



D1-40TC

Analog module with 6 thermocouple input channels (optoisolated)

The D1-40TC module provides 6 input channels for reading of temperature through thermocouples, with automatic cold junction compensation; the double ramp conversion circuit ensures a reliable reading with a 16 bit resolution and a 0.05 % full scale accuracy; the module does not require calibration and maintains its characteristics of accuracy; analog inputs, power section and communication interface are optically isolated; an internal watch-dog circuit ensures a non-stop operation; interface type (RS422 or RS485), communication protocol (Modbus ASCII or RTU) and address (from 1 to 63) can be set through microswitches; the module is suited for mounting on a DIN rail.

GENERAL SPECIFICATIONS

Power supply	From 9 to 36 Vdc, 100 mA @ 24 Vdc
Power supply protections	Against surge, voltage peaks and polarity inversion
Operating environment	Temperature: from 0 to 70 °C, relative humidity: from 25 to 85 % (non condensing)
Operating atmosphere	Without corrosive gas
Storage temperature	From -20 to 80 °C (without ice)
Electromagnetic compatibility <input type="checkbox"/>	<ul style="list-style-type: none"> • Radio frequency emissions: EN55011 Group 1 Class A • Conducted emissions: EN55011 Group 1 Class A • Radio frequency immunity: ENV50140 10 V/m AM from 80 to 1000 MHz • Conducted immunity: ENV50141 10V/m AM from 0.15 to 80 MHz
IP grade	Connectors: IP20, enclosure: IP20
Insulation	<ul style="list-style-type: none"> • Between analog inputs and power supply section: 500 V • Between analog inputs and 485/422 section: 1000 V • Between power supply and 485/422 sections: 1500 V
Signalling leds	Power on, self-test, serial tx, serial rx
Mounting mode	DIN EN50022 rail
Dimensions	175L x 120H x 65P mm
Weight	360 g
Ordering code	D1-40TC

ANALOG INPUTS SPECIFICATIONS

Sensor type	6 thermocouple sensors (type J, K, N, R, S, T) or voltage sensors (from 0 to 50 mV)
Analog/digital conversion	Double ramp, 16 bit resolution
Voltage allowed	From -10 mV to 80 mV
Overall accuracy	±0.05 % full scale
Acquisition rate	1 s (all the six channels)
Full scale temperature range	From -100 to 1760 °C
Cold junction compensation	From 0 to 70 °C

COMMUNICATION INTERFACE SPECIFICATIONS

Communication interface	EIA RS485 or RS422 (selectable by dip-switches)
Communication speed	9600 or 19200 baud (selectable by dip-switches)
Communication protocol	Modbus ASCII or Modbus RTU (selectable by dip-switches)
Device address	From 1 to 63 (selectable by dip-switches)
485/422 lines protections	Against surge, short circuits and voltage peaks
Pull-up and pull-down resistors	10 kΩ

FUNCTIONAL SPECIFICATIONS

Watch-dog	Hardware
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