

IDEM Inch Safety Switches

Inch Series Housing

- Tongue interlocking switch
- Designed to fit leading edge, hinged or lift off machine guards
- 16.5 mm- 18mm mounting profile (Inch-X); 16.5 mm- 22mm mounting profile (MK-1)
- M16, 1/2" NPT threaded opening or M12 quick disconnect connection
- 90 degree adjustable head

- Standard and compact housings
- Force guided NC contacts
- Rotating heads with dual actuator entry
- Purchase actuating key separately (See accessories)

See electrical specifications later in this section.

IDEM Inch Series



IDEM Inch Safety Switches								
Part Number	Price	Body Material	Head Material	Weight (lb)	Actuator Travel / Force for Positive Opening	Contact Configuration	Connection	Dimensions
INCH-1 Miniature Tongue Interlock Safety Switch								
<u>INCH-1-222001</u>	\$40.00	Plastic	316 stainless steel	0.29	6mm/12N	2 N.C. Slow action	1 x M16	Figure 1
<u>INCH-1-222002</u>	\$70.00			0.32			M12 Quick disconnect	
<u>INCH-1-222003</u>	\$40.00			0.29		1 x M16		
<u>INCH-1-222004</u>	\$70.00			0.32		M12 Quick disconnect		
INCH-3 Miniature Tongue Interlock Safety Switch								
<u>INCH-3-223001</u>	\$43.50	Plastic	316 stainless steel	0.29	6mm/12N	1 N.O., 2 N.C. Slow action, break before make	3 x M16	Figure 2
<u>INCH-3-223002</u>	\$73.00			0.32			M12 Quick disconnect	
MK1-SS Miniature Tongue Interlock Safety Switch								
<u>MK1-SS-224001</u>	\$129.00	316 stainless steel		0.70	6mm/12N	1 N.O., 2 N.C. Slow action, break before make	1 x M20	Figure 3
<u>MK1-SS-224002</u>	\$129.00			0.70			1 x 1/2" NPT	
<u>MK1-SS-224003</u>	\$160.00			0.75			M12 Quick disconnect	

IDEM Inch Safety Switches

Dimensions

mm [in]

