

MTL4546/C/Y – MTL5546/Y

ISOLATING DRIVER

for 4–20mA HART® valve positioners with line fault detection

The MTLx546 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 HART valve positioners, the module also permits bi-directional transmission of digital communication signals. 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 MTL4546C and the MTLx546Y are very similar to the MTLx546 except that they provide open circuit detection only (i.e. no short-circuit detection).

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

| Field wiring state | MTLx546 | MTL4546C | MTLx546Y |
|--------------------|---------|----------|----------|
| Normal | < 6.0V | < 6.0V | < 6.0V |
| Open-circuit | < 0.9mA | < 0.9mA | < 0.5mA |
| Short-circuit | < 0.9mA | N.A. | N.A. |

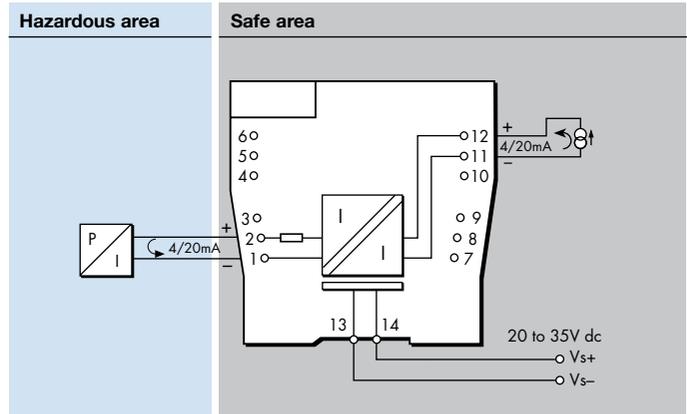
Response time

Settles within 200μA of final value within 100ms

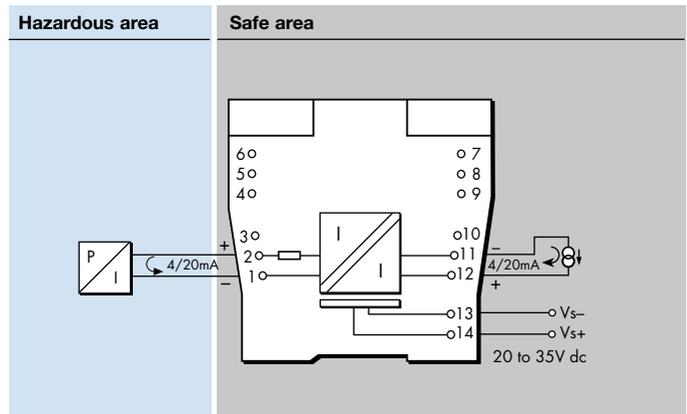
Communications supported

HART

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MTL5546 / MTL5546Y



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

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



SIL capable

These models have been assessed for use in IEC 61508 functional safety applications. See data on MTL web site and refer to the safety manual.

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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