MECHAN CONTROLS

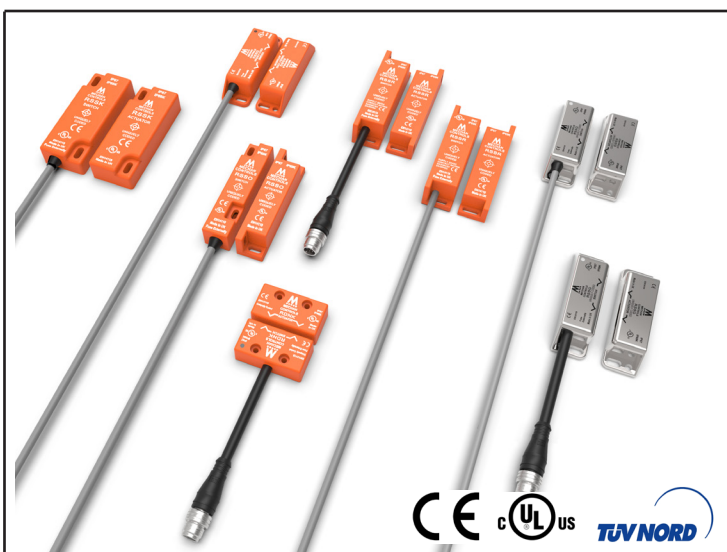*Uniquely Coded RFID Safety Switches*

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

Description

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.

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

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.

CE cULus TÜV NORD

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	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 Switching	10mm ON / 15mm OFF	10mm ON / 15mm OFF	10mm ON / 15mm OFF	10mm ON / 15mm OFF	10mm ON / 15mm OFF	10mm ON / 13mm OFF
Auxiliary Contact Rating	24VDC / 500mA	24VDC / 500mA	24VDC / 500mA	24VDC / 3 Amps	24VDC / 3 Amps (ABS)	24VDC / 500mA
Auxiliary Contact Switching	10mm ON / 15mm OFF	10mm ON / 15mm OFF	10mm ON / 15mm OFF	10mm ON / 15mm OFF	10mm ON / 15mm OFF	10mm ON / 13mm OFF
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	6.52×10^{-8}
TM (Mission Time)	> 30 Years	PFHd	4.3×10^{-8} 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
	UL 508 Industrial Control TUV Approved
International Directives	Machinery Directive 2006/42/EC, Low Voltage Directive 2006/95/EC; EMC Directive 2014/30/EU, RoHS Directive 2011/65/EC
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

