

MTL4046P HIGH POWER ISOLATING DRIVER

4–20mA with line fault detection for HART® valve positioners



The MTL4046P accepts a 4/20mA floating signal from a safe-area controller to drive a current/pressure converter (or any other floating load up to 870Ω) in a hazardous area. For HART valve positioners, the module also permits bi-directional transmission of digital communication signals so that the device can be interrogated either from the operator station or by a hand-held communicator (HHC). Process controllers with a readback facility can detect open or short circuits in the field wiring: if these occur, the current taken into the terminals drops to a preset level.

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

Digital signal bandwidth

500Hz to 10kHz

Maximum load resistance

870Ω (17.4V at 20mA)

Minimum load resistance

90Ω (short circuit detection at <50Ω)

Output resistance

>1MΩ

Under/over range capability

Under range = 1.0mA
Over range = 26.0mA (load ≤600Ω)

Input and output circuit ripple

<40μA peak-to-peak

Transfer accuracy at 20°C

Better than 20μA

Input characteristics

<4.0V with the field wiring intact
<0.9mA with the field wiring open- or short-circuit

Response time

Settles within 200μA of final value within 100ms

Temperature drift

<1.0μA/°C

LED indicator

Green: one provided for power indication

Power requirement, Vs

58mA at 24V dc
70mA at 20V dc
40mA at 35V dc

Power dissipation within unit

1.2W typical at 24V with 20mA loop current
1.4W worst case

Isolation

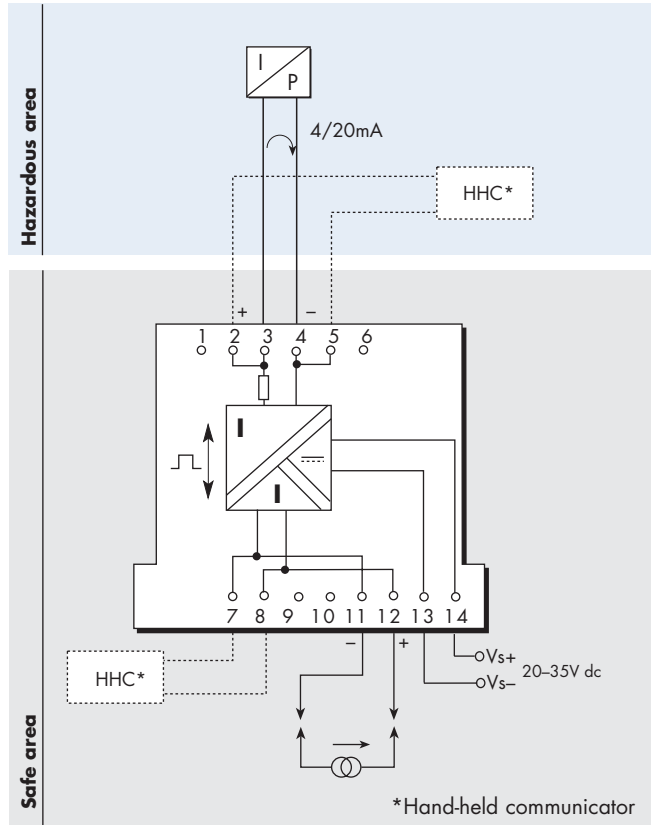
250V ac between safe- and hazardous-area circuits
Input circuit is floating

Safety description

28V, 240Ω, 116mA, $U_m = 250V$ rms or dc

FM entity parameters

$V_f = 28V$ dc, $I_{sc} = 117mA$, $C_a = 0.14\mu F$, $L_a = 2.6mH$



Terminal	Function
2	Optional HHC connection +ve
3	Output +ve
4	Output -ve
5	Optional HHC connection -ve
7	Optional HHC connection -ve
8	Optional HHC connection +ve
11	Input -ve
12	Input +ve
13	Supply -ve
14	Supply +ve

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