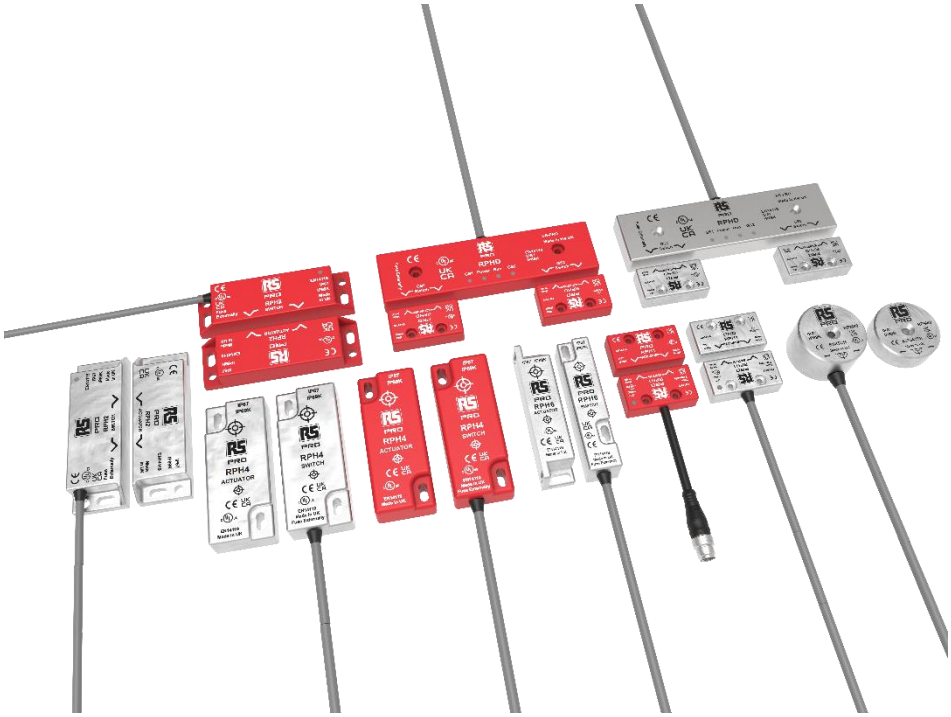
Features

- Magnetically Coded
- Solid State Design
- Wide Range Of Housings
- LED Indication
- Tolerant to Shock and Vibration
- Sealed to IP67 / IP69K

Non Contact Safety Switches

RS Stock No.: 0656599



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

RS PRO RPH safety switches are magnetically coded, solid state non-contact safety switches for use in machine guarding applications.

Non-contact operation makes the RPH switches easy to install and tolerant to misalignment. The solid state design is even more tolerant to shock and vibration, and provides single point switching which makes for a simpler and more reliable machine guard interlock.

The additional security of the coded magnetic operation along with the fully sealed IP67/IP69K rating make these switches ideal for use in wet or dusty and harsh environments.

The RPH safety switches have been designed to connect to an RS PRO safety control unit. When installed correctly, up to 30 switches can be installed in series.

Electrical Specifications

Supply voltage	24Vac/dc (+/- 15%)
Operation	Magnetically coded non-contact
Contact Arrangements	2 x N/O + 1 x N/C
Safety contact N/O ON and OFF between	7mm – 14mm
Auxiliary contact N/C OFF and on between	7mm – 14mm
Safety Contact Rating	DC : 24Vdc / 400mA
Auxiliary Contact Rating	DC : 24Vdc / 400mA
External Contact Fuse	400mA Fast Acting (Quick Blow)
IP Rating	IP67 / IP69K
Cable Length	100 Metre Max
Operating Temperature	-25ºC to +55ºC
Storage Temperature	-25ºC to +55ºC
Mounting	Target to target
Construction	Red ABS Resin Filled or 316 grade stainless steel resin filled
Indication	Dual Colour LED

Protection Category

Mechanical Specifications

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	3.62×10^{-09}
PFH	4.43×10^{-09}
B10d	2×10^{6}
MTTFd	>100 years (Based on usage rate of 360 days/year, 24 hours/day, 10 operations/hour
Tm (mission time)	20 years
DC	96.5%
SFF	98.2%

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
401.000	RS PRO	RPH1-21-DC-06M	24V dc	2NO+1NC	Plastic
401.001	RS PRO	RPH1-21-DC-LQD	24V dc	2NO+1NC	Plastic
401.002	RS PRO	RPH1-SS-21-DC-06M	24V dc	2NO+1NC	Stainless Steel
401.003	RS PRO	RPH1-SS-21-DC-LQD	24V dc	2NO+1NC	Stainless Steel
401.004	RS PRO	RPH2-21-DC-06M	24V dc	2NO+1NC	Plastic
401.005	RS PRO	RPH2-21-DC-LQD	24V dc	2NO+1NC	Plastic
401.006	RS PRO	RPH2-SS-21-DC-06M	24V dc	2NO+1NC	Stainless Steel
401.007	RS PRO	RPH2-SS-21-DC-LQD	24V dc	2NO+1NC	Stainless Steel
401.008	RS PRO	RPH4-21-DC-06M	24V dc	2NO+1NC	Plastic
401.009	RS PRO	RPH4-SS-21-DC-06M	24V dc	2NO+1NC	Stainless Steel

