MTL3014 SWITCH/PROXIMITY DETECTOR RELAY
dual outputs

The MTL3014 enables two safe-area loads to be controlled by a single proximity detector or switch located in a hazardous area. It is ideal for applications where the switch status is to be fed to two separate systems, such as control and logging or control and shutdown installations. The unit – a dual-output version of the MTL3011 – features two isolated relay outputs. Relay A reflects the status of the hazardous-area sensor, and relay B is selected by a switch in the top of the unit to operate either in parallel with relay A, or independently to provide a line-fault output when the connections to the sensor go open or short circuit. The status of each relay is indicated by an LED in the top of the unit, and an additional terminal block is fitted on the safe-area side of the unit to accommodate the connections from the two sets of relay contacts. The output phase of relay A (and relay B when 'slave' mode is selected) can be reversed by a link to allow an alarm condition (output open) to be signalled for either state of the sensor. The outputs cannot be used as if they were changeover contacts from a relay.

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, TA–6 hazardous area if suitably certified
Div 1, Group A, hazardous location

Voltage applied to sensor
7.7 to 9.0V dc from 1kΩ

Modes of operation
'Slave' or 'Line fault' mode selected by switch in top of unit

Slave mode operation
Both relays energised (outputs closed) if >2.1mA* (<2kΩ) in sensor circuit
Both relays de-energised (outputs open) if <1.2mA* (>10kΩ) in sensor circuit
Hysteresis: 200µA (650Ω) nominal
* NAMUR and DIN 19234 standards for proximity detectors

Line fault mode operation
Relay B de-energised (output open) if current in sensor circuit
is <100µA (broken line) or >6.5mA (shorted lines).
Relay A operates as in 'Slave mode' above.

Phase reverse facility
Operation of relay A (and relay B if 'slave' mode selected)
reversed by linking terminals 7 & 8

Power supply failure protection
Relays de-energised (outputs open) if supply fails

LED indicators
One provided for each relay. ON when relay energised (output closed)

Relay characteristics
Each single-pole on/off, open when relay de-energised
Response time: 15ms typical
Contact rating: 250V 5A 100VA (ac); 250V 5A 100W (dc)
Contact life expectancy: 1.5 x 10^6 operations at max. load,
>10^5 operations at 200V ac peak or dc, 10VA (resistive load)
Note: reactive loads must be adequately suppressed

Power requirement
42mA typical at 24V
50mA maximum at 20 to 35V

Power dissipation within unit
1.1W typical at 24V
1.3W maximum at 35V

Replaceable fuse
63mA, 5 x 20mm glass to DIN 41571 sht. 2, semi-time-lag (M)

Safety description
10.5V, 800Ω, 14mA, U_m = 250V rms or dc

FM max entity parameters
V_oc = 10.5V, I_sc = 14mA, C_a = 2.4µF, L_b = 165mH

Weight
170g

Unit connected in slave mode

Unit connected in line fault mode

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