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	3mV
	XK	GOST P8.585-2001	
mV	-75 to +75mV		3mV
RTD 2/3/4 wire	Pt100, Pt500, Pt1000	BS EN 60751:2008	10,50,100Ω
	Cu-50, Cu-53	GOST 6651-94	10Ω
	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:
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) x 100% = 0.1% of span
Temperature drift: ± (0.007/250 x 16000 + 0.6) µA/°C = ±1.0µA/°C

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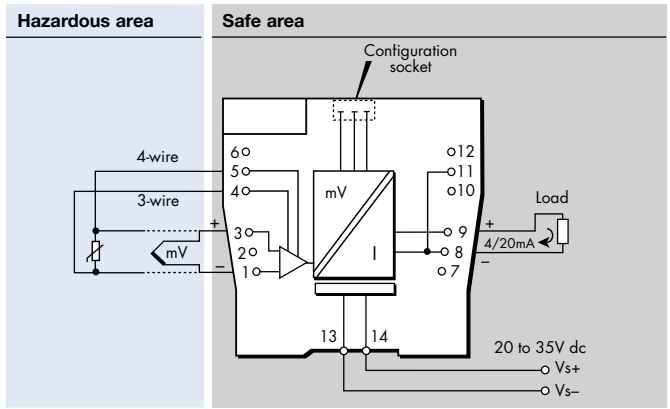

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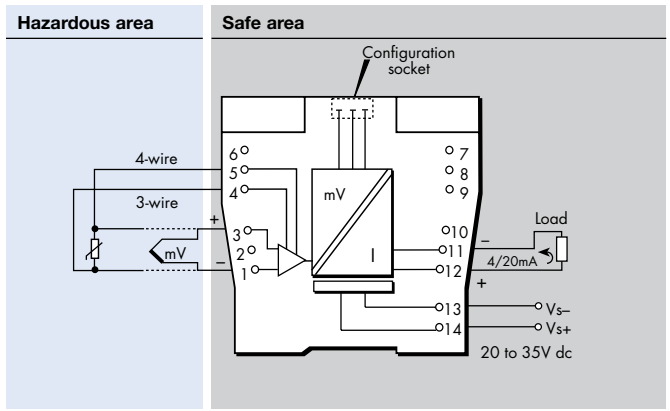

Safety drive on sensor failure
Upscale, downscale, or off
Early burnout
Early burnout detection for thermocouples (when selected)
EBD indicated when loop resistance increase is > 50Ω
Output range
4 to 20mA nominal into 600Ω max.
Out of range characteristic - MTL or NAMUR NE43
Maximum lead resistance (THC)
600Ω
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.