

MTL4044 REPEATER POWER SUPPLY

two channel, 4/20mA, smart,
for 2-wire transmitters



The MTL4044 provides fully floating dc supplies for energising two conventional 2-wire 4/20mA or 'smart' transmitters located in a hazardous area, and repeats the current in other circuits to drive two safe-area loads. 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).

SPECIFICATION

See also common specification, cable parameters and approvals

Number of channels

Two

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

2.0mA to 22mA

Digital signal bandwidth

Hazardous-to-safe: dc to 10kHz

Safe-to-hazardous: 2Hz to 10kHz

Safe-area circuit load resistance

Conventional transmitters: 0 to 300Ω

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_s

(with both channels carrying 20mA signal)

90mA at 24V dc

105mA at 20V dc

65mA at 35V dc

Power dissipation within unit

(with both channels carrying 20mA signal)

1.2W at 24V dc

1.3W at 35V dc

Isolation

250V ac between safe- and hazardous-area circuits

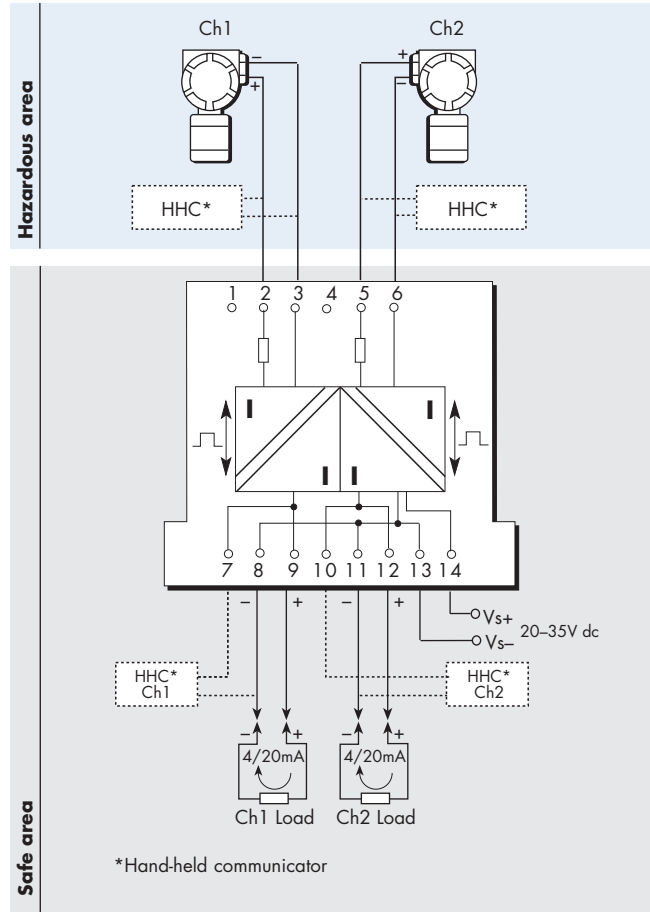
Safety description

Terminals 2 to 3 and 5 to 6

28V, 300Ω, 93mA

FM entity parameters

V_{oc} = 28V dc, I_{sc} = 93mA, C_a = 0.13μF, L_a = 4.2mH



Terminal	Function
2	Ch1 tx supply +ve
3	Ch1 tx supply -ve
5	Ch2 tx supply +ve
6	Ch2 tx supply -ve
7	Ch1 optional HHC connection +ve
8	Ch1 output -ve/HHC -ve
9	Ch1 output +ve
10	Ch2 optional HHC connection +ve
11	Ch2 output -ve/HHC -ve
12	Ch2 output +ve
13	Supply -ve
14	Supply +ve



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