

MTL5514 SWITCH/ PROXIMITY DETECTOR INTERFACE

single channel with line fault detection
and phase reversal

The MTL5514 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: $200\mu A$ (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. 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 500Ω 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

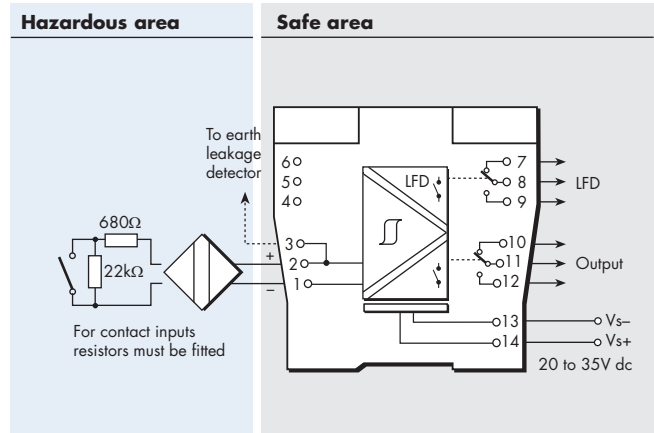
Note: reactive loads must be adequately suppressed

Relay characteristics

Response time: 10ms maximum

Contact rating: 250V ac, 2A, $\cos\phi > 0.7$

40V dc, 2A, resistive load



Terminal	Function
1	Input -ve
2	Input +ve
3	To earth leakage detector
7	LFD NC contact
8	LFD Common
9	LFD NO contact
10	Output NC contact
11	Output Common
12	Output NO 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

25mA at 24V dc

Power dissipation within unit

0.6W at 24V

Safety description

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



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