

# MTL5018 SWITCH/ PROXIMITY DETECTOR INTERFACE

two-channel, with line fault detection  
and phase reversal



The MTL5018 enables two safe-area loads to be controlled by two switches or proximity detectors located in a hazardous area. Two relay outputs are provided. Independent phase reversal control allows an alarm condition to be signalled for either state of the sensor. A selectable line fault detect (LFD) facility detects an open or short circuit in either field circuit.

## SPECIFICATION

See also common specification

### Number of channels

Two

### Location of switches

Zone 0, IIC, T6 hazardous area  
Div. 1, Group A hazardous location

### Location of proximity detector

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

### Safe-area output

Two relays with changeover contacts

### Hazardous-area inputs

Inputs conforming to NAMUR/DIN 19234 standards for proximity detectors

### Voltage applied to sensor

7 to 9V from  $1\text{k}\Omega \pm 10\%$

### Input/output characteristics

Normal (reverse) phase:

output energised (de-energised) if  $I_{in} > 2.1\text{mA}$  or  $R_{in} < 2\text{k}\Omega$   
output de-energised (energised) if  $I_{in} < 1.2\text{mA}$  or  $R_{in} > 10\text{k}\Omega$

Hysteresis:  $200\mu\text{A}$ , typical

### Line fault detection (LFD)

User-selectable via switches on the top of the unit. Line faults are indicated by an LED for each channel. A detected line fault de-energises the relay.

Open-circuit alarm on if  $I_{in} < 100\mu\text{A}$

Open-circuit alarm off if  $I_{in} > 250\mu\text{A}$

Short-circuit alarm on if  $R_{in} < 100\Omega$

Short-circuit alarm off if  $R_{in} > 360\Omega$

Note: Resistors must be fitted when using the LFD facility with a contact input  
 $500\Omega$  to  $1\text{k}\Omega$  in series with switch  
 $20\text{k}\Omega$  to  $25\text{k}\Omega$  in parallel with switch

### Phase reversal

Independent for each channel, user-selectable

### Relay type

Single pole, changeover contacts

Note: reactive loads must be adequately suppressed

### Relay characteristics

Response time: 10ms maximum

Contact rating: 250V ac, 2A,  $\cos\phi > 0.7$

40V dc, 2A, resistive load

### LED indicators

Green: power indication

Yellow: two: status of each channel (on when outputs are energised)

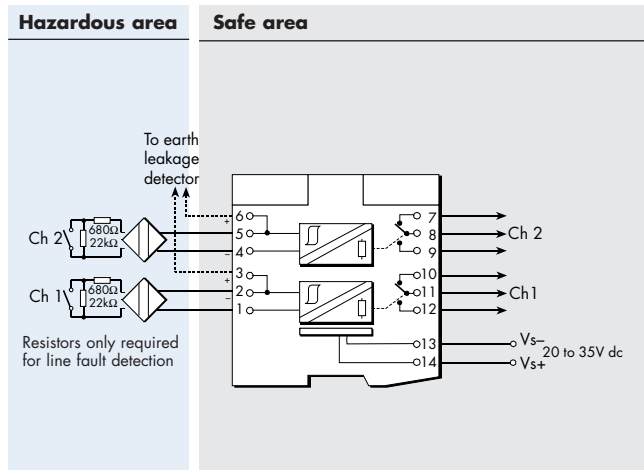
Red: two: LFD indication for each channel (on when line fault detected)

### Maximum current consumption

60mA at 20V

60mA at 24V

40mA at 35V



Terminal	Function
1	Input -ve (Ch 1)
2	Input +ve (Ch 1)
3	Earth leakage detection
4	Input -ve (Ch 2)
5	Input +ve (Ch 2)
6	Earth leakage detection
7	Normally-closed contact (Ch 2)
8	Common (Ch 2)
9	Normally-open contact (Ch 2)
10	Normally-closed contact (Ch 1)
11	Common (Ch 1)
12	Normally-open contact (Ch 1)
13	Supply -ve
14	Supply +ve

### Maximum power dissipation

1.4W at 24V

1.5W at 35V

### Isolation

250V ac or dc between power supply, hazardous-area circuits and relay outputs

### Safety description (each channel)

10.5V,  $800\Omega$ , 14mA,  $U_m = 250\text{V rms}$  or dc



EUROPE (EMEA)  
AMERICAS  
ASIA PACIFIC  
E-mail: enquiry@mtl-inst.com

Tel: +44 (0)1582 723633  
Tel: +1 603 926 0090  
Tel: +65 487 7887  
Web site: www.mtl-inst.com

Fax: +44 (0)1582 422283  
Fax: +1 603 926 1899  
Fax: +65 487 7997