

IDEM IDIS Interlock Safety Switches

IDIS Series Housing

- Tongue (key) (IDIS-1) or lever hinge (IDIS-2) interlock operated
 - 90 degree adjustable head
 - One 1/2 in. NPT female conduit opening
 - 22 mm mounting profile
 - Standard and compact housings
 - Force guided NC contacts 
 - Purchase actuating key separately (See accessories)
- See electrical specifications later in this section.**

IDEM IDIS-1 Tongue (Key) Interlock Safety Switches							
Part Number	Price	Body Material	Head Material	Weight (lbs)	Actuator Travel / Force for Positive Opening	Contact Configuration	Dimensions
IDIS-190051	\$26.00	Plastic	Plastic	0.35	6mm/12N	1 N.O., 2 N.C. Slow action	Figure 1
IDIS-190055	\$26.00					3 N.C. Slow action	Figure 1
IDIS-190059	\$26.00					1 N.O., 1 N.C. Snap action	Figure 1

IDIS-190051



IDEM IDIS-2 Hinge Interlock Safety Switches							
Part Number	Price	Body Material	Head Material	Weight (lbs)	Actuator Rotation / Force for Positive Opening	Contact Configuration	Dimensions
IDIS-192002	\$25.00	Plastic	Plastic	0.35	7 degrees / 0.5N	1 N.O., 2 N.C. Slow action	Figure 2
IDIS-192005	\$25.00					3 N.C. Slow action	Figure 2
IDIS-192008	\$25.00					1 N.O., 1 N.C. Snap action	Figure 2

IDIS-192002



Dimensions mm[in]

Figure 1

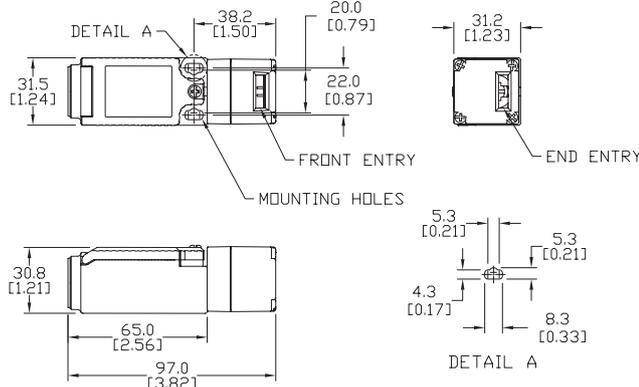
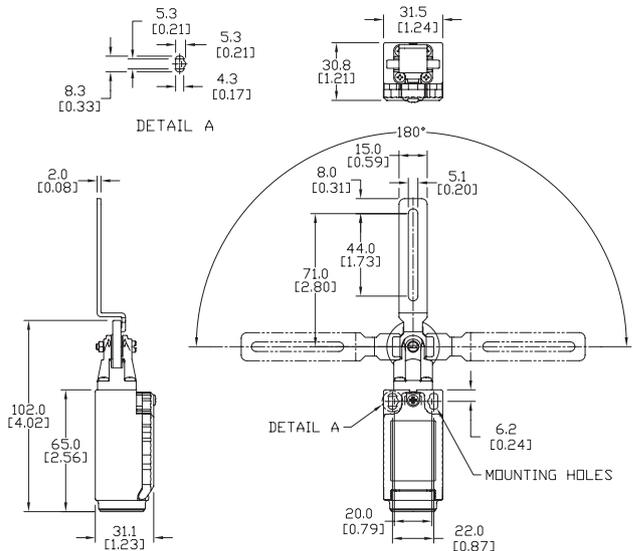


Figure 2



IDEM KM/KM-SS Interlock Safety Switches

KM/KM-SS Series Housing

- Tongue (key) interlock operated
- 90 degree adjustable head
- 8 actuator entry positions
- One 1/2 in. NPT female conduit opening
- Force guided NC contacts 
- 30 mm mounting profile
- Aluminum and 316 stainless steel options available
- Includes one tamper-proof T20 Torx bit
- Purchase actuating key separately. (See accessories)

See electrical specifications later in this section.



IDEM KM /KM-SS Interlock Safety Switches									
Part Number	Price	Body Material	Head Material	Weight (lbs)	Actuator Travel / Force for Positive Opening	Contact Configuration	Dimensions		
KM-203002	\$62.00	Die-cast aluminum	Die-cast aluminum	0.92	6mm/12N	1 N.O., 2 N.C. Slow action	Figure 1		
KM-203008	\$72.00					1 N.O., 3 N.C. Slow action	Figure 1		
KM-203011	\$72.00					2 N.O., 2 N.C. Slow action	Figure 1		
KM-203002-SS	\$82.00					316 stainless steel	1.1	1 N.O., 2 N.C. Slow action	Figure 2
KM-203008-SS	\$93.00							1 N.O., 3 N.C. Slow action	Figure 2
KM-203011-SS	\$95.00							2 N.O., 2 N.C. Slow action	Figure 2
KM-SS-204002	\$121.00	316 stainless steel	316 stainless steel	1.4	6mm/12N	1 N.O., 2 N.C. Slow action	Figure 2		
KM-SS-204008	\$130.00					1 N.O., 3 N.C. Slow action	Figure 2		
KM-SS-204011	\$128.00					2 N.O., 2 N.C. Slow action	Figure 2		

Dimensions mm[in]

Figure 1

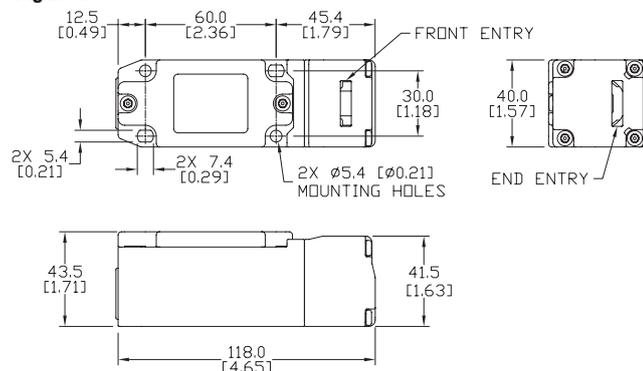
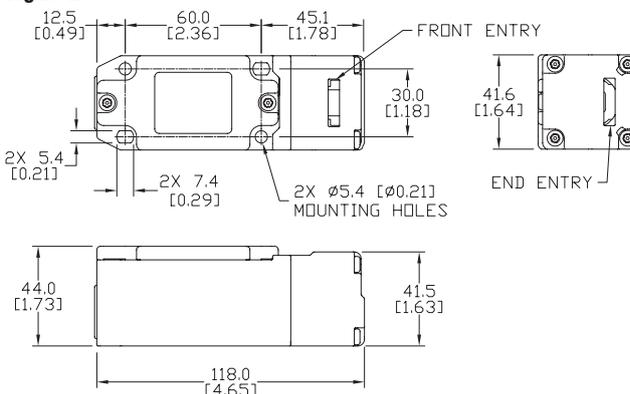


Figure 2



IDEM KP/K-SS and K-15 Interlock Safety Switches

KP/K-SS and K-15 Series Housing

- Tongue (key) interlock operated
 - 180 degree adjustable head
 - 4 actuator entry positions
 - Three 1/2 in. NPT female conduit openings
 - Force guided NC contacts →
 - 40 mm mounting profile
 - Purchase actuating key separately. (See accessories.)
- See electrical specifications later in this section.**



IDEM KP/K-SS Interlock Safety Switches							
Part Number	Price	Body Material	Head Material	Weight (lbs)	Actuator Travel/Force for Positive Opening	Contact Configuration	Dimensions
KP-200002	\$40.00	Plastic	Plastic	0.7	6mm/12N	1 N.O., 2 N.C. Slow action	Figure 1
KP-200008	\$51.00					1 N.O., 3 N.C. Slow action	Figure 1
KP-200011	\$51.00					2 N.O., 2 N.C. Slow action	Figure 1
KP-200002-SS	\$61.00		316 stainless steel	0.85		1 N.O., 2 N.C. Slow action	Figure 2
KP-200008-SS	\$69.00					1 N.O., 3 N.C. Slow action	Figure 2
KP-200011-SS	\$68.00					2 N.O., 2 N.C. Slow action	Figure 2
K-SS-208002	\$116.00	316 stainless steel	316 stainless steel	1.63	1 N.O., 2 N.C. Slow action	Figure 3	
K-SS-208008	\$125.00				1 N.O., 3 N.C. Slow action	Figure 3	
K-SS-208011	\$123.00				2 N.O., 2 N.C. Slow action	Figure 3	



IDEM K-15 Interlock Safety Switches							
Part Number	Price	Body Material	Head Material	Weight (lbs)	Actuator Travel / Force for Positive Opening	Contact Configuration	Dimensions
K-15-207002	\$40.00	Plastic	Plastic	0.66	6mm/12N	1 N.O., 2 N.C. Slow action	Figure 4
K-15-207005	\$40.00					3 N.C. Slow action	Figure 4
K-15-207002-SS	\$58.00		316 Stainless Steel	0.8		1 N.O., 2 N.C. Slow action	Figure 5
K-15-207005-SS	\$58.00					3 N.C. Slow action	Figure 5

IDEM KP/K-SS and K-15 Interlock Safety Switches

Dimensions mm[in]

