# MTL MTL Series Service Manual

MTL3011

## 1. Description

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## 3. Product Information

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These basically similar units both enable a safe-area load to be
controlled by a proximity detector or switch located in a hazardous
area, the MTL3011 having a relay output for general use. It units a built-in phase-reverse control allows an alarm
condition (output open) to be signalled for either state of the sensor. A
line-fault detection feature opens the output in the event of short or
open-circuit lines: intended for use primarily with proximity detectors,
it can also be used with switches made to resemble them electrically
by adding two resistors, or disabled by a link if not required.

SPECIFICATION

See also 'Common specification'

Number of channels

One, fully floating

Location of switch

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

7.7 to 9.0V dc from 1kΩ

Input/output characteristics

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

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

Hysteresis: 200µA (650Ω) nominal

*NAMUR and DIN 19234 standards for proximity detectors

Phase reverse facility

Operation reversed by switch on top of unit

Power supply failure protection

Output circuit opens if supply fails

Broken/shorted lines protection

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By built-in line-fault detection feature (LFD)

Output open if input current <100µA (broken line)

Output open if input current >6.5mA (shorted lines)

Note: to prevent false triggering of LFD, switch-type
sensors must be fitted with resistors as shown or LFD be
disabled by linking terminals 7 and 8

Output characteristics, MTL3011

Response time: 1ms typical

Contact rating: 200V, 0.5A, 10VA (ac); 200V, 0.5A, 10W (dc)
(USA: 60V) individual maxima, resistive loads

Contact life expectancy: 0.75 x 106 operations at max. load

Note: reactive loads must be adequately suppressed to protect the light-duty
contacts in this unit

LED indicator

ON when output circuit is closed

Power requirement

25mA typical at 24V

35mA maximum at 20 to 35V

Power dissipation within unit

0.6W typical at 24V

1.3W maximum at 35V

Replaceable fuse

50mA, 5 x 20mm glass to DIN 41571 sht. 2, semi-time-lag (M)

Safety description

10.5V, 800Ω, 14mA, Um = 250V rms or dc

FM max entity parameters

Voc =10.5V, Isc =10.7mA, Ca = 3.0µF, La = 300mH

Weight

140g