

## Features

- RFID with OSSD outputs (Yellow Housing).
- Coded Magnetic with OSSD outputs (Black Housing).
- EDM options available.
- 2Amp safety output rating (pre-wired).
- Wide Range Of Housings
- RGB LED Indication.
- Tolerant to Shock and Vibration
- Sealed to IP67 / IP69K

## Non Contact Safety Switches

RS Stock No.: 0656630



RS PRO is the own brand of RS. The RS PRO Seal of Approval is your assurance of professional quality, a guarantee that every part is rigorously tested, inspected, and audited against demanding standards. Making RS PRO the Smart Choice for our customers.

## Product Description

*The O-Series is the latest innovation in safety products, their unique design means 30 O-Series switches can be connected in series maintaining PL-e status.*

*O-Series safety switches include two LEDs for indication. They are able to provide visual diagnostics for ALL states of the device. This means the user can easily fault find without needing to access the control panel.*

*The O-Series safety switches are available with a feature called EDM (external device monitoring, this means the outputs can be used to monitor the state of contactors without the need for a safety control unit.*

## Electrical Specifications

Supply voltage	24Vdc (+/- 15%)
Operation	Individually Coded RFID (Yellow) or Magnetically Coded (Black)
Safety Contact Type	PNP type OSSD
No. of OSSD Inputs (Max)	2
No. of OSSD Outputs	2
Safety contact N/O ON and OFF between	8mm - 20mm
Auxiliary contact N/C OFF and on between	8mm - 20mm
Safety Contact Rating	DC : 24Vdc / 2A
Auxiliary Contact Rating	DC : 24Vdc / 2A
External Contact Fuse	1.8Amps Fast Acting (Quick Blow)
Switch Power Consumption (Max)	50mA
Overvoltage Category	III
OSSD Pulse Width	400 $\mu$ s
Short Circuit Protection	Yes
Over Current Protection	Yes
IP Rating	IP67 / IP69K
Connection	Pre-Wired or M12 LQD
Operating Temperature	-10°C to +60°C
Mounting	Target to target
Construction	Black & Yellow ABS Resin Filled
Indication	Dual Colour LED

## Protection Category

PL in accordance with EN ISO 13849-1	PL-e, CAT 4
SIL CL in accordance with EN IEC 62061	SIL 3
PFHd in accordance with EN IEC 62061	$1.12 \times 10^{-09}$
PFH	$1.1 \times 15^{-09}$
B10d	10,000000
MTTFd	>385 years (Based on usage rate of 360 days/year, 24 hours/day, 10 operations/hour)
Tm (mission time)	>100 years
DC	99%
SFF	99.5%

## Approvals

CE	Complies with all relevant sections of the CE marking directive
UKCA	Complies with all relevant sections of the UKCA marking directive
TUV	CAT 4 SIL 3 PLe
EN ISO 13849-1	Safety of Machinery – Safety related parts of control systems
EN ISO 62061	Safety of Machinery – Functional safety of safety related electrical, electronic and programmable electronic control systems
EN 60204	Safety of Machinery – Electrical equipment for machines
EN 60947-5-1	Low voltage switchgear and control gear
EN 14119	Interlocking devices associated with guards
EN 60947-5-3	Safety of Machinery – Specification for low voltage switchgear and control gear

## Similar Products

Stock No.	Brand	Product Name	Attribute 1	Attribute 2	Attribute 3
404.000	RS PRO	RPOH1-21-DC-06M	24V dc	2NO+1NC	Plastic
404.001	RS PRO	RPOH1-21-DC-EDM-06M	24V dc	2NO+1NC	Plastic
404.002	RS PRO	RPOH1-21-5-LQD	24V dc	2NO+1NC	Plastic
404.003	RS PRO	RPOH1-21-8-LQD	24V dc	2NO+1NC	Plastic
404.004	RS PRO	RPOSG-21-DC-06M	24V dc	2NO+1NC	Plastic
404.005	RS PRO	RPOSG-21-DC-03M	24V dc	2NO+1NC	Plastic
404.006	RS PRO	RPOSG-21-DC-10M	24V dc	2NO+1NC	Plastic
404.007	RS PRO	RPOSG-21-5-LQD	24V dc	2NO+1NC	Plastic
404.008	RS PRO	RPOSG-21-8-LQD	24V dc	2NO+1NC	Plastic
404.009	RS PRO	RPONK-21-DC-06M	24V dc	2NO+1NC	Plastic
404.010	RS PRO	RPONK-21-DC-EDM-06M	24V dc	2NO+1NC	Plastic
404.011	RS PRO	RPONK-21-5-LQD	24V dc	2NO+1NC	Plastic
404.012	RS PRO	RPONK-21-8-LQD	24V dc	2NO+1NC	Plastic

### Mounting

Do not use safety switches as a stop.

Mount the switch on to the machine frame and the actuator on to the opening edge of the door.