Figure 1

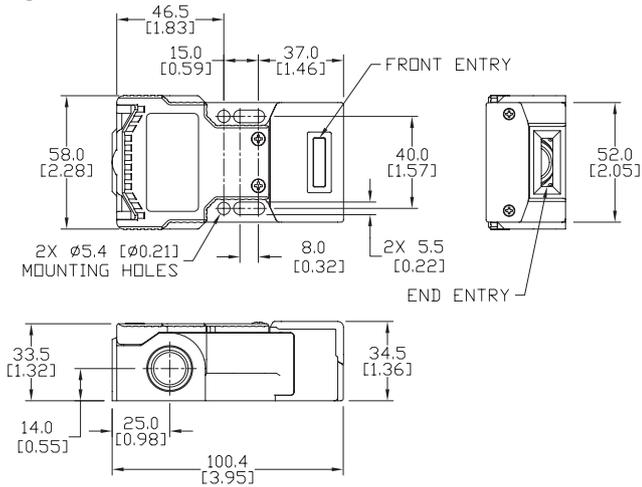


Figure 2

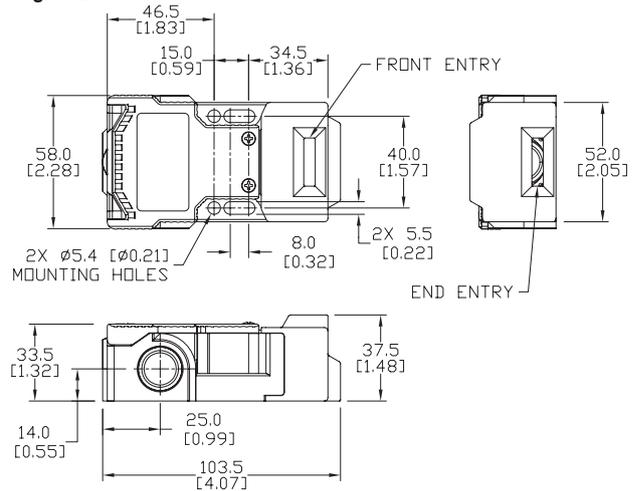


Figure 3

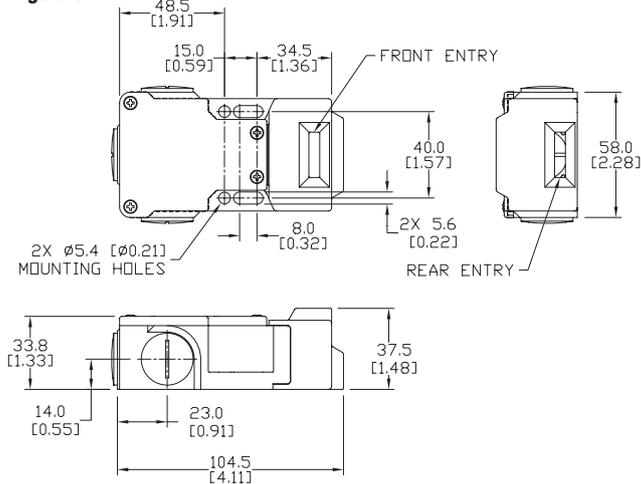


Figure 4

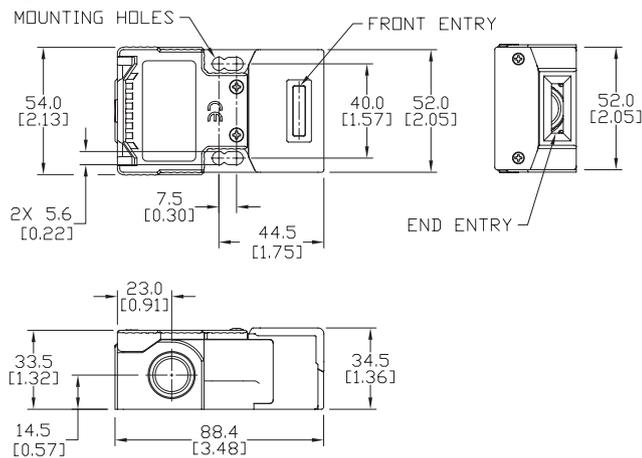
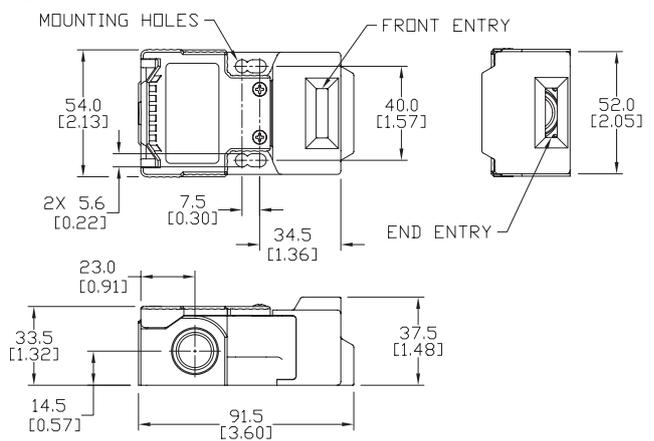


Figure 5



IDEM Interlock Safety Accessories

Actuator Keys

- 14 available keys
- All keys are 316 stainless steel
- Flexible key options available



IDEM Interlock Safety Switch Actuator Tongue (Keys)										
Part Number	Price	Description	Use with:					Weight (lbs)	Minimum Entry Radius	Dimensions
			IDIS-1	KP/K15	K-SS/KM/KM-SS	INCH	MK1			
140103	\$7.00	14.4 mm mounting hole spacing, 90° bent stainless steel key/mounting tab	✓					0.03	175mm	Figure 1
140104	\$7.00	14.4 mm mounting hole spacing, straight stainless steel key/mounting tab	✓					0.03	175mm	Figure 2
140105	\$12.00	40mm mounting hole spacing, stainless steel key with polyester flexible mounting tab	✓					0.06	100mm	Figure 3
140106	\$7.00	40mm mounting hole spacing, 90° stainless steel key/mounting tab		✓**				0.07	175mm	Figure 4
140107	\$7.00	40mm mounting hole spacing, 90° stainless steel key/mounting tab		✓*	✓			0.07	175mm	Figure 5
140108	\$7.00	20mm mounting hole spacing, straight stainless steel key with plastic stop		✓	✓			0.07	175mm	Figure 6
140109	\$12.00	40mm mounting hole spacing, stainless steel key with polyester flexible mounting tab		✓	✓			0.10	100mm	Figure 7
140110	\$24.00	40mm mounting hole spacing, stainless steel key with black-painted aluminum flexible mounting tab		✓	✓			0.16	100mm	Figure 8
140111	\$48.00	40mm mounting hole spacing, stainless steel key with mirror polished stainless steel flexible mounting tab		✓	✓			0.22	100mm	Figure 9
140130	\$26.00	IDEM lockout actuator, stainless steel, for use with IDEM tongue (key) switches		✓	✓					Figure 10
140179	\$14.00	IDEM key guide, 316 stainless steel. Mounting hardware included. For use with IDEM INCH series safety switches				✓			NA	Figure 15
140179-SS	\$14.00	IDEM key guide, 316 stainless steel. For use with IDEM MK1 series safety switches					✓			
140180	\$7.00	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				✓	✓	0.10	150mm	Figure 16
140181	\$7.00	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				✓	✓		150mm	Figure 17
140182	\$12.00	IDEM actuator tongue (key), 40mm mounting hole spacing, 316 stainless steel, flexible mounting tab. For use with IDEM MK1 and INCH series safety switches				✓	✓		100mm	Figure 18

IDEM Interlock Safety Accessories

Accessories

- Gate bolt kits provide a sliding latch and lockout for swinging or sliding doors
- Comes with handle and flat actuator
- Sliding action prevents accidental closure
- Requires four M5 x 45mm mounting hardware (not included)
- Gate bolt kit materials: ABS plastic handle; mild steel yellow plate; aluminum black base; mild steel plated bar (inserts into guide); stainless steel guide and key

GBA-1-210003



GBA-1-210004



GB - 210005



GB - 210006



IDEM Interlock Safety Switch Accessories						
Part Number	Price	Description	Use with:		Weight (lbs)	Dimensions
			KM	GBA-1		
GBA-1-210003	\$92.00	IDEM gate bolt, left hand version, for use with KM series safety switches. Includes actuating tongue (key).	✓		3.7	Figure 11
GBA-1-210004	\$90.00	IDEM gate bolt, right hand version, for use with KM series safety switches. Includes actuating tongue (key).	✓		3.7	Figure 12
GB-210005	\$12.00	IDEM rear escape handle, for use with GBA-1 and GBL-1 series gate bolts		✓	0.1	Figure 13
GB-210006	\$12.00	IDEM spring loaded catch, for use with GBA-1 and GBL-1 series gate bolts		✓	0.08	Figure 14

IDEM Interlock Safety Accessories

Dimensions mm[in]

Figure 1

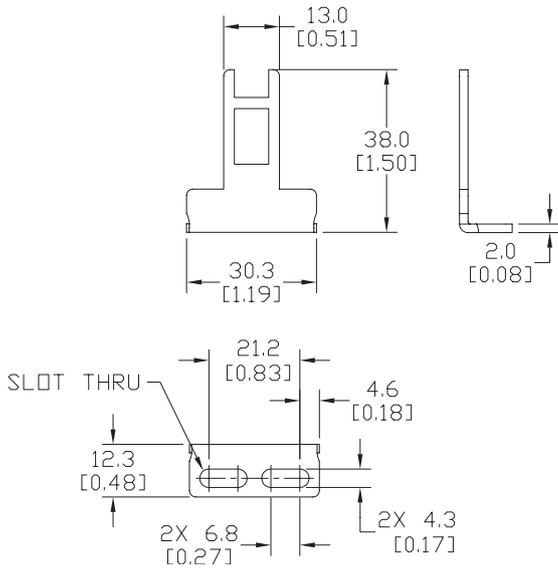


Figure 3

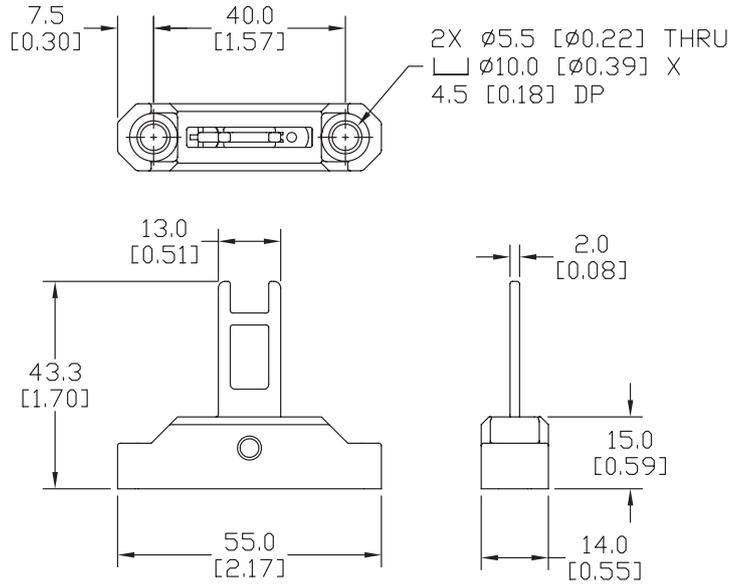


Figure 2

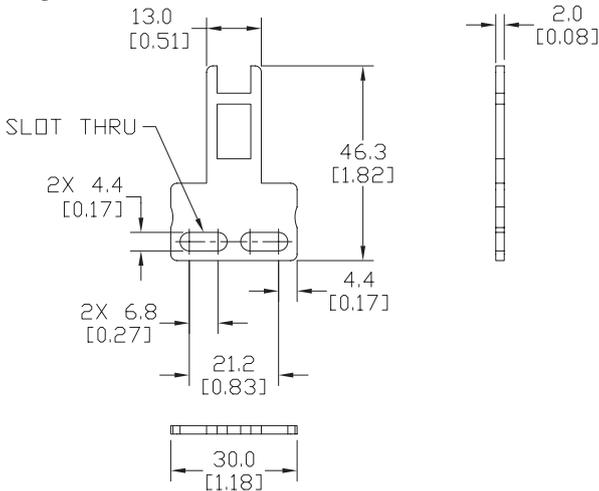
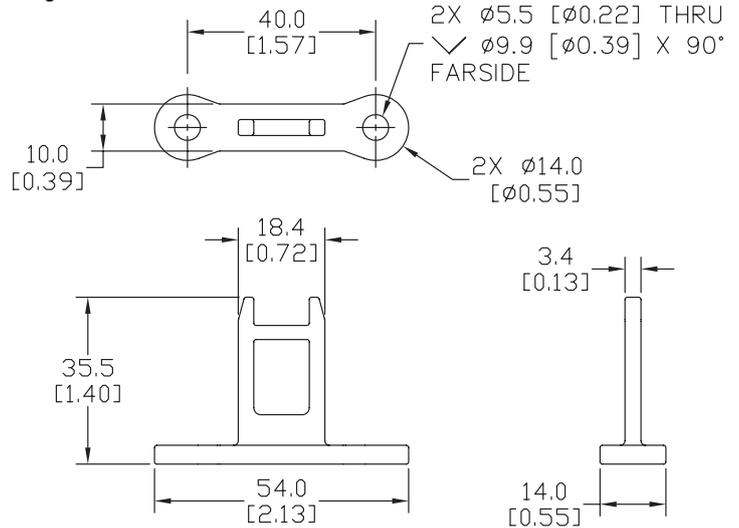


Figure 4



IDEM Interlock Safety Accessories

Dimensions mm[in]

