

# 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 multiplexed input cards

#### Safety drive on open-circuit sensor

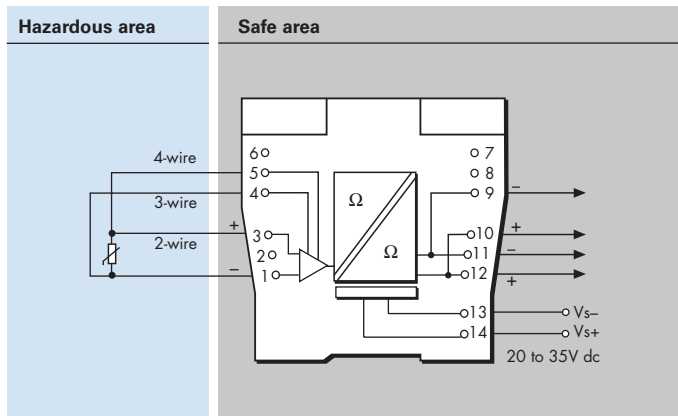
Upscale to 420Ω nominal

#### Transfer accuracy@20°C

<0.15Ω at excitation current 1 - 5mA  
<0.25Ω at excitation current 0.5 - 1mA



### MTL5582



#### 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

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



#### SIL capable

These models have been assessed for use in IEC 61508 functional safety applications.

SIL1 capable for a single device (HFT=0)  
SIL2 capable for multiple devices in safety redundant configuration (HFT=1)

See data on MTL web site and refer to the safety manual.

**NOTE: The MTL5582 is due to be superseded by the MTL5582B during Q3 2016.**



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