# 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 safearea load. Software selectable features include linearisation, ranging, monitoring, testing and tagging for all thermocouple types and 2-, 3or 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 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

### Location of signal source

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

Ni 100/500/1000 DIN 43760

### Input signal range

-75 to +75mV, or 0 to  $400\Omega$  (0 to  $1000\Omega$  Pt & Ni sensors)

#### Input signal span

3 to 150mV, or 10 to  $400\Omega$  (10 to  $1000\Omega$  Pt & Ni sensors)

## RTD excitation current

200uA nominal

### Cold junction compensation

Automatic or selectable

# Cold junction compensation error

 $\leq 1.0^{\circ} \text{C}$ 

## 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)

 $\pm$  15 $\mu$ V or  $\pm$  0.05% of input value mV/THC:

(whichever is greater)

RTD:  $\pm 80 m\Omega$ Output:  $\pm 11 \mu A$ 

### Temperature drift (typical)

Inputs:

± 0.003% of input value/°C

mV/THC:  $\pm 7 m\Omega/^{\circ}C$ RTD:  $\pm 0.6 \mu A/^{\circ}C$ Output:

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

Span:

Accuracy:  $\pm (0.08/250 + 11/16000) \times 100\%$ 

= 0.1% of span

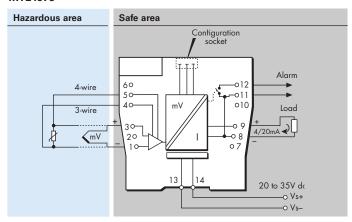
 $\pm (0.007/250 \times 16000 + 0.6) \mu A/^{\circ}C$ Temperature drift:

 $= \pm 1.0 \mu A/^{\circ}C$ 

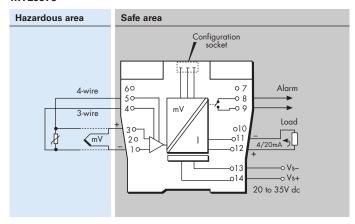
#### Safety drive on sensor failure

Upscale, downscale, or off

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### **Early burnout**

Early burnout detection for thermocouples (when selected) Alarm trips when loop resistance increase is  $> 50\Omega$ 

### **Output range**

4 to 20mA nominal into  $600\Omega$  max.

### Alarm output (configurable)

Relay ON in alarm, 250mA @ 35V max

### Maximum lead resistance (THC)

 $600\Omega$ 

#### 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<sub>m</sub>=253V rms or dc

### Configurator

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



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