

## Installation Instructions for RSS-SERIES: RDNK, RSSK, RSSO & RSSO-RH, RSSR & RSSG

	<h3>Description</h3> <p>RSS-SERIES are uniquely coded RFID (Radio Frequency Identification) safety switches with volt free contact outputs. They offer protection against manipulation, interference and defeat making them ideal for use in high risk applications.</p> <p>These tamper-proof safety switches feature agent resistant plastic or 316 stainless steel enclosures encapsulated with epoxy resin for a protection level of IP67/IP69K, ideal for use in wet, dusty and harsh environments</p> <p>Mechan's unique coding technology allows for 4 billion possible codes. Should either part be lost or damaged, the teach-in facility allows for unlimited re-teaching.</p>
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### KEEP THIS GUIDE FOR FUTURE REFERENCE

The information is designed to help suitably qualified personnel install and operate Mechan Controls safety equipment. Before using this product, read this guide thoroughly along with any relevant European and/or National Standards E.g. Machinery Directive 2006/42/EC and its Amendments, Provision and Use of Work Equipment Regulations. Further information can be obtained from Mechan Controls Ltd.

Technical Specifications	RDNK	RSSO & RSSO-RH	RSSK	RSSR	RSSG	RSSG-SS
Contacts	2 NO + 1 NC	2 NO + 1 NC	2 NO + 1 NC	2 NO + 1 NC	2 NO + 1 NC	2 NO + 1 NC
Supply Voltage Options	24VDC (+/- 15%)	24VDC (+/- 15%)	24VDC (+/- 15%)	24VDC (+/- 15%)	24VDC (+/- 15%)	24VDC (+/- 15%)
Safety Contact Rating	24VDC / 500mA	24VDC / 500mA	24VDC / 500mA	24VDC / 3 Amps	24VDC / 3 Amps	24VDC / 500mA
Safety Contact N/O Min ON / Max Off	10mm ON / 22mm OFF	10mm ON / 22mm OFF	10mm ON / 22mm OFF	10mm ON / 22mm OFF	10mm ON / 22mm OFF	7mm ON / 13mm OFF
Auxiliary Contact Rating	24VDC / 500mA	24VDC / 500mA	24VDC / 500mA	24VDC / 3 Amps	24VDC / 3 Amps (ABS)	24VDC / 500mA
Auxiliary Contact N/C Min OFF / Max ON	10mm OFF / 22mm ON	10mm OFF / 22mm ON	10mm OFF / 22mm ON	10mm OFF / 22mm ON	10mm OFF / 22mm ON	7mm OFF / 13mm ON
Switching Misalignment	8mm (Max)	8mm (Max)	8mm (Max)	8mm (Max)	8mm (Max)	4mm (Max)
External Fuse (Customer Supplied)	300mA Fast Acting	300mA Fast Acting	300mA Fast Acting	2.5 Amps Fast Acting	2.5 Amps Fast Acting	300mA Fast Acting
Response Time	On to Off 12ms	On to Off 12ms	On to Off 12ms	On to Off 12ms	On to Off 12ms	On to Off 12ms
Construction	Orange ABS	Orange ABS	Orange ABS	Orange ABS	Orange ABS	316 Stainless Steel
IP Rating	IP67 / IP69K	IP67 / IP69K	IP67 / IP69K	IP67 / IP69K	IP67 / IP69K	IP67 / IP69K
Operating Temperature	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C	-25°C to +60°C
Fixing	4 X M4 Security Screws	4 X M4 Security Screws	4 X M4 Security Screws	4 X M4 Security Screws	4 X M4 Security Screws	4 X M4 Security Screws
Mounting Gap	Minimum 2mm	Minimum 2mm	Minimum 2mm	Minimum 2mm	Minimum 2mm	Minimum 2mm
Connection	Pre-Wired or M12 QD	Pre-Wired or M12 QD	Pre-Wired or M12 QD	Pre-Wired or M12 QD	Pre-Wired or M12 QD	Pre-Wired or M12 QD
Coding	Individually Coded	Individually Coded	Individually Coded	Individually Coded	Individually Coded	Individually Coded
Indication	Dual Colour LED	Dual Colour LED	Dual Colour LED	Dual Colour LED	Dual Colour LED	Dual Colour LED

