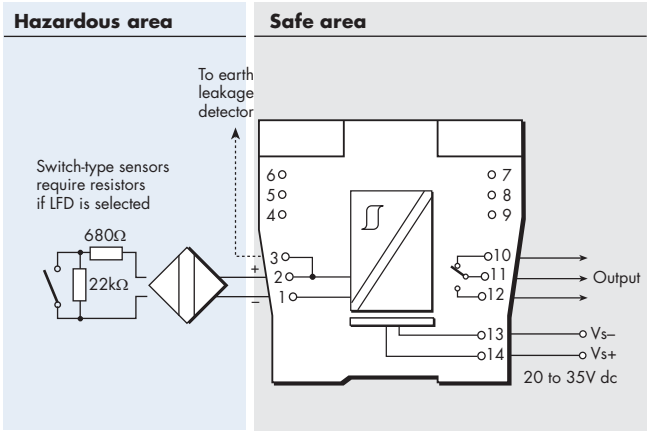
MTL5511 SWITCH/ PROXIMITY DETECTOR INTERFACE

single channel, with line fault detection

The MTL5511 enables a safe-area load 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 the channel is selected by a switch on the side of the module and output is provided by changeover relay contacts.



Terminal	Function
1	Input –ve
2	Input +ve
3	To earth leakage detector*
10	Output normally-closed contact
11	Common
12	Output normally-open contact
13	Supply –ve
14	Supply +ve

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

SPECIFICATION

See also common specification

Number of channels
One

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 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. A line fault is indicated by an LED. The channel output relay is de-energised if an input line fault is detected.
Open-circuit alarm on if Iin < 50µA
Open-circuit alarm off if Iin > 250µA
Short-circuit alarm on if Rin < 100Ω
Short-circuit alarm off if Rin > 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 output
Single pole relay with changeover contacts
Note: reactive loads must be adequately suppressed

Relay characteristics
Response time: 10ms maximum
Contact rating: 250V ac, 2A, cosØ >0.7
40V dc, 2A, resistive load

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

Maximum current consumption
25mA at 24V

Power dissipation within unit
0.6W at 24V

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

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MTL5500 SERIES COMMON SPECIFICATION

Please go to our website at www.mtl-inst.com for the latest information regarding safety approvals, certificates and entity parameters.

Connectors

Each MTL5500 unit is supplied with signal connectors, as applicable.

When using crimp ferrules for the hazardous and non-hazardous (safe) signal connectors the metal tube length should be 12mm and the wire trim length 14mm.

Isolation

250V rms, tested at 2200V rms minimum, between safe-area, hazardous-area and power supply terminals

50V ac or dc between safe-area circuits where applicable.

Supply voltage

20 – 35V dc

Location of units

Safe area

Terminals

Accepts conductors of up to 2.5mm^2 stranded or single-core

Mounting

MTL5500 series backplanes

Ambient temperature limits

–20 to +60°C (–6 to +140°F) operating

–40 to +80°C (–40 to +176°F) storage

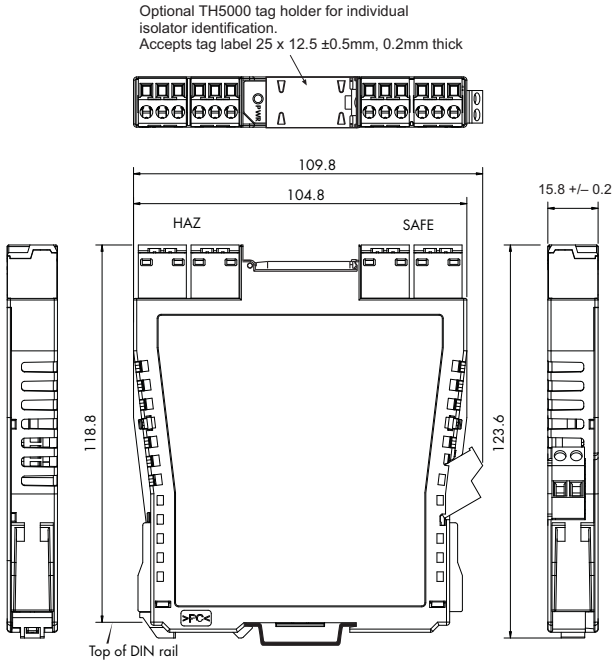
Humidity

5 to 95% relative humidity

Weight

110g approximately (except where indicated)

DIMENSIONS (mm)



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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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