Figure 5

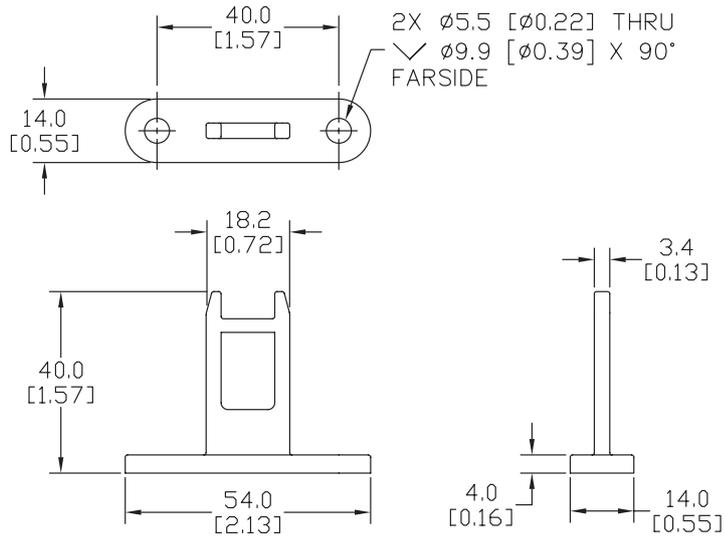
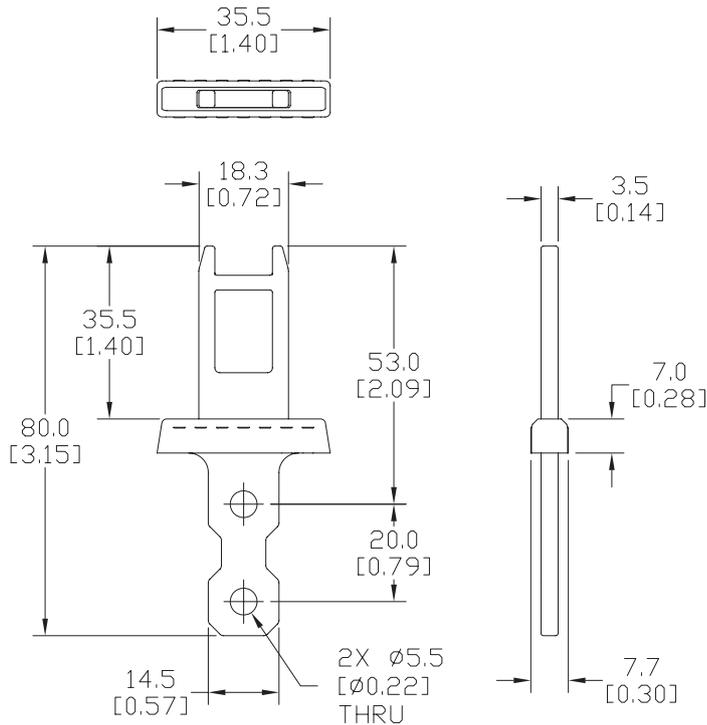


Figure 6



IDEM Interlock Safety Accessories

Dimensions mm[in]

Figure 7

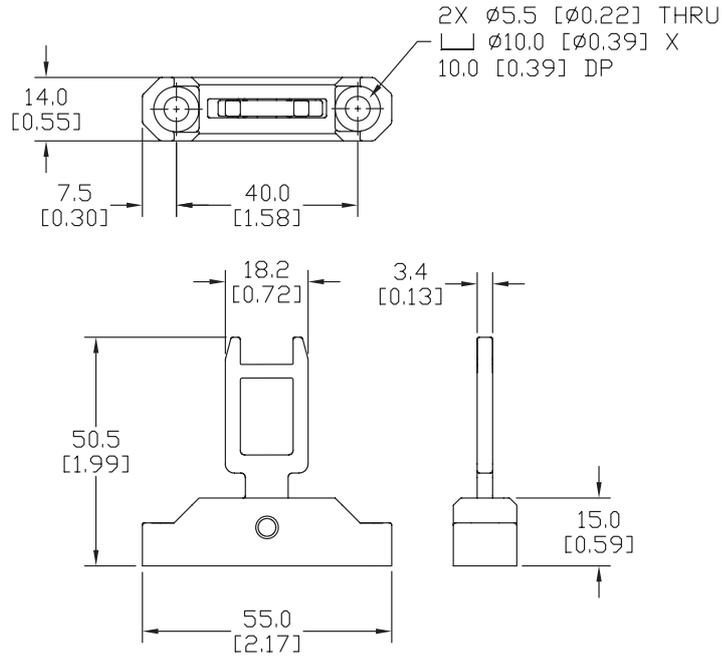
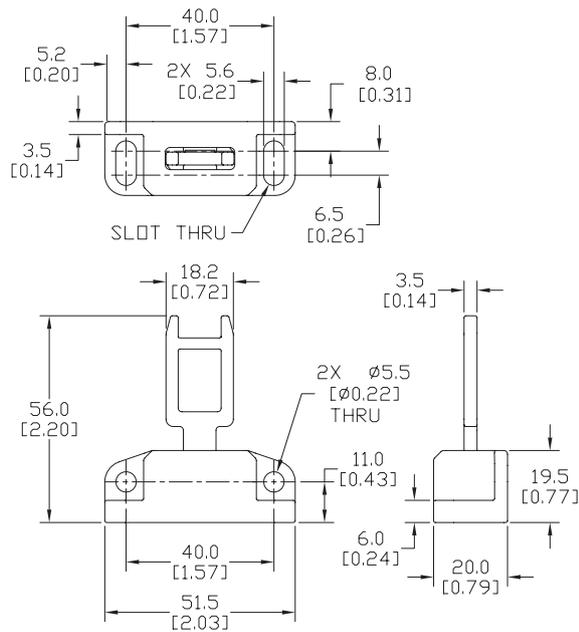


Figure 8



IDEM Interlock Safety Accessories

Dimensions mm[in]

Figure 9

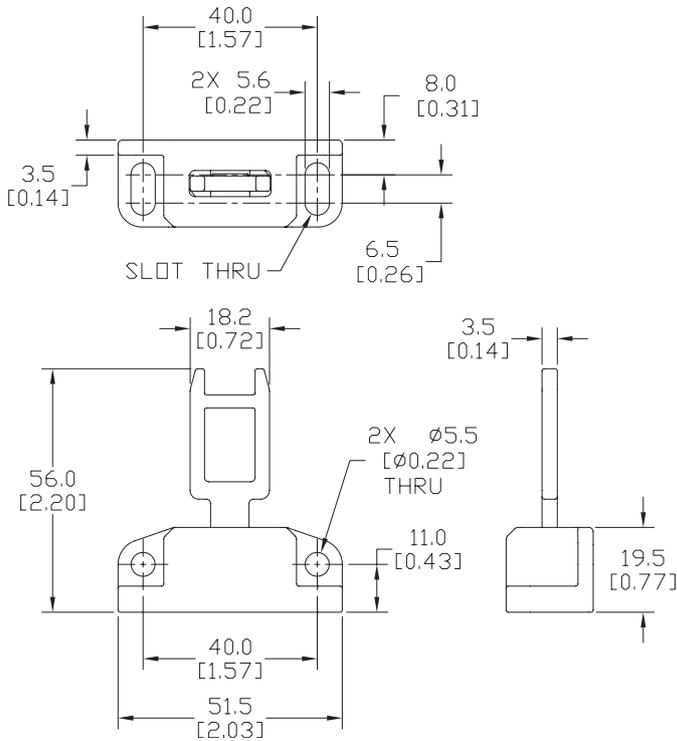
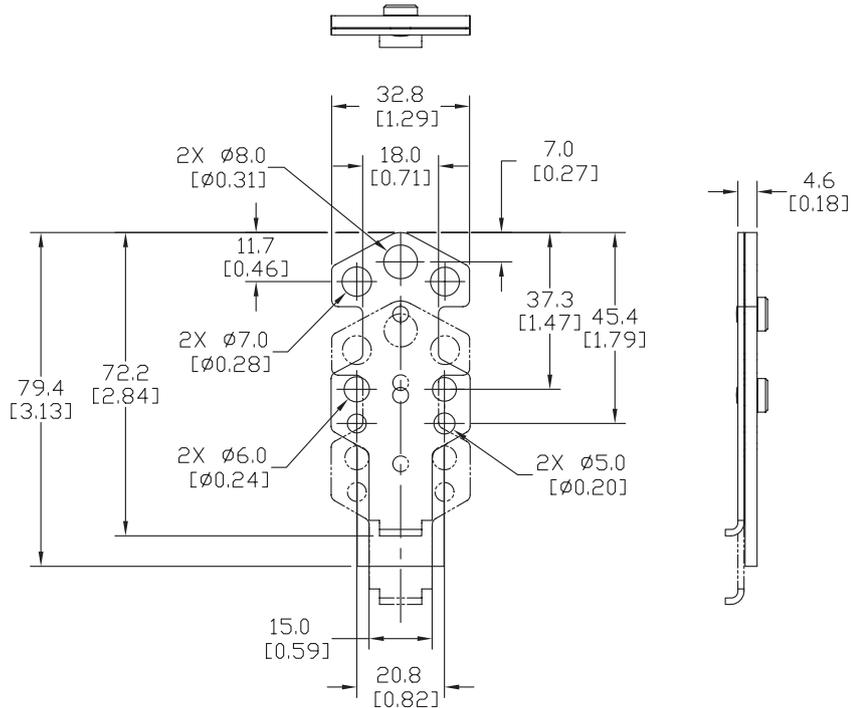


Figure 10



IDEM Interlock Safety Accessories

Dimensions mm[in]

