

MTL5012 SWITCH/ PROXIMITY DETECTOR INTERFACE

single-channel, with line fault detection
and phase reversal



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 $1k\Omega \pm 10\%$

Input/output characteristics

Normal (reverse) phase:

output on (off) if $I_{in} > 2.1mA$ or $R_{in} < 2k\Omega$

output off (on) if $I_{in} < 1.2mA$ or $R_{in} > 10k\Omega$

Hysteresis: 200 μA , 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 $I_{in} < 50\mu A$

Open-circuit alarm off if $I_{in} > 150\mu A$

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 Ω to 1k Ω in series with switch
20k Ω to 25k Ω 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: 10 μA

Max. on-state voltage drop: $1 + (0.13 \times \text{current in mA}) V$

Max. on-state current: 50mA

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

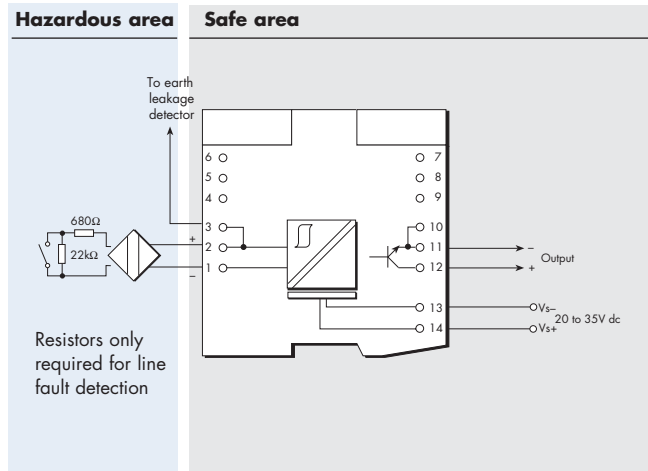
1.2W at 35V

Isolation

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

Safety description

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



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



EUROPE (EMEA)
AMERICAS
ASIA PACIFIC
E-mail: enquiry@mtl-inst.com

Tel: +44 (0)1582 723633
Tel: +1 603 926 0090
Tel: +65 487 7887

Fax: +44 (0)1582 422283
Fax: +1 603 926 1899
Fax: +65 487 7997

Web site: www.mtl-inst.com