RDNK

RSSO

RSSK

RSSR

RSSG / RSSG-SS
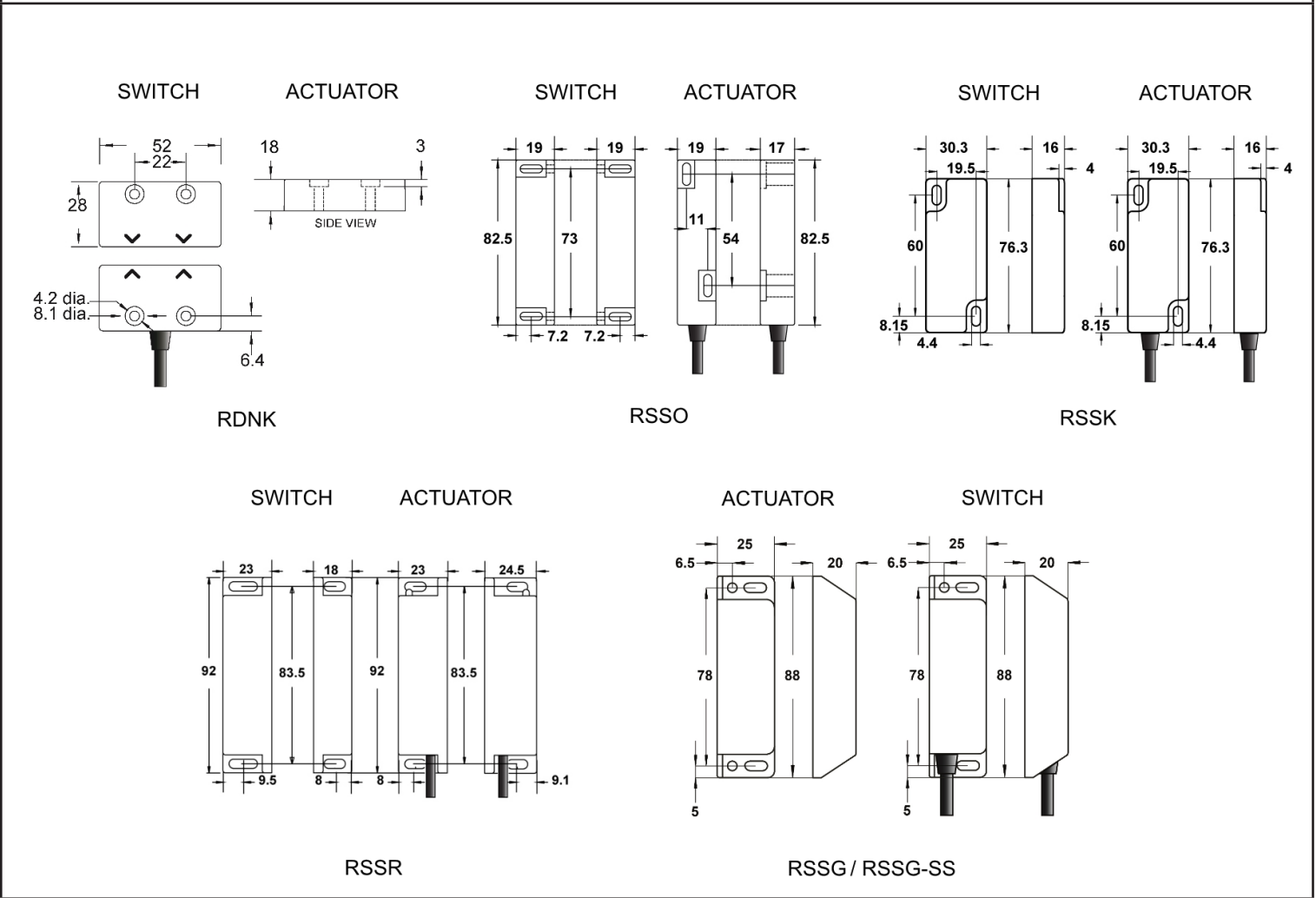
RSSG-SS OPERATION

The N/O contacts on the RSS-SERIES switches are open when the actuator is away from the switch.
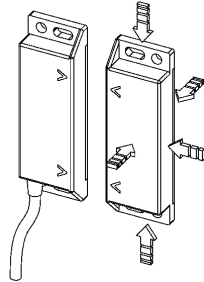
When the actuator is within the specified operating distance, the N/O contact will close and the N/C contact will open.

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.
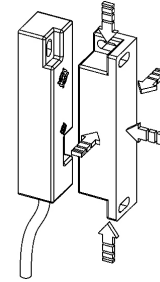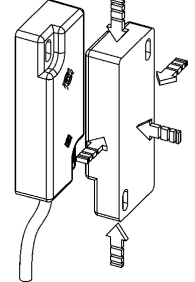

RDNK
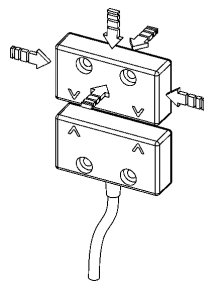
RSSG / RSSG-SS

RSSO / RSSR

RSSK

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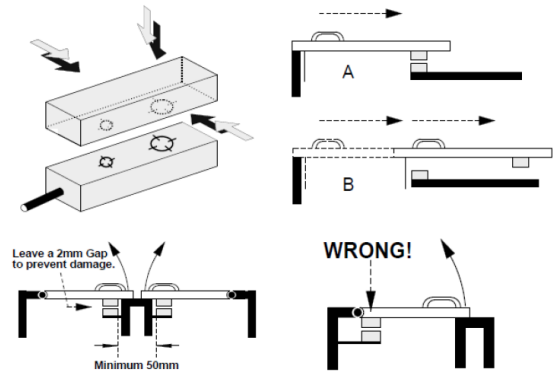
Mount the switch on to the machine frame and the actuator on to the opening edge of the door.

