

# 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)

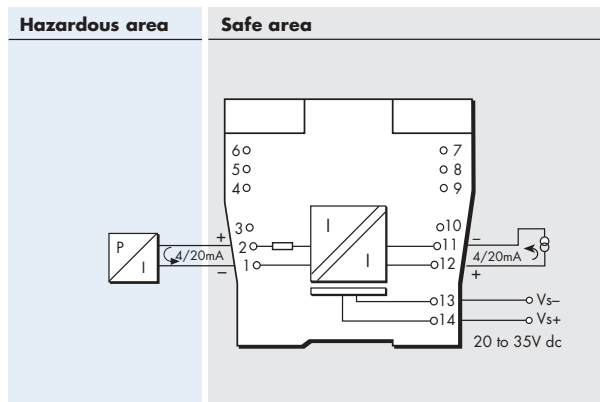
35mA at 24V dc

#### 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.



# MTL5500 SERIES COMMON SPECIFICATION

Please go to our website at [www.mtl-inst.com](http://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<sup>2</sup> 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

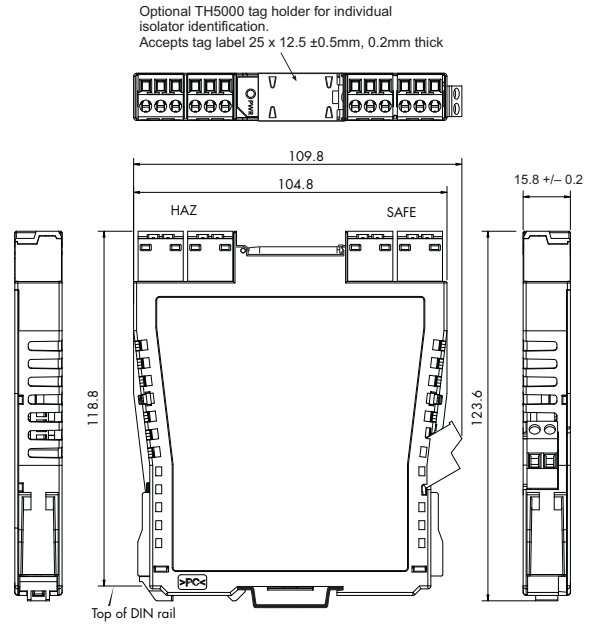
## Humidity

5 to 95% relative humidity

## Weight

110g approximately (except where indicated)

## DIMENSIONS (mm)



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