

IDEM PSA and MSA Non-Contact Coded Magnetic Stand-Alone Safety Switches



PSA Series Plastic Housing MSA Series Stainless Steel Housing PSA-D and MSA-D Series Dual Switch

- Coded magnetic actuation
- Universal housing suitable for most general applications
- LED indication
- Wide 14mm [0.55 in] sensing distance, high tolerance to misalignment
- Available with 2m, 5m, or 10m [6.56 ft, 16.40 ft, or 32.81 ft] cable or 250mm [9.84 in] pigtail with quick-disconnect cable
- No need for a separate safety relay
- Contains internal monitoring system
- Uses force guided mechanical contacts
- External reset monitoring circuit
- Will maintain PLe (ISO13849-1) even when connected in series

MSA Series Only

- Specifically designed for food processing applications
- Can be high-pressure hosed at high temperature - IP69K rated
- Suitable for CIP SIP cleaning - Food Splash Zones per EHEDG guidelines
- 316 Stainless steel mirror polished finish

PSA-D AND MSA-D Only

- Dual actuator versions are available for use with "double door" guards
- Both actuators must be used



PSA and MSA Series Non-Contact Stand-Alone Selection Chart

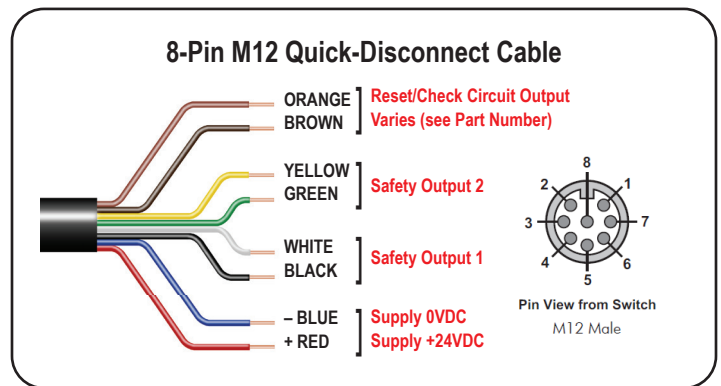
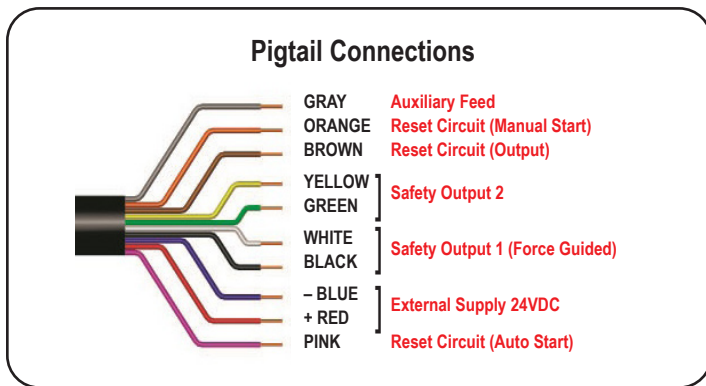
Part Number	Price	Body Material	Connection	Cable Length	Outputs	Number of Actuators	Automatic or Manual Start	Weight kg [lb]	Dimensional Drawing
PSA-117002	\$250.00	Plastic	Pigtail	5m [16.40 ft]	2 NC & 1 PNP Status	1	Selectable	0.54 [1.20]	PDF
PSA-117003	\$265.00	Plastic	Pigtail	10m [32.81 ft]	2 NC & 1 PNP Status	1	Selectable	0.94 [2.05]	PDF
PSA-117004	\$272.00	Plastic	8-pin M12 quick-disconnect	250mm [0.82 ft]	2 NC	1	Automatic	0.20 [0.45]	PDF
PSA-117005	\$272.00	Plastic	8-pin M12 quick-disconnect	250mm [0.82 ft]	2 NC	1	Manual	0.20 [0.45]	PDF
PSA-D-117102	\$288.00	Plastic	Pigtail	5m [16.40 ft]	2 NC & 1 PNP Status	2	Selectable	0.60 [1.35]	PDF
PSA-D-117103	\$304.00	Plastic	Pigtail	10m [32.81 ft]	2 NC & 1 PNP Status	2	Selectable	0.96 [2.15]	PDF
PSA-D-117104	\$310.00	Plastic	8-pin M12 quick-disconnect	250mm [0.82 ft]	2 NC	2	Automatic	0.26 [0.60]	PDF
PSA-D-117105	\$310.00	Plastic	8-pin M12 quick-disconnect	250mm [0.82 ft]	2 NC	2	Manual	0.26 [0.60]	PDF
MSA-130002	\$316.00	316 stainless steel	Pigtail	5m [16.40 ft]	2 NC & 1 PNP Status	1	Selectable	0.80 [1.75]	PDF
MSA-130003	\$332.00	316 stainless steel	Pigtail	10m [32.81 ft]	2 NC & 1 PNP Status	1	Selectable	1.18 [2.60]	PDF
MSA-130004	\$339.00	316 stainless steel	8-pin M12 quick-disconnect	250mm [0.82 ft]	2 NC	1	Automatic	0.48 [1.05]	PDF
MSA-130005	\$339.00	316 stainless steel	8-pin M12 quick-disconnect	250mm [0.82 ft]	2 NC	1	Manual	0.48 [1.05]	PDF
MSA-D-130102	\$356.00	316 stainless steel	Pigtail	5m [16.40 ft]	2 NC & 1 PNP Status	2	Selectable	0.98 [2.15]	PDF
MSA-D-130103	\$372.00	316 stainless steel	Pigtail	10m [32.81 ft]	2 NC & 1 PNP Status	2	Selectable	1.35 [3.00]	PDF
MSA-D-130104	\$379.00	316 stainless steel	8-pin M12 quick-disconnect	250mm [0.82 ft]	2 NC	2	Automatic	0.66 [1.45]	PDF
MSA-D-130105	\$379.00	316 stainless steel	8-pin M12 quick-disconnect	250mm	2 NC	2	Manual	0.66 [1.45]	PDF

