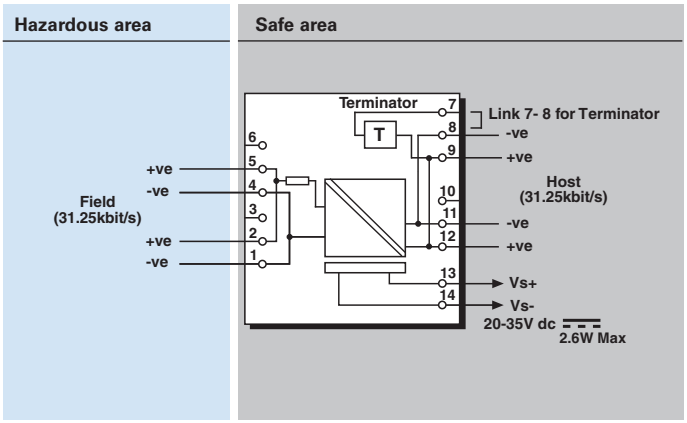
MTL5553
ISOLATOR/ POWER SUPPLY
31.25kbit/s fieldbus

The MTL5553 has been specifically developed to extend 31.25kbit/s (H1) fieldbus networks into hazardous areas. It provides power and communication to devices powered through the signal conductors. For installations in which the safe-area bus length is small an internal terminator can be enabled by a switch on top of the module.

The MTL5553 complies with requirements of Fieldbus Foundation™ specified power supply Type 133† (IS power supply).



SPECIFICATION

See also common specification

Location of fieldbus device(s)
Zone 0, IIC, T4–6 hazardous area if suitably certified

Hazardous-area fieldbus power supply
18.4V ± 2%
105Ω ±3% dc impedance
80mA maximum current

Maximum cable length
Determined by IS requirements, depending on other devices attached and maximum acceptable voltage drop along cable

Digital signal transmission
Compatible with 31.25kbit/s fieldbus systems and complies with fieldbus standards†

Supply voltage
20 to 35Vdc

LED indicator
Green: one provided for power indication

Power requirement, Vs, with 80mA output load
135mA typical at 24V
105mA at 35V

Power dissipation within unit, with 80mA output load
2.3W typical at 24V
2.6W maximum at 35V

Note: To allow adequate heat dissipation under all likely thermal conditions, it is recommended that MTL5553's are installed on a horizontal DIN-rail mounted on a vertical surface with a 10mm space between adjacent units. MTL MS010 10mm DIN-rail module spacers are available for this purpose.*

** If an MTL5553 is mounted in a non-optimum orientation, the maximum operating temperature is reduced to 45°C.*

Isolation
250V ac between safe- and hazardous-area circuits and power supply

Safety description
Terminals 1 and 2
22V, 102Ω, 216mA; Um = 250V rms or dc

† The applicable fieldbus specifications and standards are: Foundation fieldbus™ 31.25kbit/s Physical Layer Profile Specification, document FF-816, IEC 61158-2: 1993 and ISA-S50.02-1992 for 31.25kbit/s fieldbus systems

Terminal	Function
1	Hazardous-area fieldbus device(s) connection –ve
2	Hazardous-area fieldbus device(s) connection +ve
4	Optional HHC connection –ve
5	Optional HHC connection +ve
7	Link to 8 to enable internal terminator
8 & 11	Safe-area fieldbus device(s) connection –ve
9 & 12	Safe-area fieldbus device(s) connection +ve
13	Supply –ve
14	Supply +ve

Note: To assist the process of terminating cable screens, screw terminals have been provided in terminals 3, 6, and 10. Please note, however, that there is no internal connection for these terminals so they are not earthed.

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MTL5500 RANGE
COMMON SPECIFICATIONS

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

Connectors

Each unit is supplied with signal connectors, as applicable. When using crimp ferrules for the hazardous or non-hazardous (safe) signal connectors the metal tube length should be 12mm and the wire trim length 14mm.

Isolation

250V rms, tested at 1500V rms minimum, between safe- and hazardous-area terminals.

MTL5500: 250V rms between safe-area circuits and power supply

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

T-section 35mm DIN rail (7.5 or 15mm) to EN 50022

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

Approximate (except where indicated)

MTL5500 150g

EMC

To EN61326 and NE21*

** For 20ms power interruption compliance, a suitable power supply must be used.*

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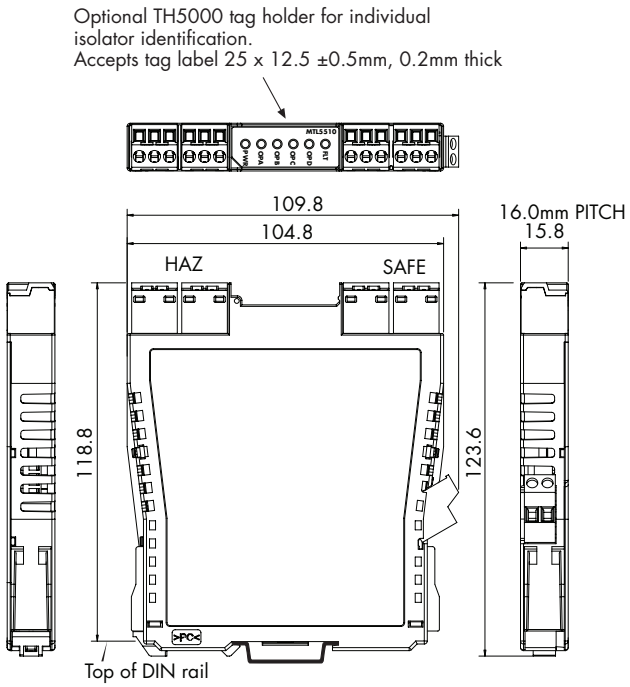
DIMENSIONS (MM)

MTL5500



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