Figure 1

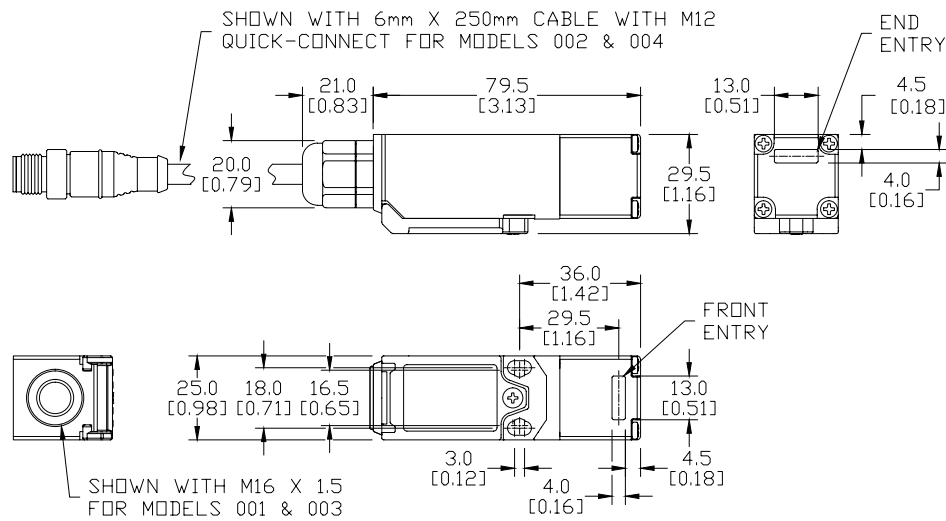


Figure 2

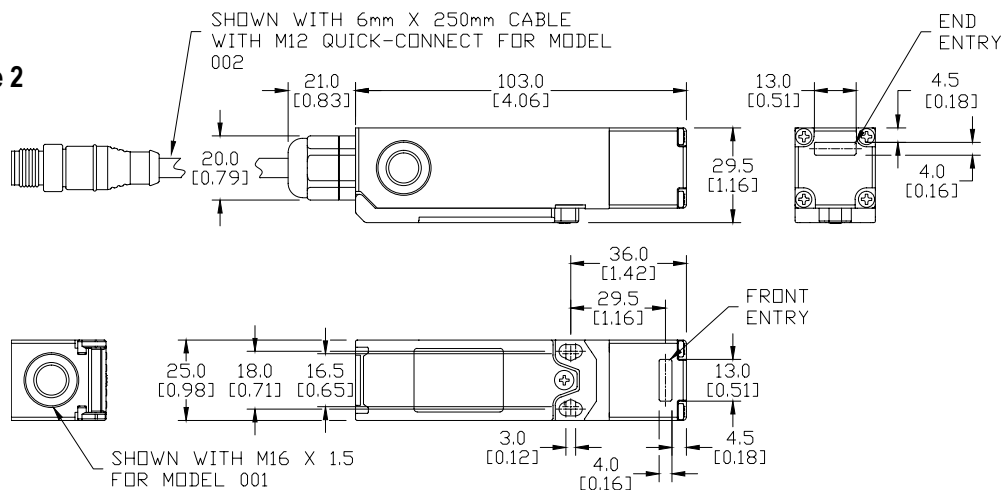
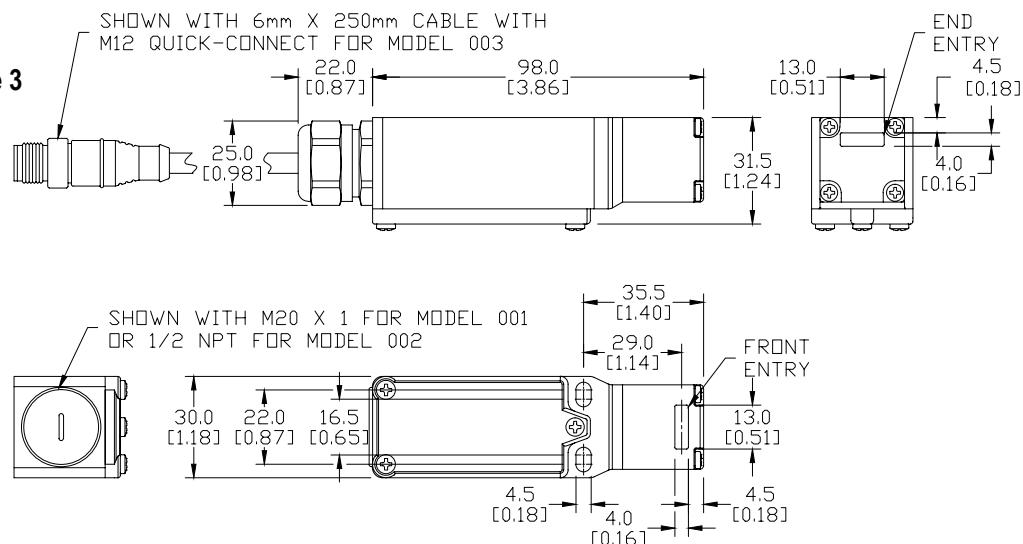


Figure 3



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

IDEM Interlock Safety Accessories



Actuator Keys For Use With INCH and MK1

- All keys are 316 stainless steel
- Flexible key option available

**140179 140179-SS****140180****140181****140182**

IDEM Interlock Safety Switch Actuator Tongue (Keys)

Part Number	Price	Description	Use With		Minimum Entry Radius (mm [in])	Weight (lb [g])	Drawings
			INCH	MK1			
<u>140179</u>	\$23.50	IDEM key guide, 316 stainless steel. Mounting hardware included. For use with IDEM INCH series safety switches	✓		NA	0.10 [45.4]	<u>PDF</u>
<u>140179-SS</u>	\$23.50	IDEM key guide, 316 stainless steel. For use with IDEM MK1 series safety switches		✓	NA	0.10 [45.4]	<u>PDF</u>
<u>140180</u>	\$11.50	IDEM actuator tongue (key), 8mm mounting hole spacing, 316 stainless steel, 90 degree mounting tab. For use with IDEM MK1 and INCH series safety switches	✓	✓	150 [5.91]	0.10 [45.4]	<u>PDF</u>
<u>140181</u>	\$11.50	IDEM actuator tongue (key), 15mm mounting hole spacing, 316 stainless steel, straight mounting tab, shock absorbing. For use with IDEM MK1 and INCH series safety switches	✓	✓	150 [5.91]	0.10 [45.4]	<u>PDF</u>
<u>140182</u>	\$20.00	IDEM actuator tongue (key), 40mm mounting hole spacing, 316 stainless steel, flexible mounting tab. For use with IDEM MK1 and INCH series safety switches	✓	✓	100 [3.94]	0.10 [45.4]	<u>PDF</u>

