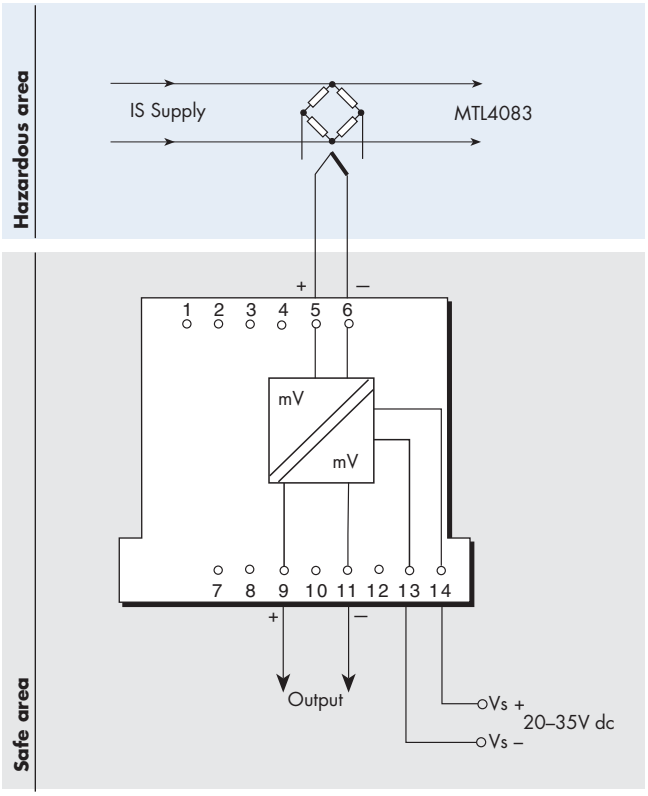
MTL4081 MILLIVOLT/ THERMOCOUPLE ISOLATOR

for low-level signals

CE

The MTL4081 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 strain-gauge bridges or thermocouples utilising external cold-junction compensation. A switch located on top of the module 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.



Terminal	Function
5	THC/EMF input +ve
6	THC/EMF input –ve
9	Output +ve
11	Output –ve
13	Supply –ve
14	Supply +ve

SPECIFICATION

See also common specification, cable parameters and approvals

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 ±50mV, overrange to ±55mV

Output resistance
60Ω nominal

Transfer accuracy
Linearity and repeatability <0.05% of reading or ±5μV, whichever is the greater

Temperature drift
<2μV/°C, maximum

Response time
Settles to within 10% of final value within 150μs

Frequency response
DC to 4kHz nominal

Safety drive on THC burnout
Two switches on top of the module enable or disable the safety drive and select upscale or downscale operation

LED indicator
Green: one provided for power indication

Power requirement, Vs
26mA max, 20V dc to 35V dc

Power dissipation within unit
0.6W typical at 24V
0.9W at 35V

Isolation
250V ac between safe- and hazardous-area circuits

Safety description

Terminals 5 and 6

U_{max} out 1.0V
I_{max} out 47.8mA
P_{max} out 0.012W
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.

* *Note: output negative (terminal 11) is clamped to supply negative (terminal 13) through two series diodes*

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