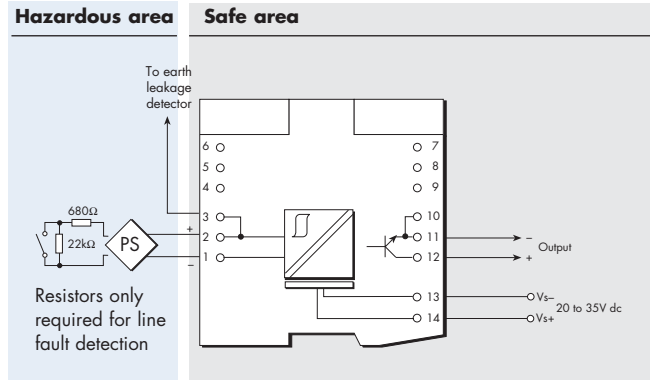


MTL5012S

solid-state output with phase reversal
and line fault detection for use with
United Electric One series 2-wire
sensor/switch CE

The MTL5012S enables a solid-state output in the safe area to be controlled by a switch or United Electric One series 2-wire sensor 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 sensor

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

Designed to match United Electric One series 2-wire sensors

Voltage applied to sensor

7 to 9V from $500\Omega \pm 10\%$

Input/output characteristics

Normal (reverse) phase:

output on (off) if $I_{in} > 3.8\text{mA}$ or $R_{in} < 1.3\text{k}\Omega$
output off (on) if $I_{in} < 2.5\text{mA}$ or $R_{in} > 3.1\text{k}\Omega$

Hysteresis: 0.5mA, 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 $I_{in} < 50\mu\text{A}$
Open-circuit alarm off if $I_{in} > 150\mu\text{A}$
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 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: $1 + (0.13 \times \text{current in mA}) \text{V}$
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

33mA at 20V
35mA at 24V
38mA at 35V

Maximum power dissipation

0.9W at 24V
1.4W at 35V

Isolation

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

Safety description

10.5V, 480Ω, 22mA, $U_m = 250\text{V rms or dc}$

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

