# MTL4575 – MTL5575
# TEMPERATURE CONVERTER
THC or RTD input + Alarm

The MTLx575 converts a low-level dc signal from a temperature sensor mounted in a hazardous area into a 4/20mA current for driving a safe-area load. Software selectable features include linearisation, ranging, monitoring, testing and tagging for all thermocouple types and 2-, 3- or 4-wire RTDs. (For thermocouple applications the HAZ-CJC plug on terminals 1–3 includes an integral CJC sensor). Configuration is carried out using a personal computer. A single alarm output is provided and may be configured for high or low process alarm or to provide notice of early thermocouple failure.

## SPECIFICATION

***See also common specification***

**Number of channels**
One
**Signal source**
THC types J, K, T, E, R, S, B or N to BS 60584 and XK
mV input
RTDs 2/3/4-wire platinum 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**
–75 to +75mV, or 0 to 400Ω (0 to 1000Ω Pt & Ni sensors)
**Input signal span**
3 to 150mV, or 10 to 400Ω (10 to 1000Ω Pt & Ni sensors)
**RTD excitation current**
200µA nominal
**Cold junction compensation**
Automatic or selectable
**Cold junction compensation error**
≤ 1.0°C
**Common mode rejection**
120dB for 240V at 50Hz or 60Hz (500ms response)
**Series mode rejection**
40dB for 50Hz or 60Hz
**Calibration accuracy (at 20°C)**
**(includes hysteresis, non-linearity and repeatability)**

| | |
|---|---|
| **Inputs: (500ms response)** | |
| mV/THC: | ± 15µV or ± 0.05% of input value (whichever is greater) |
| RTD: | ± 80mΩ |
| **Output:** | ± 11µA |

**Temperature drift (typical)**

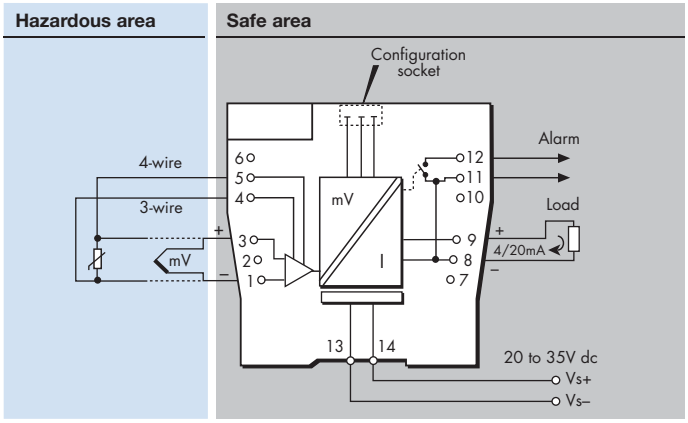
| | |
|---|---|
| **Inputs:** | |
| mV/THC: | ± 0.003% of input value/°C |
| RTD: | ± 7mΩ/°C |
| **Output:** | ± 0.6µA/°C |

**Example of calibration accuracy and temperature drift**
**(RTD input - 500ms response)**

| | |
|---|---|
| Span: | 250Ω |
| Accuracy: | ± (0.08/250 + 11/16000) x 100% = 0.1% 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

**MTL4575**

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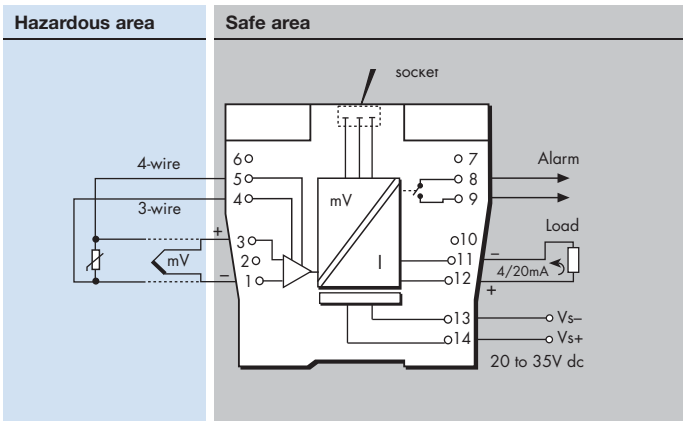


**Early burnout**
Early burnout detection for thermocouples (when selected)
Alarm trips when loop resistance increase is > 50Ω
**Output range**
4 to 20mA nominal into 600Ω max. (direct or reverse)
**Alarm output (configurable)**
Relay ON in alarm, 250mA @ 35V max
**Maximum lead resistance (THC)**
600Ω
**Response time**
Configurable - 500 ms default
(Accuracy at 100/200ms - contact MTL)
**LED indicator**
Green: power and status indication
Yellow: alarm indication, on when contacts are closed
**Maximum current consumption** (with 20mA signal)
50mA at 24V
**Power dissipation within unit** (with 20mA signal)
1.2W at 24V
**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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