IDEM Interlock Safety Switches Specifications



Specifications							
	IDIS	INCH/MK1	HC	KM	KP/K-SS	K-15	GLx
Safety Classification and Reliability Data							
Switching Reliability (B10 _d)	2.5 x 10 ⁶ operations at 100mA load						1.5 x 10 ⁶ operations at 100mA load
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						
Agency Approvals	cULus (E258676), CE						cULus (E258676), CE, TUV
Electrical and General Specifications							
Conductor Sizes	16-12 AWG (1.5 to 2.5 mm ²)						
Utilization Category	AC15, A300, 3A						
Thermal Current	10A						
Short Circuit Overload Protection	External 10A Fast Acting recommended						
Rated Insulation Voltage	600VAC				500VAC		
Contact Terminals	Stainless steel (Snap action plated brass); Max conductor 1.5 m ² (IDIS), 2.5 m ² (KM, K/K-15); 1 N•m [0.74 lb•ft] torque						
Maximum Switching Current	2.5A @24 VDC 6A @ 120VAC, 3A @ 240VDC (720VA Break)						
Maximum Approach/Withdrawal Speed	600mm/s [23.6 in/s]						NA
Enclosure Protection	IP67 (IP69K on all models with both stainless steel head and body)						
Operating Temperature	-25°C to 80°C [-13°F to 176°F]						
Vibration	IEC 68-2-6, 10Hz to 55Hz + 1Hz						10Hz to 500Hz 0.35 mm [0.014 in]
Lid Screws/Torque	Plated brass 1 N•m [0.74 lb•ft]	Stainless steel T20 Torx 1 N•m [0.74 lb•ft]	Stainless steel 1 N•m [0.74 lb•ft]				Stainless steel T20 Torx 1.5 N•m [1.11 lb•ft]
Recommended Mounting Screws/ Torque	M4 1.5 N•m [1.11 lb•ft]	M5 4N•m [2.95 lb•ft]	M4 1.5 N•m [1.11 lb•ft]		M5 4N•m [2.95 lb•ft]		
Head Screws/Torque	Stainless steel, except snap (plated brass) 1 N•m [0.74 lb•ft]	Stainless steel T20 Torx 1 N•m [0.74 lb•ft]	Stainless steel; 1 N•m [0.74 lb•ft]				

IDEM Interlock/Hinge Safety Travel Charts



Interlock Safety Switch Types

Slow-make/slow-break contacts:

A contact element in which the contact motion is dependent on the actuator speed.

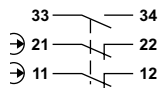
Snap-action contact:

A contact element in which the contact motion is independent of the speed of the actuator. This feature ensures reliable electrical performance even in applications involving very slow moving actuators.

Contacts Configuration

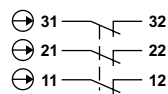
1 NO and 2 NC

Slow-make/slow-break contacts



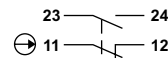
3 NC

Slow-make/slow-break contacts



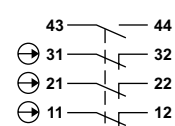
1 NO and 1 NC

Snap action contacts



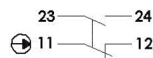
1 NO and 3 NC

Slow-make/slow-break contacts



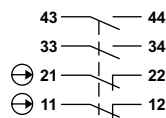
1 NO and 1 NC

Slow-make/slow-break contacts



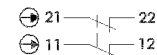
2 NO and 2 NC

Slow-make/slow-break contacts



2 NC

Slow-make/slow-break contacts



Travel Charts



Interlock Switches

2NC 1NO 6.8 6.0 0 mm

11/12	Open	
21/22	Open	
33/34		Open

3NC 6.0 0 mm

11/12	Open	
21/22	Open	
31/32	Open	

3NC 1NO 6.8 6.0 0 mm

11/12	Open	
21/22	Open	
31/32	Open	
43/44		Open

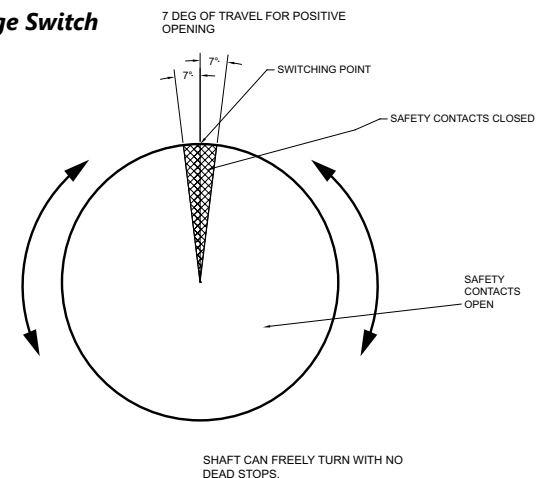
2NC 2NO 6.8 6.0 0 mm

11/12	Open	
21/22	Open	
33/34		Open
43/44		Open

1NC 1NO (SNAP) 6.5 0 mm

11/12	Open	
23/24		Open

Hinge Switch



User to ensure that by correct positioning of the shaft at installation causes the safety contacts to open such that no hazard exists to the operator when the door is opened a few degrees.

Safety Rope Switches

EX	1 NO/2 NC	1 NO/3 N.C.	2 NO/2 N.C.	0 mm	3.5 mm	14.5 mm	17.0 mm
				Latched off - Rope Slack	Tension Range (Switch Reset)	Rope Pulled	
NC	11/12	11/12	11/12	Open		Open	
	21/22	21/22	21/22	Open		Open	
		31/32		Open		Open	
NO	33/34	43/44	33/44		Open		
			43/44		Open		

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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