

MTL5043 REPEATER POWER SUPPLY

dual output, 4/20mA, for 2-wire 'smart' transmitters



The MTL5043 provides a fully floating dc supply for energising a conventional 2-wire 4/20mA 'smart' transmitter which is located in a hazardous area, and repeats the current in two floating circuits to drive two safe-area loads. HART is repeated through channel 1 only for bi-directional 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 outputs

Signal range: 4 to 20mA
Over/under-range: 0 to 24mA (load ch1 <250Ω, ch2 <450Ω)
(21mA with max load below)
Safe-area load resistance: ch1: 0 - 350Ω (terminals 11 & 12)
ch1: 0 - 130Ω (terminals 10 & 11)
Safe-area load resistance: ch2: 0 - 550Ω
Safe-area load resistance: ch2 current sink 1kΩ (max voltage 30V)
Safe-area circuit output resistance: >2MΩ

Safe-area circuit ripple

<125µA peak-to-peak

Hazardous-area input

Signal range: 0 to 24mA (including over-range)
Transmitter voltage: 15.5V at 20mA

Transfer accuracy at 20°C

Better than 20µA (typically <5µA)

Temperature drift

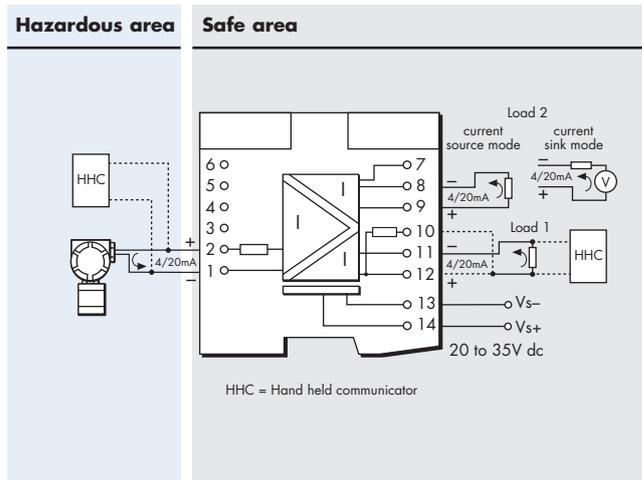
<0.5µA/°C

Response time

Both outputs settle to within 10% of final value within 500µs
Digital signal bandwidth: 400Hz to 4kHz

Communication supported

HART®



Terminal	Function
1	Input -ve } HHC
2	
7	Output -ve (ch2 passive current sink)
8	Output -ve (ch2 Active/+ve current sink)
9	Output +ve (ch2 Active)
10	Output +ve (ch1 via 220W for HART Apps)
11	Output -ve (ch1)
12	Output +ve (ch1)
13	Supply -ve
14	Supply +ve

LED indicator

Green: power indication

Supply voltage

20 to 35V dc

Maximum current consumption

(with two 20mA signals)

100mA at 24V
120mA at 20V
80mA at 35V

Maximum power dissipation within unit

(with two 20mA signals)

1.7W at 24V

Isolation

250V ac or dc between power supply, input and outputs

Safety description

$U_o = 28V$, $I_o = 93mA$, $P_o = 0.65W$
 $U_m = 253V$ rms.

N. B. MTL5043 marked Baseefa 03ATEX0584 pass HART and are fully compliant with this spec. Modules carrying the BAS01ATEX7154 or Ex97D2248 certification, do not pass HART, are not fitted with a current sink output on terminal 7 nor a 220 series resistor on terminal 10.

HART® is a registered trademark of the HART Communication Foundation



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