Figure 11

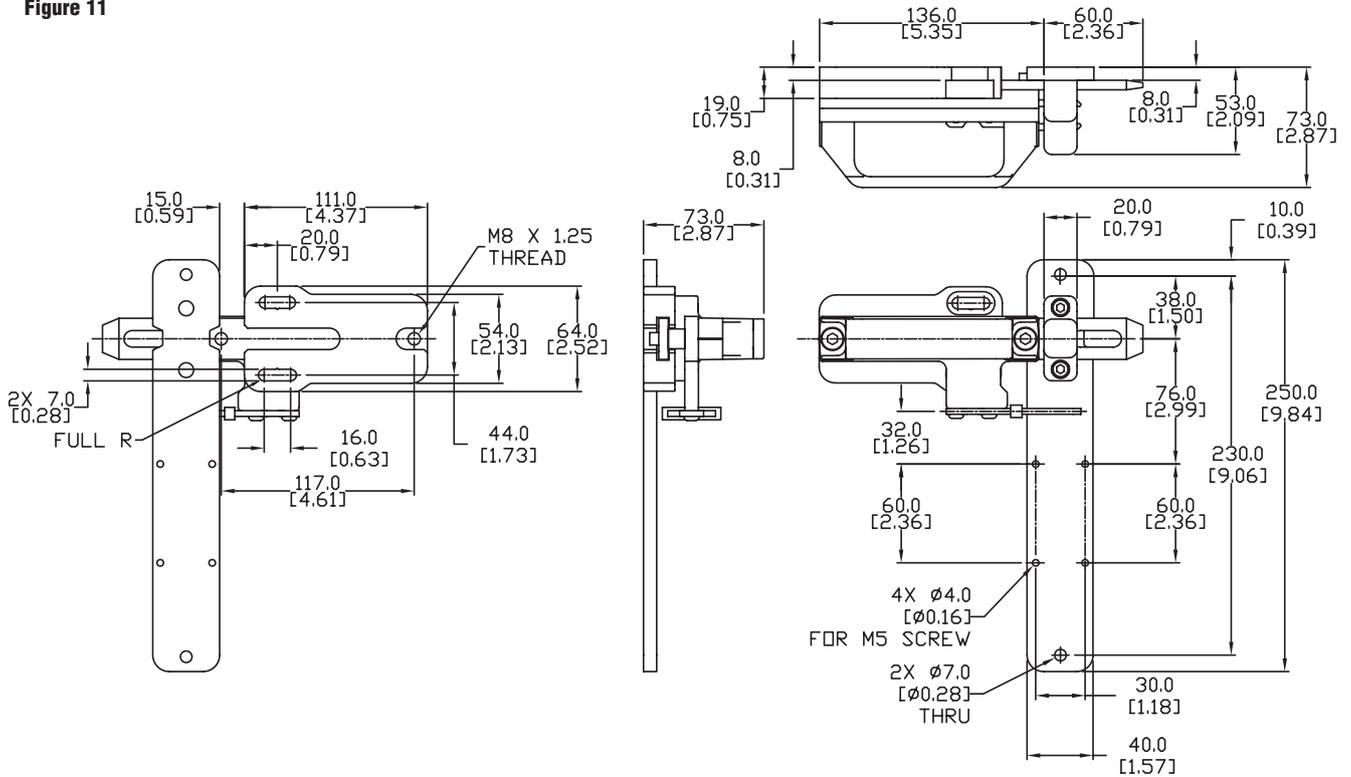
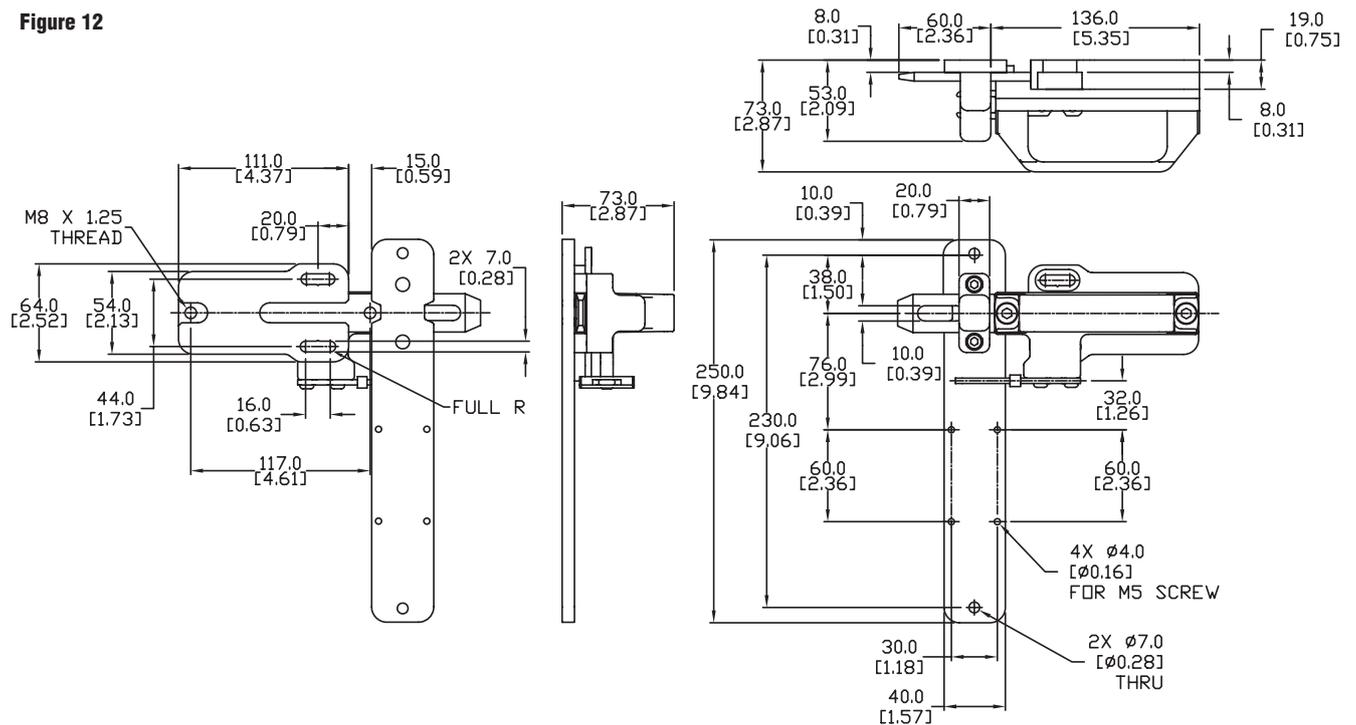


Figure 12



IDEM Interlock Safety Accessories

Dimensions mm[in]

Figure 13

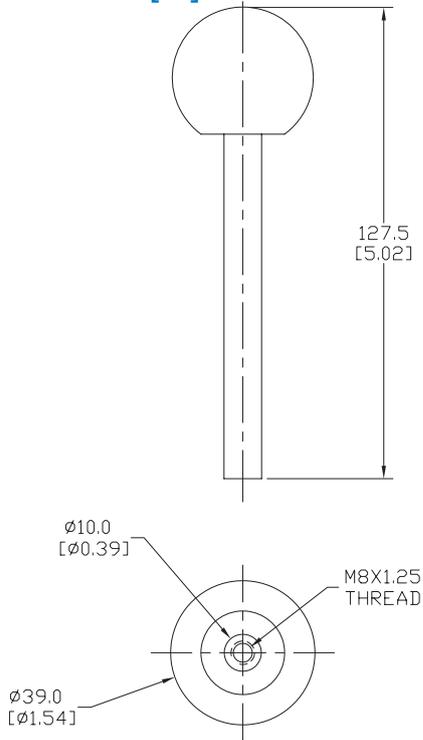


Figure 15

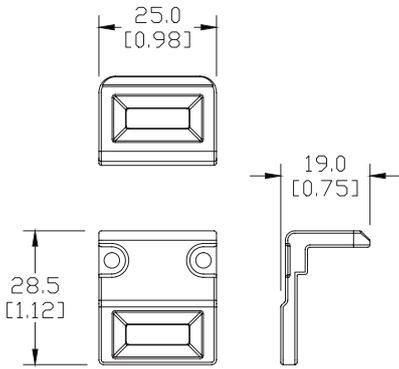


Figure 17

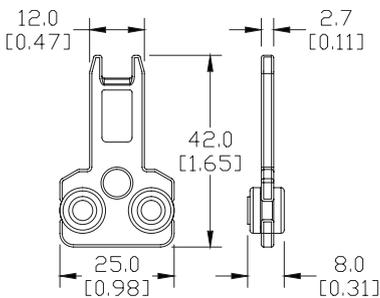


Figure 14

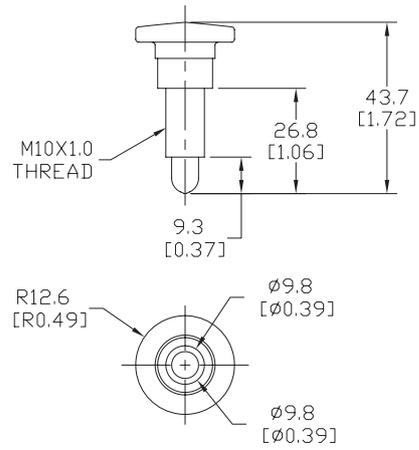


Figure 16

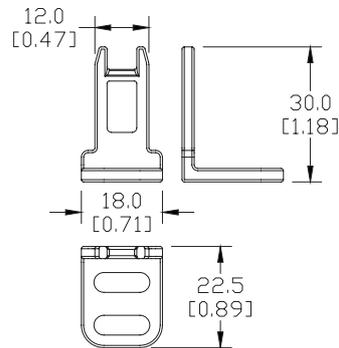
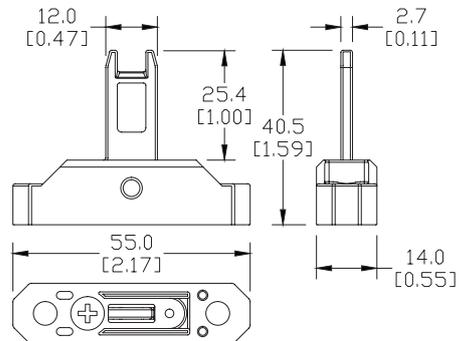


Figure 18



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

IDEM GM and GLS Safety Rope Switches

GLM and GLS Series Pull Cord Housings

- Three 1/2 in. NPT female fittings
 - Includes one tamper-proof T20 Torx bit
 - 57 mm, 63 mm, and 65 mm mounting profiles
 - Rope Pull kits sold separately and recommended for increased reliability
 - 50m, 80m, and 100m length systems
- See electrical specifications later in this section.**

IDEM GLM/GLS Interlock Safety Switches								
Part Number	Price	Construction Material	Weight (lbs)	E-Stop	LED	Maximum Rope Length	Contact Configuration	Dimensions
GLM-143002	\$115.00	57 mm Die-cast Aluminum	1.5	No	No	50m/164 ft.*	1 N.O., 2 N.C. Slow	Figure 1
GLM-143051	\$125.00		1.5	No	No		1 N.O., 3 N.C.	Figure 1
GLM-143053	\$125.00		1.5	No	No		2 N.O., 2 N.C.	Figure 1
GLM-143057	\$148.00		1.6	Yes	No		1 N.O., 3 N.C.	Figure 1
GLM-143067-AS	\$164.00		1.7	Yes	24VDC		1 N.O., 3 N.C.	Figure 2
GLM-143067-BS	\$168.00		1.7	Yes	110VAC		1 N.O., 3 N.C.	Figure 2
GLS-142002	\$125.00	63 mm Die-cast Aluminum	1.75	No	No	80m/262 ft.*	1 N.O., 2 N.C.	Figure 3
GLS-142051	\$139.00		1.75	No	No		1 N.O., 3 N.C.	Figure 3
GLS-142053	\$139.00		1.75	No	No		2 N.O., 2 N.C.	Figure 3
GLS-142063	\$158.00		1.85	Yes	No		1 N.O., 3 N.C.	Figure 3
GLS-142075-AS	\$177.00		1.9	Yes	24VDC		1 N.O., 3 N.C.	Figure 4
GLS-142075-BS	\$184.00		1.9	Yes	110VAC		1 N.O., 3 N.C.	Figure 4
GLS-SS-144002	\$263.00	65 mm Stainless Steel	4.2	No	No	100m/328 ft.*	1 N.O., 3 N.C.	Figure 5
GLS-SS-144004	\$263.00		4.2	No	No		2 N.C., 2 N.O.	Figure 5
GLS-SS-144014	\$304.00		4.3	Yes	No		1 N.O., 3 N.C.	Figure 5
GLS-SS-144020-AS	\$338.00		4.4	Yes	24VDC		1 N.O., 3 N.C.	Figure 6
GLS-SS-144020-BS	\$343.00		4.4	Yes	110VAC		1 N.O., 3 N.C.	Figure 6

*See Recommended Rope Span Options and Fittings for number of switches recommended with specific maximum rope lengths.

