IDEM SPF

Non-Contact RFID Coded Safety Switches



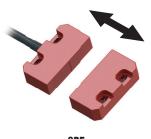
SPF Series Plastic Housing

- RFID coded actuation
- Switching capability up to 0.2A
- Can be high-pressure hosed at high temperature IP69K rated
- Will operate with most safety relays
- Available with 2m, 5m, or 10m cable or 250mm pigtail with quick-disconnect cable

See Dimensions later in this section.



RFID Coded Actuator Operating Direction



SPF

SPF Non-Contact RFID Coded Safety Switches						
Part Number	Price	Body Material	Coding	Cable Length	Circuits	Contact Rating
	Pigtail Versions					
SPF-U-405001	\$133.00			2m	2 NC, 1 NO	0.2A
SPF-U-405002	\$152.00		Unique	5m		
SPF-U-405003	\$167.00	D:		10m		
SPF-M-405101	\$133.00	Plastic	Plastic	2m		
SPF-M-405102	\$152.00			5m		
SPF-M-405103	\$167.00			10m		
Quick Disconnect Versions (M12 8-pin)						
SPF-U-405004	\$174.00	D:	Unique	250mm	2 NC, 1 NO	0.2A
SPF-M-405104	\$174.00	Plastic	Master			

Replacement Actuators for SPF Master Units						
Part Number	Price	Body Material	Coding	Cable Length	Circuits	Contact Rating
SPF-M-405201	\$35.50	Plastic	Master	-	2 NC, 1 NO	0.2A

Female Quick Disconnect Lead				
Part Number Price Descri		Description	Exit Type/Cable Length	
<u>140101</u>	\$59.00	Famala OD Load	M12 Female 5m, 8-pin	
140102	\$88.00	Female QD Lead	M12 Female 10m, 8-pin	



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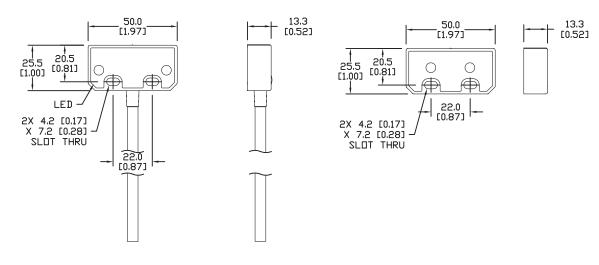
Non-Contact RFID Coded Safety Switches

Dimensions

mm [in]

SPF Series

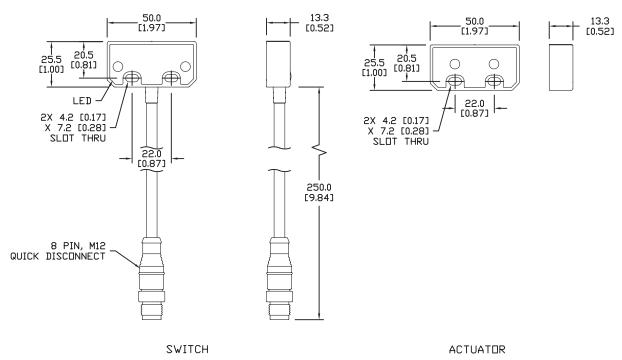
Pigtail



SWITCH

ACTUATOR

Quick Disconnect

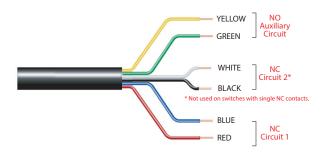


See our website: www.AutomationDirect.com for complete Engineering drawings.

IDEM Non-Contact Safety Switches Electrical Connections and Dimensions

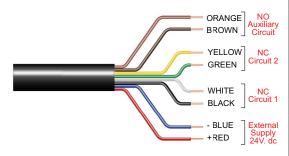
Electrical Connections

Magnetic Switches



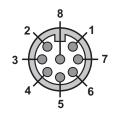
Magnetic Switches - Electrical Connections				
Quick Disconnect Connector Pin Out	Lead Color	Type of Circuit (Actuator Present)		
4	Yellow	Auxiliary (NO)		
6	Green	Auxiliary (NO)		
7	Black	NC2		
1	White	NC2		
2	Red	NC1		
3	Blue	NC1		

Coded Magnetic and RFID Switches



Coded Magnetic Switches - Electrical Connections				
Quick Disconnect Connector Pin Out	Lead Color	Type of Circuit (Actuator Present)	Output Types (Solid State)	
8	Orange	Auxiliary (NO)	200 mA max. 24 VDC	
5	Brown	Auxiliary (NO)	200 MA Max. 24 VDC	
4	Yellow	NC2 +	200 mA max. 24 VDC	
6	Green	NC2 -	(Optocoupler)	
7	Black	NC1+	200 mA max. 24 VDC (Optocoupler)	
1	White	NC1 -		
2	Red	Supply +24 VDC	Supply 24 VDC	
3	Blue	Supply 0VDC	+10% / -15%	

