MTL4045B/4045C ISOLATING DRIVERS

4/20mA, with line fault detection

CE

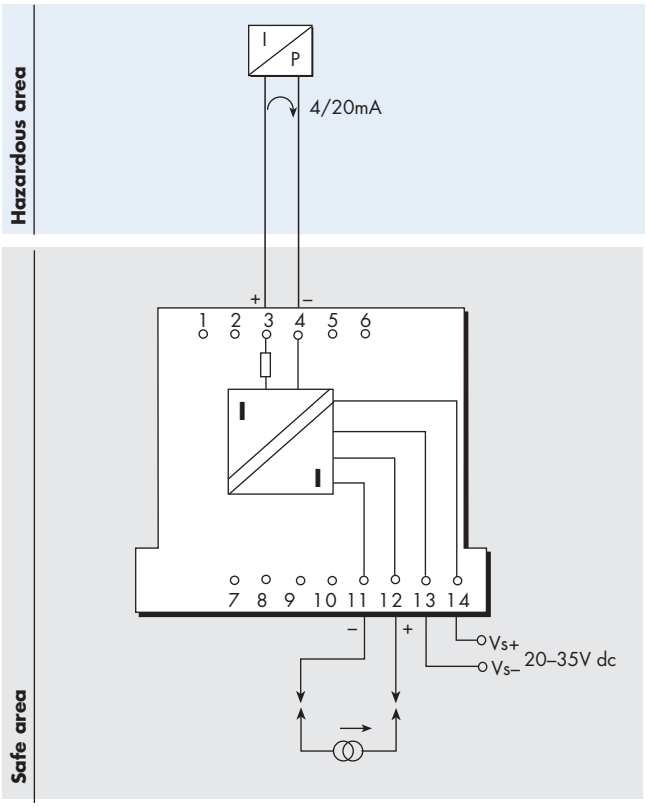
The MTL4045B accepts a 4/20mA signal from a safe-area controller and repeats it to drive a current/pressure (I/P) converter or any other load up to 800Ω in a hazardous area. The output capability is 16V at 20mA and the drop across the input terminals is low (4V). The input and output circuits float independently. Process controllers with a readback facility can detect an open or short circuit in the field wiring since, if this occurs, the resistance across the input terminals will change to a preset high value.

The MTL4045C is identical to the MTL4045B except that it provides open circuit detection only (no short circuit detection). The MTL4045B short circuit detection feature may not be compatible with some I/P positioners which have a high self-inductance. Consult your MTL representative for advice.

SPECIFICATION

See also common specification, cable parameters and approvals

Number of channels
One
Location of I/P converter
Zone 0, IIC, T4–6 hazardous area if suitably certified
Div.1, Group A, hazardous location
Working range
4 to 20mA
Maximum load resistance
800Ω (16V at 20mA)
Minimum load resistance (MTL4045B only)
90Ω (short circuit detection at <50Ω)
Output resistance
>1MΩ
Under/over range capability
1.0 to 21.4mA
Input and output circuit ripple
<40µA peak-to-peak
Input parameters
≤200Ω with the field wiring intact
>47kΩ with the field wiring open-circuit
<0.75mA with the field wiring short-circuit (MTL4045B only)
Transfer accuracy at 20°C
Better than 20µA
Temperature drift
<1.0µA/°C
Response time
Settles within 200µA of final value within 100ms
LED indicator
Green: one provided for power indication
Power requirement, Vs
50mA at 24V dc with 20mA signal
55mA at 20V dc
40mA at 35V dc
Power dissipation within unit
1.0W maximum at 24V with 20mA signal
1.2W at 35V
Isolation
250V ac between safe- and hazardous-area circuits.
Input circuit is floating; clamped to less than 10V above supply –ve permitting the use of a 250ž current sense resistor in the return path.



Terminal	Function
3	Output +ve
4	Output –ve
11	Input –ve
12	Input +ve
13	Supply –ve
14	Supply +ve

Safety description
28V, 300Ω, 93mA; U_m = 250V rms or dc
FM entity parameters
V_{oc} = 28V dc, I_{sc} = 93mA, C_a = 0.12µF, L_a = 4.2mH

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