GLM-143067-AS



GLS-142053



GLS-SS-144020-AS



Cable Kits for IDEM Cable-Pull Safety Switches

- One end of cables terminated with a thimble, permanent clamp, and a threaded quick link
- Kit includes everything needed for installation
- 4 mm diameter cable with red plastic coating
- 4 mm Allen key

Cable Kits for IDEM Cable-Pull Safety Switches					
Part Number	Price	Description	Cable Length	Construction Material	Weight (lbs)
140002	\$61.00	Includes (1) cable, (5) eyebolts, (1) tensioner / gripper and (1) allen key.	10m/32 ft.	galvanized steel	0.8
140011	\$82.00			stainless steel	1.3
140004	\$82.00	Includes (1) cable, (9) eyebolts, (1) tensioner / gripper and (1) allen key.	20m/65 ft.	galvanized steel	2.2
140013	\$101.00			stainless steel	2.9
140005	\$95.00	Includes (1) cable, (12) eyebolts, (1) tensioner / gripper and (1) allen key.	30m/98 ft.	galvanized steel	2.8
140014	\$116.00			stainless steel	3.9
140006	\$114.00	Includes (1) cable, (20) eyebolts, (1) tensioner / gripper and (1) allen key.	50m/164 ft.	galvanized steel	4.5
140015	\$131.00			stainless steel	6.0
140007	\$125.00	Includes (1) cable, (30) eyebolts, (2) tensioner / grippers and (1) allen key.	80m/262 ft.	galvanized steel	7.0
140016	\$164.00			stainless steel	9.5

140002



IDEM GLM and GLS Safety Rope Switches

Dimensions mm[in]

Figure 1

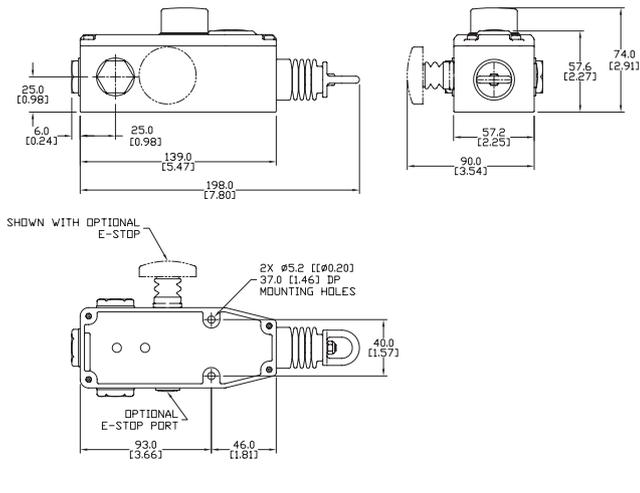


Figure 2

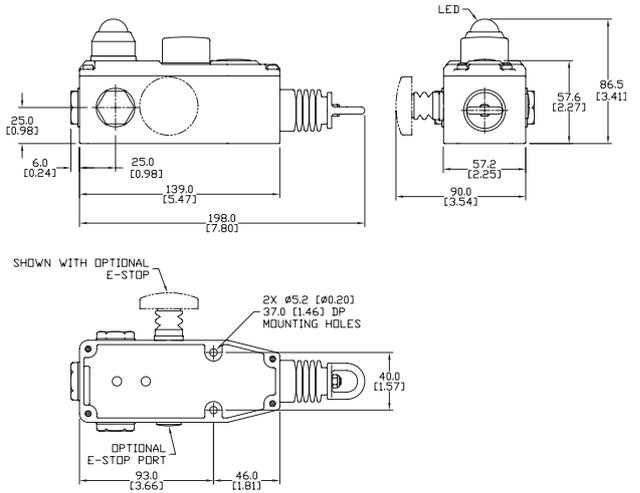


Figure 3

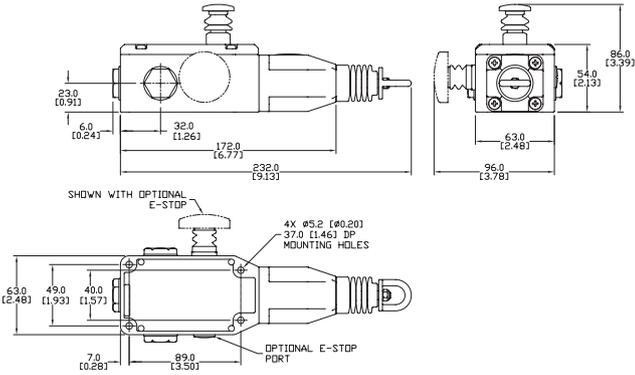


Figure 4

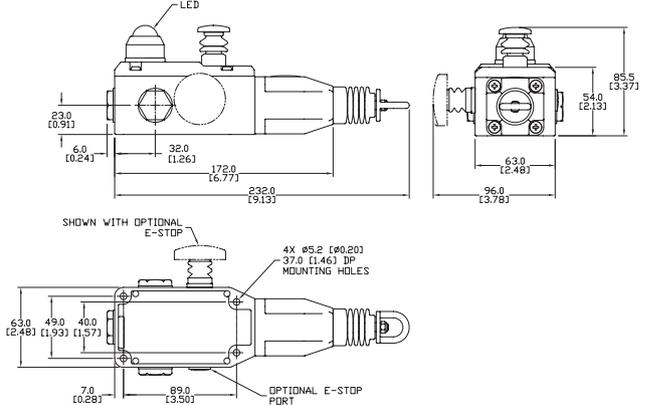


Figure 5

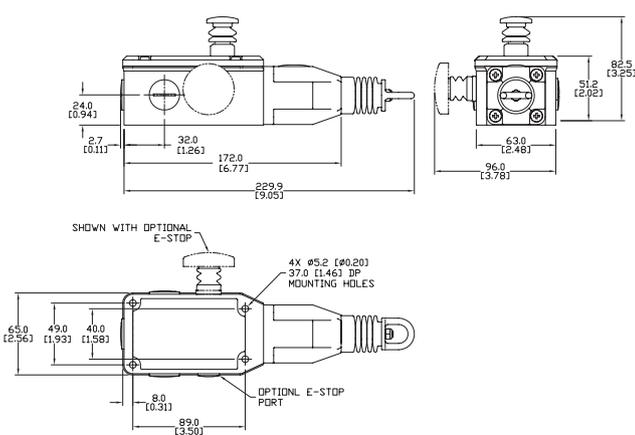
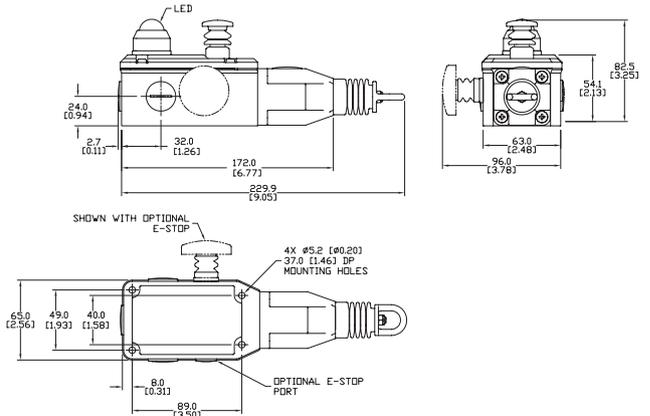


Figure 6



IDEM Interlock Safety Rope Switch Accessories

Steel Cable for IDEM Cable-Pull Safety Switches				
Part Number	Price	Description	Cable Length	Weight (lbs)
140033	\$12.00	5 meter length steel cable, 4mm diameter, red	5m/16 ft.	0.35
140034	\$19.00	10 meter length steel cable, 4mm diameter, red	10m/32 ft.	0.7
140036	\$30.00	20 meter length steel cable, 4mm diameter, red	20m/65 ft.	1.4
140037	\$37.00	30 meter length steel cable, 4mm diameter, red	30m/98 ft.	2.1
140038	\$51.00	50 meter length steel cable, 4mm diameter, red	50m/164 ft.	3.5
140039	\$77.00	80 meter length steel cable, 4mm diameter, red	80m/262 ft.	5.4
140040	\$88.00	100 meter length steel cable, 4mm diameter, red	100m/328 ft.	6.6
140041	\$101.00	126 meter length steel cable, 4mm diameter, red	126m/413 ft.	8.42



IDEM Interlock Safety Switch Accessories					
Part Number	Price	Description	Construction Material	Weight (lbs)	Dimensions
140019	\$48.00	Cable Tensioner / Gripper. Includes 4mm allen wrench	Stainless Steel	0.5	Figure 1
140020	\$31.00		Galvanized Steel	0.3	Figure 1
140021	\$24.00	Pulley assembly	Stainless Steel	0.3	Figure 2
140064	\$18.00		Galvanized Steel	0.2	Figure 2
140045	\$25.00	Eye bolt 84mm long, M8 x 1.25 threads. Includes (2) flat washers and (2) nuts per eye bolt. Package of 8.	Stainless Steel	0.8	Figure 3
140046	\$13.00		Galvanized Steel	0.5	Figure 3
140043	\$17.00	Spring, 220mm long	Stainless Steel	0.4	Figure 4
140132-AS	\$26.00	Replacement LED assembly, 24VDC, bi-color steady green and red. Use with GLM, GLS or GLS-SS series cable pull switches.	NA	0.08	NA
140132-BS	\$32.00	Replacement LED assembly, 110VAC, bi-color steady green and red. Use with GLM, GLS or GLS-SS series cable pull switches.	NA	0.08	NA



Dimensions mm[in]

Figure 1

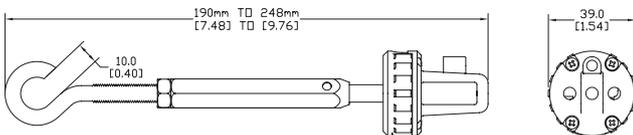


Figure 2

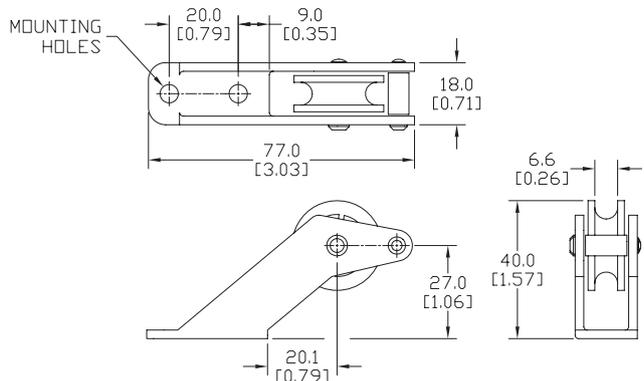


Figure 3

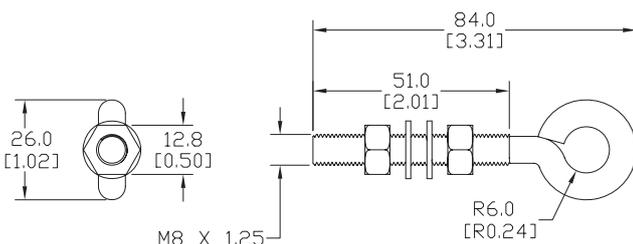
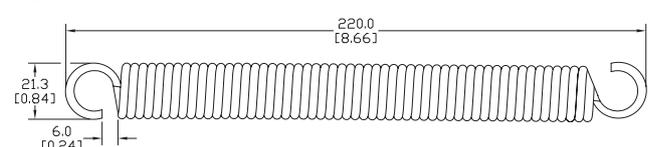


Figure 4



IDEM Interlock Rope Span Options

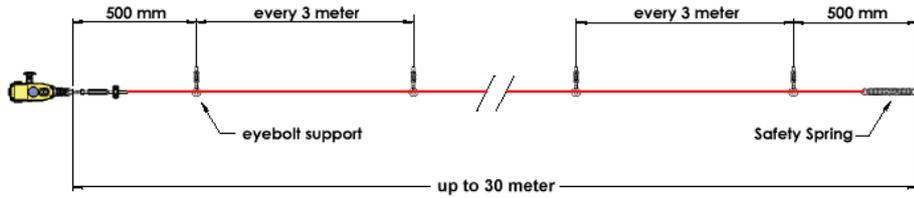
Recommended Options and Fittings

Recommended options and fittings:

- Use two switches when using two pulleys
- When using a safety spring, use a maximum of one corner pulley

