

MTL4516/C – MTL5516C SWITCH/ PROXIMITY DETECTOR INTERFACE

2-channel, with line fault detection

The MTLx516/C enable two safe-area loads to be controlled by a switch or proximity detector located in a hazardous-area. When selected, open or short circuit conditions in the field wiring are detected by the line-fault-detect (LFD) facility and also indicated on the top of the module. Phase reversal for each channel is selected by a switch on the side of the module and output is provided by changeover relay contacts.

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 detector

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 1k Ω $\pm$ 10%

Input/output characteristics

Normal phase

Outputs closed if input > 2.1mA (< 2k Ω in input circuit)

Outputs open if input < 1.2mA (> 10k Ω in input circuit)

Hysteresis: 200 μ A (650 Ω) nominal

Line fault detection (LFD) (when selected)

User-selectable via switches on the side of the unit. Line faults are indicated by an LED for each channel. The channel output relay is de-energised if an input line fault is detected.

Open-circuit alarm on if $I_{in} < 50\mu A$

Open-circuit alarm off if $I_{in} > 250\mu A$

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

Safe-area output

Two single-pole relays with changeover contacts

Note: reactive loads must be adequately suppressed

Relay characteristics

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Response time:	10ms maximum	10ms maximum
Contact rating (Safe Area):	10W, 0.5A, 35V dc	250V ac, 2A, cos ϕ >0.7, 40V dc, 2A, resistive load
Contact rating (Zone 2):	10W, 0.5A, 35V dc	35V, 2A, 100VA.

Maximum current consumption

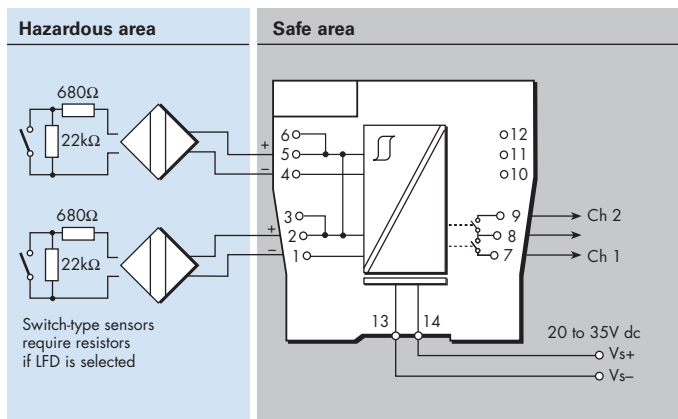
35mA at 24V

Power dissipation within unit

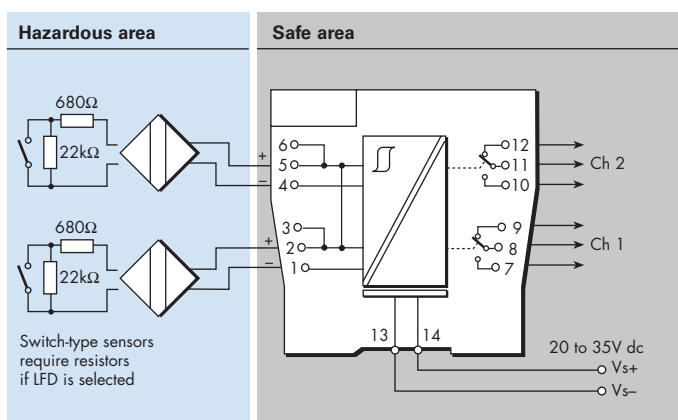
0.84W at 24V



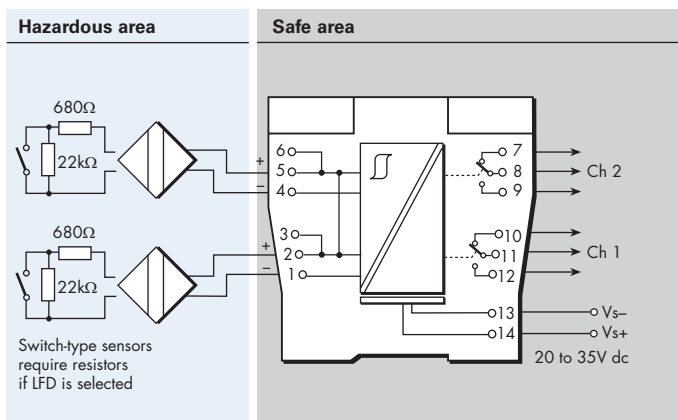
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LED indicators

Green: power indication

Yellow: two: channel status, on when output energised

Red: two: LFD indication, on when line fault detected

Safety description (each channel)

$U_o=10.5V$ $I_o=14mA$ $P_o=37mW$ $U_m = 253V$ rms or dc



SIL capable

These models have been assessed for use in IEC 61508 functional safety applications.

SIL2 capable for a single device (HFT=0)

SIL3 capable for multiple devices in safety redundant configurations (HFT=1)

See data on MTL web site and refer to the safety manual

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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