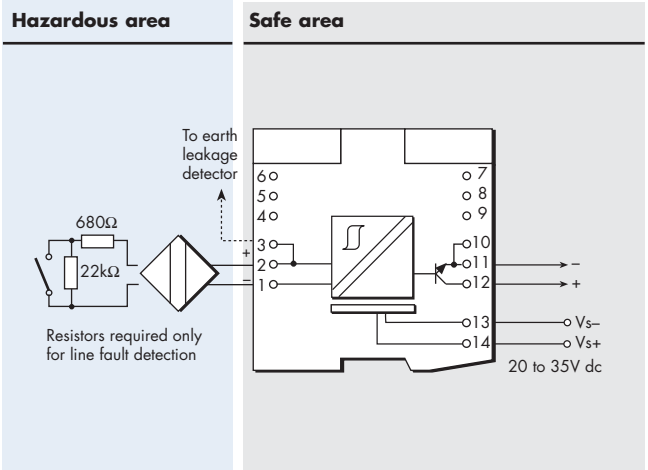
MTL5012 SWITCH/ PROXIMITY DETECTOR INTERFACE

single-channel, with line fault detection and phase reversal

CE

The MTL5012 enables a solid-state output in the safe area to be controlled by a switch or proximity detector located in the hazardous area. Independent output phase reversal and line fault detection are provided.



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

Safe-area output
Floating solid-state output compatible with logic circuits

Hazardous-area input
Input conforming to NAMUR/DIN 19234 standards for proximity detectors

Voltage applied to sensor
7 to 9V from 1kΩ ±10%

Input/output characteristics
Normal (reverse) phase:
output on (off) if I_{in} >2.1mA or R_{in} <2kΩ
output off (on) if I_{in} <1.2mA or R_{in} >10kΩ
Hysteresis: 200µA, typical

Line fault detection (LFD)
User-selectable. Line faults are indicated by an LED. A detected line fault switches off the output.
Open-circuit alarm on if I_{in}<50µA
Open-circuit alarm off if I_{in}>150µA
Short-circuit alarm on if R_{in}<100Ω
Short-circuit alarm off if R_{in}>360Ω

Note: Resistors must be fitted when using the LFD facility with a contact input
500Ω to 1kΩ in series with switch
20kΩ to 25kΩ in parallel with switch

Phase reversal
User-selectable

Output characteristics

Operating frequency:	dc to 5kHz
Max. off-state voltage:	35V
Max. off-state leakage current:	10µA
Max. on-state voltage drop:	1 + (0.13 x current in mA) V
Max. on-state current:	50mA

Terminal	Function
1	Input –ve
2	Input +ve
3	Earth leakage detection
10, 11	Output –ve
12	Output +ve
13	Supply –ve
14	Supply +ve

LED indicators
Green: power indication
Yellow: status (on when output is on)
Red: LFD indication (on when line fault detected)

Maximum current consumption
28mA at 20V
30mA at 24V
32mA at 35V

Maximum power dissipation
0.8W at 24V
1.2W at 35V

Isolation
250V ac or dc between power supply, input and output

Safety description
10.5V, 800Ω, 14mA, U_m = 250V rms or dc

EUROPE (EMEA) Tel: +44 (0)1582 723633 Fax: +44 (0)1582 422283
AMERICAS Tel: +1 281 571 8065 Fax: +1 281 571 8069
ASIA PACIFIC Tel: +65 6 487 7887 Fax: +65 6 487 7997
E-mail: enquiry@mtl-inst.com **Web site: www.mtl-inst.com**

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