MTL4544/S – MTL5544/S REPEATER POWER SUPPLY

2-channel, 4/20mA, HART®, 2- or 3- wire transmitters

The MTLx544 provides fully-floating dc supplies for energising two conventional 2-wire or 3-wire 4/20mA or HART transmitters located in a hazardous area, and repeats the current in other circuits to drive two safe-area loads. For smart transmitters, the unit allows bi-directional transmission of digital communication signals superimposed on the 4/20mA loop current. Alternatively, the MTLx544S acts as a current sink for a safe-area connection rather than driving a current into the load. Separately powered current sources, such as 4-wire transmitters, can be connected but will not support HART communication.

SPECIFICATION

See also common specification

Number of channels
Two

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

Safe-area output

Signal range:	4 to 20mA
Under/over-range:	0 to 24mA
Safe-area load resistance (MTLx 544)	
@ 24mA:	0 to 360Ω
@ 20mA:	0 to 450Ω
Safe-area load (MTLx544S)	
Current sink:	600Ω max.
Maximum voltage source:	24V dc
Safe-area circuit output resistance:	> 1MΩ

Safe-area circuit ripple
< 50µA peak-to-peak

Hazardous-area input

Signal range:	0 to 24mA (including over-range)
Transmitter voltage:	16.5V at 20mA

Transfer accuracy at 20°C
Better than 15µA

Temperature drift
< 0.8µA/°C

Response time
Settles to within 10% of final value within 50µs

Communications supported
HART (terminals 1 & 2 and 4 & 5 only)

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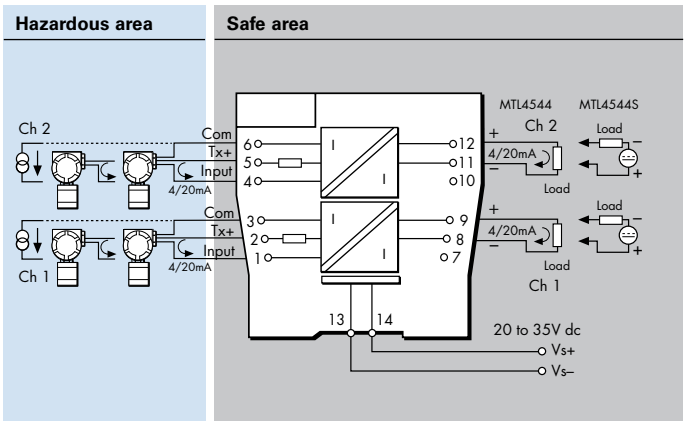

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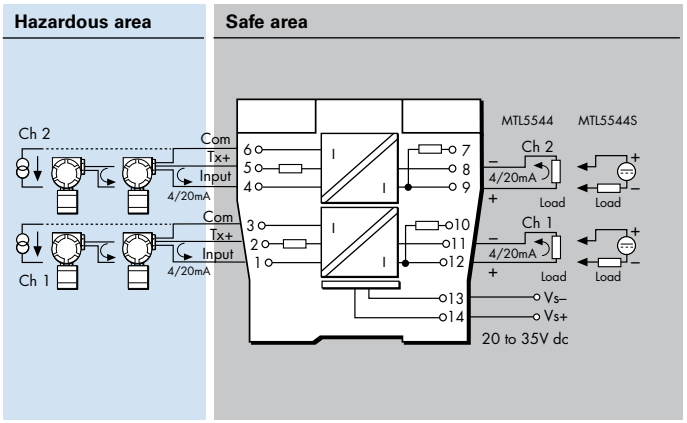

LED indicator
Green: power indication

Maximum current consumption (with 20mA signals)
96mA at 24V dc

Power dissipation within unit (with 20mA signals)

MTLx544	1.4W @ 24V dc
MTLx544S	1.9W @ 24V dc

Safety description (each channel)
Terminals 2 to 1 and 3, and 5 to 4 and 6:
U_o=28V I_o=93mA P_o=651mW U_m = 253V rms or dc
Terminals 1 to 3 and 4 to 6:
Simple apparatus ≤1.5V, ≤0.1A and ≤25mW; can be connected without further certification into any IS loop with an open-circuit voltage <28V

SIL capable
These models have been assessed for use in IEC 61508 functional safety applications.
SIL3 capable for a single device (HFT=0)
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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