Connection Colors

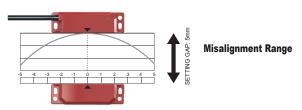


Pin View from Switch M12 Male

IDEM Non-Contact Safety Switches Specifications

Non-contact Safety Switches Specifications				
	Non-Contact Magnetic Switches	Non-Contact Coded Magnetic Switches	Non-Contact RFID Coded Switches	
Safety Classification and Reliability Data				
Switching Reliability (B10d)	3.3 x 10 ⁶ operations at 100mA load	No mechanical parts implemented	No mechanical parts implemented	
ISO 13849-1	Up to Category 4			
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			
PFHd	2.8 x 10 ⁻¹⁰	2.6 x 10 ⁻¹⁰	4.77 x 10 ⁻¹⁰	
Proof Test Interval (Life)	2.0 × 10	20 years	4.77 X 10	
MTTFd	470 years	866 years	1100 years	
Agency Approvals	470 years	CE, cULus	1100 years	
Electrical and General Specifications		OL, COLUS		
Liectrical and General Specifications	MPR: Voltage free: 250VAC, 0.5 A max.			
	LPR, LMR, SPR, SMR, SMR-F: Voltage free: 250VAC, 1.0 A max.	24VDC, 0.2 A max (optocoupler)	24VDC, 0.2 A max (optocoupler)	
Contact Ratings: Safety Contact NC	CPR, CMR, CMR-F, WPR: Voltage free: 250VAC, 2.0 A max.			
	BPR, BMR: 240VAC, 24VAC/DC, 1.0 A max.			
Contact Ratings: Monitoring (Auxilary) Contact NO	Voltage free: 24VDC, 0.2 A max.	24VDC, 0.2A max.	24VDC, 0.2A max.	
	MPR: Fuse externally 0.4 A (F)		NA	
Recommended Fuses (NC Circuits)	LPR, LMR, SPR, SMR, SMR-F, CMR, CMR-F: Fuse externally 0.8 A (F)	NA		
,	CPR, WPR: Fuse externally 1.6 A (F)			
	BPR, BMR: Fuse externally 0.5 A (F)			
Contact Release Time	<2ms	NA	NA	
Initial Contact Resistance	<0.5 Ω	NA NA	NA NA	
Minimum Switched Current	40.0 12	10 DC, 1mA	IVA	
Dielectic Withstand		250VAC		
Insulation Resistance		100 Megohms		
Recommended Setting Gap		5mm [0.20 in]		
NC Switching Distance	• • •			
NC Switching Operation	Sao (assured ON) 8mm [0.31 in] close; Sar (assured OFF) 20mm [0.79 in] open			
NO Switching Operation	For all switches the NC circuits are closed when the guard is closed and the actuator is present. Opens before NC circuits close			
Tolerance to Misalignment	5mm [0.20 in] in any direction from 5mm [0.20 in] setting gap (See Misalignment Range drawing on this page)			
Switching Frequency	1.0 Hz Max.			
Approach Speed	200mm [7.87 in] per minute to 1000mm [39.37] per second			
Body Material - Polyester	CPR, LPR, MPR, SPR, WPR, BPR	CPC, LPC, MPC, SPC, WPC	LPF, SPF, BPF	
Body Material - 316 Stainless Steel	CMR, CMR-F, LMR, SMR, SMR-F, BMR	CMC, CMC-F, LMC, SMC, SMC-F	LMF, BMF	
	Polyester: -25° to +80°C (-13° to +176° F)			
Operating Temperature Range	316 Stainless Steel: -25° to +105° C [-13° to +221° F]	316 Stainless Steel: -25° to +105° C [-13° to +221° F]	-25° to +80° C [-13° to +176° F]	
Storage Temperature (Low)	-55° to -40° C [-67° to -40° F]			
Enclosure Protection	IP67, IP69K (QC versions are IP67 due to connector)			
Shock Resistance	IEC 68-2-27 11ms 30g			
Vibration Resistance	IEC 68-2-6 10-55 Hz 1mm [0.04 in]			
Cable Type	PVC, 6.5 mm outside diameter max.	PVC, 6.5 mm outside diameter max.	PVC, 6mm [0.24 in] outer diameter max.	
Mounting Bolts (recommended)		2 x M4; Tightening torque: 1.0 N•m [0.74 lb•ft]		

Note: Always mount onto non-ferrous materials.



Safety Products



Warning: Safety products sold by AutomationDirect are Safety components only. The purchaser/installer is solely responsible for the application of these components and ensuring all necessary steps have been taken to assure each application and use meets all performance and applicable safety requirements and/or local, national and/or international safety codes as required by the application. AutomationDirect cannot certify that our products, used solely or in conjunction with other AutomationDirect or other vendors' products, will assure safety for any application. Any person using or applying any products sold by AutomationDirect is responsible for learning the safety requirements for their individual application and applying them, and therefore assumes all risks, and accepts full and complete responsibility, for the selection and suitability of the product for their respective application.

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