

Overview

The N/O3 Heavy Duty Magnetic Proximity Sensor is designed as a general purpose position or movement sensor; it should not be used in or relied on in safety related applications.

Principles of operation and use

The N/O3 is a normally open reed switch based sensor that closes when in the presence of a magnetic actuator. The non contact operation of these sensors make them suited to applications where misalignment or contamination from dust and solids are a concern. When mounted on or near ferrous surfaces the operating distance will be reduced. Avoid close proximity to strong magnetic fields i.e. electric motors and solenoids. The switch may be operated through a non ferrous skin such as non magnetic stainless steel, plastic, aluminium and non ferrous castings etc. possibly enabling the switch and its connections to be inside part of a housing or machine. N/O3 sensors may be operated from three sides.

Loads

Maximum ratings in the "Specification and ratings" are for dc voltage and resistive loads. Protect against inductive, capacitive or reactive loads. For maximum contact life and reliability, ensure the ratings are not exceeded. Contact our technical department for advice on specific loads.

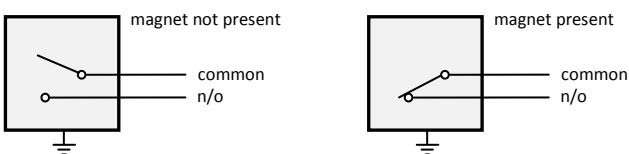
Fitting and adjustment

When considering fixing positions refer to "Principles of operation and use". Ensure vibration and shock limits will not be exceeded both in normal and in any foreseen abnormal operation. To help reduce the effects of vibration or shock the sensor unit may be mounted on a rubber pad or foam tape. The switch and actuator should not be fixed so that they slide longitudinally against each other as multiple operations may occur; they should be mounted so that that switch and actuator move parallel to each other, see "Operating positions". When adjusting the N/O3 sensor for maximum operation distance it is recommended that it is magnetically overdriven by at least 25% i.e. With an application that gives a maximum operating distance of 16 mm it should be considered that the maximum distance is actually 16 mm less 25% = 12 mm, therefore to operate the sensor correctly the actuator magnet should be within 12 mm of the switch. Consideration should be given to the safe routing of the connecting cable, avoid tight bends and allow a minimum of 50mm of straight cable from the sensor housing before any bends. See "Schematic diagram" for electrical connections; check the contact ratings are not exceeded.

Maintenance

To clean wipe with a damp cloth, do not immerse in water or cleaning fluid. The C/O4R/S sensor should be routinely checked for correct operation.

Schematic diagram



Order Codes

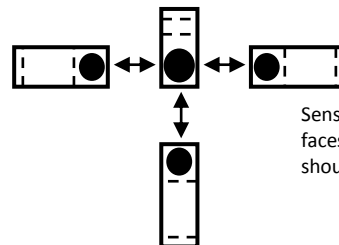
Type	Description
N/O3	Normally open heavy duty magnetic proximity sensor
AM/5	Standard magnetic actuator
AM/9	Extra power magnetic actuator

Specifications and ratings

Specification	N/O3
Contact form	N/O normally open
Max contact rating	100 VA do not exceed product of voltage x amps
Max switching voltage	250 Vdc #
Max switching current	3 Amps dc resistive
Max carry current	6 Amps dc resistive
Minimum breakdown voltage	400 Vdc
Capacitance	0.6 pF
Contact resistance	100 mΩ
Temperature range	-10 to +70 °C
Max vibration	30 G's 50-2000 hertz's
Max Shock	100 G's 11ms ½ sine wave
Resonate frequency	850 Hz
Pull in time	4.5 ms
Release time	2.5 ms
Environmental protection	IP64
Operating distance AM/5	make 13 release 23 mm nominal
Cable	0.7 metres of 3183Y 0.75 ²mm
Common	Brown wire
Normally open	Blue wire
Earth	Green / yellow wire

Tested at 240Vac 400 mA for 500K operations and 115Vac 1 Amp for 100K operations with resistive test loads. Switching inductive, capacitive or reactive loads will reduce life expectancy

Operating positions



Sensor and the three possible operating faces for the magnetic actuator which should move parallel to the sensor

Image



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