

# MTL4576-RTD – MTL5576-RTD TEMPERATURE CONVERTER

RTD/potentiometer input, 2-channel

The MTLx576-RTD converts signals from resistance temperature detectors (RTDs) mounted in a hazardous area, into 4/20mA currents for driving safe-area loads. Software selectable features include input type and characterisation, ranging, monitoring, testing and tagging. Configuration is carried out using a personal computer. The MTLx576-RTD is compatible with 2- and 3-wire RTD inputs. The MTLx576-RTD can also be configured to drive two safe-area loads from a single input.

## SPECIFICATION

See also common specification

### Number of channels

Two

### Signal source

2-/3-wire RTDs to BS 60751  
Pt 100, Pt 500, Pt 1000  
Cu-50 & Cu-53  
Ni 100/500/1000 DIN 43760

### Location of signal source

Zone 0, IIC, T4-6 hazardous area  
Division 1, Group A, hazardous location

### Input signal range

0 to 400Ω (0 to 4000Ω Pt & Ni sensors)

### Input signal span

10 to 400Ω (10 to 1000Ω Pt & Ni sensors)

### RTD excitation current

200μA nominal

### Common mode rejection

120dB for 240V at 50Hz or 60Hz

### Series mode rejection

40dB for 50Hz or 60Hz

### Calibration accuracy (at 20°C)

(includes hysteresis, non-linearity and repeatability)

Input: ± 80mΩ  
Output: ± 16μA

### Temperature drift (typical)

Input: ± 7mΩ/°C  
Output: ± 0.6μA/°C

### Example of calibration accuracy and temperature drift (RTD input)

Span: 250Ω  
Accuracy: ± (0.08/250 + 16/16000) x 100%  
= 0.13% of span  
Temperature drift: ± (0.007/250 x 16000 + 0.6) μA/°C  
= ±1.0μA/°C

### Safety drive on sensor failure

Upscale, downscale, or off

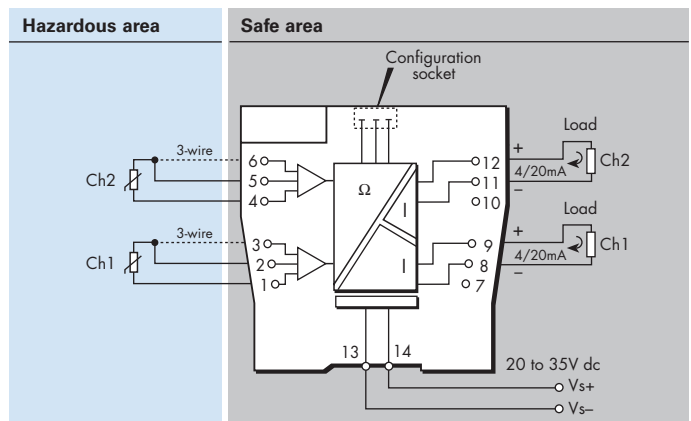
### Output range

4 to 20mA nominal into 300Ω max.

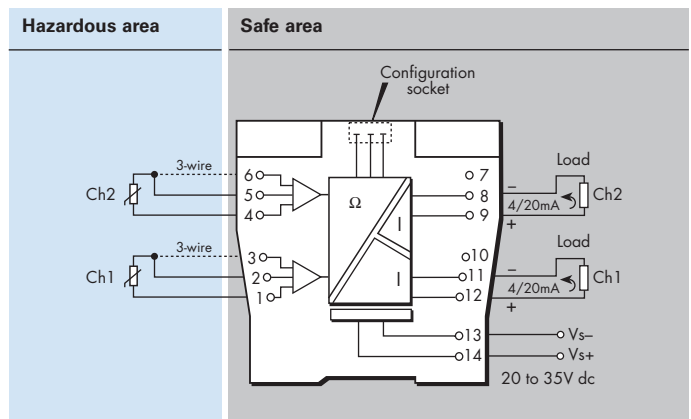
### Response time

Configurable - 500 ms default  
(Accuracy at 100/200ms - contact MTL)

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### LED indicator

Green: power and status indication  
Yellow: one provided for channel status  
Red: alarm indication

### Power requirement, Vs with 20mA signal

60mA at 24V

### Power dissipation within unit with 20mA signal

1.4W at 24V

### Isolation

Functional channel-channel isolation for safe and hazardous-area circuits

### Safety description

Refer to certificate for parameters.  $U_m=253V$  rms or dc

### Configurator

A personal computer running MTL PCS45 software with a PCL45USB serial interface.



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Publication No.  
EPSx576R Rev5 010916

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