# MTL4541/S – MTL5541/S REPEATER POWER SUPPLY

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

The MTLx541 provides a fully-floating dc supply for energising a conventional 2- or 3-wire 4/20mA transmitter, which is located in a hazardous area, and repeats the current in another floating circuit to drive a safe-area load. For HART 2-wire transmitters, the unit allows bi-directional communications signals superimposed on the 4/20mA loop current. Alternatively, the MTLx541S 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**
One

**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 (MTLx541) | |
| @ 24mA: | 0 to 360Ω |
| @ 20mA: | 0 to 450Ω |
| Safe-area load (MTLx541S) | |
| 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 |

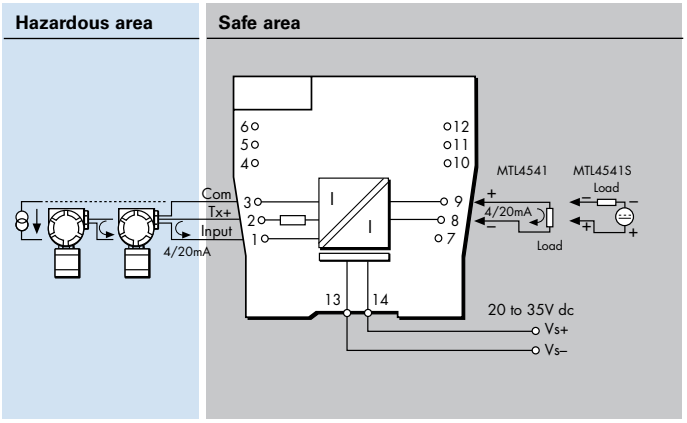
**Transfer accuracy at 20°C**
Better than 15µA

**Temperature drift**
< 0.8µA/°C

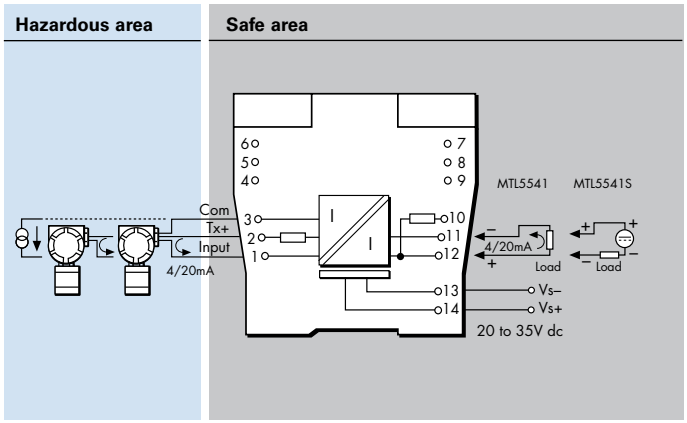
**Response time**
Settles to within 10% of final value within 50µs

**Communications supported**
HART (terminals 1 & 2 only)

**MTL4541 / MTL4541S**




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**LED indicator**
Green: power indication

**Maximum current consumption (with 20mA signal)**
51mA at 24V

**Power dissipation within unit (with 20mA signal)**

| | |
|---|---|
| MTLx541 | 0.7W @ 24V dc |
| MTLx541S | 1.0W @ 24V dc |

**Safety description**
Terminals 2 to 1 and 3:
$U_o$=28V $I_o$=93mA $P_o$=651mW $U_m$ = 253V rms or dc
Terminals 1 to 3:
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.



Powering Business Worldwide

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