### Safety Related Data

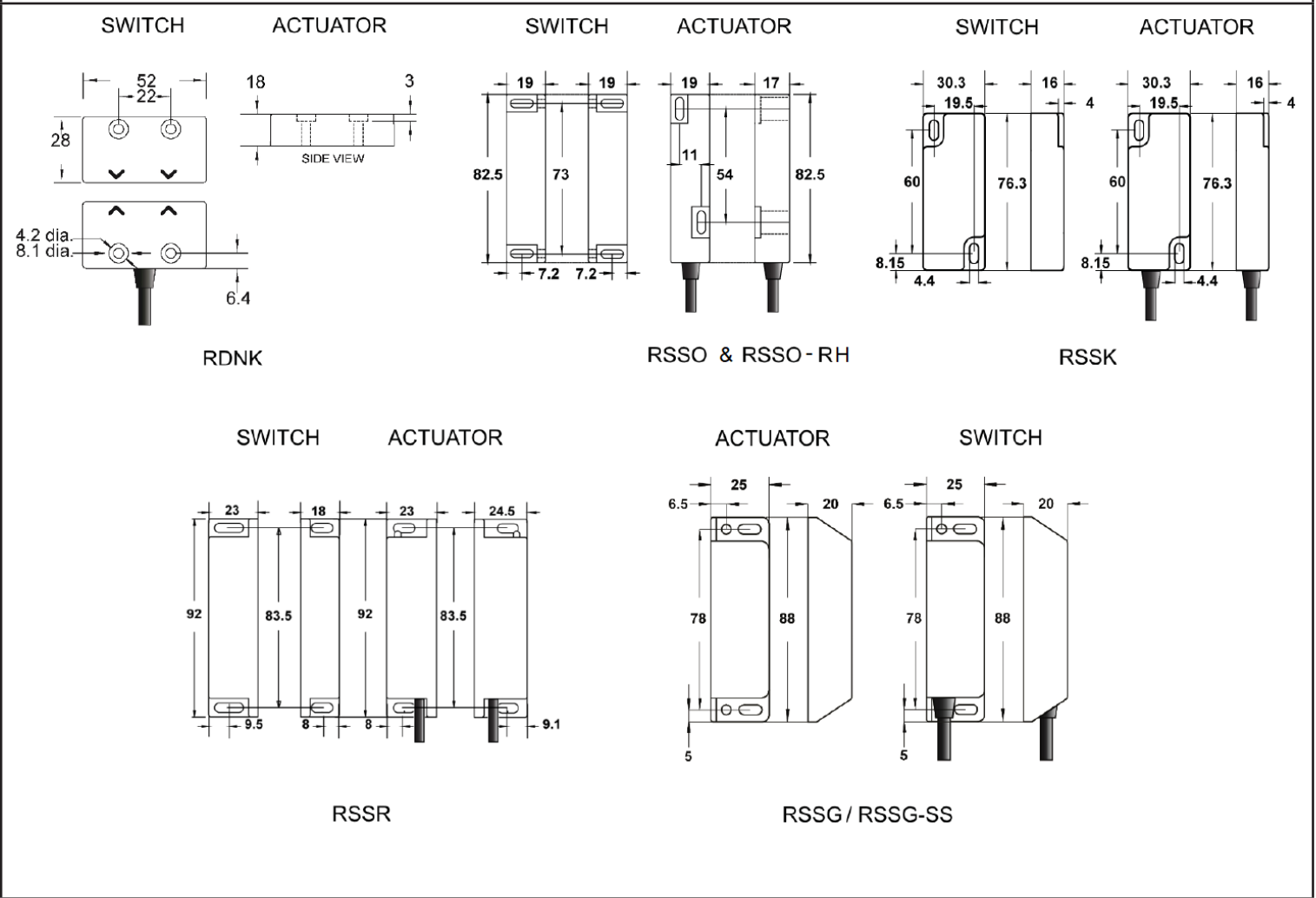
B10d	2,000,000	PFH	6.52 x 10 <sup>-8</sup>
TM (Mission Time)	> 30 Years	PFHd	4.3 x 10 <sup>-8</sup> See Note 1
DC	99%	SFF	99%
MTTFd	High > 100 Years (Based on usage rate of 360 Days/Year, 24 Hours/Day, 10 Operations/Hour)		

Note 1: Based on dual channel wiring according to CAT 4. Diagnostic coverage provided by downstream control logic. DC - medium, MTTFd = 100 Years. Suitable for performance level applications PLe according to ISO 13849-1. (SIL 3 according to IEC 62061)

