

MTL4541 REPEATER POWER SUPPLY

4/20mA, smart, for 2- or 3-wire transmitters

The MTL4541 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 smart 2-wire transmitters, the unit allows bi-directional communications signals superimposed on the 4/20mA signal.

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: 0 to 360Ω @ 24mA
0 to 450Ω @ 20mA
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)

LED indicator

Green: power indication

Maximum current consumption (with 20mA signal)

51mA at 24V

Power dissipation within unit (with 20mA signal)

0.7W at 24V

Safety description

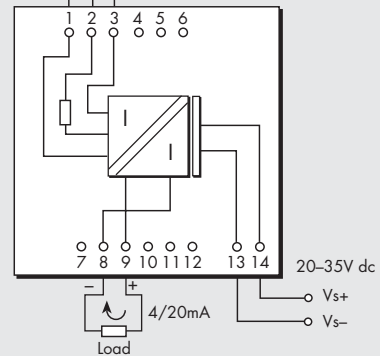
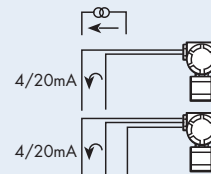
Terminals 2 to 1 and 3:

$V_o=28V$ $I_o=93mA$ $P_o=651mW$ $U_m = 253V$ 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

Hazardous area



Safe area

Terminal	Function
1	Current input
2	Transmitter supply +ve
3	Common
8	Output -ve
9	Output +ve
13	Supply -ve
14	Supply +ve