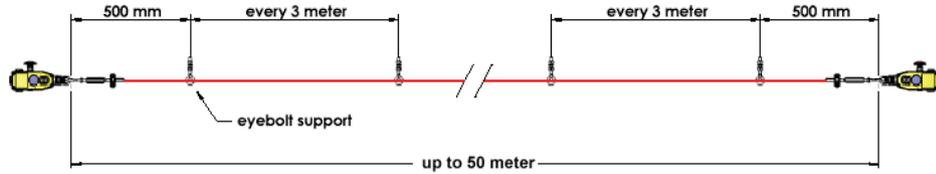
GLM 30m

Up to 30m
1 switch/1 spring



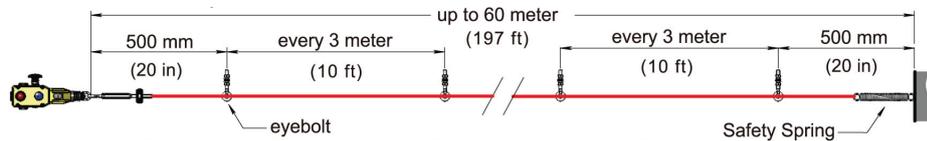
GLM 50m

30 to 60m
2 switches



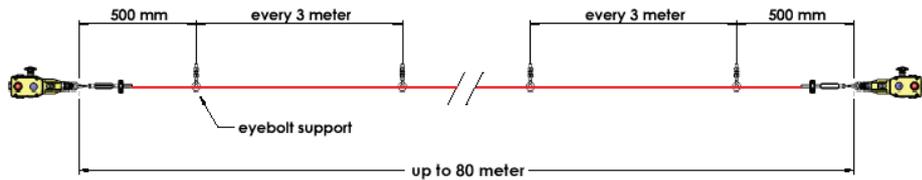
GLS 60m

Up to 60m
1 switch/1 spring



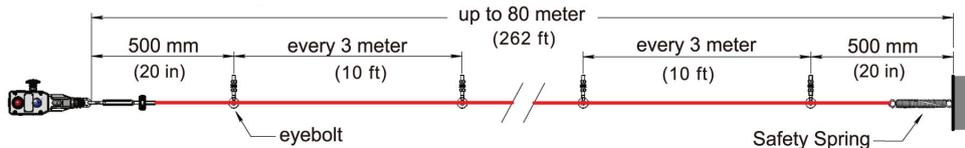
GLS 80m

60 to 80m
2 switches



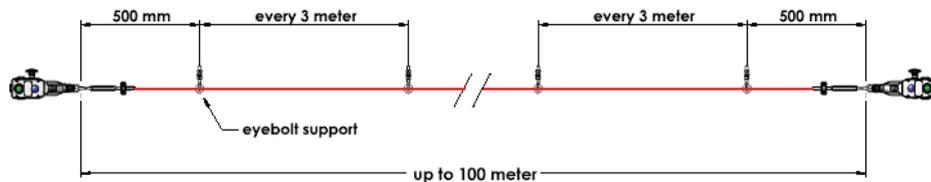
GLS-SS 80m

Up to 80m
1 switch/1 spring

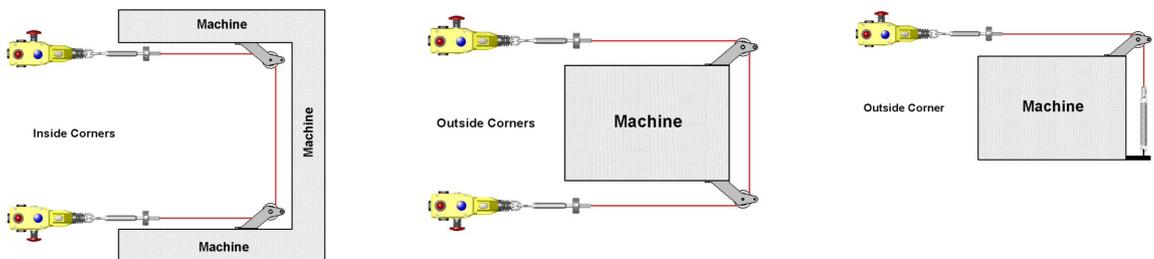


GLS-SS 100m

80 to 100m
2 switches



Universal Pulley Examples



LED

When power is applied to the Red wire (terminal 1), the lamp will illuminate Red. When power is applied to the Green Wire (terminal 3), the Lamp will illuminate Green. Black is 0 VDC or Neutral for 110 VAC and 230 VAC versions.

LED Steady Red - Stopped LED Steady Green - Run

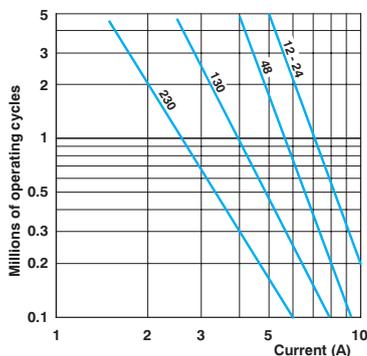


IDEM Interlock Safety Switches Specifications

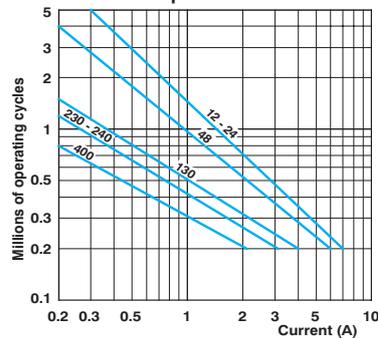
Specifications							
	IDIS	KM	KP/K-SS	K-15	GLM/GLS	INCH/MK1	HC
Safety Classification and Reliability Data							
Switching Reliability (B10d)	2.5 x 10 ⁶ operations at 100mA load						
ISO 13849-1	Up to PLe depending upon system architecture						
EN 62061	Up to SIL3 depending upon system architecture						
Safety Data - Annual Usage	8 cycles per hour / 24 hours per day / 365 days						
Agency Approvals	cULus (E258676), CE, TUV (rope pull switches)						
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	500 VAC					600 VAC	
Contact Terminals	Stainless steel (Snap action Plated Brass); Max conductor 1.5 m ² (IDIS), 2.5 m ² (KM, K/K-15); 1 Nm torque						
Max. Switching Current	2.5A @24 VDC 6A @ 120VAC, 3A @ 240VDC (720VA Break)						
Maximum Approach/Withdrawal Speed	600mm/s						
Enclosure Protection	IP67 (IP69K on all models with both stainless steel head and body)					IP67 Plastic or IP69K Stainless Steel 316	
Operating Temperature	-25C to 80C / -13F to 176F						
Vibration	IEC 68-2-6, 10-55Hz+1Hz						
Lid Screws/Torque	Plated Brass; 1Nm (.74 lb-ft)	Stainless Steel; T20 Torx; 1Nm (.74 lb-ft)	Stainless Steel; 1Nm (.74 lb-ft)		Stainless Steel; T20 Torx; 1Nm (.74 lb-ft)	Stainless Steel; 1Nm (.74 lb-ft)	
Recommended Mounting Screws/Torque	M4; 1.5 Nm (1.11 lb-ft)	M5; 4Nm (2.95 lb-ft)				M4; 1.5 Nm (1.11 lb-ft)	
Head Screws/Torque	Stainless Steel, except snap (Plated Brass); 1Nm (.74 lb-ft)	Stainless Steel; T20 Torx; 1Nm (.74 lb-ft)	Stainless Steel; 1Nm (.74 lb-ft)				

Electrical Durability (according to IEC 947-5-1)

AC-15 Slow Action



AC-15 Snap Action



IDEM Interlock/Hinge Safety Travel Charts

Interlock Safety Switch Types

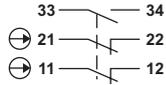
Slow-make/slow-break contacts: A contact element in which the contact motion is dependent on the actuator speed.

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

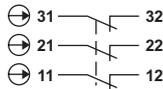
1 N.O. and 2 N.C.

Slow-make/ slow-break contacts



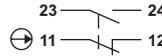
3 N.C.

Slow-make/ slow-break contacts



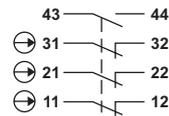
1 N.O. and 1 N.C.

Snap action contacts



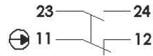
1 N.O. and 3 N.C.

Slow-make/ slow-break contacts



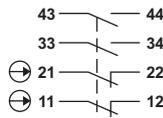
1 N.O. and 1 N.C.

Slow-make/ slow-break contacts



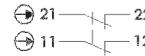
2 N.O. and 2 N.C.

Slow-make/ slow-break contacts



2 N.C.

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

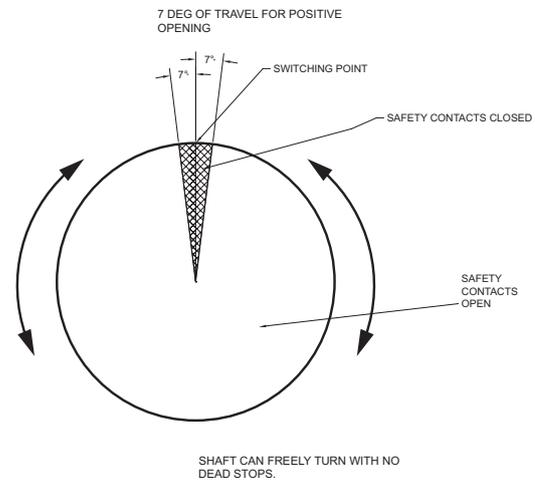
2NC 2NO 6.8 6.0 0 mm

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

	0 mm	3.5 mm	14.5 mm	17.0 mm		
EX	1 N.O./2 N.C.	1 N.O./3 N.C.	2 N.O./2 N.C.	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	

130N Force

Comepi Safety Limit Switches

These limit switches are developed and manufactured according to IEC and EN European standards.

Easy to use, electromechanical limit switches provide:

- Visible operation
- Ability to switch large currents (10 A conventional thermal current)
- Precise operating points (consistency)

- Immunity to electromagnetic disturbances
- Electrically separated contacts (Zb) 
- N.C. contacts with positive opening operation
- Actuation Speed: Max. - 0.5 m/s; Min. - 0.01 m/s
- Conduit opening - 1/2" NPT threaded or adapter

Note: Purchase actuating tongue (key) separately.



Safety Limit Switches															
Part Number	Price	Actuator Type	No. of Conduit Holes	Min Force for Key Actuation	Min Torque	Positive Opening Force	B10 _d	Dimensions Body / Head	Contact Config. Diagram	Weight (lbs.)	Photo				
SP2K20X11	\$15.00	90° adjustable head, tongue (key) interlock	One	15N		30N		Figures 1, 5	1	0.2	A				
SP2K20W02	\$15.00		One								Figures 1, 5	2	0.2	A	
SP2K120X11	\$18.50	360° adjustable head, tongue (key) interlock	One	15N		30N		Figures 1, 6	1	0.2	B				
SP2K120W02	\$18.50		One								Figures 1, 6	2	0.2	B	
SP2K72X11	\$21.50	90° adjustable head, shaft hinge interlock	One	15N		30N		Figures 1, 7	1	0.2	C				
SP2K72W02	\$21.50		One								Figures 1, 7	2	0.2	C	
SP2K61X11	\$14.50	90° adjustable head, lever hinge interlock	One	15N		30N	2,000,000 operations	Figures 1, 8	1	0.2	D				
SP2K61W02	\$14.50		One								Figures 1, 8	2	0.2	D	
SDM2K20X11	\$19.00	90° adjustable head, tongue (key) interlock	Three	15N		30N	2,000,000 operations	Figures 2, 5	1	0.6	E				
SDM2K20W02	\$19.00		Three								Figures 2, 5	2	0.6	E	
SDM2K120X11	\$22.00	360° adjustable head, tongue (key) interlock	Three	15N		30N	2,000,000 operations	Figures 2, 6	1	0.6	F				
SDM2K120W02	\$22.00		Three								Figures 2, 6	2	0.6	F	
SDM2K72X11	\$25.00	90° adjustable head, shaft hinge interlock	Three	15N		30N	2,000,000 operations	Figures 2, 7	1	0.6	G				
SDM2K72W02	\$25.00		Three								Figures 2, 7	2	0.6	G	
SDM2K61X11	\$18.00	90° adjustable head, lever hinge interlock	Three	15N		30N	2,000,000 operations	Figures 2, 8	1	0.6	H				
SDM2K61W02	\$18.00		Three								Figures 2, 8	2	0.6	H	
SDM2K98X11	\$24.00	Cable-pull interlock with reset	Three	15N		30N	2,000,000 operations	Figures 2, 10	1	0.6	I				
SDM2K98W02	\$24.00		Three									Figures 2, 10	2	0.6	I
SBM2K40X11	\$25.50	90° adjustable head, tongue (key) interlock	One	30N		45N	2,000,000 operations	Figures 3, 11	1	0.4	J				
SBM2K40W02	\$25.50		One									Figures 3, 11	2	0.4	J
SBM2K40X12	\$27.50		One									Figures 3, 11	3	0.4	J
SBM2K40W03	\$28.00		One									Figures 3, 11	4	0.4	J
SBM2K99X11	\$22.50	Cable-pull interlock with reset	One	30N		45N	2,000,000 operations	Figures 3, 13	1	0.6	K				
SBM2K99W02	\$22.50		One									Figures 3, 13	2	0.6	K
SBM2K99X12	\$24.50		One									Figures 3, 13	3	0.6	K
SBM2K99W03	\$25.00		One									Figures 3, 13	4	0.6	K
SCM2K40X11	\$26.00	90° adjustable head, tongue (key) interlock	Three	30N		45N	2,000,000 operations	Figures 4, 11	1	0.5	L				
SCM2K40W02	\$26.00		Three									Figures 4, 11	2	0.5	L
SCM2K40X12	\$29.00		Three									Figures 4, 11	3	0.5	L
SCM2K40W03	\$29.00		Three									Figures 4, 11	4	0.5	L
SCM2K99X11	\$23.50	Cable-pull interlock with reset	Three	30N		45N	2,000,000 operations	Figures 4, 13	1	0.7	M				
SCM2K99W02	\$23.50		Three									Figures 4, 13	2	0.7	M
SCM2K99X12	\$25.50		Three									Figures 4, 13	3	0.7	M
SCM2K99W03	\$25.50		Three									Figures 4, 13	4	0.7	M

