

MTL4510B – MTL5510B

SWITCH/ PROXIMITY

DETECTOR INTERFACE

4-channel, multi-function, digital input

The MTL4510B enables four solid-state outputs in the safe area to be controlled by up to four switches or proximity detectors located in a hazardous area. Each pair of output transistors shares a common terminal and can switch +ve or –ve polarity signals. A range of module configurations is available (see Table 1) through the use of selector switches. These include start/stop operations and pulse output modes.

SPECIFICATION

See also common specification

Number of channels

4, configured by switches

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: $200\mu A$ (650Ω) nominal

Line fault detection (LFD) (when selected)

User-selectable via switches on the side of the unit.

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
 500Ω to $1k\Omega$ in series with switch
 $20k\Omega$ to $25k\Omega$ in parallel with switch

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: 25Ω

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

LED indicators

Green: power indication

Yellow: four: on when output active

Red: LFD indication + faulty channel's yellow LED flashes

Maximum current consumption

40mA at 24V (with all output channels energised)

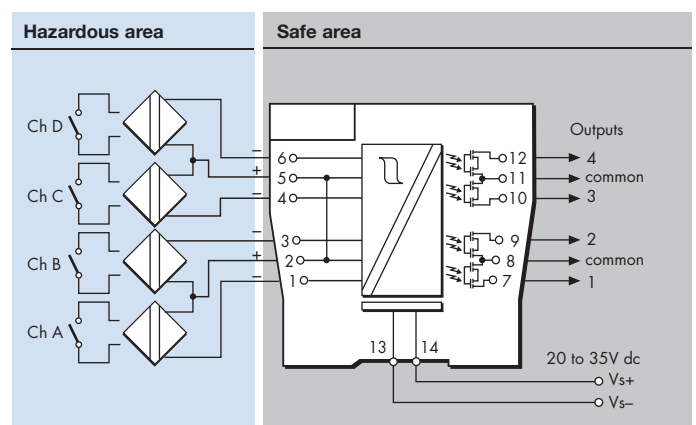
Power dissipation within unit

0.96W at 24V, with 10mA loads

Safety description (each channel)

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

MTL4510B



MTL5510B

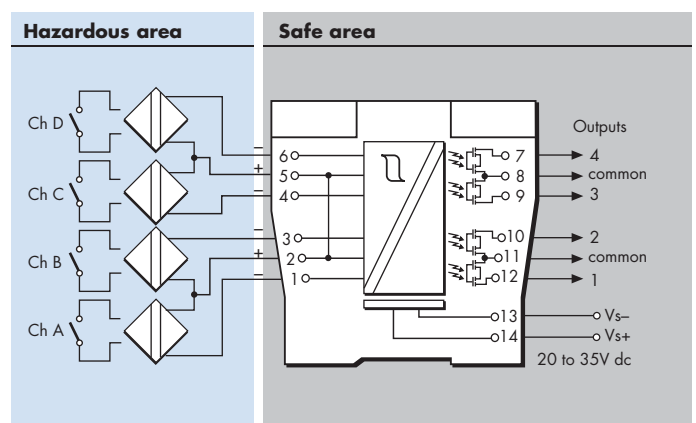


Table 1 - Mode options

MODE	Function	Equivalent*
0	4-ch switch input,	MTLx510
1	2-ch each channel one input, two outputs	MTL4016
2	Same as mode 1 with phase reversed	MTL4016
3	2-ch, 2-pole changeover output	
4	1-ch with line fault output	MTLx014
5	As mode 4 with changeover outputs	
6	1-ch with start-stop latch	MTL2210B
7	4-ch switch input,	MTLx510
8	4-ch switch input,	MTLx510
9	2-ch with line fault output	MTLx017
10	As mode 9 with LFD changeover	
11	As mode 10 with phase reversed	
12	3-ch with normally-open LFD output	
13	3-ch with normally-closed LFD output	
14	2-ch monostable, pulse stretcher	
15	4-ch switch input	MTLx510

* Note: that terminal connections may not be the same on these models, and x can mean either '4' or '5'.

See Instruction Manual INM4500 for further mode information.

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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