MTL4513 – MTL5513
SWITCH/ PROXIMITY DETECTOR INTERFACE
2-channel, line fault detection, phase reversal

The MTLx513 enables two solid-state outputs in the safe area to be controlled by two switches or proximity detectors located in the hazardous area. The Ch1/Ch2 output transistors share a common terminal and can switch +ve or -ve polarity signals. Independent output phase reversal and line fault detection are enabled via switches for each output. LFD indication is provided on the top of the module.

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

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 1kΩ ±10%

Input/output characteristics
Normal phase
Outputs closed if input > 2.1mA (< 2kΩ in input circuit)
Outputs open if input < 1.2mA (> 10kΩ in input circuit)
Hysteresis: 200µA (650Ω) nominal

Line fault detection (LFD) (when selected)
User-selectable for each channel via switches on the side of the unit. Line faults are indicated by an LED for each channel.
Open-circuit alarm on if I_{in} < 50µA
Open-circuit alarm off if I_{in} > 250µA
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

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

Operating frequency:	dc to 500Hz
Max. off-state voltage:	± 35V
Max. off-state leakage current:	± 50µA
Max. on-state resistance:	25Ω
Max. on-state current:	± 50mA

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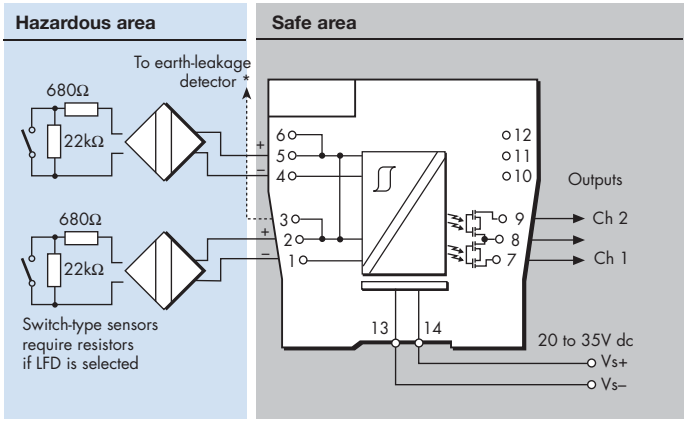

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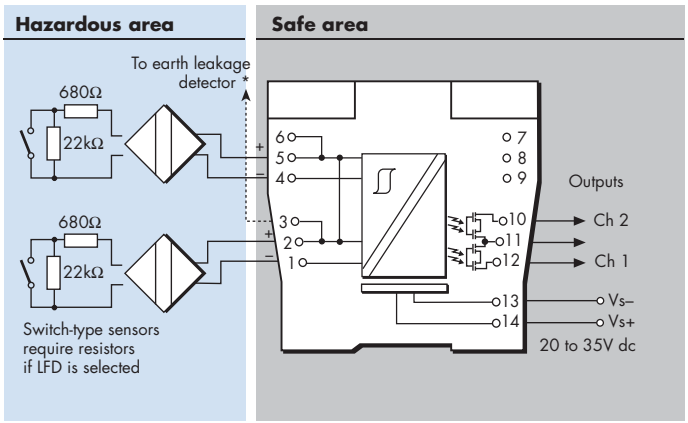

*Signal plug HAZ1-3 is required for access to this function

LED indicators
Green: power indication
Yellow: two: channel status, on when output active
Red: two: LFD indication, on when line fault detected

Maximum current consumption
30mA at 24V

Power dissipation within unit
0.65W typical at 24V, with 10mA loads
0.78W max. with 50mA loads

Safety description (each channel)
V_o=10.5V I_o=14mA P_o=37mW U_m = 253V rms or dc

The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.

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