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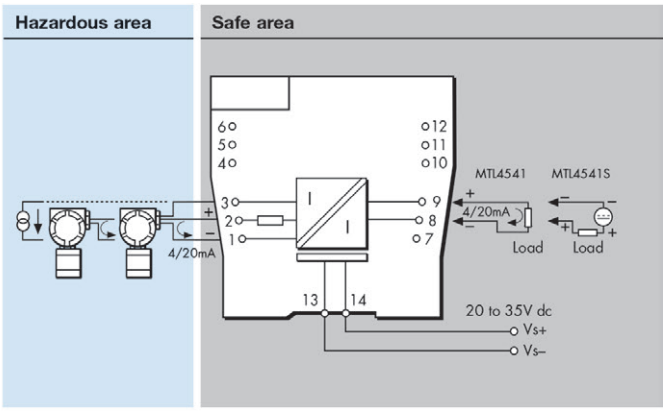
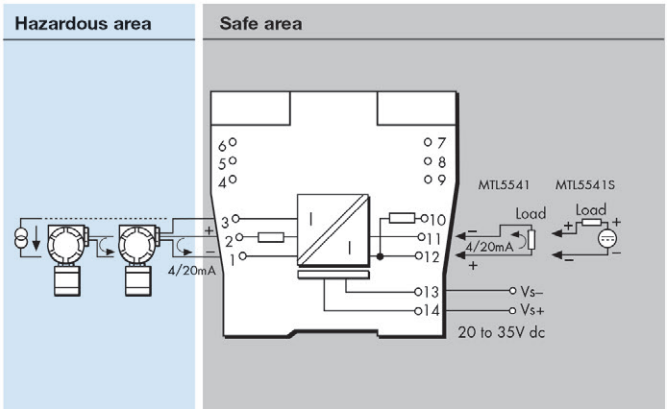
MTL4541/S – MTL5541/S
REPEATER POWER SUPPLY
4/20mA, HART®, 2- or 3-wire transmitters

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.

MTL4541 / MTL4541S



MTL5541 / MTL5541S



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)
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. See data on MTL web site.