

MTL5549/5549Y

ISOLATING DRIVER

two-channel, for 4–20mA smart valve positioners with line fault detection

The MTL5549 accepts 4/20mA floating signals from safe-area controllers to drive 2 current/pressure converters (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. The MTL5549Y is very similar to the MTL5549 except that it provides open circuit detection *only* (i.e. no short-circuit detection)

SPECIFICATION

See also common specification

Number of channels

Two

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

Field wiring state	MTL5549	MTL5549Y
Normal	< 6.0V	< 6.0V
Open-circuit	< 0.9mA	< 0.5mA
Short-circuit	< 0.9mA	N.A.

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)

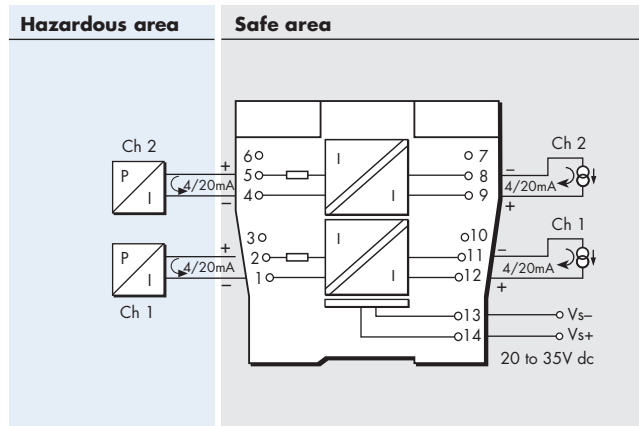
70mA at 24V dc

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

1.6W at 24V

Safety description (each channel)

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



Terminal	Function
1	Output -ve (Ch 1)
2	Output +ve (Ch 1)
4	Output -ve (Ch 2)
5	Output +ve (Ch 2)
8	Input -ve (Ch 2)
9	Input +ve (Ch 2)
11	Input -ve (Ch 1)
12	Input +ve (Ch 1)
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

Web site: www.mtl-inst.com

Fax: +44 (0)1582 422283

Fax: +1 281 571 8069

Fax: +65 6 487 7997

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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

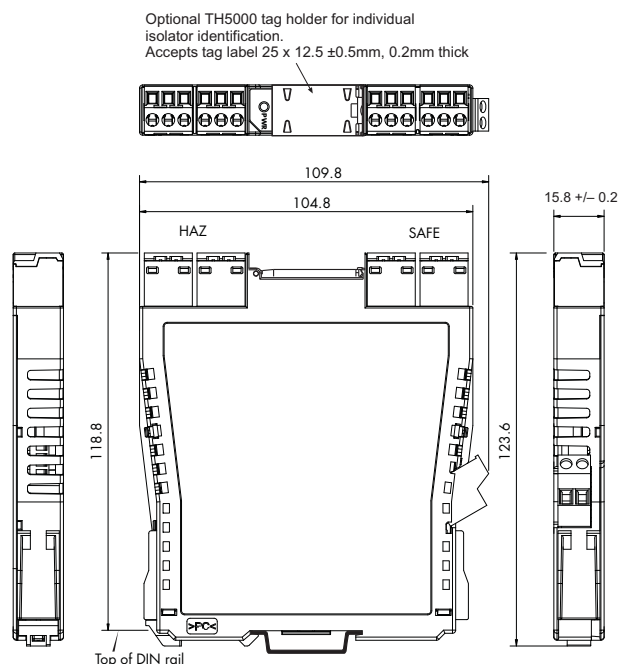
Humidity

5 to 95% relative humidity

Weight

110g approximately (except where indicated)

DIMENSIONS (mm)



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