Stand-Alone Non-Contact Coded Magnet Safety Switch Actuator Replacement Selection Chart

Part Number	Price	Body Material	Weight (kg [lb])	Dimensional Drawing
PSA-117200	\$41.00	Plastic	0.06 [0.15]	PDF
MSA-130200	\$61.00	316 stainless steel	0.18 [0.40]	PDF

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Electrical Connections

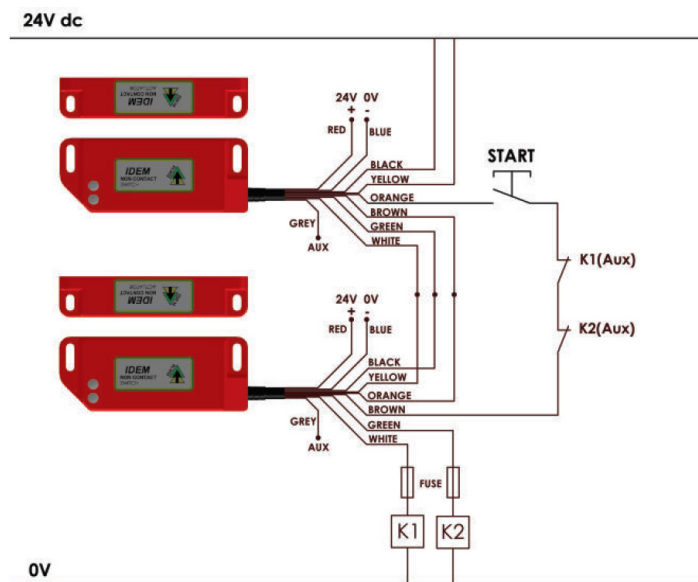


Pigtail Connection Flying Lead Color	Circuit	8-Pin M12 Male Quick-Disconnect Pin Number (Wire Color*)
Red	Supply +24VDC	2 (Red)
Blue	Supply 0VDC	3 (Blue)
White	Safety Output 1 (Force Guided Relay)	1 (White)
Black	Safety Output 1 (Force Guided Relay)	7 (Black)
Yellow	Safety Output 2	4 (Yellow)
Green	Safety Output 2	6 (Green)
Brown	Reset/Check Circuit - Output	8 (Orange)
Orange	Reset Check Circuit - Manual Start Version (see Part Number)	5 (Brown)
Pink	Reset/Check Circuit - Automatic Start version (see Part Number)	5 (Brown)
Gray	Auxiliary Feed	Not Used

