

RFID Coded Non Contact Switches - Types LP-RFID and SP-RFID



The LP-RFID and SP-RFID Non Contact Coded switches have been developed to provide and maintain a high level of functional safety whilst providing a very high anti-tamper coded activation.

Coding is achieved by using magnetic and radio frequency techniques, both principles need to be satisfied for the switch to operate safely.

They will connect to most popular standard Safety Relays to achieve up to PLe / Category 4 to ISO13849-1.

They are offered in high specification plastic housings and can be used in almost any environments including high pressure cleaning following contamination from foreign particles.

They have IP69K ingress protection and are suitable for CIP and SIP processes.

The typical sensing distance 'on' is 14mm with wide tolerance to guard misalignment after setting.

The RFID sensing provides a tamper resistant operation when the actuator is in the sensing range of the switch.

The LP-RFID and SP-RFID are available in 2 types either coded by series or uniquely coded.

Type 1 LP-RFID-M or SP-RFID-M Master code – by series (any actuator will operate any switch) - used when unique door activation is not required, but the benefit of RFID makes it virtually impossible to be overridden or by passed by simple means.

Type 2 LP-RFID-U or SP-RFID-U 32,000,000 Unique codes - these switches are factory set and used when unique activation is required in areas where there are many interlocked doors and security of individual areas is required.

Main user benefits

- 1) RFID provides high degree of anti-tamper - virtually impossible to override
- 2) Unique RFID or series coding RFID available - depending upon user's risk assessment.
- 3) Able to connect to most popular Safety Relays to achieve up to PLe and Category 4 for ISO13849-1.
- 4) Connect up to 20 switches in series.
- 5) Ability to connect other switches and E Stops in series.



LP-RFID-U (Uniquely Coded)
LP-RFID-M (Master Coded by series)



SP-RFID-U (Uniquely Coded)
SP-RFID-M (Master Coded by series)

Functional Specification:

High Functional Safety to ISO 13849-1 – connects to most Safety Relays to maintain PLe Cat.4.

RFID Coded actuation to provide high tamperproof interlock security on Guard Doors.

Diagnostic LED:

LED Green – Indication of Safety Circuits closed

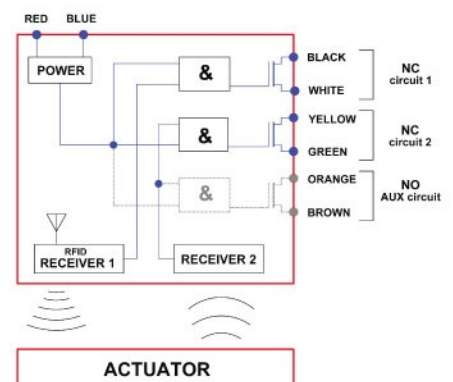
2NC Safety Outputs short circuit protected

1NO Auxiliary Output for indication of door open

No moving parts – high switch life and resistance to Shock and Vibration

M12 Male 8 way connector versions available (Flying Lead 250mm (10 inches))

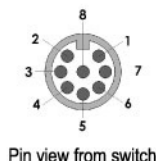
Principle:



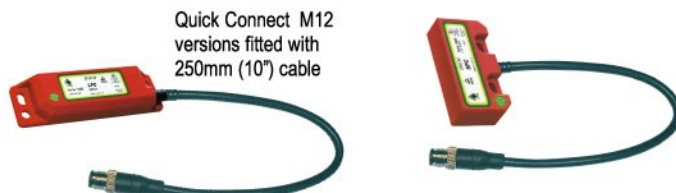
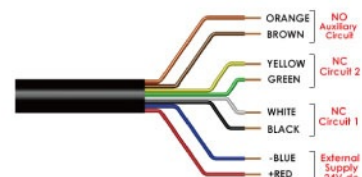
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For all IDEM switches the NC circuits are closed when the guard is closed and the actuator present.



