

# 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  $600\Omega$

#### Output resistance

$60\Omega$  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  $150\mu\text{s}$

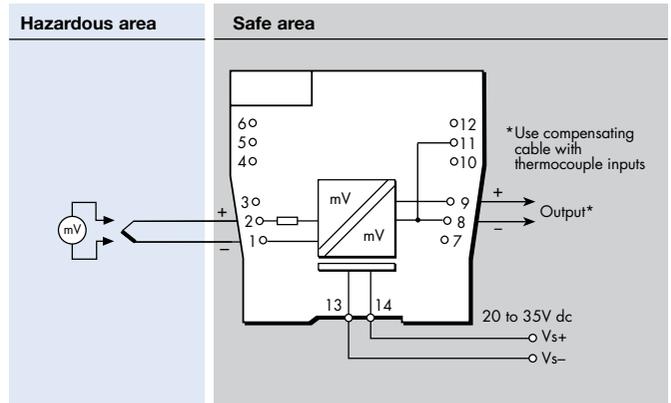
#### Frequency response

dc to 4kHz nominal

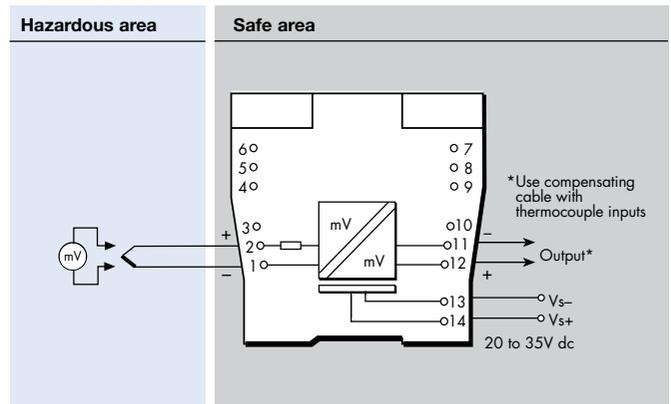
#### Safety drive on THC burnout

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  $< 28\text{V}$