

Overview

C/O4 and C/O4R are heavy duty reed switch based sensors housed in robust zinc castings. For use as general purpose position, movement or limit switches. They should **not** be used in or relied on in safety applications.

Principles of operation and use

The C/O4's contacts change over when in the presence of a magnetic actuator, providing both n/o and n/c contacts. The non contact operation of these sensors make them suited to applications where misalignment or contamination from dust and solids are a concern. The switch may be operated through a non ferrous skin such as non magnetic stainless steel, plastic, aluminium and non ferrous castings etc. C/O4 sensors may be operated from three sides.

Loads

Maximum ratings in the "Specification and ratings" table 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. Use the C/O4R for voltages below 36 VDC.

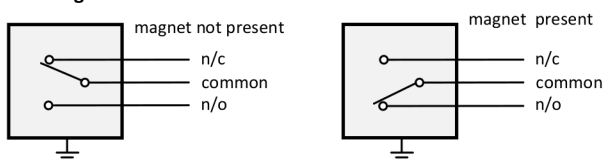
Fitting and adjustment

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. 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. 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 be fixed so that they move parallel to each other, see "Operating Positions". When adjusting the C/O4 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 16mm less 25% = 12mm, 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

Ensure that the installation is in a safe condition with the power off before any maintenance is carried out. To clean, wipe with a damp cloth, do not immerse in water or cleaning fluid. The C/O4 sensor should be routinely checked for correct operation.

Schematic diagram



Product codes

| Code | Heavy Duty Reed Switch Sensors |
|-------|--|
| C/O4 | Change over switch 50VA |
| C/O4R | Change over switch 30 VA for applications below 36 VDC |
| AM/5 | Standard actuator magnet |
| AM/9 | Extra power actuator magnet, in polycarbonate case |

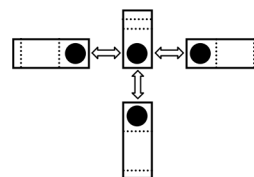
Longer cable lengths are available. The order code for C/O4 with a 5 metre cable would be C/O4/5M

Specifications and ratings

| Specification | C/O4 | C/O4R |
|---------------------------------|--|-----------------------|
| Contact Form | C/O change over | |
| Max contact rating | 50 Watt ⁴ | 30 Watt ⁴ |
| Max switching voltage | 250 VDC ¹ | 250 VDC |
| Min breakdown voltage | 500 VDC | |
| Max switching current resistive | 1.5 Amps ³ | 0.5 Amps ³ |
| Max carry current | 2.0 Amps | 3.0 Amps |
| Capacitance | 2.0 pF | |
| Contact Resistance | 0.50 Ω ^{2&5} | 0.125 Ω ⁵ |
| Temperature range | -10 to 70 | |
| Max vibration | 15 G's 50-2000 Hertz | |
| Max shock | 10 G's 11ms ½ sine wave | |
| Resonate frequency | 2750 Hertz typical | |
| Pull in time, nominal | 5.5 ms | 4.5 ms |
| Release time, nominal | 8.0 ms | 7.0 ms |
| Environmental protect | IP64 | |
| Operating distance AM/5 | 13 mm nominal | |
| Operating Distance AM/9 | 25 mm nominal | |
| Cable | 0.7 metres of 3184Y 0.75 ² mm | |
| Dimensions | L79.8 x W19.1 x H9.65 mm | |
| Connections | grey = com black = n/o brown = n/c green/yellow = earth | |

- Notes 1) Also tested at 240Vac 200 mA for 200K operations & 240Vac 10mA for 500K operations, with resistive loads.
2) Contact resistance when wetted @ 36VDC 100 mA.
3) Switching inductive, capacitive or reactive loads will reduce life expectancy.
4) Do not exceed the product of voltage x amps.
5) Use C/O4R when the operating voltage is below 36VDC.

Operating positions



Switch is in the centre with magnets indicating each of the three possible operating positions.

The actuator magnet should move in parallel to the switch.

Image



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