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 $< 50\Omega$)

Output resistance

 $> 1M\Omega$

Under/over range capability

Under range = 1mA

Over range = 24mA (load $\leq 520\Omega$)

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.

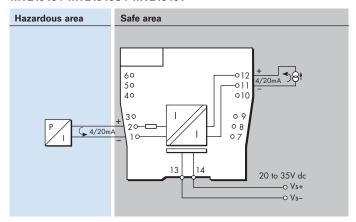
Response time

Settles within 200µA of final value within 100ms

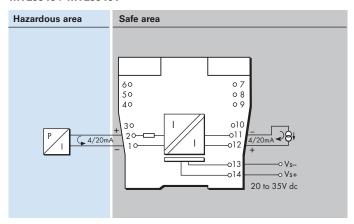
Communications supported

HART

MTL4546 / MTL4546C / MTL4546Y



MTL5546 / MTL5546Y



LED indicator

Green: power indication

Maximum current consumption (with 20mA signals into 250 Ω load) 35mA at 24V dc

Power dissipation within unit (with 20mA signals into 250 Ω load) 0.8W at 24V

Safety description

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



SIL capable

These models have been assessed for use in IEC 61508 functional safety applications. SIL2 capable for a single device (HFT=0) SIL3 capable for multiple devices in safety redundant configurations (HFT=1) See data on MTL web site and refer to the safety manual.



Great Marlings, Butterfield, Luton Beds, LU2 8DL, UK. Tel: + 44 (0)1582 723633 Fax: + 44 (0)1582 422283 E-mail: mtlenquiry@eaton.com www.mtl-inst.com © 2016 Eaton All Rights Reserved Publication No. EPSx546/C/Y Rev6 010916

EUROPE (EMEA):

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

+44 (0)1582 723633 mtlenquiry@eaton.com THE AMERICAS:

+1 800 835 7075 mtl-us-info@eaton.com **ASIA-PACIFIC:** +65 6 645 9888 sales.mtlsing@eaton.com