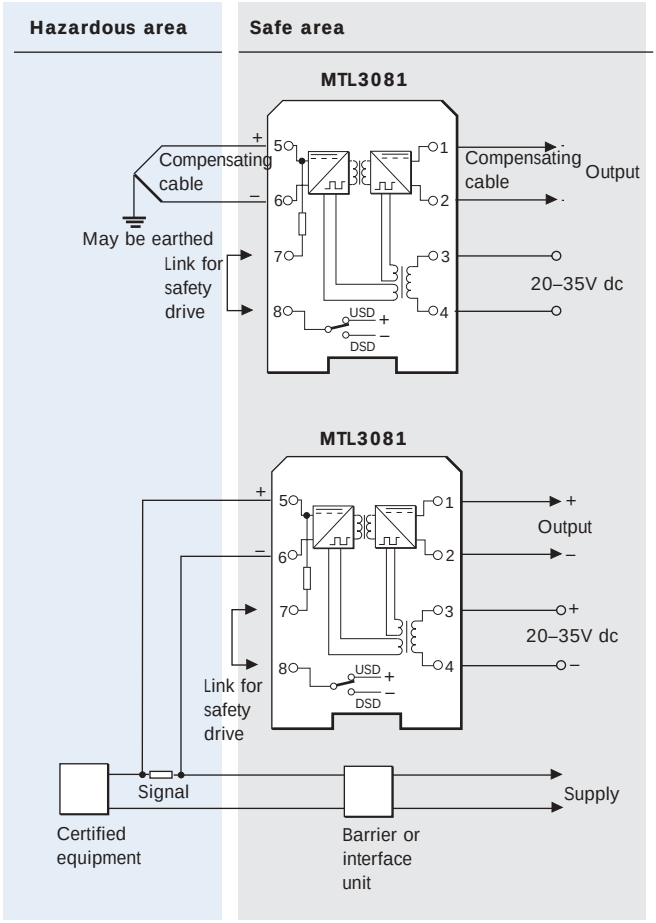
MTL3081 MILLIVOLT ISOLATOR

for low-level signals

The MTL3081 takes the signal from a thermocouple or dc millivolt source in a hazardous area, isolates it, and passes it on to the receiving instrument in the safe area. It is ideally suited to applications where the thermocouple signal is fed directly into the receiving instrument, rather than converted beforehand into 4/20mA. The safety drive, which is optional, can be enabled by a link to initiate either a high or low output in the event of thermocouple burnout or cable breakage. The direction of the safety drive is set by a switch in the top of the unit. The unit is very easy to use since its ±50mV input range is sufficient to cope with all common thermocouple outputs, and so there are no calibration procedures to worry about. Furthermore, its input terminals are non-energy-storing which allows installation in virtually any IS system without further certification.



SPECIFICATION

See also 'Common specification'

Number of channels
One, fully floating

Signal source
Any dc millivolt source

Location of thermocouple
Zone 0, IIC, T4 hazardous area
Div 1, Group A, hazardous location

Location of millivolt source
Zone 0, IIC, T4 hazardous area if suitably certified
Div 1, Group A, hazardous location

Input and output signal range
0 to ±50mV

Output impedance
≤250Ω

Transfer accuracy at 20°C
0.05% of reading (input ≥ ±10mV)
±5µV (input < ±10mV)

Temperature drift (with source impedance of <500Ω)
(1µV + 0.002% of input) per °C, typically
(2µV + 0.004% of input) per °C, maximum

Response time
Settles to within 10% of final value after typically 50ms

Safety drive on THC burnout (selectable)
Upscale or downscale at >10mV/s, or off

Power requirement
10mA maximum at 20 to 35V

Power dissipation within unit
0.35W maximum at 35V

Replaceable fuse
50mA, 5x20mm glass to DIN 41571 sht. 2, semi-time-lag (M)

Safety description
Input terminals (Nos. 5 & 6): non-energy-storing apparatus (≤1.2V, ≤0.1A, ≤20µJ and ≤25mW). Can be connected without further certification into any IS loop with open-circuit voltage not more than 28V.

FM max entity parameters
V_{oc} = 1.2V, I_{sc} = 22.5mA, C_a = 1000µF, L_a = 75mH

Weight
170g

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