MTL5582
RESISTANCE ISOLATOR
to repeat RTD signals

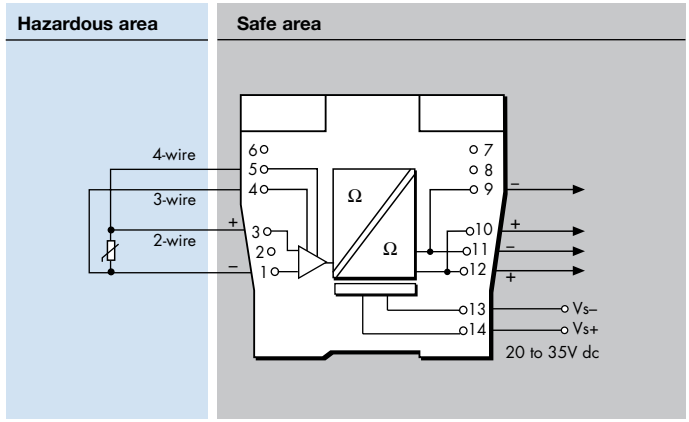
The MTL5582 connects to a 2-, 3-, or 4-wire resistance temperature device (RTD) or other resistance located in a hazardous area, isolates it and repeats the resistance to a monitoring system in the safe area. The module is intended typically (but not exclusively) for use with Pt100 3-wire RTDs. Switches 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 (100Ω at 0°C)
*user selectable by switches (factory set for 3-wire)
Resistance range
10Ω to 400Ω
RTD excitation current
200µA nominal
Output configuration
2, 3 or 4 wires (independent of mode selected for hazardous area terminals)
Output range
10Ω to 400Ω (from a 100µA to 5mA source)
Temperature drift
±10mΩ/C° typical (0.01%/°C @ 100Ω)
Response time
To within 4% of final value within 1s
Not suitable for muliplexed input cards
Safety drive on open-circuit sensor
Upscale to 420Ω nominal
Transfer accuracy@20°C
<0.15Ω at excitation current 1 - 5mA
<0.25Ω 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
Uo = 1.2V Io = 4mA Po = 1.2mW U_m = 253V rms or dc
Non-energy-storing apparatus ≤ 1.5V, ≤ 0.1A, ≤ 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
Uo = 6.6V Io = 42mA Po = 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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