## Safety Standards

Approvals	CE Complies with all relevant sections of the CE Marking Directive
	cUL 508 Industrial Control TUV Approved
International Directives	Machinery Directive 2006/42/EC, Low Voltage Directive 2014/35/EU; EMC Directive 2014/30/EU, RoHS Directive 2011/65/EU
International Standards	EN 12100 Safety of Machinery. General principles for design.
	EN ISO 14119 Safety of Machinery. Interlocking devices associated with guards. Principles for design and selection. EN ISO 13849 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 of machines.
	EN 60947-5-1 Low-voltage switchgear and controlgear.
	EN 60947-5-3 Low-voltage switchgear and controlgear.

## Dimensions



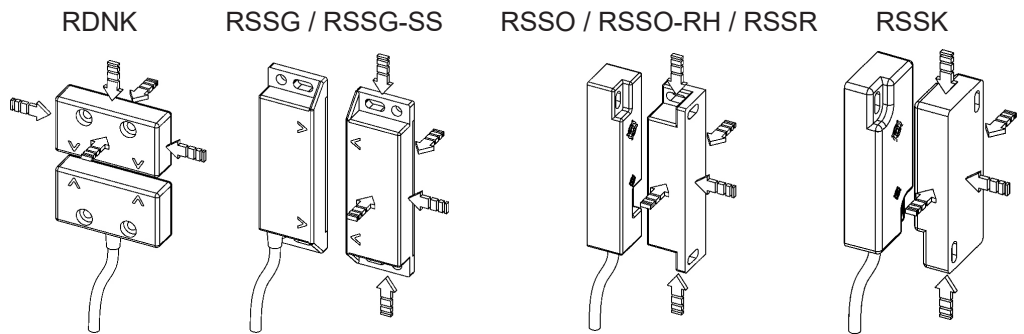
## RSS SERIES OPERATION / RE-CODING

The N/O contacts on the RSS-SERIES switches are open when the actuator is away from the switch.

When the actuator is within the specified operating distance, the N/O contact will close and the N/C contact will open.

The RSS SERIES safety switches and actuators are designed to approach each other from most angles. When the guard is closed the targets on the printed face of the switch and actuator must be aligned.

To teach a new actuator/switch the supply voltage for the switch needs to be dropped down to 17V then the new actuator is brought in. The switch LED will flash red for a couple of seconds then hold solid green when the new switch/actuator is coded. Now bring the supply back up to 24Vdc and the switch and actuator will work together.



## Mounting

Mechan RFID safety switches can approach each other from most angles. When the guard is closed the targets on the printed face of the switch and actuator must be aligned.

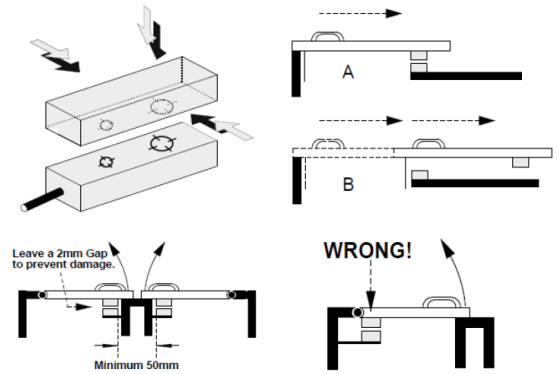
Mount the switch on to the machine frame and the actuator on to the opening edge of the door.

Use the tamper proof screws provided to make the installation more secure.

Do not use the safety switch as a door stop. Leave a minimum of 50 mm between any adjacent switches. **Leave 2mm gap between switch and actuator.**

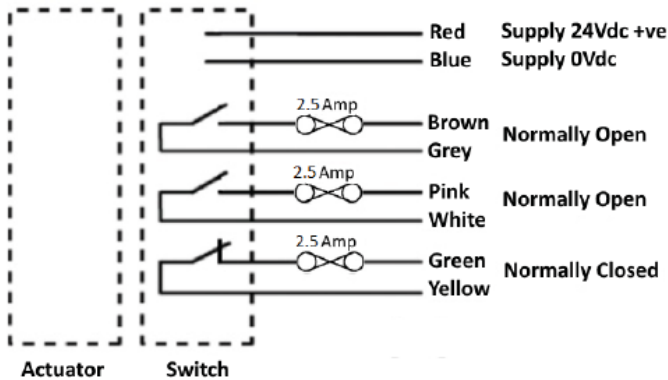
### EN ISO 14119

Provides some mounting suggestions, see example opposite.

