

# MTL5061 FIRE/SMOKE DETECTOR INTERFACE

two-channel, loop-powered



The MTL5061 is a loop-powered two-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 circuit. The unit has reverse input polarity protection, while 'non-fail' earth fault detection on either line can be provided by connecting an earth leakage detector to terminals 3 or 6.

## SPECIFICATION

See also common specification

### Number of channels

Two

### Location of detectors

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

### Current range

1 to 40mA, nominal

### Integral input polarity protection

Input circuit protected against reverse polarity

### 'No-fail' earth fault protection (optional)

Enabled by connecting terminals 3 and 6 to the MTL4220 earth leakage detector. If a fault on either line of each channel is proclaimed: unit continues working.

*Note:1. The earth leakage detector introduces a 100µA, 1Hz ripple to the field circuit.*

### Minimum output voltage $V_{out}$ at 20°C

whichever is the lower of:

$V_{in} - (0.38 \times \text{current in mA}) - 2V$  or  
 $21V - (0.35 \times \text{current in mA})$

### Response time to step input

Settles to within 500µA of final value within 30ms

### Hazardous-area output

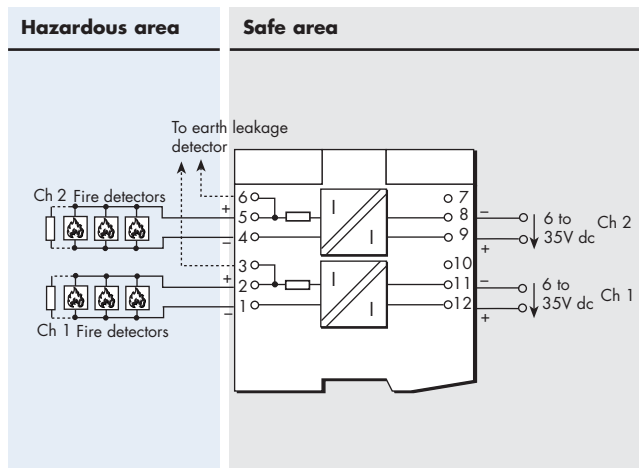
Maximum output voltage 28V from 300Ω

### Transfer accuracy at 20°C

Better than 400µA

### Temperature drift

<10µA/°C (-20 to 60°C)



Terminal	Function
1	Output -ve (channel 1)
2	Output +ve (channel 1)
3	Earth leakage detection (channel 1)
4	Output -ve (channel 2)
5	Output +ve (channel 2)
6	Earth leakage detection (channel 2)
8	Input -ve (channel 2)
9	Input +ve (channel 2)
11	Input -ve (channel 1)
12	Input +ve (channel 1)

### Loop supply voltage

6 to 35V dc

### Quiescent safe-area current at 20°C

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

### Maximum power dissipation within unit

0.7W at 24V with 40mA signal (each channel)  
1.2W at 35V with 40mA signal (each channel)

### Safety description

28V, 300Ω, 93mA;  $U_m = 250V$  rms or dc



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