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.**
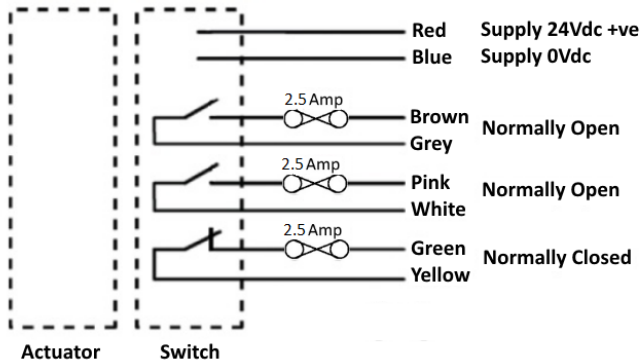
EN ISO 14119
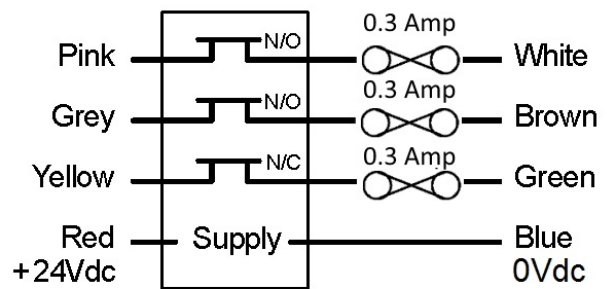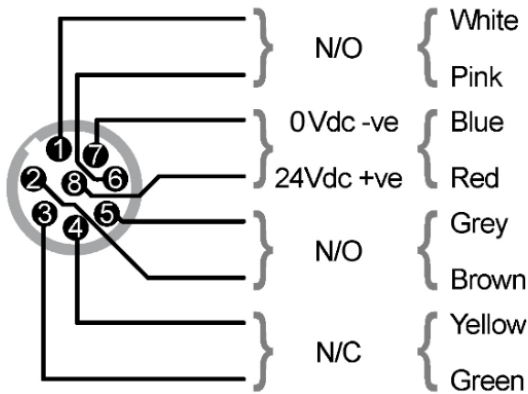Provides some mounting suggestions, see example opposite.

Leave a 2mm Gap to prevent damage.

Minimum 50mm

A

B

WRONG!

Connections & Fuses

RSSR & RSSG
Contacts 2NO + 1NC

Red	Supply 24Vdc +ve	
Blue	Supply 0Vdc	
Brown	Normally Open	2.5 Amp
Grey		
Pink	Normally Open	2.5 Amp
White		
Green	Normally Closed	2.5 Amp
Yellow		

Actuator   Switch

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

Pink	N/O	0.3 Amp	White
Grey	N/O	0.3 Amp	Brown
Yellow	N/C	0.3 Amp	Green
Red +24Vdc	Supply		Blue 0Vdc

Connector	Description	Cable
	N/O	White
		Pink
	0Vdc -ve	Blue
	24Vdc +ve	Red
	N/O	Grey
		Brown
	N/C	Yellow
		Green

