

MTL5541 REPEATER POWER SUPPLY

4/20mA, smart, for 2- or 3-wire
transmitters

The MTL5541 provides a fully-floating dc supply for energising a conventional 2- or 3-wire 4/20mA transmitter which is located in a hazardous area, and repeats the current in another floating circuit to drive a safe-area load. For smart 2-wire transmitters, the unit allows bi-directional communications signals superimposed on the 4/20mA signal.

SPECIFICATION

See also common specification

Number of channels

One

Location of transmitter

Zone 0, IIC, T4–6 hazardous area if suitably certified
Div. 1, Group A hazardous location

Safe-area output

Signal range: 4 to 20mA
Under/over-range: 0 to 24mA
Safe-area load resistance: 0 to 360Ω @ 24mA
0 to 450Ω @ 20mA

Safe-area circuit output resistance: > 1MΩ

Safe-area circuit ripple

< 50μA peak-to-peak

Hazardous-area input

Signal range: 0 to 24mA (including over-range)
Transmitter voltage: 16.5V at 20mA

Transfer accuracy at 20°C

Better than 15μA

Temperature drift

< 0.8μA/°C

Response time

Settles to within 10% of final value within 50μs

Communications supported

HART® (terminals 1 & 2 only)

LED indicator

Green: power indication

Maximum current consumption (with 20mA signal)

51mA at 24V

Power dissipation within unit (with 20mA signal)

0.7W at 24V

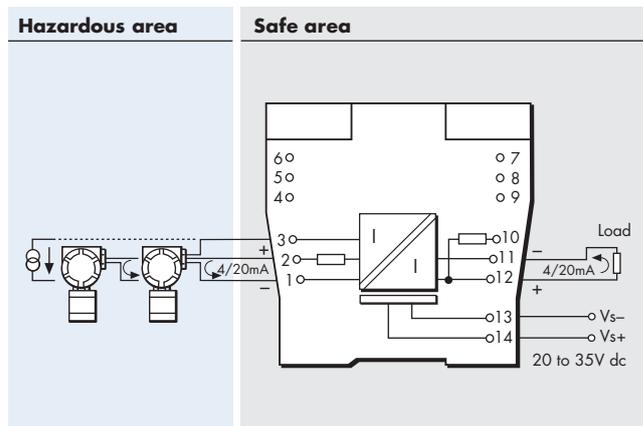
Safety description

Terminals 2 to 1 and 3:

$V_o=28V$ $I_o=93mA$ $P_o=651mW$ $U_m = 253V$ rms or dc

Terminals 1 to 3:

Simple apparatus ≤1.5V, ≤0.1A and ≤25mW; can be connected without further certification into any IS loop with an open-circuit voltage <28V



Terminal	Function
1	Current input
2	Transmitter supply +ve
3	Common
10	Output +ve via 220Ω for HART apps.
11	Output -ve
12	Output +ve
13	Supply -ve
14	Supply +ve

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.



EUROPE (EMEA)
AMERICAS
ASIA PACIFIC
E-mail: enquiry@mtl-inst.com

Tel: +44 (0)1582 723633
Tel: +1 281 571 8065
Tel: +65 6 487 7887

Fax: +44 (0)1582 422283
Fax: +1 281 571 8069
Fax: +65 6 487 7997

Web site: www.mtl-inst.com

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 2.5mm² 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

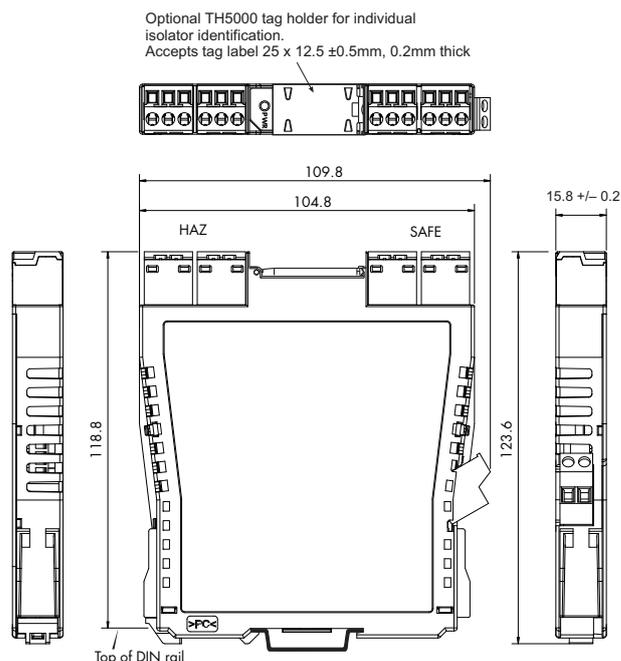
Humidity

5 to 95% relative humidity

Weight

110g approximately (except where indicated)

DIMENSIONS (mm)



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