

# MTL5541/S-T REPEATER POWER SUPPLY

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

The MTL5541-T 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 MTL5541S-T 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 (MTL5541-T)  
@ 24mA: 0 to 360Ω  
@ 20mA: 0 to 450Ω  
Safe-area load (MTL5541S-T)  
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

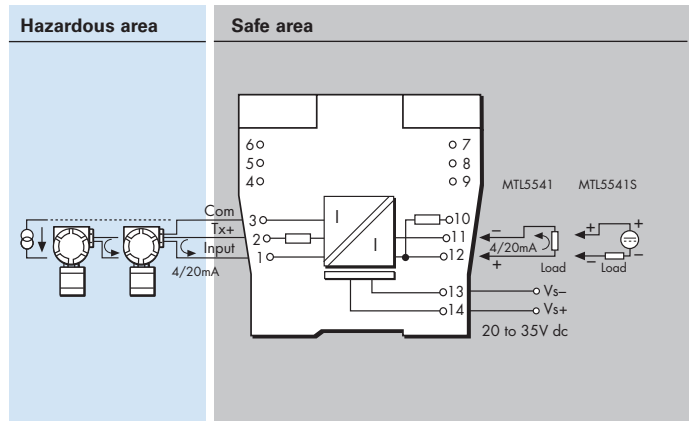
### Response time

Settles to within 10% of final value within 50μs

### Communications supported

HART (terminals 1 & 2 only)

## MTL5541-T / MTL5541S-T



### LED indicator

Green: power indication

### Maximum current consumption (with 20mA signal)

51mA at 24V

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

MTL5541-T 0.7W @ 24V dc  
MTL5541S-T 1.0W @ 24V dc

### Safety description

Terminals 2 to 1 and 3:

$U_o=28V$   $I_o=93mA$   $P_o=0.65W$   $U_m = 253V$  rms or dc

Terminals 1 to 3:

Simple apparatus  $\leq 1.5V$ ,  $\leq 0.1A$  and  $\leq 25mW$ ; can be connected without further certification into any IS loop with an open-circuit voltage  $< 28V$

### Ambient temperature limits

-20°C to + 65°C (-6 to + 149°F) operating

-40°C to + 80°C (-40 to + 176°F) storage



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Publication No.  
EPS5541/S-T Rev2 190124

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