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

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

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

56mm | 150mm

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

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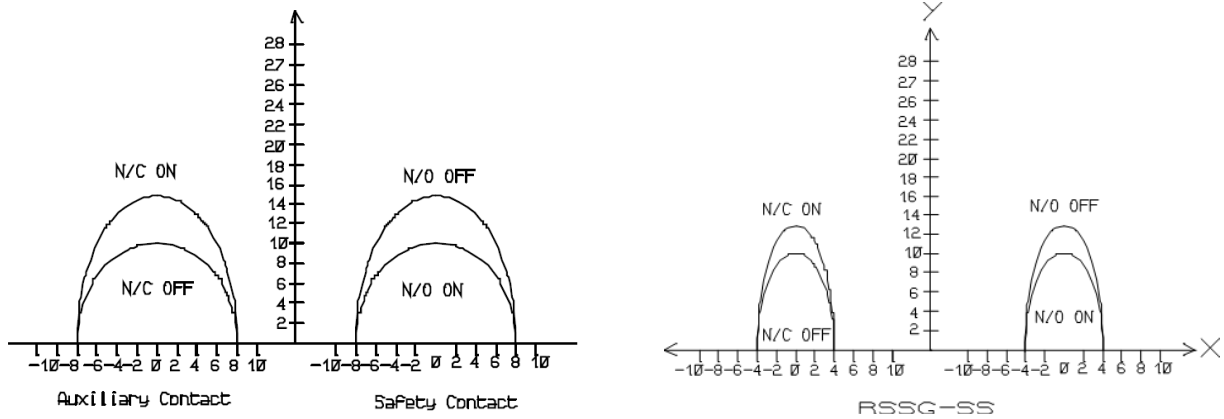
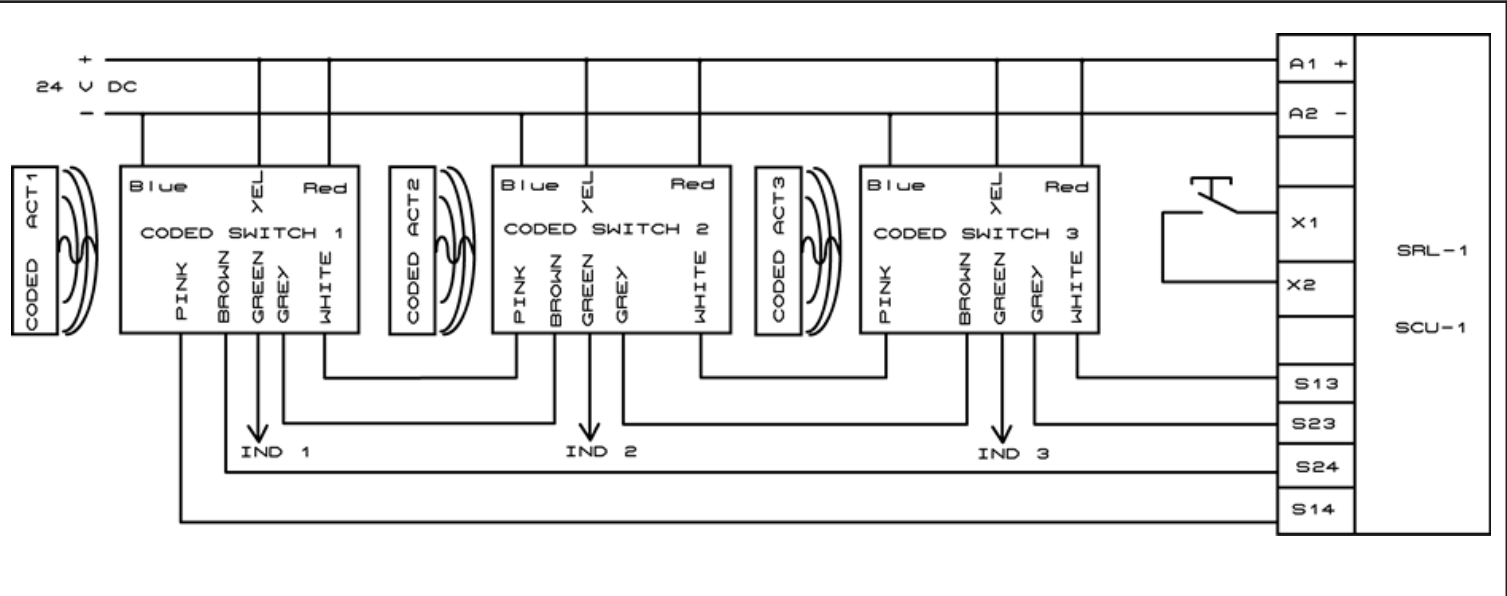|	RDNK, RSSO, RSSK, RSSR, RSSG & RSSG-SS
Power Off	Off
Power On Gate(s) Open	Red
Power On Gate(s) Closed	Green
Incorrect Code	Flash Red

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

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, 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 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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