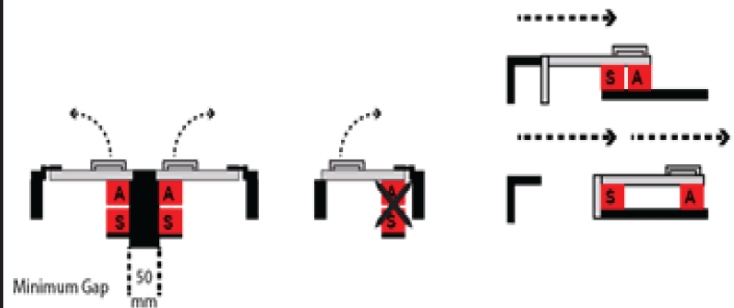
Always try to mount the switch on non-ferrous material. (Ferrous materials may reduce the switching distance.)

#### NOTES:

Minimum separation 50mm between adjacent switches

**DO NOT** mount on hinged side of the guard.

Leave a minimum gap of 2mm between the switch and actuator.



## Operating Face and Misalignment

### Operating Faces

Designed to operate on ALL guard positions. The RPONK and RPOSG are extremely versatile.

The RPONK and RPOSG will operate on two faces.

Whereas the RPOH1 will only operate on the front face.

All O-Series switches have a +/- 4mm misalignment



RPONK operates on two faces



RPOSG operates on two faces

### Misalignment indication

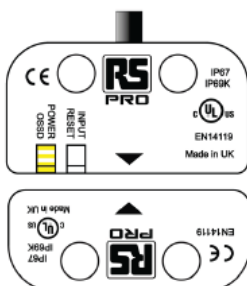
The RPOH1 has a feature that will show the user if the switch is not aligned correctly. All O-Series switches have a +/- 4mm misalignment.



RPOH1 operates on one face.

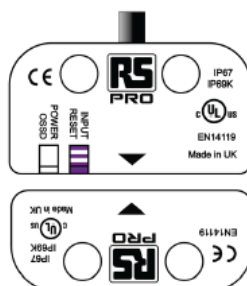
## Teach Mode (RPONK / RPOSG Only)

If during installation you lose or break the accompanying actuator, it is possible to re-teach a new part by following these steps:



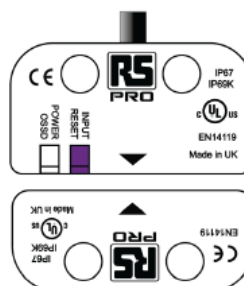
Step 1

Power/OSSD LED Flashing yellow indicates a incorrect coded actuator has been detected.



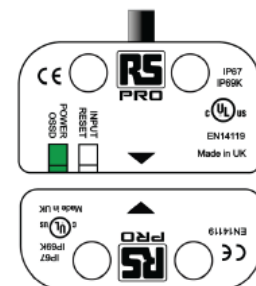
Step 2

Drop the supply to 0v then bring back up to 17v. Input/Reset LED will begin to flash purple meaning it is ready to accept a new code.



Step 3

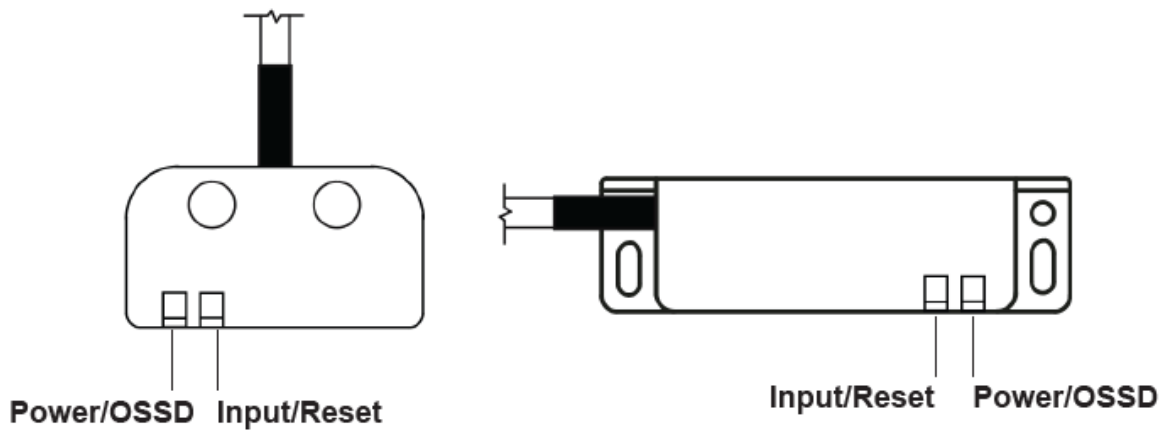
Bring the new actuator with-in operating distance of the switch. Input/Reset LED will stop flashing and turn solid purple. This means the new code has been accepted.



Step 4

Increase the supply to 24Vdc. Input/Reset LED will switch OFF or turn blue (If connected in monitored reset.) and Power/OSSD LED will change to green.