401.010	RS PRO	RPH6-SS-21-DC-04M	24V dc	2NO+1NC	Stainless Steel
401.011	RS PRO	RPHD-21-DC-06M-C	24V dc	2NO+1NC	Plastic
401.012	RS PRO	RPHD-21-DC-LQD-C	24V dc	2NO+1NC	Plastic
401.013	RS PRO	RPHD-SS-21-DC-06M-C	24V dc	2NO+1NC	Stainless Steel
401.014	RS PRO	RPHD-SS-21-DC-LQD-C	24V dc	2NO+1NC	Stainless Steel

MOUNTING SAFETY SWITCHES

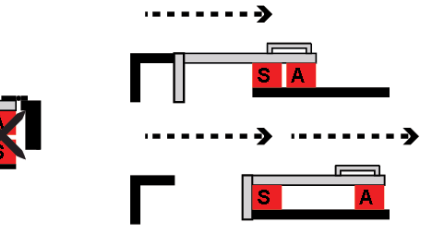
RPH1/2/4/6 Safety Switches

Do not use safety switches, as a stop. 1 mm separation when closed provides the best results.

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

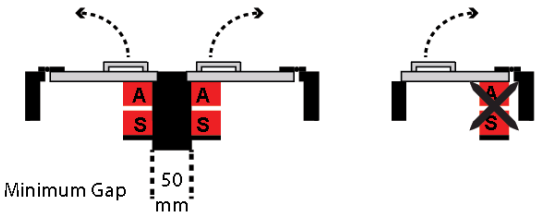
DO NOT mount on hinged side of the guard.

EN14119 : Hide the actuator where possible.



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

Minimum separation 50mm between adjacent switches.



RPHD Safety Switches - 2 Gate operation

RPHD Switches are designed to monitor 2 doors with one switch and 2 actuators. Simplifying installation by reducing wiring to the control panel, and the number of brackets required for the switches.

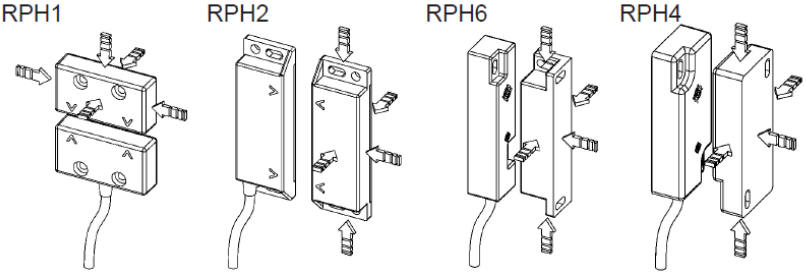
Both gates must be closed to enable the NO contacts of the switch to close and the NC indication contact to open. Opening either gate will open the NO contacts and close the NC contact. LED indication is available on the switch to help fault diagnosis.

Operation

The RPH safety switches have up to 2xN/O + 1xN/C solid state outputs along with built in LED(s) for indication. With power applied to the switch and actuator aligned correctly within the specified operating range, the N/O Outputs will be closed, the N/C Output will be open. When the actuator moves out of the operating range, the N/O Outputs will open, the N/C Output will close. The actuator(s) can approach the switch from any angle without false tripping. When the guard is closed the targets on the printed face of the switch and actuator must be aligned.

NOTE: The RPHD switch requires both actuators to be in place to operate the contacts. Removing one actuator will open the NO contacts and close the NC contact.

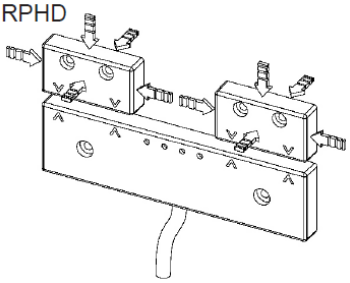
RPH1 RPH2 RPH6 RPH4



The RPHD double switch is designed to monitor two adjacent doors.

Both actuators need to be in place to close the NO output contacts and open the NC auxiliary contact.

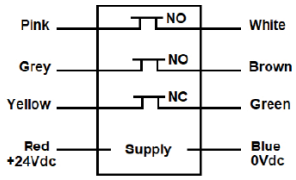
RPHD



CONNECTIONS & FUSES

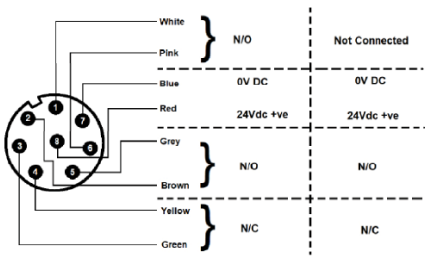
Pre-wired Switches

Contacts 2NO + 1NC

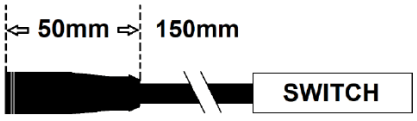


M12 Leaded Quick Disconnect

2NO + 1NC



M12 Leaded Quick Disconnect (LQD)

