

MTL5582

RESISTANCE ISOLATOR

to repeat RTD signals

The MTL5582 connects to a 2-, 3-, or 4-wire resistance temperature device (RTD) or other resistance located in a hazardous area, isolates it and repeats the resistance to a monitoring system in the safe area. The module is intended typically (but not exclusively) for use with Pt100 3-wire RTDs. Switches enable selection of 2-, 3-, or 4-wire RTD connection. The MTL5582 should be considered as an alternative, non-configurable MTL5575, for use in RTD applications where a resistance input is preferred or needed instead of 4/20mA. The design is notable for its ease of use and repeatability. The number of wires which can be connected on the safe-area side of the unit is independent of the number of wires which can be connected on the hazardous-area side. The module drives upscale in the case of open circuit detection. Note that this module is not suitable for use with measurement systems where the resistance input channels are multiplexed.

SPECIFICATION

See also common specification

Number of channels

One

Location of RTD

Zone 0, IIC, T4 hazardous area

Div. 1, Group A, hazardous location

Resistance source

2-, 3-, or 4-wire* RTDs to BS 1904/DIN 43760 (100 Ω at 0 $^{\circ}$ C)

*user selectable by switches (factory set for 3-wire)

Resistance range

10 Ω to 400 Ω

RTD excitation current

200 μ A nominal

Output configuration

2, 3 or 4 wires (independent of mode selected for hazardous area terminals)

Output range

10 Ω to 400 Ω (from a 100 μ A to 5mA source)

Temperature drift

\pm 10m Ω /C $^{\circ}$ typical (0.01%/C $^{\circ}$ @ 100 Ω)

Response time

To within 4% of final value within 1s

Not suitable for multiplexed input cards

Safety drive on open-circuit sensor

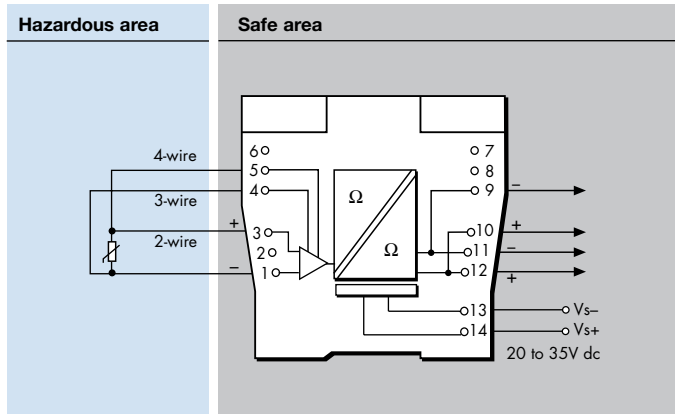
Upscale to 420 Ω nominal

Transfer accuracy@20 $^{\circ}$ C

<0.15 Ω at excitation current 1 - 5mA

<0.25 Ω at excitation current 0.5 - 1mA

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LED indicator

Green: power indication

Power requirements, Vs

33mA at 24V

35mA at 20V

28mA at 35V

Maximum power dissipation within unit

0.8W at 24V

1.0W at 35V

Safety description

Terminals 1 and 3

$U_o = 1.2V$ $I_o = 4mA$ $P_o = 1.2mW$ $U_m = 253V$ rms or dc

Non-energy-storing apparatus $\leq 1.5V$, $\leq 0.1A$, $\leq 25mW$; can

be connected without further certification into any IS loop with an open circuit voltage < 5V.

Terminals 1 and 3 and 4 and 5

$U_o = 6.6V$ $I_o = 42mA$ $P_o = 69mW$

The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.



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