MTL4573 - MTL5573 **TEMPERATURE CONVERTER**

THC or RTD input

The MTLx573 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.

SPECIFICATION

See also common specification

Number of channels

One

Location of signal source

Zone 0, IIC, Hazardous area

Division 1, Groups A-D, hazardous location

Signal source

Input	Туре		Min. span
THC	J,K,T,E,R,S,B,N	BS EN 60584-1:1996	3mV
	XK	GOST P8.585-2001	
mV	-75 to +75mV		3mV
RTD	Pt100, Pt500, Pt1000	BS EN 60751:2008	10,50,100Ω
2/3/4	Cu-50, Cu-53	GOST 6651-94	10Ω
wire	Ni100, Ni500, Ni1000	DIN43760:1985	10,50,100Ω
Resistance	0 to 400Ω		10Ω

RTD excitation current

200µA nominal

Cold junction compensation, THC input

Selectable ON or OFF

Cold junction compensation error

≤ 1.0°C

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)

Inputs:

 \pm 15µV or \pm 0.05% of input value mV/THC:

(whichever is greater)

Pt 100 - RTD: $+80m\Omega$ Output: $\pm 11 \mu A$

Temperature drift (typical) Inputs:

mV/THC: ± 0.003% of input value/°C

Pt 100 - RTD: $\pm 7 m\Omega/^{\circ}C$

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

Example of calibration accuracy and temperature drift (RTD input)

Span:

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

= 0.1% of span

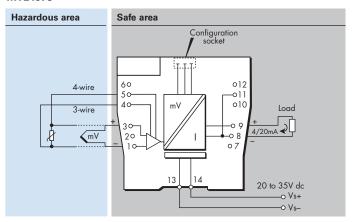
 $\pm (0.007/250 \times 16000 + 0.6) \mu A/^{\circ}C$ Temperature drift:

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

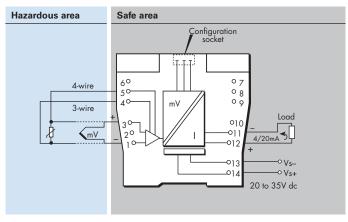
Safety drive on sensor failure

Upscale, downscale, or off

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Early burnout

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

Output range

4 to 20mA nominal into 600Ω max.

Out of range characteristic - MTL or NAMUR NE43

Maximum lead resistance (THC)

 600Ω with safety drive on sensor failure enabled.

 $> 10 k\Omega$ with safety drive on sensor failure disabled

Response time

Typical 500 ms

LED indicator

Green: EBD alarm indication, power and status indication Yellow: alarm indication

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.

> The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes EUROPE (EMEA):

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