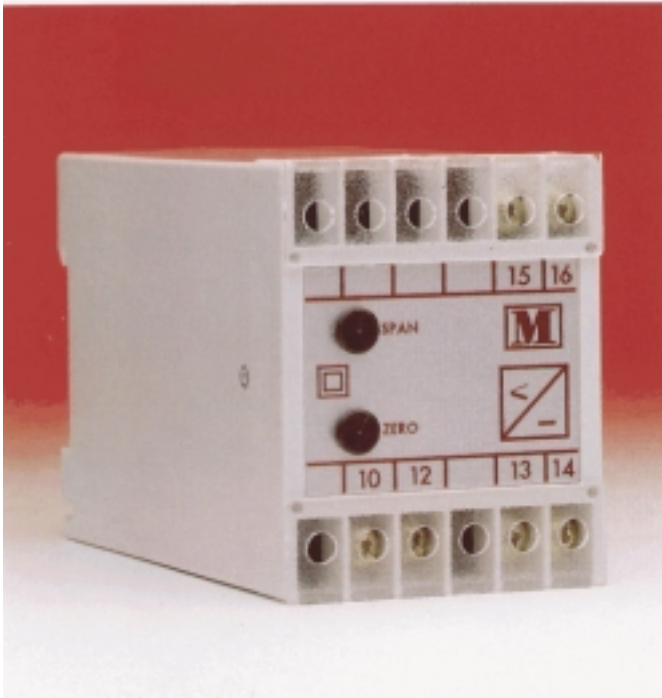


# THERMOCOUPLE TEMPERATURE



## TECHNICAL SPECIFICATION

### INPUT

Type J Fe/Const.	Min. range 0-185°C (min. span 10mV) Max range 0-870 °C (max. span 50mV)
Type K NiCr/NiAl	Min. range 0-245 °C (min. span 10mV) Max. range 0-1230 °C (max. span 50mV)

Impedance >10kOhm

Thermocouple Break protection Upscale or down scale optional

Cold junction compensation Automatic over the range 0-50 °C

Overload protection 10 x input continuous

### OUTPUT

Rated value mA 0-1/5/10/20 & 4-20mA

Load resistance 12/2.4/1.2/0.6 kOhm

Rated value volts 0-5 / 10 & 1-5 V

### ADJUSTMENT

Zero ±2%

Span ±10%

### AUXILIARY

A.C. Voltage 115 / 230 / 400 V (± 25% / 45-65 Hz / < 2VA)

D.C. Voltage 24 / 48 / 110 V (± 20% / galvanically isolated / <3W)

WEIGHT & CASE SIZE Approx. 0.4 kg. case 55mm

### NOTE

No isolation is provided between input and output

## SELECTION GUIDE

M100-TJ1	Type J thermocouple
M100-TK1	Type K thermocouple

## TYPICAL APPLICATIONS

The M100-TJ1 and TK1 measure the millivolt drop of J and K type thermocouples respectively.

Thermocouples are made from two dissimilar metals and as the temperature rises, the mV across the thermocouple increases. The millivolts developed corresponds to the change in temperature, thermocouple manufacturers provide tables showing temperature versus voltage drop.

The M100 TJ1 / TK1 measures this voltage change and converts it to an output signal that corresponds to the temperature being monitored. The output from the M100-TJ1/TK1 is not linearised

Thermocouple temperature measurement is used in a variety of applications, including monitoring of temperature of furnaces etc.

The M100 thermocouple transducer is provided with automatic cold junction temperature compensation over the range 0-50 °C. Also provided is thermocouple break protection should the thermocouple leads break, the output from the transducer will go to its maximum or minimum output value, depending on which option is chosen at time of ordering.