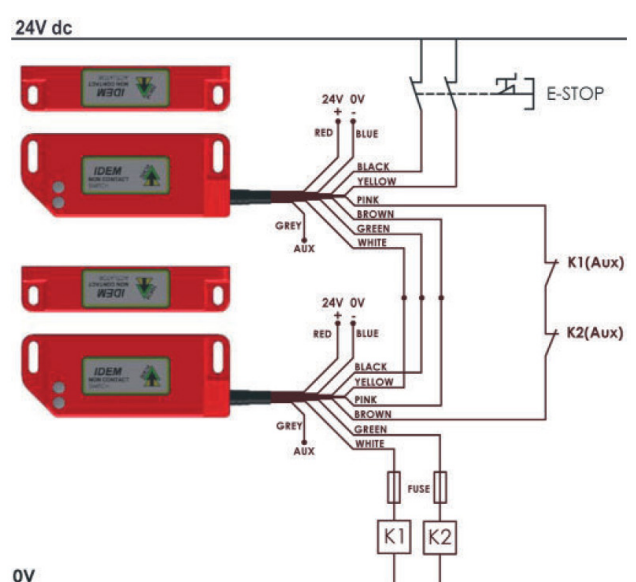
*When using IDEM/AutomationDirect cable part number [140101](#) or [140102](#)

Connection Examples

Switches in Series – Manual Start PLc



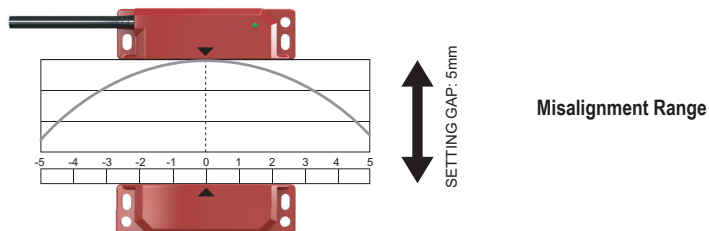
Switches in Series – Automatic Start PLd/Cat3



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Idem Non-Contact Coded Magnetic Stand-Alone Safety Switches Specifications		
	PSA or MSA series with Quick Disconnect Connections	PSA or MSA series with Flying Lead Connections
Safety Classification and Reliability Data According to IEC62061 (used as a sub System)		
Safety Integrity Level	SIL3	
PFH (1/h)	3.95 x 10 ⁻¹⁰ corresponds to 4.0% of SIL3	
PFD	3.46 x 10 ⁻⁵ corresponds to 3.5% of SIL3	
Proof Test Interval T1	20 years	
Safety Classification and Reliability Data According to EN ISO13849-1		
Performance Level	Ple	
Category	Cat4	
MTTFd	446 years	
Diagnostic Coverage (DC)	99% (high)	
Safety Data - Annual Usage	1 cycle per day / Machine in operation 24 hours per day, 365 days per year	
Switching Reliability (B10d)	150,000 AC1 Load 3.0 A 2,000,000 AC1 Load 0.5 A	
Electrical and General Specifications		
Supply Voltage	24VDC +/- 10%	
Power Consumption	150mA max	
Safety Outputs	2 NC Max: 2A (240VAC or 24VDC) Min 10VDC 1mA	2 NC Max: 3A (240VAC or 24VDC) Min 10VDC 1mA
Status Outputs	None	1 PNP - 500mA @ 24VDC
Operating Temperature	-25°C to 45°C [-13°F to 113°F]	
Shock Resistance	IEC 68-2-27 11ms 30g	
Vibration Resistance	IEC 68-2-6 10-55Hz 1mm	
Recommended Setting Gap	5mm [0.197 in]	
Tolerance to Misalignment	5mm [0.197 in] in any direction from the setting gap	
Approach Speed	600mm/min to 1000mm/sec [23in/min to 39in/second]	
NC Switching Distance	Sao (assured ON) 10mm [0.39 in] close Sar (assured OFF) 15mm [0.59 in] open	
NC Switching Operation	For all switches the NC circuits are closed when the guard is closed and the actuator is present.	
NO Switching Operation	None	Opens before NC circuits close
Cable Type	PVC 8 core 7mm [0.28 in] outer diameter max	PVC 10 core 7mm [0.28 in] outer diameter max.
Mounting Bolts (Recommended)	2 x M4; Tightening torque: 1.0 N•m [0.74 lb•ft]	
Ingress Protection	PSA: IP67 MSA: IP69K/IP67	
Agency Approvals	CE, cULus, TÜV	

NOTE: Always mount onto non-ferrous material



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.

AutomationDirect does not provide design or consulting services, and cannot advise whether any specific application or use of our products would ensure compliance with the safety requirements for any application.