MTL4032 PULSE ISOLATOR

CE

The MTL4032 isolates pulses from a switch, proximity detector, current pulse transmitter or voltage pulse transmitter located in a hazardous area. It is ideal for applications involving high pulse rates and fast response times.

SPECIFICATION

See also common specification, cable parameters and approvals

Number of channels
One, fully floating

Sensor type
Switch or proximity detector (NAMUR/DIN 19234)
2- or 3-wire voltage or pulse transmitter

Location of switch
Zone 0, IIC, T6 hazardous area
Div. 1, Group A, hazardous location

Location of proximity detector or transmitter
Zone 0, IIC, T4–T6 if suitably certified
Div.1, Group A, hazardous location

Input

Switch input:
Output ON if switch is closed
Output OFF if switch is open

Proximity detector input:
Excitation: 7.0 to 9.0V dc from 1kΩ nominal
Output ON if input >2.1mA* (<2kΩ)
Output OFF if input <1.2mA* (>10kΩ)
Switching hysteresis: 0.2mA (650Ω) nominal
**NAMUR and DIN19234 standards for proximity detectors*

Current pulse input:
Transmitter supply: 16.5V dc at 20mA
Short circuit current: 24mA
Output ON if input >9.0mA
Output OFF if input <7.0mA
Switching hysteresis: 0.5mA

Voltage pulse input
Input impedance: >10kΩ
Switching point voltage (Vsp): 3, 6, or 12V nominal (selectable by switch on top of unit)
Output ON if input >Vsp
Output OFF if input <Vsp
Switching hysteresis: 100mV + (0.1 x Vsp) typical

Pulse width
High: 10µs min
Low: 10µs min

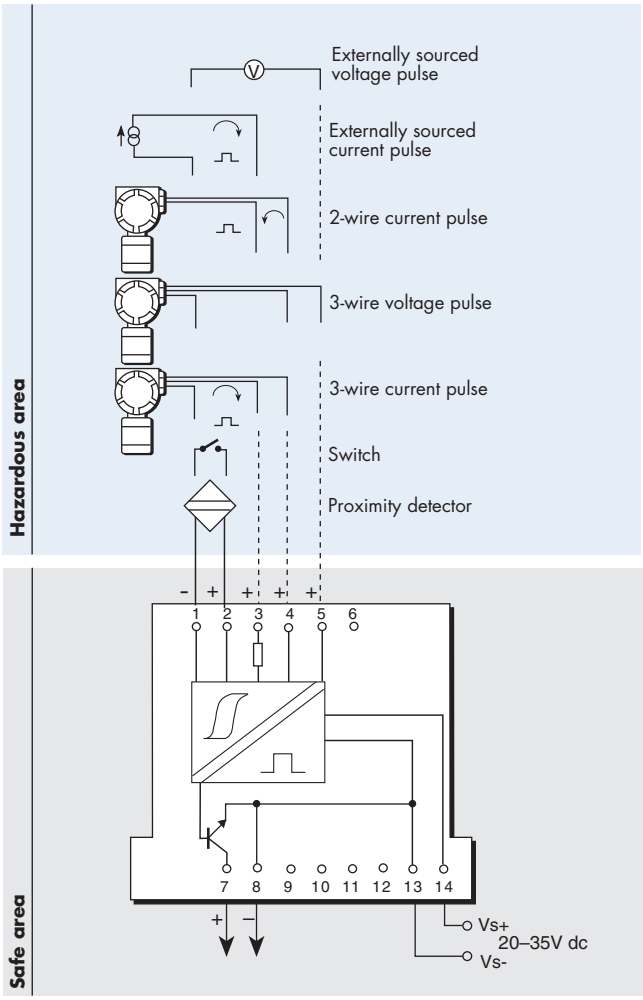
Frequency range
0–50kHz

Output characteristics
Maximum off-state voltage: 35V
Maximum off-state leakage current: 10µA
Maximum on-state voltage drop: 1 + (0.1x current in mA) V
Maximum on-state current: 50mA
Output OFF if supply fails
Note: the output is zener diode protected against inductive loads

LED indicators
Amber: one provided for input, ON when output circuit is ON
Green: one provided for power indication

Power requirement
65mA at 24V dc
70mA at 20V dc
55mA at 35V dc

Power dissipation within unit
1.35W maximum at 24V
1.75W maximum at 35V



Terminal	Function
1	Common input –ve
2	Switch/proximity input +ve
3	Current pulse input +ve
4	Tx supply +ve
5	Voltage pulse input +ve
7	Pulse output +ve
8	Pulse output –ve
13	Supply –ve
14	Supply +ve

Isolation
250V ac between safe- and hazardous-area circuits

Safety description

Terminals 2 to 1
10.5V, 800Ω, 14mA

Terminals 4 to 3 and 1
28V, 300Ω, 93mA

Terminals 3 to 1
Non-energy storing apparatus ≤1.2V, ≤0.1A, ≤20µJ and ≤25mW; can be connected without further certification into any IS loop with open-circuit voltage not more than 28V

Terminals 5 to 4 and 1
Vmax ≤28V, Imax ≤94mA, Pmax ≤0.66W

FM entity parameters

Terminals 1, 4 and 5
V_t = 27.6V, I_t = 94mA, C_a = 0.12µF, L_a = 4.2mH

Terminals 1, 2
V_{oc} = 10.5V, I_{sc} = 13mA, C_a = 2.4µF, L_a = 200mH

Terminals 1, 3, 4
V_t = 27.6V, I_t = 155mA, C_a = 0.12µF, L_a = 1.57mH

Terminals 1, 3
V_{oc} = 1.1V, I_{sc} = 51mA, C_a = 1000µF, L_a = 13.8mH

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