MTL MTL Series Service Manual

MTL4013

1. Description

The MTL4013 is a two-channel unit enabling safe-area loads to be

3. Product Information

www.autronexa.com

The MTL4013 is a two-channel unit enabling safe-area loads to be controlled, through logic compatible solid-state outputs, by switches or proximity detectors located in hazardous areas. It can also be used with positive displacement (PD) flowmeters and some turbine meters. Earth fault detection is available optionally by using the MTL4013 with an MTL4220 earth leakage detector. Power and switch status is indicated by LEDs located on top of the module.

SPECIFICATION

See also common specification, cable parameters and approvals

Number of channels

Two

Location of switches

Zone 0, IIC, T6 hazardous area

Div.1, Group A, hazardous location

Location of proximity detector

Zone 0, IIC, T4–6 if suitably certified

Div.1, Group A, hazardous location

Voltage applied to sensor

7.0V – 9.0V dc from 1kΩ

Input/output characteristics

Output on if >2.1mA* (<2kΩ) in sensor circuit

Output off if <1.2mA* (>10kΩ) in sensor circuit

Hysteresis: 200µA (650Ω) nominal

*NAMUR and DIN 19234 standards for proximity detectors

'No-fail' earth fault protection

Enabled by connecting terminals 3 and 6 to an MTL4220 earth leakage detector

Fault on either line proclaimed: unit continues working

Note: if it is required to maintain isolation between the two channels, separate earth leakage detectors are needed

Output characteristics

Operating frequency: dc to 5kHz

Maximum off-state voltage: 35V

Maximum off-state leakage current: 10µA

Maximum on-state voltage drop: [1+ (0.1 x current in mA)] V

Maximum on-state current: 50mA

Note: each output is Zener-diode protected against inductive loads

LED indicators

Amber: one provided for each channel, ON when output circuit is closed

Green: one provided for power indication

Power requirement, Vs

47.5mA at 24V dc

45mA at 20V dc

50mA at 35V dc

Power dissipation within unit

1.15W at 24V

1.75W at 35V

Isolation

250V ac between safe and hazardous area circuits

Safety description for each channel

10.5V, 800Ω, 14mA

FM entity parameters

Voc = 10.5V dc, Isc = 14mA, Ca = 2.4µF, La = 165mH

Terminal Function

1 Input 1 –ve

www.autronexa.com

2 Input 1 +ve

3 Optional link from input 1 to MTL4220

4 Input 2 –ve

5 Input 2 +ve

6 Optional link from input 2 to MTL4220

7 Output 1 +ve

8 Outputs 1/2 –ve

9 Output 2 +ve

13 Supply –ve

14 Supply +ve

www.autronexa.com