

# 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.

### 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

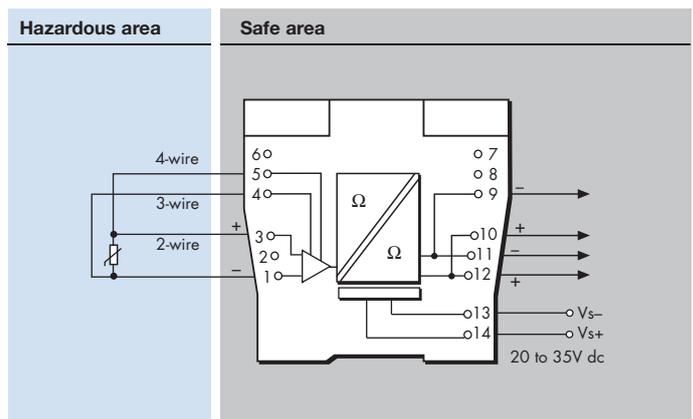
#### Safety drive on open-circuit sensor

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

U<sub>o</sub> = 1.2V I<sub>o</sub> = 4mA P<sub>o</sub> = 1.2mW U<sub>m</sub> = 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

U<sub>o</sub> = 6.6V I<sub>o</sub> = 42mA P<sub>o</sub> = 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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