

# MTL4516C SWITCH/ PROXIMITY DETECTOR INTERFACE

two-channel, with line fault detection

The MTL4516C enables two safe-area loads 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 each 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

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

### 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 for each channel. 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

Two single-pole relays with changeover contacts

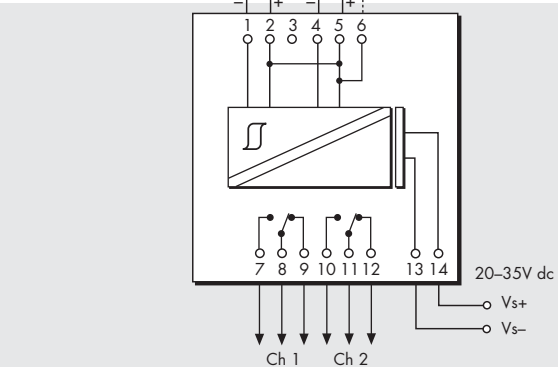
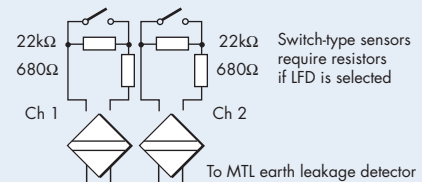
Note: reactive loads must be adequately suppressed

### Relay characteristics

Response time: 10ms maximum

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

### Hazardous area



### Safe area

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

### LED indicators

Green: power indication

Yellow: two: channel status, on when output is energised

Red: two: LFD indication, on when line fault detected

### Maximum current consumption

35mA at 24V

### Power dissipation within unit

0.84W at 24V

### Safety description (each channel)

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