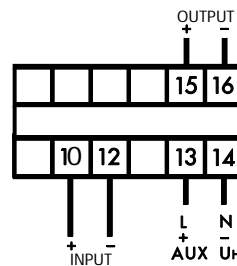
## ORDERING INFORMATION

Product Code	Temp.	O/p.	Aux.	Freq.	Options
M100-TK1	0-500°C	1 mA	120V	60Hz	Up scale

## OPTIONS

1. Non standard inputs / outputs only as far as technically acceptable.
2. A.C. Auxiliary in range 57.7 to 450 volts
3. Calibration at temperature other than 23°C
4. Up or down scale break protection

## CONNECTION DIAGRAMS



M100-TJ1 / TK1



Panel Components & Systems



## GENERAL SPECIFICATIONS

### ENVIRONMENTAL

Working temperature	0 to +60 deg C
Functional temperature	-25 to +70 deg C
Storage temperature	-55 to +85 deg C
Temperature coefficient	0.02% per deg C (100 ppm / °C)
Relative humidity	95% non condensing
Class of climate	HSE complying with DIN 40040 -3 complying with VDE/VDI 3540

### INSULATION

Test voltage	4kV RMS 50Hz 1min. between Input / Case / Auxiliary / Output
Impulse test	EMC 5kV transient complying with IEC 801 / EN55020
HF interference test	EHF 2.5kV 1MHz complying with IEC 255-4
Protection class	II complying with IEC 348 BS 4753 / DIN 57411 / VDE 0411

### APPLIED STANDARDS

General	IEC 688 / BS 6253 / VDE/ VDI 2192
Safety	BS EN61010 DIN 57411 / VDE 0411 ANSI C37
Surge withstand	IEC 801 / EN 55020 ANSI C37-90a
Radio screening	RFI degree N complies with VDE 0875
EMC	Emissions EN50081-2 Immunity EN50082-1

### ACCURACY

Class	±0.2 % complying with IEC 688
Calibration temperature	23°C
Temperature coefficient	0.01% / °C (100 ppm / °C)
Stability	0.05 % per annum non cumulative
Warm up time	<15 min

### OUTPUT

Rated value	See individual product pages
Load resistance mA (Unless otherwise stated)	1mA <15 kOhm 5mA <3 kOhm 10mA <1.5 kOhm 20mA <0.75kOhm 4-20mA <0.75kOhm
Load resistance volts (M100-VA1,VA3 only)	1, 5 & 10 volts >1 kOhm 1, 5 & 10 volts > 50kOhm
Load influence	<0.1 %
Ripple	<0.5% peak-peak at full load
Response time	<200 msec for 0-99 % at full load
Overload	<2 x rated value at full load
No load voltage	<27 V

### ENCLOSURE

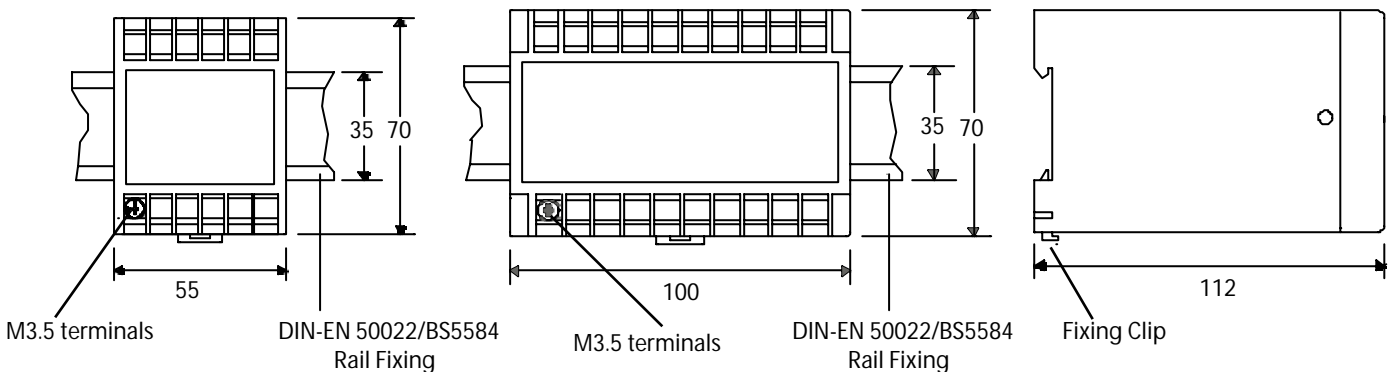
Fixing	Snap on to DIN rail 35 x 7.5 mm complies with DIN-EN 50022 BS 5584
Mounting Enclosure Code	Any position Case IP 50 / terminals IP 30 Complies with IEC 529 BS 5490 DIN 40050

### APPROVALS

cU.L. Approval	File No E157034
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### CASE DIMENSIONS

All Dimensions in mm



Panel Components & Systems

