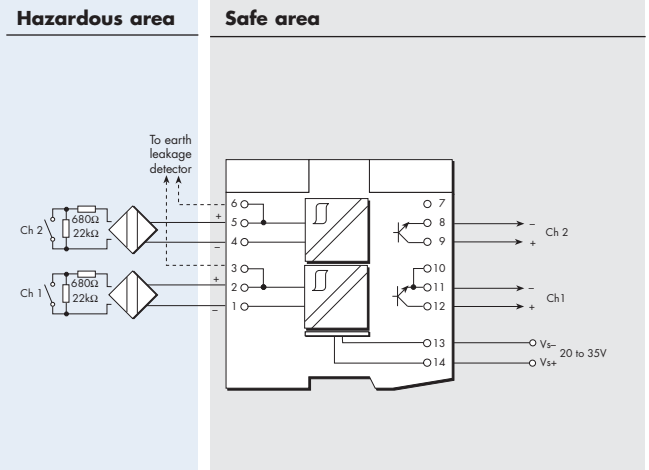
MTL5015 SWITCH/ PROXIMITY DETECTOR INTERFACE

two-channel, with line fault detection and phase reversal

CE

The MTL5015 enables two solid-state outputs in the safe area to be controlled by two switches or proximity detectors located in the hazardous area. Independent output phase reversal and line fault detection are provided for each output.



SPECIFICATION

See also common specification

Number of channels
Two

Location of switches
Zone 0, IIC, T6 hazardous area
Div. 1, Group A hazardous location

Location of proximity detectors
Zone 0, IIC, T4–6 hazardous area if suitably certified
Div. 1, Group A hazardous location

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

Hazardous-area inputs
Inputs 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 for each channel. 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
Independent for each channel, 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

LED indicators
Green: power indication
Yellow: two: status of each channel (on when outputs are on)
Red: two: LFD indication for each channel (on when line fault detected)

Maximum current consumption
42mA at 20V
44mA at 24V
46mA at 35V

Maximum power dissipation
1.1W at 24V
1.6W at 35V

Isolation
250V ac or dc between power supply, hazardous-area circuits and each output. 30V between hazardous-area circuits.

Safety description (each channel)
10.5V, 800Ω, 14mA, U_m = 250V rms or dc

Terminal	Function
1	Input –ve (Ch 1)
2	Input +ve (Ch 1)
3	Earth leakage detection
4	Input –ve (Ch 2)
5	Input +ve (Ch 2)
6	Earth leakage detection
8	Output –ve (Ch 2)
9	Output +ve (Ch 2)
10, 11	Output –ve (Ch 1)
12	Output +ve (Ch 1)
13	Supply –ve
14	Supply +ve

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