MTL4532 – MTL5532
PULSE ISOLATOR
pulse & 4/20mA current outputs

The MTLx532 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, by repeating the pulses into the safe area. An analogue output proportional to frequency is also provided, together with a relay output, which may be configured to act as an alarm. Configuration is carried out with a personal computer.

SPECIFICATION

See also common specification

Number of channels
One, fully floating
Sensor type
Switch or proximity detector (NAMUR/BS EN 60947–5–6:2001)
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
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 BS EN 60947–5–6:2001standards
Current pulse input:
Transmitter supply: 16.5V dc at 20mA
Short circuit current: 24mA
Output: I_{in} > 9.0mA = ON, I_{in} < 7.0mA = OFF
Switching hysteresis: 0.5mA
Voltage pulse input
Input impedance: > 10kΩ
Switching point voltage (V_{sp}): 3, 6, or 12V nominal
(User selectable by switches on the side of the module)
Output: $V_{in} > V_{sp}$ = ON, $V_{in} < V_{sp}$ = OFF
Switching hysteresis: 100mV + (0.1 x V_{sp}) typical
Safe-area pulse output
Maximum delay: 10µs
Maximum off–state voltage: 35V
Maximum off–state leakage current: 10µA
Maximum on–state resistance: 25Ω
Maximum on–state current: 50mA
Output OFF if supply fails
Note: LFD signal is Zener-diode protected against inductive loads
Safe-area current output
Input capture delay: 2 signal periods (5ms min.)
Signal range: 4 to 20mA
Under/over range: 0 to 22mA
Load resistance: 0 to 450Ω @20mA
Output resistance: >1MΩ
Ripple: < 50µA peak-to-peak
Accuracy: better than 20µA at 20°C
Temperature drift: < 1µA/°C
Risetime (10% - 90%, after step change): 60 ms
Alarm output
Relay ON in alarm, 0.5A @ 35Vdc max.

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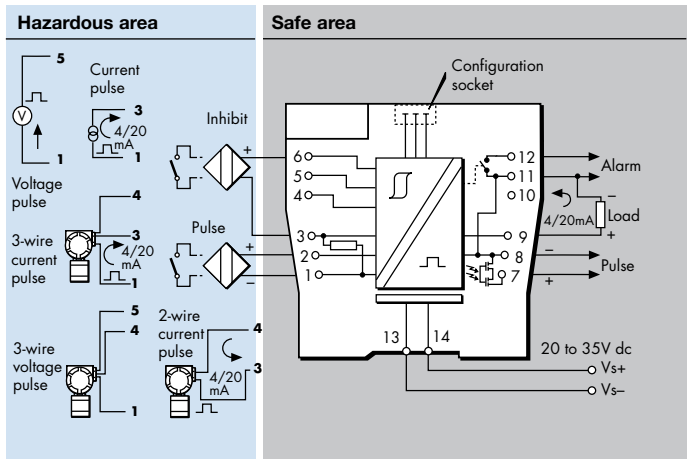

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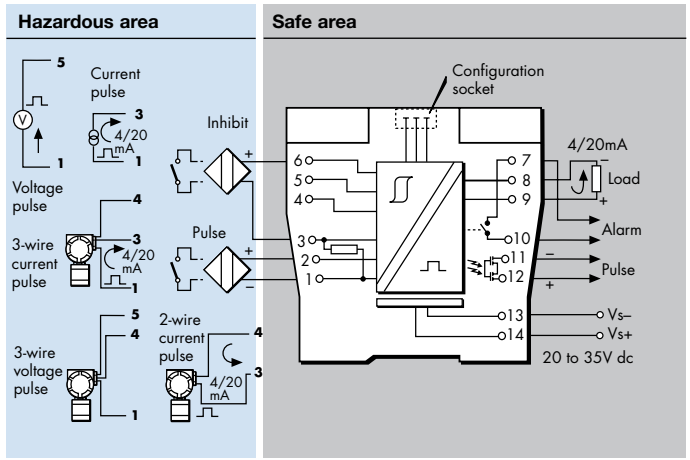

Pulse width
High: 10µs min
Low: 10µs min
Frequency range
0 – 50kHz - pulse output mode
0 – 10KHz - for analogue output
LED indicators
Green: power indication
Yellow: on when output circuit is on
Red: flashing when line fault or error
Power requirement
65mA at 24V dc
70mA at 20V dc
55mA at 35V dc
Power dissipation within unit
1.35W maximum at 24V
1.75W maximum at 35V
Safety description (U_m = 253V rms or dc)
Terminals 2 to 1 and 6 to 1
U_o=10.5V I_o=14mA P_o=37mW
Terminals 4 to 3 and 1
U_o=28V I_o=93mA P_o=651mW
Terminals 3 to 1
Non-energy-storing apparatus ≤1.5V, ≤0.1A and ≤25mW; can be connected without further certification into any IS loop with an open-circuit voltage <28V
Terminals 5 to 4 and 1
V_{max} ≤ 28V, I_{max} ≤ 94mA, P_{max} ≤ 0.66W
Configurator
A personal computer running MTL PCS45 software with a PCL45USB serial interface.