## Indication



**RPONK / RPOSG LED Configuration**

Power/OSSD LED	Input/Reset LED	Description
		No Power supplied to switch
Solid Red		Power Supplied to switch, no actuator present
Flashing Red		Output fault (turn power off and on to reset)
Flashing Red	Flashing Yellow	OSSD input fault (turn power off and on to reset)
Solid Green		OSSD outputs are present and operating correctly
Flashing Green	Solid Yellow	Actuator present, OSSD inputs not detected
Flashing Green	Solid Blue	Actuator present, OSSD inputs present, external circuit needs resetting (EDM only)
Flashing Yellow		No input, wrong actuator
	Solid Purple	Actuator has been taught
	Flashing Purple	No actuator present, voltage is at 17v ready to be taught

**RPOH1 LED Configuration**

Power/OSSD LED	Input/Reset LED	Description
		No Power supplied to switch
Solid Red		Power Supplied to switch, no actuator present
Flashing Red		Output fault (turn power off and on to reset)
Flashing Red	Flashing Yellow	OSSD input fault (turn power off and on to reset)
Solid Green		OSSD outputs are present and operating correctly
Flashing Green	Solid Yellow	Actuator present, OSSD inputs not detected
Flashing Green	Solid Blue	Actuator present, OSSD inputs present, external circuit needs resetting (EDM only)
Flashing Yellow		Actuator Misaligned to switch

*Solid Yellow (Input/Reset LED) Check previous connected safety switch is closed (operating) or check if inputs are connected correctly.*

*Flashing Yellow (Input/Reset LED) OSSD Input faults are due to different signals, one channel going high and the other low.*



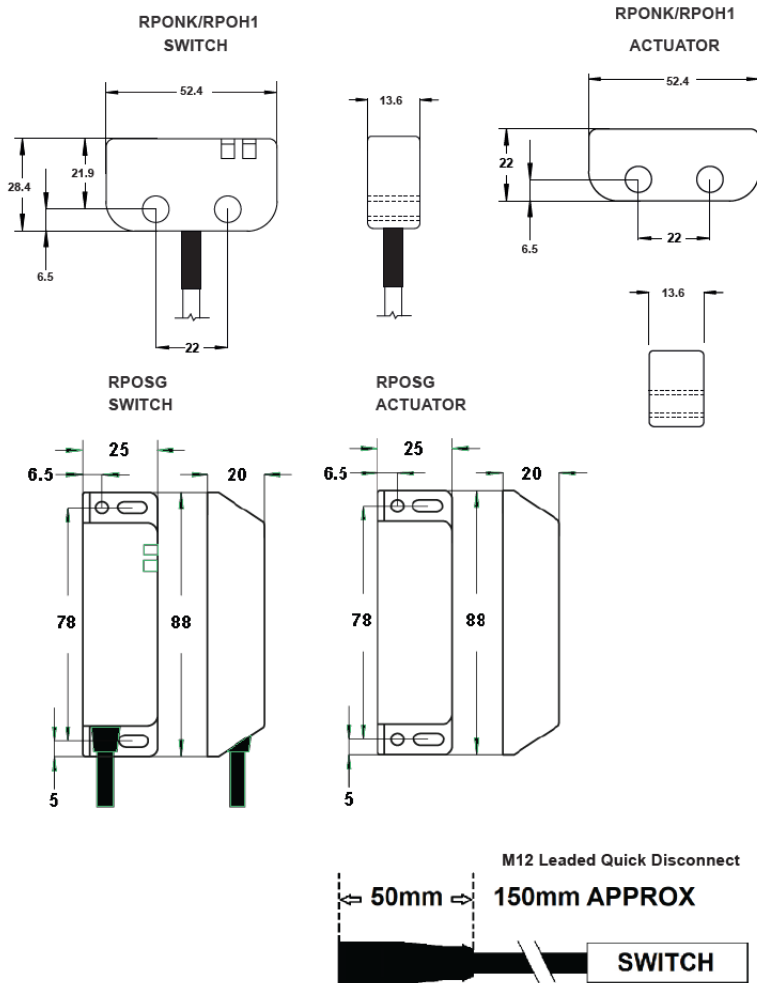
Standard Connection Type  
(M12, 8 pins, Male)

PIN	Function	Wire Colour
1	Auxiliary	White
2	+24VDC	Brown
3	NOT USED	Green
4	OSSD 2 Input	Yellow
5	OSSD 1 Output	Grey
6	OSSD 2 Output	Pink
7	0V	Blue
8	OSSD 1 Input	Red

## Pre-Wired Connections

Function	Standard	Advanced
+24VDC	Brown	Brown
0V	Blue	Blue
OSSD 1 Output	Grey	Grey
OSSD 2 Output	Pink	Pink
Auxiliary	White	White
OSSD 1 Input	Red	Red
OSSD 2 Input	Yellow	Yellow
A/M Select	Orange (not used)	Orange (see note 1)
Reset / EDM	Green (not used)	Green (see note 1)

## Dimensions



## Maintenance

It is recommended to check the safe operation of the switches and look for signs of damage or excessive wear on a weekly basis. Damaged units should be replaced or returned to the manufacturer for repair where practical.

## Notes

In the interest of product development specifications are subject to change without notice.

It is the responsibility of the user to ensure compliance with any acts or by-laws in place.

All information regarding equipment is believed to be accurate at the time of printing. Responsibility cannot be accepted for errors or omissions.

All dimensions are approximate.