

MTL4561 – MTL5561

FIRE AND SMOKE DETECTOR INTERFACE

2-channel

The MTLx561 is a loop-powered 2-channel interface for use with conventional fire and smoke detectors located in hazardous areas. In operation, the triggering of a detector causes a corresponding change in the safe-area current. The unit features reverse input polarity protection, while 'no-fail' earth fault detection on either line can be provided by connecting an earth leakage detector to terminal 3 and/or 6.

SPECIFICATION

See also common specification



Number of channels

Two, fully floating, loop powered

Location of fire and smoke detectors

Zone 0, IIC, T4-6 hazardous area if suitably certified
Div. 1, Group A, hazardous area

Input voltage

6 to 30V dc

Current range

1 to 40mA, nominal

Quiescent safe-area current at 20°C

(hazardous-area terminals open circuit)
< 400µA at $V_{in} = 24V$ per channel

Integral input polarity protection

Input circuit protected against reverse polarity

'No-fail' earth fault protection

Enabled by connecting terminals 3 and/or 6 to an earth leakage detector (see notes below)
Fault on either line of each channel proclaimed: unit continues working

Minimum output voltage V_{out} at 20°C

For $V_{in} \leq 25V$: $V_{out} = V_{in} - (0.38 \times \text{current in mA}) - 2V$
For $V_{in} > 25V$: $V_{out} = 22.5V - (0.35 \times \text{current in mA})$

Maximum output voltage

28V from 300Ω

Transfer accuracy at 20°C

Better than 400µA

Temperature drift

< 4µA/°C (0°C to 60°C)
< 15µA/°C (-20°C to 0°C)

Response time to step input

Settles to within 5% of final value within 1.5ms

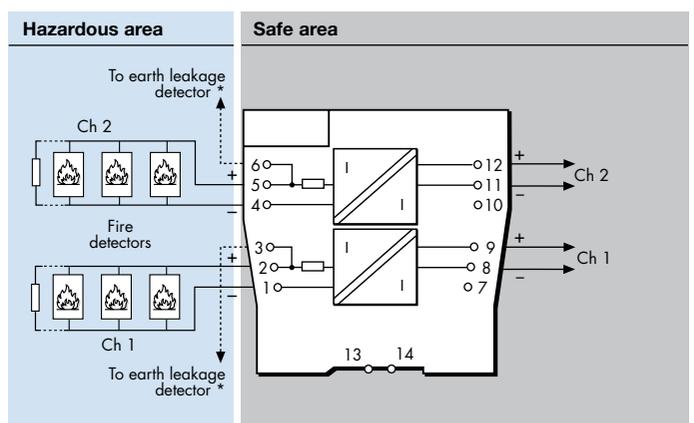
Power dissipation within unit

0.7W maximum at 24V with 40mA signal (each channel)
0.9W maximum at 30V with 40mA signal (each channel)

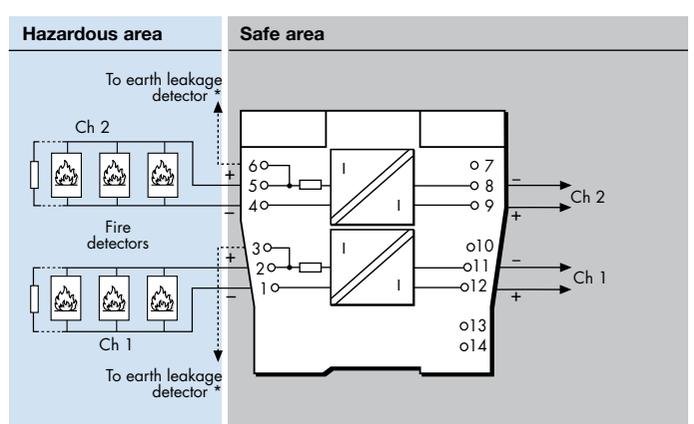
Notes:

- To maintain isolation between the two channels, separate earth leakage detectors are needed.
- The earth leakage detectors introduce a 100µA, 1Hz ripple to the field circuit.

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*Signal plug HAZ1-3 is required for access to this function

Safety description for each channel

$U_o = 28V$ $I_o = 93mA$ $P_o = 0.65W$ $U_m = 253V$ rms or dc



SIL capable

These models have been assessed for use in IEC 61508 functional safety applications. See data on MTL web site and refer to the safety manual.

The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.



EUROPE (EMEA): +44 (0)1582 723633
enquiry@mtl-inst.com

THE AMERICAS: +1 800 835 7075
csinfo@mtl-inst.com

ASIA-PACIFIC: +65 6 645 9888
sales.mtlsing@cooperindustries.com

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