Comepi Safety Limit Switches

Switch Body Dimensions mm [in]

Figure 1: SP2K body

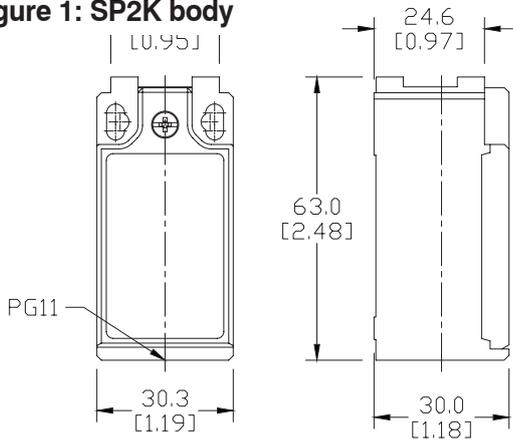


Figure 2: SDM2K body

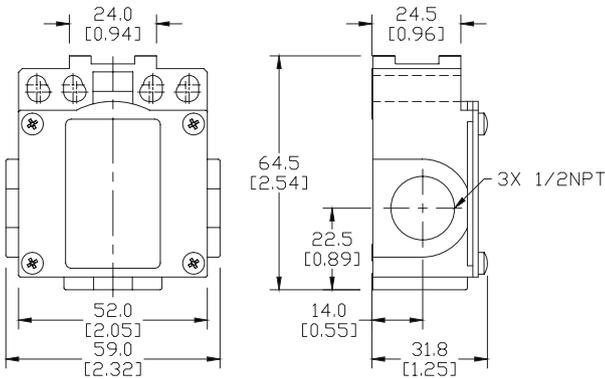


Figure 3: SBM2K body

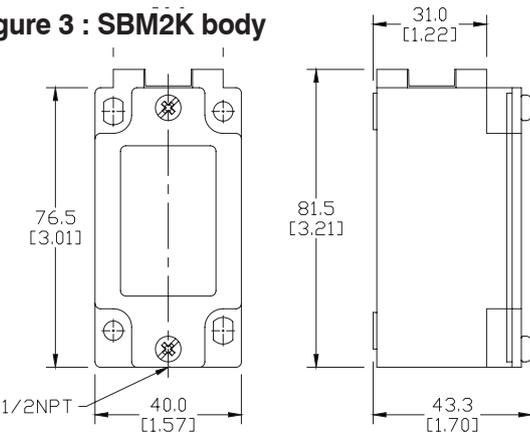
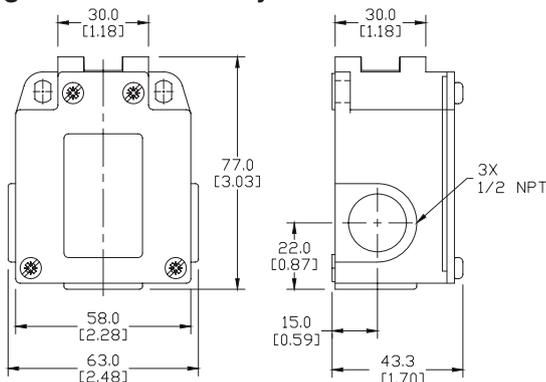


Figure 4: SCM2K body



Actuator Dimensions mm [in]

Figure 5: 90° adjustable head - SP2K20, SDM2K20 models

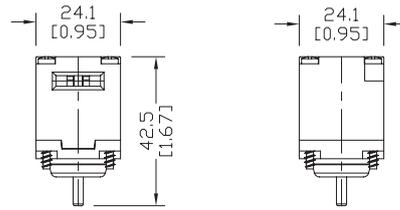


Figure 6: Fully turnable 360° head - SP2K120, SDM2K120 models

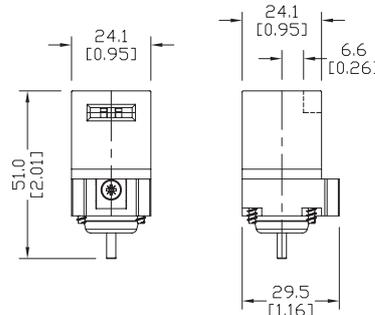


Figure 7: 90° adjustable head with shaft hinge interlock - SP2K72, SDM2K72 models

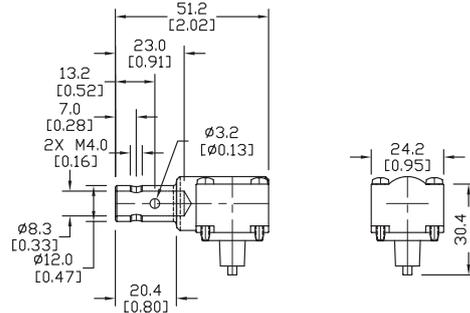
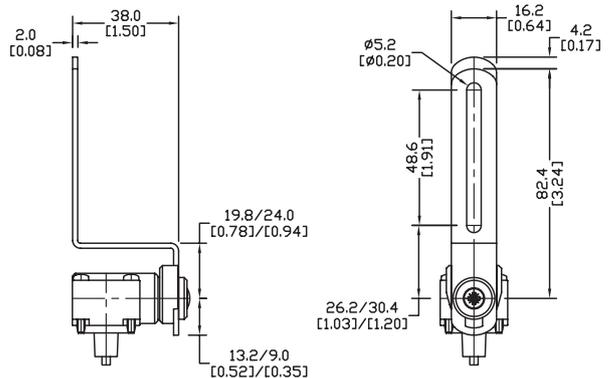


Figure 8: 90° adjustable head with lever hinge interlock - SP2K61, SDM2K61 models



Comepi Safety Limit Switches

Actuators Dimensions mm [in]

Figure 9: Pull wire without reset for simple stop - SDM2K96 models

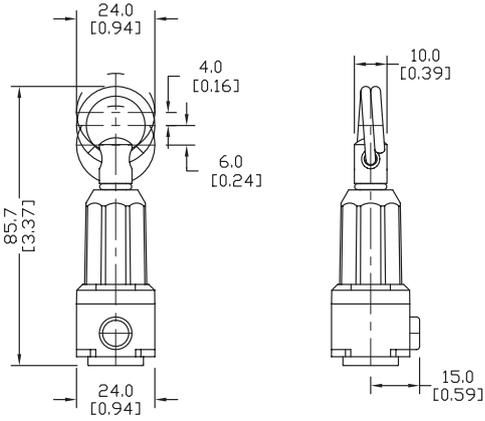


Figure 12: Pull wire without reset for simple stop - SBM2K97 and SCM2K97 models

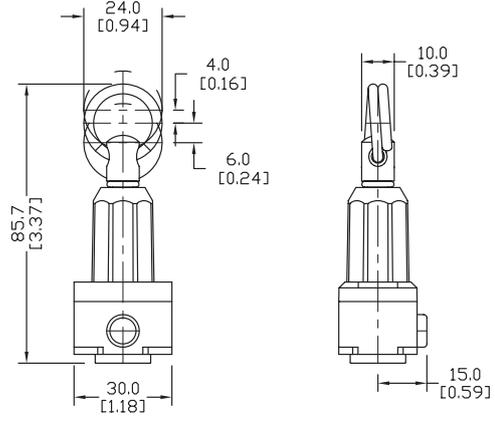


Figure 10: Pull wire with reset for emergency stop - SDM2K98 models

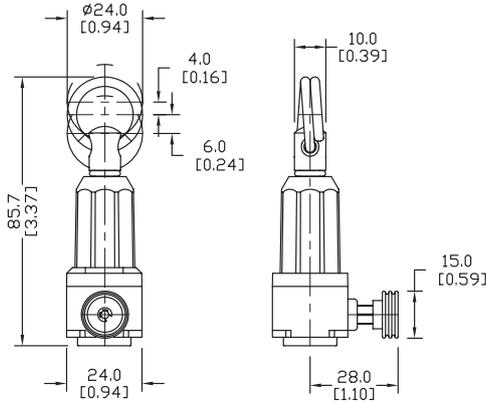


Figure 13: Pull wire with reset for emergency stop - SBM2K99 and SCM2K99 models

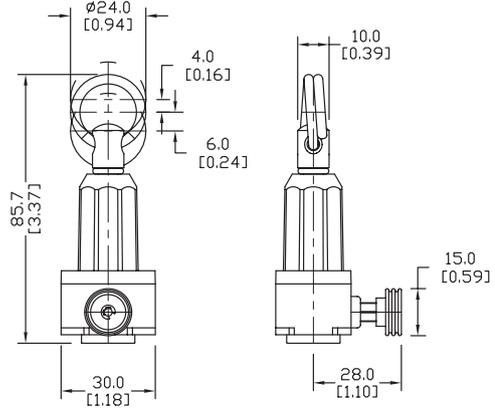
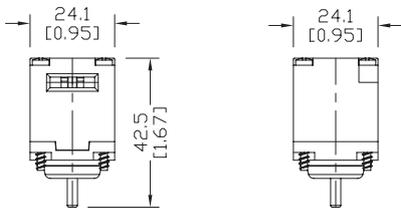


Figure 11: 90° adjustable head - SBM2K40, SCM2K40 models



Comepi Safety Limit Switches

These limit switches are developed and manufactured according to IEC and EN European standards. Easy to use, electromechanical limit switches provide:

- Visible operation
- Ability to switch large currents (10 A conventional thermal current)

- Precise operating points (consistency)
- Immunity to electromagnetic disturbances
- Electrically separated contacts (Zb)
- N.C. contacts with positive opening operation →
- Conduit threads - 1/2" NPT adapter



