MTL4514D - MTL5514D **SWITCH/ PROXIMITY DETECTOR INTERFACE**

1-channel, dual output, LFD, phase reversal

The MTLx514D enables two safe-area loads to be controlled, through relays, by a proximity detector or switch 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 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 < 1.2 mA (> $10 \text{k}\Omega$ in input circuit) Hysteresis: 200μA (650Ω) nominal

Line fault detection (LFD) (when selected)

User-selectable via switches on the side of the unit. Line faults are indicated by an LED. The channel output relays are 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 $R_{in}^{(n)} > 360\Omega$ Note: Resistors must be fitted when using the LFD facility with a contact input 500Ω to $1k\Omega$ in series with switch $20k\Omega$ to $25k\Omega$ in parallel with switch

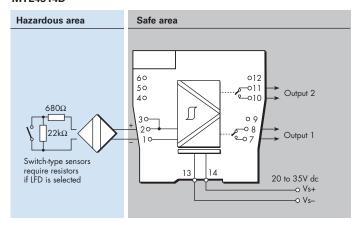
Safe-area output

MTL4514D: two, single pole relays with normally-open contacts MTL5514D: two, single pole relays with changeover contacts Note: reactive loads must be adequately suppressed

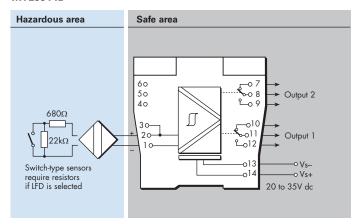
Relay characteristics

	MTL4514D	MTL5514D
Response time:	10ms maximum	10ms maximum
Contact rating (Safe Area):	10W, 0.5A, 35V dc	250V ac, 2A, cosØ >0.7, 40V dc, 2A, resistive load
Contact rating (Zone 2):	10W, 0.5A, 35V dc	35V, 2A, 100VA.

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LED indicators

Green: power indication

Yellow: channel status, on when output energised Red: LFD indication, on when line fault detected

Maximum current consumption

29mA at 24V dc

Power dissipation within unit

0.7W at 24V

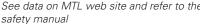
Safety description

 $U_0 = 10.5V$ $I_0 = 14 \text{mA}$ $P_0 = 37 \text{mW}$ $U_m = 253 \text{V}$ rms or dc



SIL capable

These models have been assessed for use in IEC 61508 functional safety applications. SIL2 capable for a single device (HFT=0) SIL3 capable for multiple devices in safety redundant configurations (HFT=1) See data on MTL web site and refer to the





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FUROPE (FMFA).

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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