

MTL5546

ISOLATING DRIVER

for 4–20mA smart valve positioners
with line fault detection

The MTL5546 accepts a 4/20mA floating signal from a safe-area controller to drive a current/pressure converter (or any other load up to 800Ω) in a hazardous area. For smart valve positioners, the module also permits bi-directional transmission of digital communication signals so that the device can be interrogated either from the operator station or by a hand-held communicator. Process controllers with a readback facility can detect open or short circuits in the field wiring: if these occur, the current taken into the terminals drops to a preset level.

SPECIFICATION

See also common specification

Number of channels

One

Location of I/P converter

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

Working range

4 to 20mA

Digital signal bandwidth

500Hz to 10kHz

Maximum load resistance

800Ω (16V at 20mA)

Minimum load resistance

90Ω (short-circuit detection at < 50Ω)

Output resistance

> 1MΩ

Under/over range capability

Under range = 1mA

Over range = 24mA (load ≤ 520Ω)

Input and output circuit ripple

< 40μA peak-to-peak

Transfer accuracy at 20°C

Better than 20μA

Temperature drift

< 1.0μA/°C

Input characteristics

< 6.0V with the field wiring intact

< 0.9mA with the field wiring open or short-circuit

Response time

Settles within 200μA of final value within 100ms

Communications supported

HART®

LED indicator

Green: power indication

Maximum current consumption (with 20mA signals into 250Ω load)

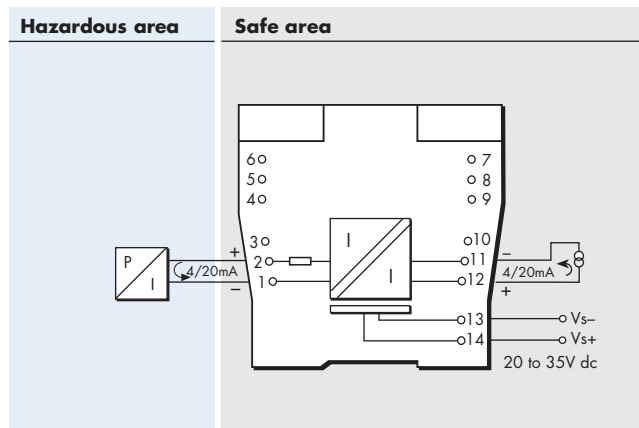
35mA at 24V dc

Power dissipation within unit (with 20mA signals into 250Ω load)

0.8W at 24V

Safety description

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



Terminal	Function
1	Output –ve
2	Output +ve
11	Input –ve
12	Input +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.



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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 2.5mm² 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

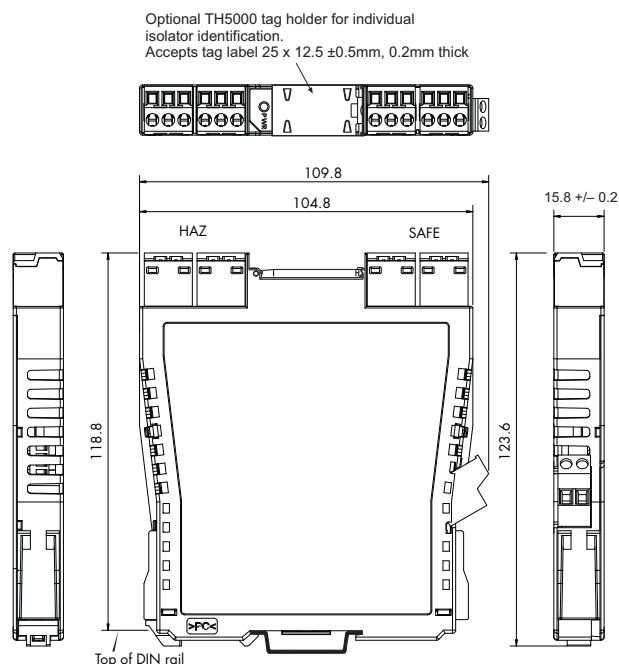
Humidity

5 to 95% relative humidity

Weight

110g approximately (except where indicated)

DIMENSIONS (mm)



HART® is a registered trademark of HART Communication Foundation

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