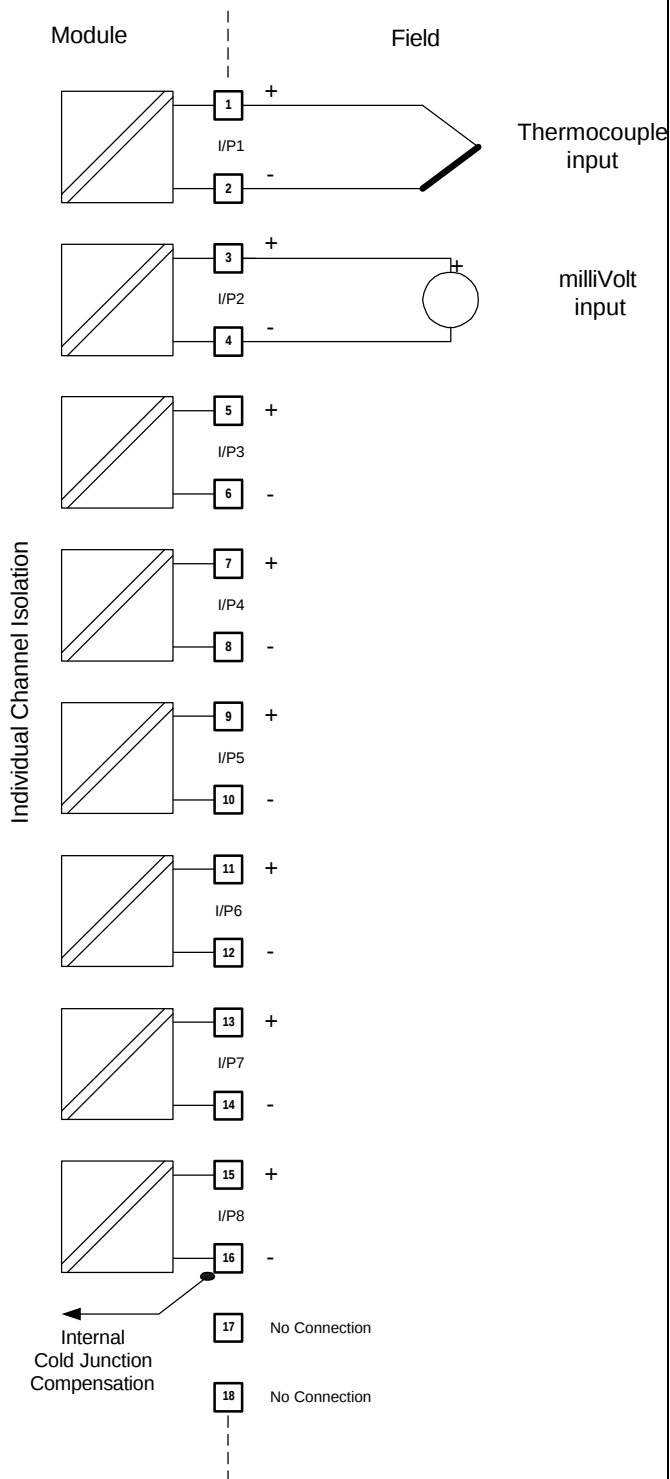
Model	Order Code
Maxiflex 8TC module	M1432A



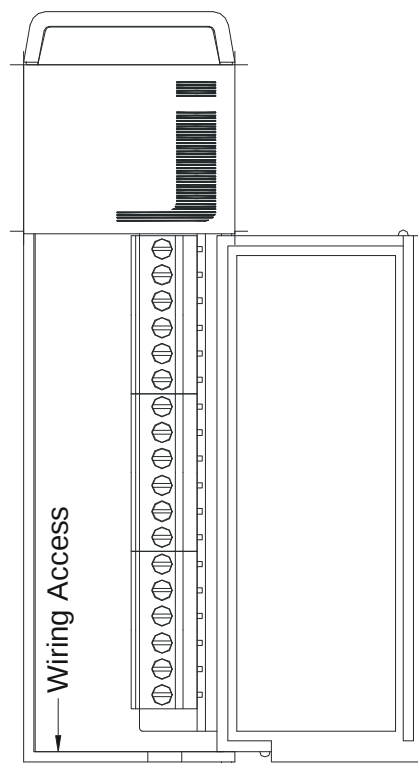
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ELECTRICAL CONNECTION



MECHANICAL CONFIGURATION



Note: Module shown with door open.