

MTL4581 – MTL5581 MILLIVOLT/THERMOCOUPLE ISOLATOR

for low-level signals

The MTLx581 takes a low-level dc signal from a voltage source in a hazardous area, isolates it, and passes it to a receiving instrument located in the safe area. The module is intended for use with thermocouples utilising external cold-junction compensation. A switch enables or disables the safety drive in the event of thermocouple burnout or cable breakage; a second switch permits the selection of upscale or downscale operation as appropriate.

SPECIFICATION

See also common specification

Number of channels

One

Signal source

Any dc millivolt source

Location of millivolt source

Zone 0, IIC, T4–T6 hazardous area if suitably certified
Div. 1, Group A, hazardous location

Input and output signal range

0 to $\pm 50\text{mV}$, overrange to $\pm 55\text{mV}$
Maximum lead resistance 600Ω

Output resistance

60Ω nominal

Transfer accuracy@20°C

Linearity and repeatability $< 0.05\%$ of reading or $\pm 5\mu\text{V}$,
whichever is the greater

Temperature drift

$< 2\mu\text{V}/^\circ\text{C}$, maximum

Response time

Settles to within 10% of final value within $150\mu\text{s}$

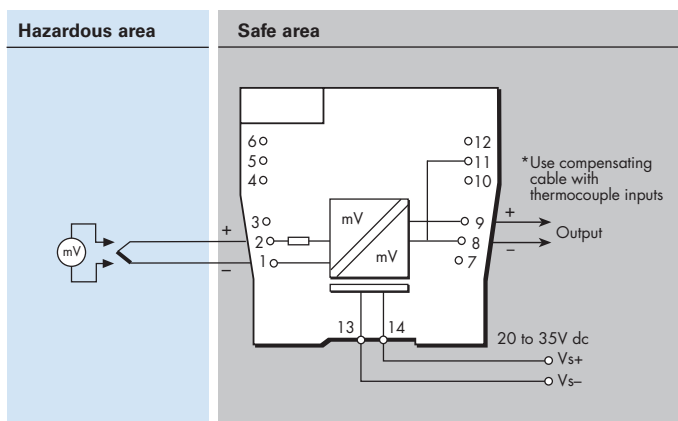
Frequency response

dc to 4kHz nominal

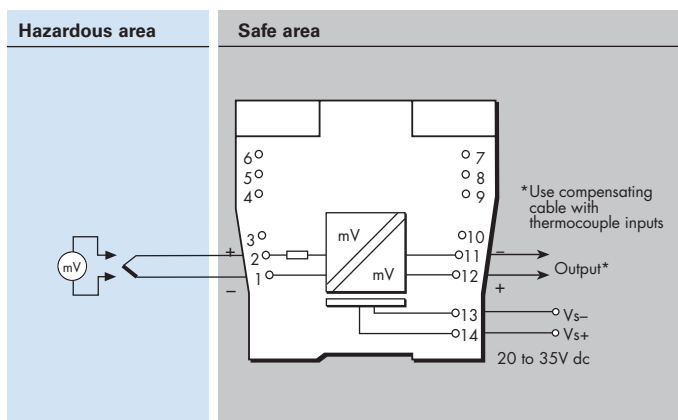
Safety drive on THC burnout

Two switches enable or disable the safety drive and select
upscale or downscale operation

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LED indicator

Green: power indication

Power requirement, Vs

30mA max, 20V dc to 35V dc

Power dissipation within unit

0.7W typical at 24V
0.91W at 35V

Safety description

Terminals 1 to 2

Non-energy-storing apparatus $\leq 1.5\text{V}$, $\leq 0.1\text{A}$ and $\leq 25\text{mW}$; can
be connected without further certification into any IS loop with an
open-circuit voltage $< 28\text{V}$



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In the interest of further technical developments, we reserve the right to make design changes.