

DIN Rail Mount Indicators

RM4-TCR Universal Temperature Monitor

RTD, thermocouple, 0-20mV & 0-50mV

Description

The RM4-TCR is a DIN rail mounted process unit which can function as an indicator/ alarm/ controller/ transmitter/ computer interface.

Input types available are 100Ω (Pt100) or 1000Ω (Pt1000) RTDs or thermocouple types B, E, J, K, N, R, S or T. Two millivolt input ranges of 0-20mV and 0-50mV are also provided with five point linearisation.

All function settings, including selection of input type and calibration scaling is carried out via the pushbuttons.

Temperature units can be selected as °C or °F with a user selectable resolution of up to 0.01 degrees (RTD) or 0.1 degrees (thermocouple). If required the display can be programmed to show the units of temperature as °, °C, °F, C or F e.g. 325°C. For mV inputs the display can be scaled to read in engineering units.

Two alarm relays are provided as standard. The relays can be set for independent operation or to have a "trailing" operation.

Combinations of optional outputs including extra relays, analog output (configurable as retransmission or PI control) or serial communications (ASCII or Modbus protocol) can also be provided.

The RM4-TCR has a programmable display brightness function, this allows the unit to be operated with low display brightness to reduce the instrument power consumption and to improve readability in darker areas.

The programmable digital filter improves stability by smoothing out short term interference.

An external input is configurable to perform one of various functions e.g. Two level brightness switching, peak hold, display hold, max/min memory, scale switching (allows switching between two sets of display scale values, resolution and display units e.g. °C to °F), setpoint only access or security lockout.

Electrical isolation between power supply, temperature sensor input and retransmission eliminates grounding and common mode voltage problems.



Features

- Pushbutton calibration and setup
- 5 digit LED display and relay/ alarm status indication
- Programmable **P** button function e.g. max/ min display, zero or tare
- Isolation between input, output and supply
- Powered by 240V, 110V, 48V, 42V, 32V, 24VAC, or 12 to 48V DC (factory configured)
- Digital filter for improved stability
- Two alarm/ control relay outputs (5A) standard
- Programmable display brightness reduces power consumption and controls glare in low brightness areas
- Auto dim feature conserves power
- Rugged aluminium DIN rail mount housing
- Remote input to perform special functions e.g. zero, tare/ gross/ net, peak hold, display hold, max/ min, scale switching or security lock out
- 2 year guarantee

Options

- Isolated 12 bit analog output (configurable as retransmission or PI control) Single or two independent outputs 4-20mA, 0-1V or 0-10V (link selectable)
- 16 bit analog retransmission + 3rd setpoint relay
- Additional relay in combination with analog or transmitter supply outputs
- Isolated & regulated 12VDC @ 50mA or 24VDC @ 25mA (link selectable)
- Isolated RS232, RS422 or RS485 serial comms. with a choice of ASCII or Modbus RTU protocol
- Combined analog 4-20mA and RS485 serial outputs



RM4TCR-3.2-0

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Specifications

Technical Specifications

Input types: 100Ω (Pt100) or 1000Ω (Pt1000) RTDs, thermocouple types B, E, J, K, N, R, S or T or mV

Display values: Temperature °C or °F or scaled in engineering units for mV input

Display resolution: RTD & thermocouple up to 2 decimal places, mV up to 4 decimal places

ADC resolution: 1 in 20,000

Accuracy: 0.1% when calibrated

Sample Rate: mV: 7.5 per second, RTD: 2 per second, thermocouple: 1 per second

Conversion: Dual Slope ADC

Microprocessor: MC68HC11 CMOS

Ambient temp: -10°C to 60°C

Humidity: 5% to 95% non condensing

Display: LED 5 digit 7.6mm and alarm annunciator LEDs

Power supply: 240V, 110V, 48V, 42V, 32V, 24VAC or 12 to 48VDC (factory configured)

Power usage: AC supply 6 VA max, DC supply, <6W (depends on load & options)

Output (standard): 2 x relays, form A Rated 5A resistive 240VAC

Relay action: Programmable N.O. or N.C.

Output Options

Third relay : Rated 0.5A resistive at 30VAC or DC, form C if no other options fitted (otherwise form A)

Fourth relay: Rated 0.5A resistive at 30VAC or DC, form A

Retransmission: Analog 4 to 20mA, 0 to 1V or 0 to 10V link selectable (single or dual channel versions) 16 bit single channel available Serial RS232, RS485 or RS422 choice of ASCII or Modbus RTU protocols

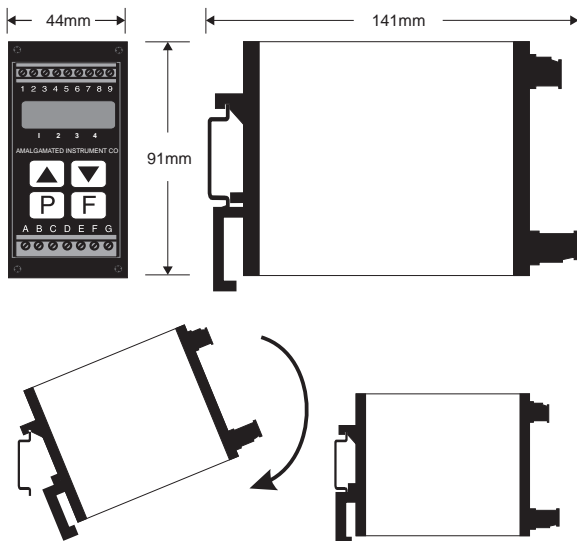
DC voltage out: Isol. 24V at 25mA or 12VDC at 50mA

Physical Characteristics

Case size: 44mm x 91mm x 141mm

Connections: Plug in screw terminals 2.5mm² wire)

Weight: 500g basic model, 550g with option card



RM4-TCR Order Codes

RM4-TCR - [] - [] - []

Power Supplies

RM4-TCR - [XXX] - [] - []

240VAC	240
110VAC	110
48VAC	48
42VAC	42
32VAC	32
24VAC	24
12 to 48VDC	DC

Display Type

RM4-TCR - [] - 5E - []

Options

RM4-TCR - [] - [] - [XXX]

ANALOG (4-20mA, 0-1V or 0-10V selectable)	A
DUAL ANALOG (4-20mA, 0-1V or 0-10V selectable)	AA
RS232	232
RS485	485
RS422	422
DC VOLTAGE OUTPUT 24V (±12V)	E
THIRD RELAY	R
THIRD & FOURTH RELAYS	RR
ANALOG (16 BIT) PLUS 3RD RELAY	AHR
3RD RELAY PLUS 24V (±12VDC) OUTPUT	RE
3RD RELAY PLUS ANALOG (12 BIT)	AR
ANALOG (12 BIT) PLUS 24V (±12VDC) OUTPUT	AE
ANALOG (12 BIT) PLUS RS485	A485

Temperature Sensor Ranges

Input type	Range
Pt100 RTD (100Ω)	-180 to 650°C
Pt1000 RTD (1000Ω)	-180 to 550°C
Type B Thermocouple	400 to 1866°C
Type E Thermocouple	-100 to 1000°C
Type J Thermocouple	-100 to 870°C
Type K Thermocouple	-100 to 1372°C
Type N Thermocouple	-100 to 1300°C
Type R Thermocouple	-35 to 1768°C
Type S Thermocouple	-35 to 1768°C
Type T Thermocouple	-100 to 400°C

