

# MTL4041B REPEATER POWER SUPPLY

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



The MTL4041B provides a fully floating dc supply for energising a conventional 2- or 3-wire 4/20mA transmitter or a 'smart' transmitter located in a hazardous area, and repeats the current in another circuit to drive a safe-area load. For smart transmitters, the unit allows bi-directional transmission of digital communication signals superimposed on the 4/20mA signal so that the transmitter can be interrogated either from the operator station or by a hand-held communicator (HHC). The module can also be used with hazardous-area current sources and some vortex and turbine meters.

## SPECIFICATION

See also common specification, cable parameters and approvals

### Number of channels

One

### Location of transmitter

Zone 0, IIC, T4-6 hazardous area if suitably certified  
Div.1, Group A, hazardous location

### Voltage available for transmitter and lines

15V minimum at 20mA

Note: maximum open-circuit voltage is 28V

### Input and output signal range

4 to 20mA

### Over-/under-range

1.0mA to 21.5mA

### Digital signal bandwidth

10Hz to 8kHz

### Safe-area circuit load resistance

Conventional transmitters: 0 to 650Ω

Smart transmitters: 250Ω ±10%

### Safe-area circuit output resistance

>1MΩ

### Safe-area circuit ripple

<50μA peak-to-peak up to 80kHz

### Transfer accuracy at 20°C

Better than 20μA

### Temperature drift

<1μA/°C

### Response time

Settles within 200μA of final value within 20ms

### LED indicator

Green: one provided for power indication

### Power requirement, V<sub>s</sub>

65mA at 24V dc

75mA at 20V dc

50mA at 35V dc with 20mA signal

### Power dissipation within unit

1.2W at 24V with 20mA signal

1.4W at 35V

### Isolation

250V ac between safe- and hazardous-area circuits

### Safety description

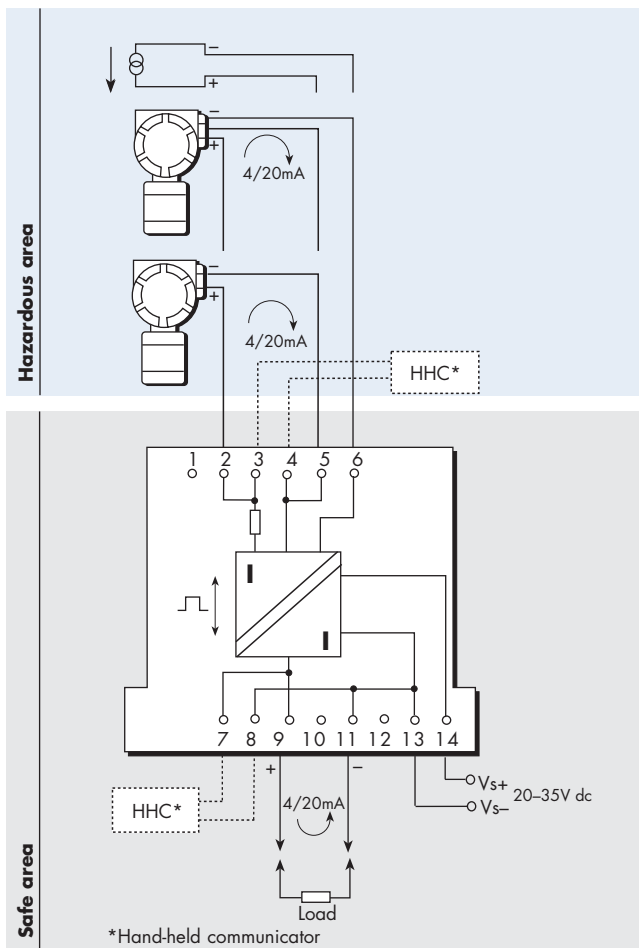
#### Terminals 2 to 5 and 6

28V, 300Ω, 93mA

#### Terminals 5 to 6

Non-energy storing apparatus ≤1.2V, ≤0.1A, ≤20μJ and ≤25mW; can be connected without further certification into any IS loop with open-circuit voltage not more than 28V

Note: Terminals 5 and 6 do not support HART® communications.



Terminal	Function
2	Tx supply +ve
3	Optional HHC connection +ve
4	Optional HHC connection -ve
5	Current input -ve
6	Common
7	Optional HHC connection +ve
8	Optional HHC connection -ve
9	Output +ve
11	Output -ve
13	Supply -ve
14	Supply +ve

### FM entity parameters

#### Terminals 2, 5, 6

V<sub>t</sub> = 28V, I<sub>t</sub> = 141mA, C<sub>a</sub> = 0.13μF, L<sub>a</sub> = 1.94mH

#### Terminals 2, 4, 5

V<sub>t</sub> = 28V, I<sub>t</sub> = 93mA, C<sub>a</sub> = 0.13μF, L<sub>a</sub> = 4.2mH



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