

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 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.

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

mV/THC: ± 15μV or ± 0.05% of input value
(whichever is greater)

Pt 100 - RTD: ± 80mΩ

Output: ± 11μA

Temperature drift (typical)

Inputs:

mV/THC: ± 0.003% of input value/°C

Pt 100 - RTD: ± 7mΩ/°C

Output: ± 0.6μA/°C

Example of calibration accuracy and temperature drift (RTD input)

Span: 250Ω

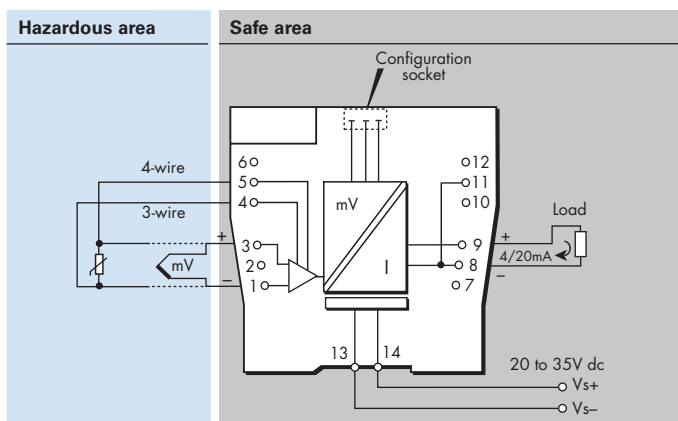
Accuracy: ± (0.08/250 + 11/16000) × 100%
= 0.1% of span

Temperature drift: ± (0.007/250 × 16000 + 0.6) μA/°C
= ±1.0μA/°C

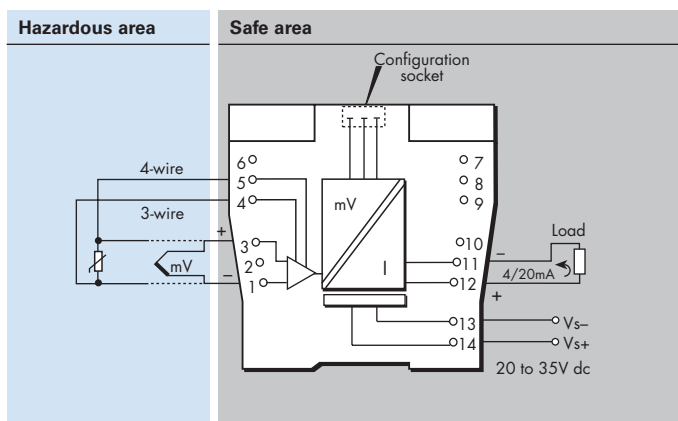
Safety drive on sensor failure

Upscale, downscale, or off

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Early burnout

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

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.

>10kΩ 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.



Powering Business Worldwide

Eaton Electric Limited,

Great Marlings, Butterfield, Luton
Beds, LU2 8DL, UK.

Tel: + 44 (0)1582 723633 Fax: + 44 (0)1582 422283

E-mail: mtlenquiry@eaton.com

www.mtl-inst.com

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EUROPE (EMEA):

+44 (0)1582 723633 mtlenquiry@eaton.com

THE AMERICAS:

+1 800 835 7075 mtl-us-info@eaton.com

ASIA-PACIFIC:

+65 6 645 9888 sales.mtlsing@eaton.com