

# 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 1k $\Omega$   $\pm$ 10%

### Input/output characteristics

Normal phase

Outputs closed if input > 2.1mA (< 2k $\Omega$  in input circuit)

Outputs open if input < 1.2mA (> 10k $\Omega$  in input circuit)

Hysteresis: 200 $\mu$ A (650 $\Omega$ ) 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  $I_{in} < 50\mu$ 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 $\Omega$  to 1k $\Omega$  in series with switch  
20k $\Omega$  to 25k $\Omega$  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

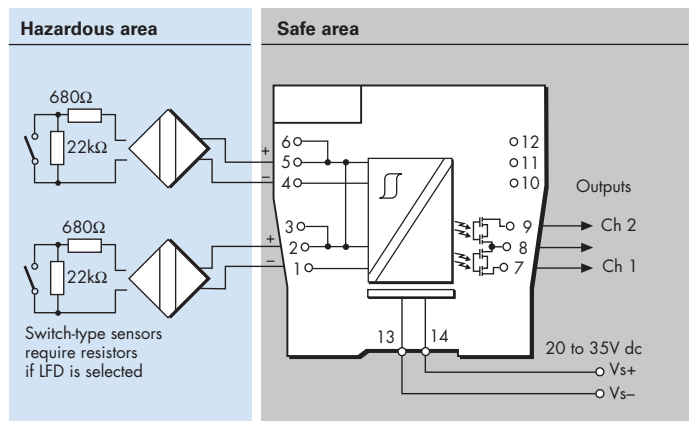
Max. off-state voltage:  $\pm$  35V

Max. off-state leakage current:  $\pm$  50 $\mu$ A

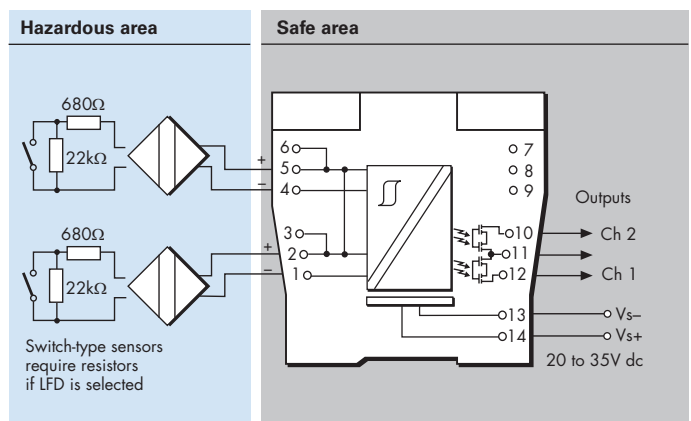
Max. on-state resistance: 25 $\Omega$

Max. on-state current:  $\pm$  50mA

## MTL4513



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### 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)

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