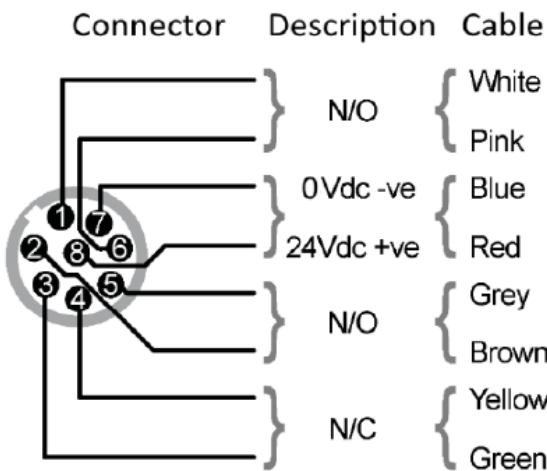
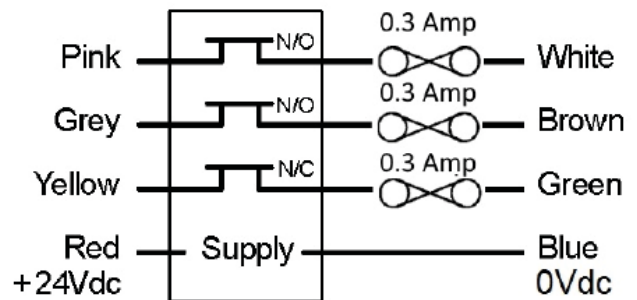


## Connections & Fuses

### RSSR & RSSG Contacts 2NO + 1NC



### RSSO, RSSO-RH, RSSK, RDNK & RSSG-SS Contacts 2NO + 1NC



**\*All RSS-Series Safety Switches are available with M12 leaded quick disconnect**

M12 Leaded quick disconnect with 150mm connecting lead to the switch



Connector  
150mm Lead, M12  
8 Pole, Single Key Way

The RSS are available with an IP69K, 6" (150mm), 8 pole 'Pig Tail' connector. Connector specification: 8-pin, Micro Single Key-way, M12.

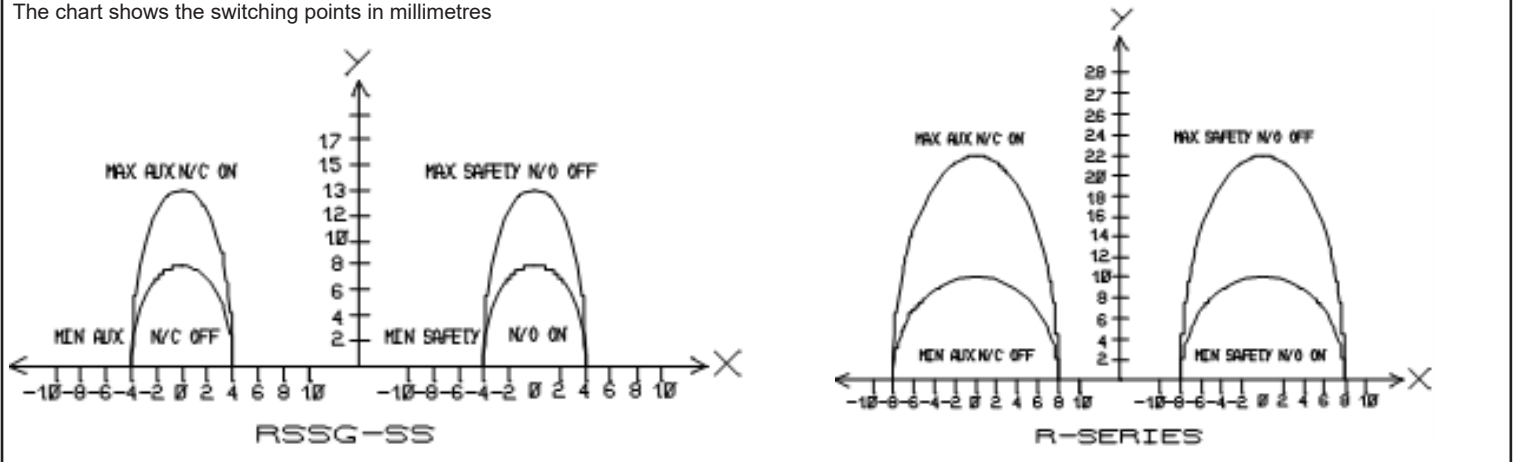
## Indication

	RDNK, RSSO, RSSO-RH, RSSK, RSSR, RSSG & RSSG-SS
Power Off	Off
Power On Gate(s) Open	Red
Power On Gate(s) Closed	Green
Incorrect Code	Flash Red