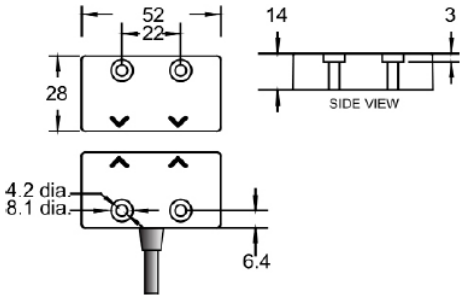


Dimensions are in mm approximately

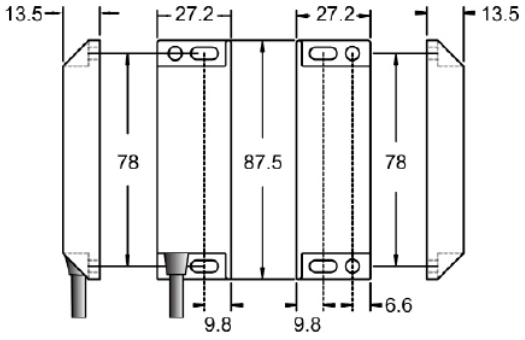
CONTACT OPERATION - The N/O contact(s) on RS PRO safety switches are open when the actuator is away from the switch. When the actuator is within the specified operation distance, the N/O contact(s) will close and N/C contact will open.

Dimensions

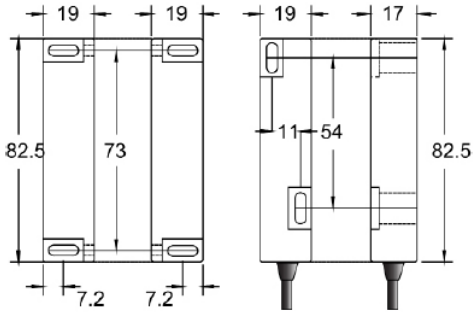
RPH1 & RPH1-SS



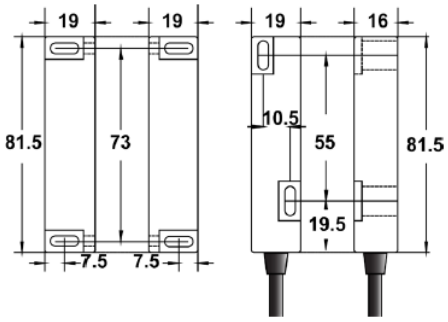
RPH2 & RPH2-SS



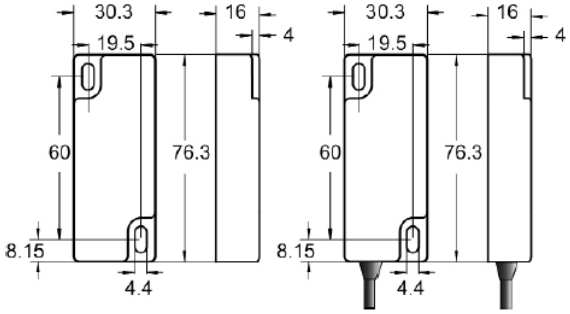
RPH6



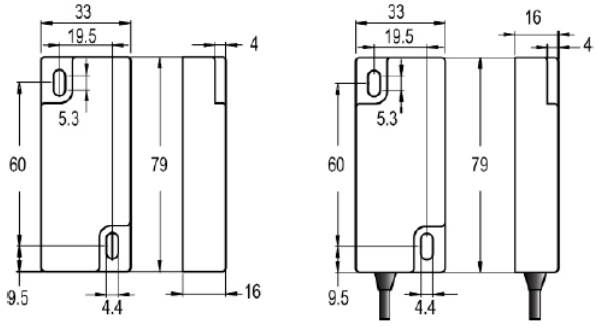
RPH6-SS



RPH4



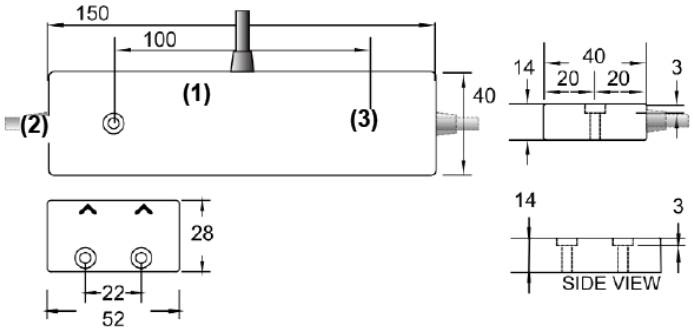
RPH4-SS



NOTE
All dimensions have a tolerance:
Plastic ±0.3mm
Stainless Steel ±0.5mm

NOTE
RPHD switch has three options for
cable exit to enusure easy installation:
RPHD-21-DC-xxC
Cabel exit in centre of switch (1)
RPHD-21-DC-xxL
Cabel exit from left had sideof the switch (2)
RPHD-21-DC-xxR
Cabel exit from right hand side of the switch (3)

xx= cable length or lqd



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.