

# MTL4514 SWITCH/ PROXIMITY DETECTOR INTERFACE

single channel with line fault detection  
and phase reversal

The MTL4514 enables a safe-area load to be controlled, through a relay, by a proximity detector or switch located in a hazardous area. Line faults are signalled through a separate relay and indicated on the top of the module. Switches are provided to select phase reversal and to enable the line fault detection.

## SPECIFICATION

See also common specification

### Number of channels

One

### Location of switch

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

### Location of proximity detector

Zone 0, IIC, T4-6 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. Line faults are indicated by an LED. Line fault relay is energised and channel output relay de-energised if input line-fault 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

Channel: Single pole relay with changeover contacts

LFD: Single pole relay with changeover contacts

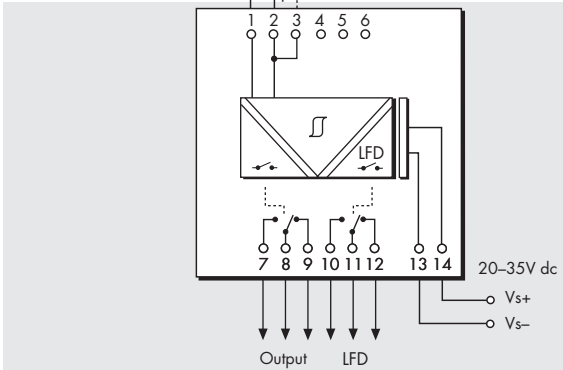
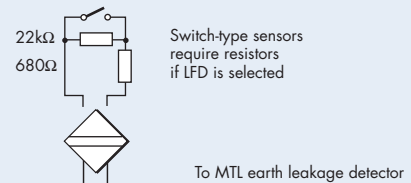
Note: reactive loads must be adequately suppressed

### 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 NO contact
8	Output Common
9	Output NC contact
10	LFD NO contact
11	LFD Common
12	LFD NC contact
13	Supply - ve
14	Supply +ve

### LED indicators

Green: power indication

Yellow: channel status, on when output circuit is closed

Red: LFD indication, on when line fault is detected

### Maximum current consumption

35mA at 24V dc

### Power dissipation within unit

0.72W at 24V

### Safety description

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

