MTL4041A CURRENT REPEATER

4/20mA passive input for smart transmitters

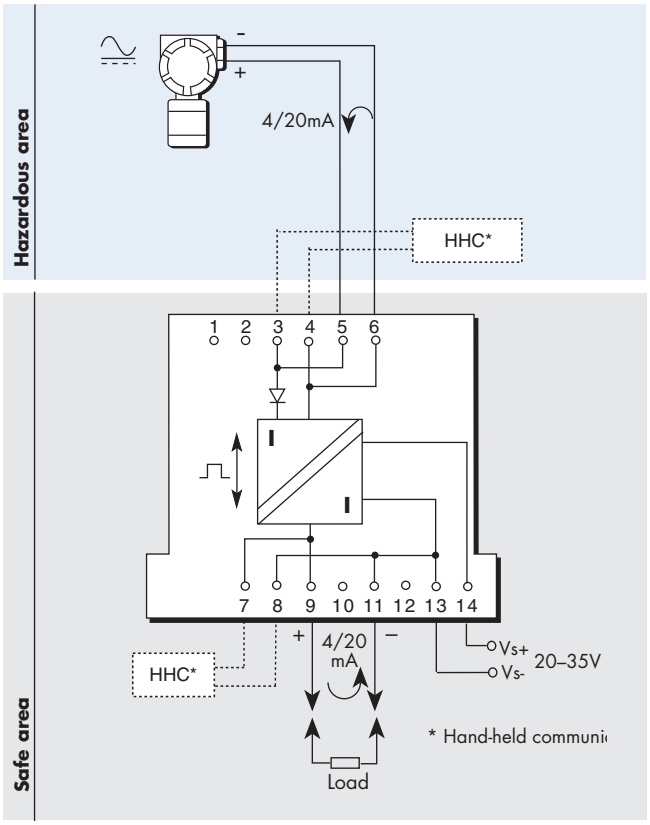
CE

The MTL4041A provides an input for separately powered 4/20mA transmitters and also allows bi-directional transmission of digital communication signals superimposed on the 4/20mA loop current, 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
One
Location of transmitter
Zone 0, IIC, T4–6 hazardous area if suitably certified
Div.1, Group A, hazardous location
Input impedance for HART® signals
at terminals 5, 6: >230Ω
Maximum input volt drop
at terminals 5, 6: <6.2V
i.e. a transmitter load of 310Ω at 20mA
Input and output signal range
4 to 20mA
Over-/under-range
1.0mA to 21.5mA
Digital signal bandwidth
50Hz to 8kHz
Safe-area circuit load resistance
Conventional transmitters: 0 to 600Ω
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 after 20ms
LED indicator
Green: one provided for power indication
Power requirement, at 20mA
70mA at 24V
85mA at 20V
50mA at 35V
Power dissipation within unit, at 20mA
1.6W at 24V
1.7W at 35V
Isolation
250V ac between safe- and hazardous-area circuits
Safety description
Terminals 3 to 4 and 5 to 6
8.6V (diode). This voltage must be considered when calculating the load capacitance.
Simple apparatus
Terminals 3 to 4 and 5 to 6 meet clause 5.4 of EN50020 : 1994 and have the following parameters: U ≤ 1.5V, I ≤ 0.1A, P ≤ 25mW. They can be connected without further certification into an IS loop with open circuit voltage of not more than 28V. See certificate for further details.



Terminal	Function
3	Optional HHC connection +ve
4	Optional HHC connection –ve
5	Tx signal +ve
6	Tx signal –ve
7	Optional HHC connection +ve
8	Optional HHC connection –ve
9	Output +ve
11	Output –ve
13	Supply –ve
14	Supply +ve

HART® is a registered trademark of HART Communication Foundation

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