

MTL5042 REPEATER POWER SUPPLY

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



The MTL5042 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 600Ω
Safe-area circuit output resistance: >2MΩ

Safe-area circuit ripple

<40μA 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 10μA

Temperature drift

<0.5μA/°C

Response time

Settles to within 10% of final value within 40μs

Digital signal bandwidth

10Hz to 12kHz

Communications supported

HART®
Honeywell DE
Foxboro
Yokogawa Brain

LED indicator

Green: power indication

Supply voltage

20 to 35V dc

Maximum current consumption (with 20mA signal)

75mA at 24V
85mA at 20V
55mA at 35V

Maximum power dissipation within unit (with 20mA signal)

1.3W at 24V

Safety description

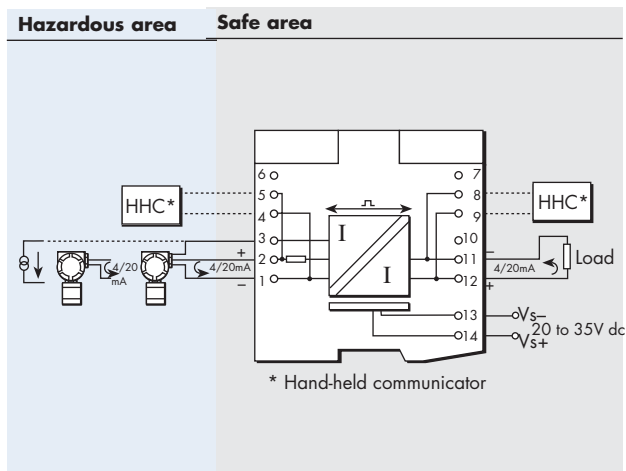
Terminals 2 to 1 and 3:

28V, 300Ω, 93mA; $U_m = 250V$ rms or dc

Terminals 1 to 3:

Non-energy-storing apparatus $\leq 1.2V$, $\leq 0.1A$, $\leq 20\mu J$ and $\leq 25mW$;
can be connected without further certification into any IS loop with an open-circuit voltage <28V

Note: Terminals 1 and 3 only support HART® communications in one direction from field device to safe-area connections 11 and 12



Terminal	Function
1	Current input
2	Transmitter supply +ve
3	Common
4	Optional HHC -ve
5	Optional HHC +ve
8	Optional HHC -ve
9	Optional HHC +ve
11	Output -ve
12	Output +ve
13	Supply -ve
14	Supply +ve

HART® is a registered trademark of the HART Communication Foundation



EUROPE (EMEA) Tel: +44 (0)1582 723633 Fax: +44 (0)1582 422283
AMERICAS Tel: +1 603 926 0090 Fax: +1 603 926 1899
ASIA PACIFIC Tel: +65 487 7887 Fax: +65 487 7997
E-mail: enquiry@mtl-inst.com Web site: www.mtl-inst.com

June 2004