MTL MTL Series Service Manual

MTL3081

1. Description

The MTL3081 takes the signal from a thermocouple or dc millivolt

3. Product Information

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 opencircuit voltage not more than 28V.

FM max entity parameters

Voc = 1.2V, Isc = 22.5mA, Ca = 1000µF, La = 75mH

Weight

170g

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