

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: $\pm 80\text{m}\Omega$

Output: $\pm 16\mu\text{A}$

Temperature drift (typical)

Input: $\pm 7\text{m}\Omega/^{\circ}\text{C}$

Output: $\pm 0.6\mu\text{A}/^{\circ}\text{C}$

Example of calibration accuracy and temperature drift (RTD input)

Span: 250Ω

Accuracy: $\pm (0.08/250 + 16/16000) \times 100\%$
= 0.13% of span

Temperature drift: $\pm (0.007/250 \times 16000 + 0.6) \mu\text{A}/^{\circ}\text{C}$
= $\pm 1.0\mu\text{A}/^{\circ}\text{C}$

Safety drive on sensor failure

Upscale, downscale, or off

Output range

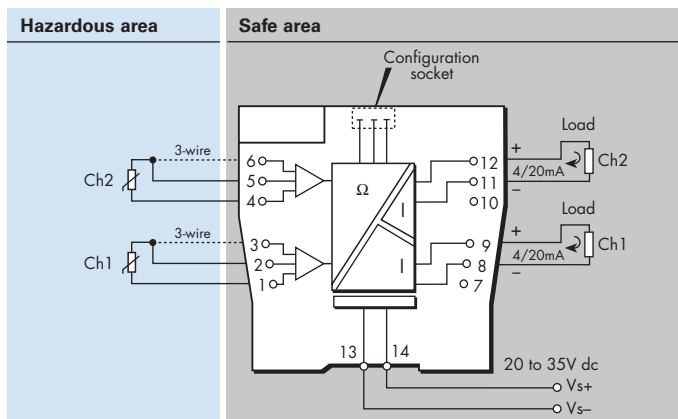
4 to 20mA nominal into 300Ω max.

Response time

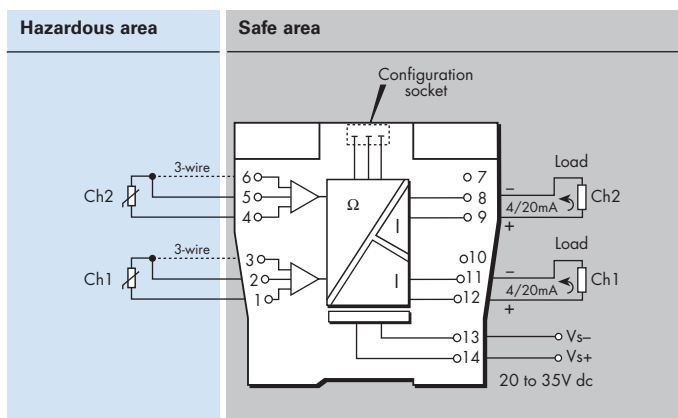
Configurable - 500 ms default

(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. $U_m=253\text{V}$ rms or dc

Configurator

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



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In the interest of further technical developments, we reserve the right to make design changes.