

# MTL4514/B – MTL5514 SWITCH/ PROXIMITY DETECTOR INTERFACE

1-channel, line fault detection, phase reversal

The MTLx514 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 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. 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

#### MTL4514 & MTL5514

Channel: Single pole relay with changeover contacts

LFD: Single pole relay with changeover contacts

#### MTL4514B

Channel: Single pole relay

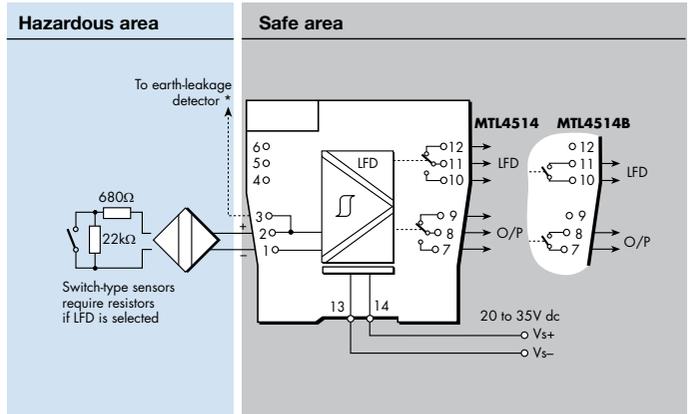
LFD: Single pole relay

Note: reactive loads must be adequately suppressed

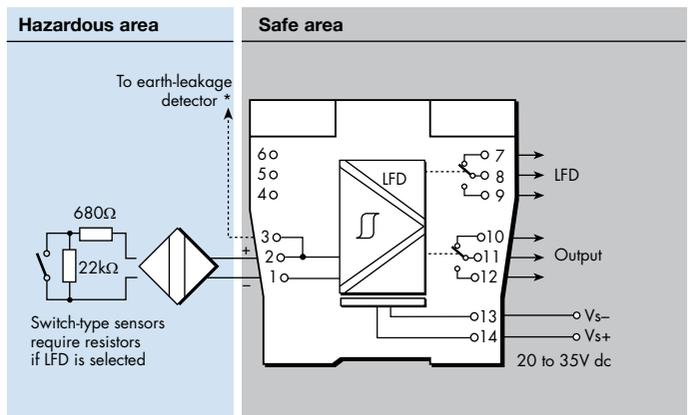
### Relay characteristics

	MTL4514/B	MTL5514
Response time:	10ms maximum	10ms maximum
Contact rating (Safe Area):	10W, 0.5A, 35V dc	250V ac, 2A, $\cos\phi > 0.7$ , 40V dc, 2A, resistive load
Contact rating (Zone 2):	10W, 0.5A, 35V dc	35V, 2A, 100VA.

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\* Signal plug HAZ1-3 is required for access to this function

### LED indicators

Green: power indication

Yellow: channel status, on when output energised

Red: LFD indication, on when line fault detected

### Maximum current consumption

25mA at 24V dc

### Power dissipation within unit

0.6W at 24V

### Safety description

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



### SIL capable

These models have been assessed for use in IEC 61508 functional safety applications.

See data on MTL web site and refer to the safety manual.

The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.



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