

# MTL4511 SWITCH/ PROXIMITY DETECTOR INTERFACE

single channel, with line fault detection

The MTL4511 enables a safe-area load to be controlled by a switch or proximity detector located in a hazardous-area. When selected, open or short circuit conditions in the field wiring are detected by the line-fault-detect (LFD) facility and also indicated on the top of the module. Phase reversal for the channel is selected by a switch on the side of the module and output is provided by changeover relay contacts.

## SPECIFICATION

See also common specification

### Number of channels

One

### 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

### Hazardous-area inputs

Inputs conforming to BS EN60947-5-6:2001 standards for proximity detectors (NAMUR)

### Voltage applied to sensor

7 to 9V dc from  $1k\Omega \pm 10\%$

### Input/output characteristics

Normal phase

Outputs closed if input  $> 2.1mA$  ( $< 2k\Omega$  in input circuit)

Outputs open if input  $< 1.2mA$  ( $> 10k\Omega$  in input circuit)

Hysteresis:  $200\mu A$  ( $650\Omega$ ) nominal

### Line fault detection (LFD) (when selected)

User-selectable via switches on the side of the unit. A line fault is indicated by an LED. The channel output relay is de-energised if an input line fault is detected.

Open-circuit alarm on if  $I_{in} < 50\mu A$

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

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  $1k\Omega$  in series with switch

$20k\Omega$  to  $25k\Omega$  in parallel with switch

### Safe-area output

Single pole relay with changeover contacts

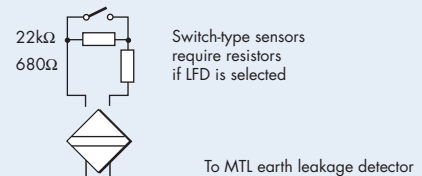
Note: reactive loads must be adequately suppressed

### Relay characteristics

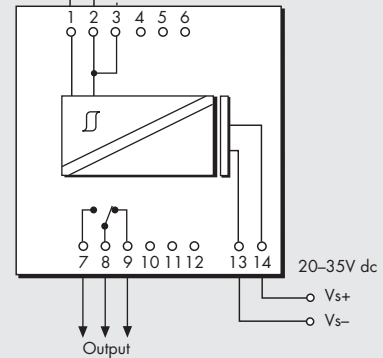
Response time: 10ms maximum

Contact rating: 10W, 0.5A, 35V dc

### Hazardous area



### Safe area



Terminal	Function
1	Input -ve
2	Input +ve
3	To earth leakage detector
7	Output normally-open contact
8	Common
9	Output normally-closed contact
13	Supply -ve
14	Supply +ve

### LED indicators

Green: power indication

Yellow: channel status, on when output is energised

Red: LFD indication, on when line fault is detected

### Maximum current consumption

30mA at 24V

### Power dissipation within unit

0.72W at 24V

### Safety description (each channel)

$V_o = 10.5V$   $I_o = 14mA$   $P_o = 37mW$   $U_m = 253V$  rms or dc



EUROPE (EMEA)

Tel: +44 (0)1582 723633

Fax: +44 (0)1582 422283

AMERICAS

Tel: +1 603 926 0090

Fax: +1 603 926 1899

ASIA PACIFIC

Tel: +65 6 487 7887

Fax: +65 6 487 7997

E-mail: enquiry@mtl-inst.com

Web site: www.mtl-inst.com