

MTL4032 PULSE ISOLATOR



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 1k Ω nominal
Output ON if input >2.1mA* (<2k Ω)
Output OFF if input <1.2mA* (>10k Ω)
Switching hysteresis: 0.2mA (650 Ω) 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: >10k Ω
Switching point voltage (V_{sp}): 3, 6, or 12V nominal (selectable by switch on top of unit)
Output ON if input >V_{sp}
Output OFF if input <V_{sp}
Switching hysteresis: 100mV + (0.1 x V_{sp}) typical

Pulse width

High: 10 μ s min
Low: 10 μ s min

Frequency range

0–50kHz

Output characteristics

Maximum off-state voltage: 35V
Maximum off-state leakage current: 10 μ A
Maximum on-state voltage drop: 1 + (0.1 x 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

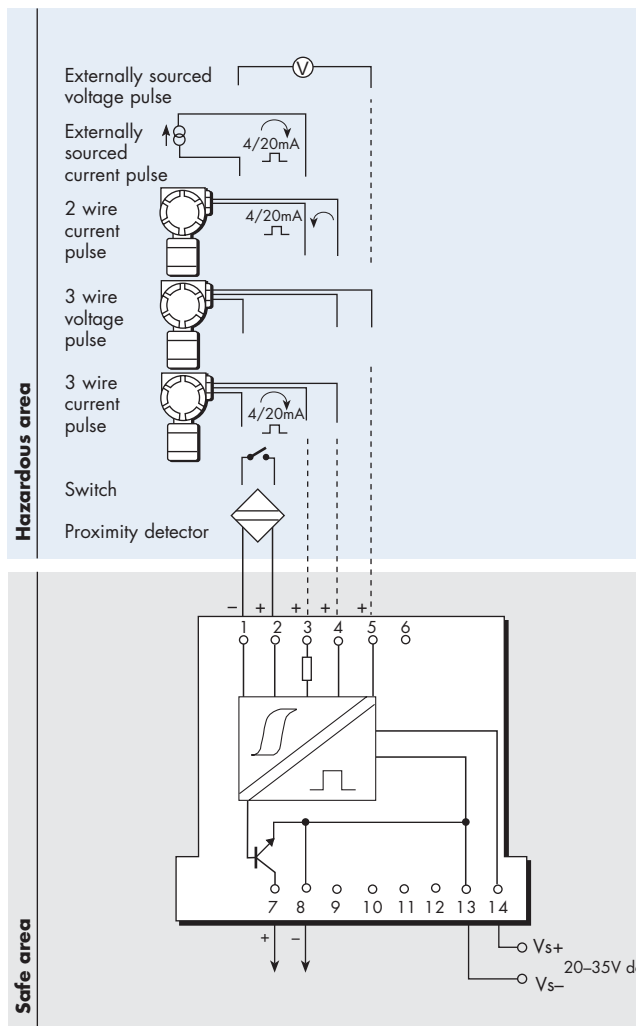
Amber: one provided for input, ON when output circuit is ON
Green: one provided for power indication

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, 800 Ω , 14mA

Terminals 4 to 3 and 1

28V, 300 Ω , 93mA

Terminals 3 to 1

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 open-circuit voltage not more than 28V

Terminals 5 to 4 and 1

V_{max} $\leq 28V$, I_{max} $\leq 94mA$, P_{max} $\leq 0.66W$

FM entity parameters

Terminals 1, 4 and 5

V_t = 27.6V, I_t = 94mA, C_a = 0.12 μ F, L_a = 4.2mH

Terminals 1, 2

V_{oc} = 10.5V, I_{sc} = 13mA, C_a = 2.4 μ F, L_a = 200mH

Terminals 1, 3, 4

V_t = 27.6V, I_t = 155mA, C_a = 0.12 μ F, L_a = 1.57mH

Terminals 1, 3

V_{oc} = 1.1V, I_{sc} = 51mA, C_a = 1000 μ F, L_a = 13.8mH



EUROPE (EMEA)
AMERICAS
ASIA PACIFIC
E-mail: enquiry@mtl-inst.com

Tel: +44 (0)1582 723633
Tel: +1 603 926 0090
Tel: +65 487 7887

Fax: +44 (0)1582 422283
Fax: +1 603 926 1899
Fax: +65 487 7997

Web site: www.mtl-inst.com