

MTL5314 TRIP AMPLIFIER

4/20mA, for 2- or 3-wire transmitters

The MTL5314 connects to a 2- or 3-wire 4/20mA transmitter or current source located in the hazardous area. It supplies one or two configurable alarm signals to the safe area via changeover relays. Each relay may be configured individually to signal an alarm condition (relay de-energised) when the input signal is greater than or less than a pre-set value.

In addition, the MTL5314 can be connected in series to the hazardous-area side of an MTL5541 4/20mA repeater power supply (or equivalent device) to provide two trip alarm outputs direct from the transmitter signal (see schematic diagram). Looping the transmitter signal through the MTL5314 (via terminals 1 and 3) does not affect HART® communications.

SPECIFICATION

See also common specification

Number of channels

One, with two configurable alarms

Location of field equipment

Zone 0, IIC, T4–T6 hazardous area, if suitably certified
Div 1, Group A, hazardous location

Safe-area output

Two relays with changeover contacts

Hazardous-area input

Signal range: 0 to 24mA
(including over-range)

Voltage available for transmitter (terminals 1 and 2)

>17V at 20mA

Current input (terminals 1 to 3)

Input resistance 25Ω maximum

Response time

<75ms

Trip-points

Trip-points can be adjusted by the user via multiturn potentiometers accessible on the top of the unit.

Trip-point range 0.5 to 22mA

Effective resolution 20μA

Trip-point drift with temperature 1.5μA/°C max.

Hysteresis min 1% of trip-point range
max 1.7% of trip-point range

Relay type

Single pole, changeover contacts

Note: reactive loads must be adequately suppressed

Relay characteristics

Contact rating 250V ac, 2A, $\cos\phi > 0.7$
40V dc, 2A, resistive load

Contact life expectancy 3.3x10⁵ operations

LED indicators

Power LED green, illuminated when the power is connected to the module

Status LED yellow, one per trip, illuminated when relay is energised (not tripped)

Supply voltage

20 to 35V dc

Maximum current consumption (with 20mA signal)

85mA at 24V

100mA at 20V

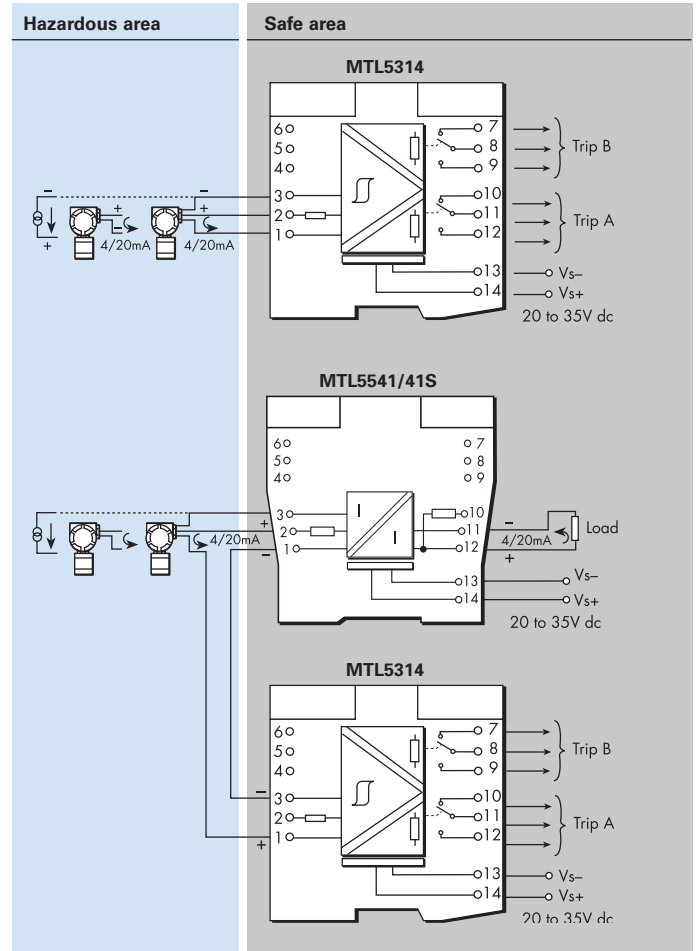
60mA at 35V

Maximum power dissipation within the unit

(with 20mA signal)

1.7W at 24V

1.8W at 35V



| Terminal | Function |
|----------|------------------------|
| 1 | Current input |
| 2 | Transmitter supply +ve |
| 4 | Common |
| 7 | Trip B (NC) |
| 8 | Trip B (COM) |
| 9 | Trip B (NO) |
| 10 | Trip A (NC) |
| 11 | Trip A (COM) |
| 12 | Trip A (NO) |
| 13 | Supply -ve |
| 14 | Supply +ve |

Safety description

Terminals 2 to 1 and 3 28V, 300Ω, 93mA

Terminals 1 and 3 These terminals meet clause 5.4 of EN50020 : 1994 and have the following parameters: $U \leq 1.5V$, $I \leq 0.1A$, $P \leq 25mW$. They can be connected without further certification into an IS loop with open circuit voltage of not more than 28V. See certificate for further details.

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The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee. In the interest of further technical developments, we reserve the right to make design changes.



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