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MTL4510 – MTL5510 SWITCH/ PROXIMITY DETECTOR INTERFACE

4-channel, digital input

The MTLx510 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. When proximity detector modes are selected, LFD is enabled and the output switches to OFF if a line fault is detected.

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 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 via switches on the side of the unit.
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

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

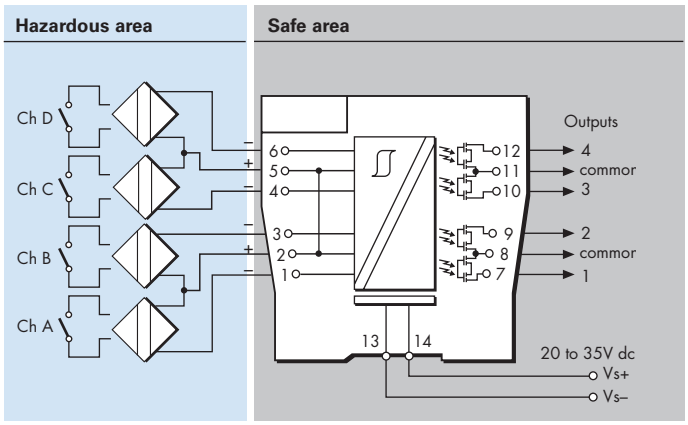
LED indicators
Green: power indication
Yellow: four: on when output active
Red: LFD indication + faulty channel's yellow LED flashes

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

MTL4510



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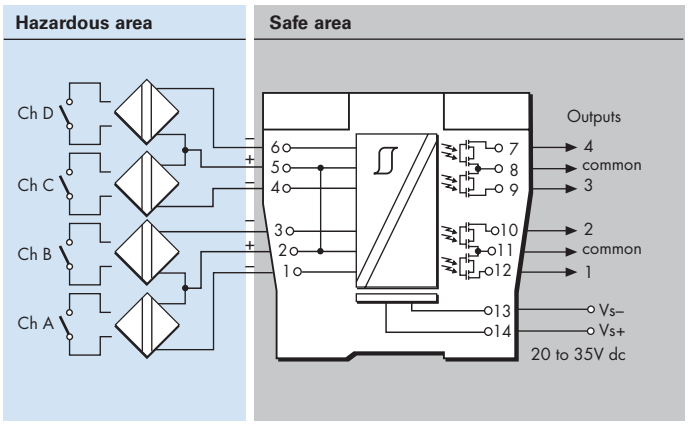


Table 1 - Mode options

MODE	o/p 1	o/p 2	o/p 3	o/p 4	i/p type
0	chA	chB	chC	chD	switch
1	chA rev.	chB	chC	chD	
2	chA	chB rev.	chC	chD	
3	chA	chB	chC rev.	chD	
4	chA	chB	chC	chD rev.	
5	chA rev.	chB	chC rev.	chD	
6	chA	chB rev.	chC	chD rev.	
7	chA rev.	chB rev.	chC rev.	chD rev.	
8	chA	chB	chC	chD	prox. detector + LFD
9	chA rev.	chB	chC	chD	
10	chA	chB rev.	chC	chD	
11	chA	chB	chC rev.	chD	
12	chA	chB	chC	chD rev.	
13	chA rev.	chB	chC rev.	chD	
14	chA	chB rev.	chC	chD rev.	
15	chA rev.	chB rev.	chC rev.	chD rev.	

See Instruction Manual INM4500 or INM5500 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.

Powering Business Worldwide

Eaton Electric Limited,
Great Marlings, Butterfield, Luton
Beds, LU2 8DL, UK.
Tel: + 44 (0)1582 723633 Fax: + 44 (0)1582 422283
E-mail: mtlenquiry@eaton.com
www.mtl-inst.com

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Publication No.
EPSx510 Rev4 010916

EUROPE (EMEA):
+44 (0)1582 723633 mtlenquiry@eaton.com
THE AMERICAS:
+1 800 835 7075 mtl-us-info@eaton.com
ASIA-PACIFIC:
+65 6 645 9888 sales.mtlsing@eaton.com

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