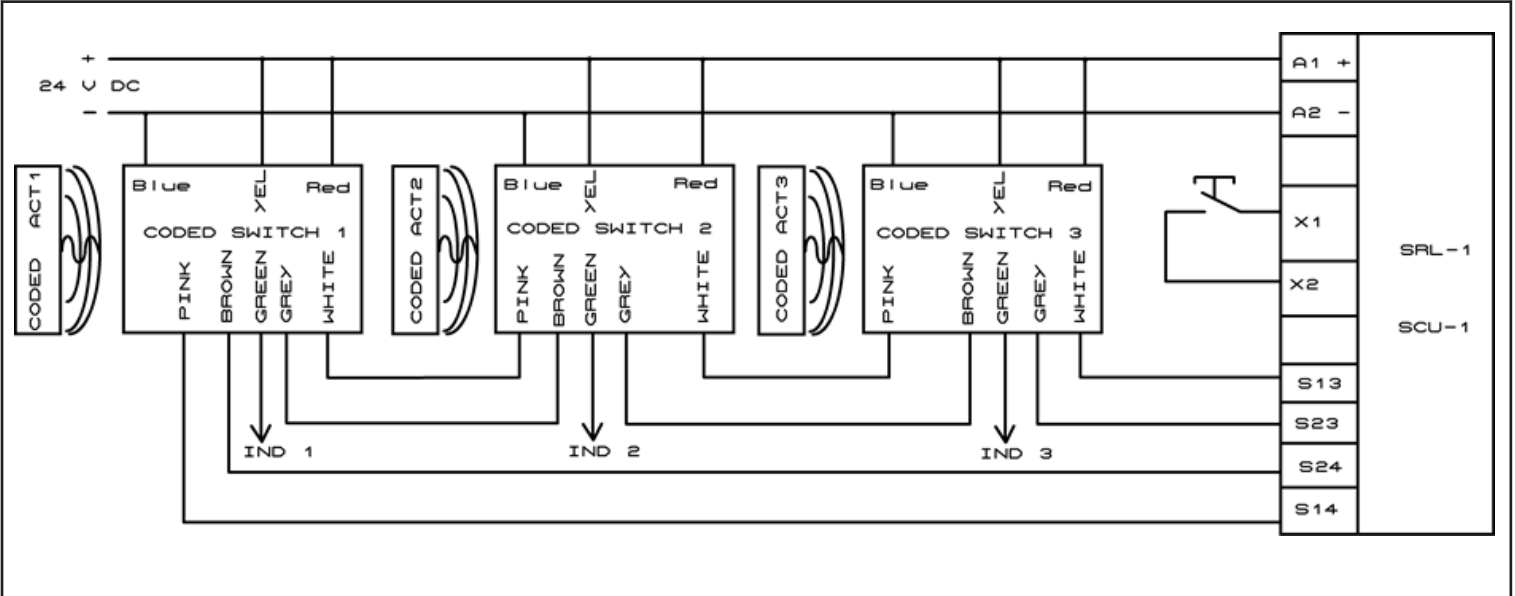
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#### Switching Characteristics

The chart shows the switching points in millimetres



#### Recommended Safety Control Units



#### IMPORTANT

##### CONNECTION TO A SAFETY RELAY

RSSG & RSSR non-contact safety switches are designed work with most safety relays on the market.

RSSO, RSSO-RH, RSSK, RDNK & RSSG-SS are designed to be connected to a safety control circuit which has less than 0.5 Amps inrush current.

All control contacts should be externally fused.

Recommended Safety Control Unit Mechan Part Number: SRL-1, SCU-1 24VAC/DC or EM1 & ESM

##### 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 Mechan equipment is believed to be accurate at the time of printing. Responsibility cannot be accepted for errors or omissions.

#### Contact Details

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