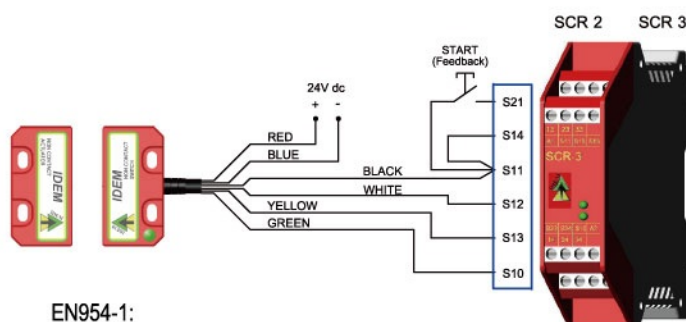
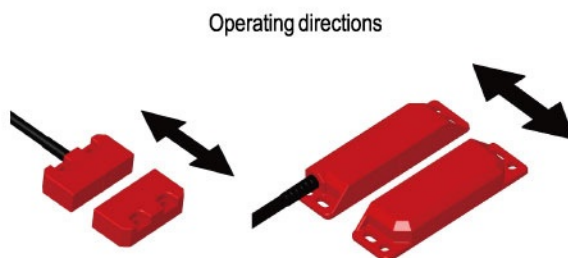
Quick Connect (QC) M12 8 way Male Plug (Pin view from switch)	Flying Lead Colours	Circuit (Actuator Present)	Output Types Solid State
8	Orange	Auxiliary NO	200mA Max. 24Vdc
5	Brown	Auxiliary NO	
4	Yellow	Safety NC2	200mA Max. 24Vdc
6	Green	Safety NC2	
7	Black	Safety NC1	200mA Max. 24Vdc
1	White	Safety NC1	
2	Red	Supply +24Vdc	Supply 24Vdc +/- 10%
3	Blue	Supply 0Vdc	



Standards EN1088 IEC 60947-5-3 EN 60204-1
ISO 13849-1 EN62061 EN 954-1 UL508

Safety Classification and Reliability Data:

Switching Reliability	3.3 x 10 ⁶ operations at 100mA load
EN 954-1	up to Category 4 with Safety Relay
ISO 13849-1	up to PLe depending upon system architecture
EN 62061	up to SIL3 depending upon system architecture
Safety Data - Annual Usage	8 cycles per hour / 24 hours per day / 365 days
PFFd	2.52 x 10 ⁻⁸
Proof Test Interval (Life)	47 years
MTTFd	470 years
Maximum Rating	24V.d.c 0.2 A Max. Rating
Minimum switched current	10V. dc 1mA
Dielectric withstand	250V.ac
Insulation Resistance	100 Mohms
Recommended setting gap	5mm
Switching Distance:	
(Target to target)	Sao 10mm Close
	Sar 20mm Open
Tolerance to misalignment	5mm in any direction from 5mm setting gap
Approach speed	200mm/m. to 1000mm/s.
Body Material	UL Approved Polyester
Temperature Range	-25 / 105C.
Shock Resistance	IEC 68-2-27 11ms 30g
Vibration Resistance	IEC 68-2-6 10-55 Hz. 1mm
Enclosure Protection	IP69K IP67
Cable Type	PVC 8 core 6mm O.D.
Mounting Bolts	2 x M4



EN954-1:

One switch to one Safety Relay - Cat 4
Multiple switches to one Safety Relay - Cat.3.

Single switch connected to an SCR-2 or SCR-3 to give Dual Channel monitoring with Manual Start.



Sales Number	UNIQUELY CODED (every switch unique activation)	Cable Length
404001	LP-RFID-U	2M
404002	LP-RFID-U	5M
404003	LP-RFID-U	10M
404004	LP-RFID-U	QC-M12
404200	Replacement Actuator (re-teach)	

Sales Number	MASTER CODED (same code every switch)	Cable Length
404101	LP-RFID-M	2M
404102	LP-RFID-M	5M
404103	LP-RFID-M	10M
404104	LP-RFID-M	QC-M12
404201	Replacement Actuator Master	

Sales Number	UNIQUELY CODED (every switch unique activation)	Cable Length
405001	SP-RFID-U	2M
405002	SP-RFID-U	5M
405003	SP-RFID-U	10M
405004	SP-RFID-U	QC-M12
405200	Replacement Actuator (re-teach)	

Sales Number	MASTER CODED (same code every switch)	Cable Length
405101	SP-RFID-M	2M
405102	SP-RFID-M	5M
405103	SP-RFID-M	10M
405104	SP-RFID-M	QC-M12
405201	Replacement Actuator Master	



140101	Female QC Lead	M12 Female 5m. 8 way
140102	Female QC Lead	M12 Female 10m. 8 way