AP2R Series Safety Limit Switches Selection Chart											
Part Number	Price	Actuator Type	No. of Conduit Holes	Max. Actuation Speed (m/s)	Min. Actuation Force (N) / Torque (Nm)	Min. Positive Opening Force (N) / Torque (Nm)	B10d	Head Dimensions	Contact Config. Diagram	Weight (lbs.)	Photo
AP2R11X11	\$13.00	Steel plunger with reset	One	0.5	9N	44N	2,000,000 operations	Figure 1	1	0.2	A
AP2R11W02	\$13.00		One					Figure 1	2	0.2	
AP2R13X11	\$14.00	Steel plunger with nylon roller with reset	One	0.3	12N	44N		Figure 2	1	0.2	B
AP2R13W02	\$14.00		One					Figure 2	2	0.2	
AP2R31X11	\$14.50	Steel plunger with one-way horizontal actuated nylon roller with reset	One	1.0	7N	24N		Figure 3	1	0.2	C
AP2R31W02	\$14.50		One					Figure 3	2	0.2	
AP2R32X11	\$15.00	Steel plunger with one-way vertical actuated nylon roller with reset	One	1.0	7N	24N		Figure 4	1	0.2	D
AP2R32W02	\$15.00		One					Figure 4	2	0.2	
AP2R41X11	\$16.50	Lever with nylon roller with reset	One	1.5	0.10Nm	0.32Nm		Figure 5	1	0.2	E
AP2R41W02	\$16.50		One					Figure 5	2	0.2	
AP2R51X11	\$17.00	Adjustable lever with nylon roller with reset	One	1.5	0.10Nm	0.32Nm		Figure 6	1	0.2	F
AP2R51W02	\$17.00		One					Figure 6	2	0.2	

Dimensions mm [in]

AP2R Series Body

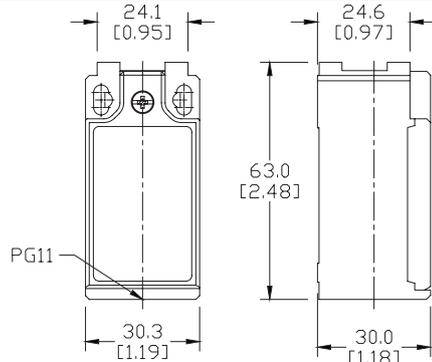
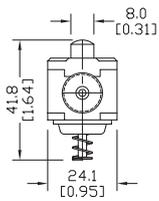
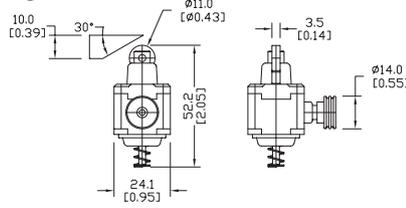


Figure 1



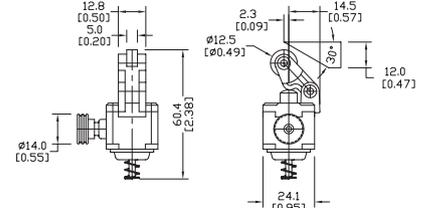
AP2R11

Figure 2



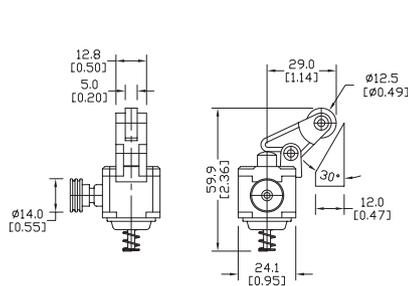
AP2R13

Figure 3



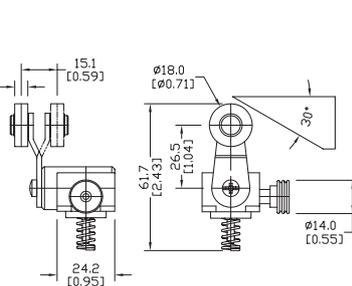
AP2R31

Figure 4



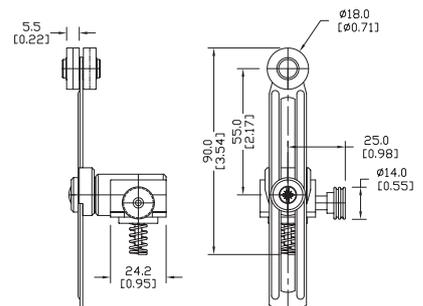
AP2R32

Figure 5



AP2R41

Figure 6

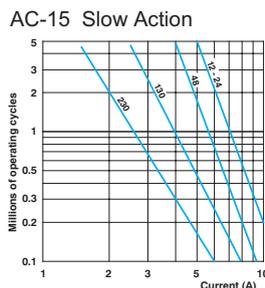


AP2R51

Comepi Safety Limit Switches

Approvals		
All: IEC 947-5-1, EN 60947-5-1, UL 508, CSA C22.2 No 14, RoHS		
Environmental		
Degree of Protection	Plastic models: IP65 according to IEC 529 Aluminum and ZAMAK (zinc alloy) models: IP66 according to IEC 529	
Temperature Range	Plastic models: storage: -30° to 80°C (-22° to 176°F) operating: -25° to 70°C (-13° to 158°F) Aluminum and ZAMAK (zinc alloy) models: storage: -30° to 80°C (-22° to 176°F) operating: -25° to 70°C (-13° to 158°F); minimum temperatures assume that the atmosphere is free of moisture, which could cause moving parts to freeze up.	
Rated Insulation Voltage	SDM:400V, All others 500V; (degree of pollution - 3)	
Mechanical Ratings		
Mechanical Life	1 million operations. Pull wire models - 25,000 operations	
Enclosure Material	Plastic models: fiberglass-reinforced plastic-V0 class (UL94); aluminum models: die-cast aluminum; ZAMAK models: zinc alloy	
Contact Blocks Rating		
Positive Opening	Yes, all models	
Electrical Ratings	AC15	Make: 60A@120VAC; 30A @ 240VAC; 18A @ 400VAC Break:10A @ 24VAC; 6.5A @130VAC; 3.1A @ 230VAC; 1.8A @ 400VAC
	DC13	2.8A @ 24VDC; 0.5A @ 110VDC
Maximum Switching Frequency	Contact blocks: all one cycle per second	
Repeat Accuracy	0.01mm on the operating points at 1 million operations	
Short-Circuit Protection	Cartridge fuses, general purpose, gl 10A-500V 10.3x38 1 100KA	
Contact Resistance	25 milli Ω	
Recommended Minimum Operating Speed	With slow-action contacts: 500 mm per minute*	
Rated Insulation Voltage	660V	
Terminals Marking	According to CENELEC EN 50013	
Wiring Connections	2 x 2.5mm ² (AWG14) to 2 x 0.5mm ² (AWG18)	
Wiring Terminal Type	Captive screw with self-lifting pressure plate	
Wiring Terminal Markings	According to CENELEC EN50013	
User Protection	Double insulation (plastic models only)	
Contact Blocks Performance		
Operation Frequency	3600 ops/h	
Electrical Durability (according to IEC 947-5-1)	Utilization categories AC-15 and DC-13; load factor of 0.5. See table and curves below.	
Tools Needed		
Phillips screwdriver, #1 #2 / Hex wrench, 10mm		
*Note: Slow-action contacts must not be operated at very low speeds because of the tendency to maintain the arc if contacts are not rapidly separated.		

**Electrical Durability
(according to
IEC 947-5-1)**



DC-13	Slow Action
	Power breaking for a durability of 5 million cycles
24 Volts	12W
48 Volts	9W
110 Volts	6W

Comepi Safety Limit Switches

Contacts Configuration Charts

Chart 1

X11 Slow action break before make 1NO+1NC

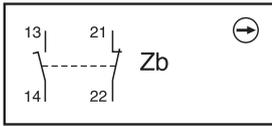


Chart 2

W02 Simultaneous slow action 2NC

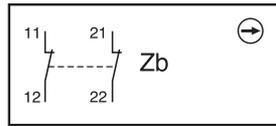


Chart 3

X12 Slow action break before make 1NO+2NC

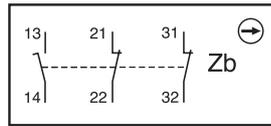
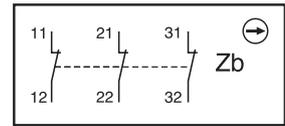


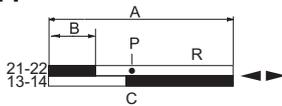
Chart 4

W03 Simultaneous slow action 3NC

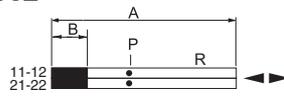


Bar charts for keys, shaft lever or limit switches

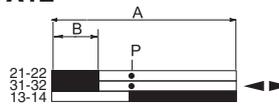
X11



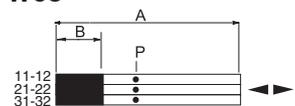
W02



X12



W03



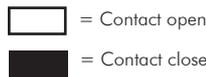
A = Max. travel of the operator in mm or degrees

B = Tripping travel of the N.C. contact

C = Tripping travel of the N.O. contact

P = Point from which positive opening is assured

R = Reset latch activates

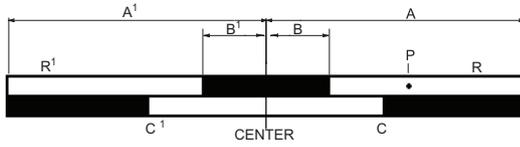


Part Series	Contact Configuration	Displacement Values mm(in) or degrees				
		A	B	C	P	R
SP2K20, SP2K120, SDM2K20, SDM2K120 Top Key Extraction	X11	21.5 (0.85)	2.0 (0.08)	3.0 (0.12)	3.5 (0.14)	–
	W02	21.5 (0.85)	1.8 (0.07)	–	3.3 (0.13)	–
SP2K20, SP2K120, SDM2K20, SDM2K120 Front Key Extraction	X11	21.5 (0.85)	3.8 (0.15)	4.8(0.19)	5.3 (0.21)	–
	W02	21.5 (0.85)	3.5 (0.14)	–	5.0 (0.20)	–
SP2K72, SP2K61, SDM2K72, SDM2K61	X11	±90°	±6°	±15°	±31°	–
	W02	±90°	±5°	–	±30°	–
SBM2K40, SCM2K40 Top Key Extraction	X11	26.6 (1.05)	4.6 (0.18)	6.1 (0.24)	5.8 (0.23)	–
	W02	26.6 (1.05)	4.1 (0.16)	–	5.6 (0.22)	–
	X12	26.6 (1.05)	4.3 (0.17)	5.8 (0.23)	5.5 (0.21)	–
	W03	26.6 (1.05)	4.1 (0.16)	–	5.6 (0.22)	–
SBM2K40, SCM2K40 Front Key Extraction	X11	26.6 (1.05)	5.8 (0.23)	7.3 (0.29)	7.0 (0.28)	–
	W02	26.6 (1.05)	5.3 (0.21)	–	6.8 (0.27)	–
	X12	26.6 (1.05)	5.5 (0.21)	7.0 (0.28)	6.7 (0.26)	–
	W03	26.6 (1.05)	5.3 (0.21)	–	6.8 (0.27)	–
AP2R11	X11	5.6 (0.22)	1.6 (0.06)	2.5 (0.10)	3.2 (0.13)	4.4 (0.17)
	W02	5.6 (0.22)	1.5 (0.06)	–	3.1 (0.12)	4.4 (0.17)
AP2R13	X11	9.6 (0.38)	3.2 (0.13)	4.6 (0.18)	6.0 (0.23)	7.5 (0.30)
	W02	9.6 (0.38)	3.0 (0.12)	–	5.9 (0.23)	7.5 (0.30)
AP2R31, AP2R32	X11	21.0 (0.83)	6.0 (0.24)	8.6 (0.34)	10.5 (0.41)	15.6 (0.61)
	W02	21.0 (0.83)	5.7 (0.22)	–	10.2 (0.40)	15.6 (0.61)
AP2R41, AP2R51	X11	±74°	±21°	±30°	±37°	±60°
	W02	±74°	±19°	–	±37°	±60°

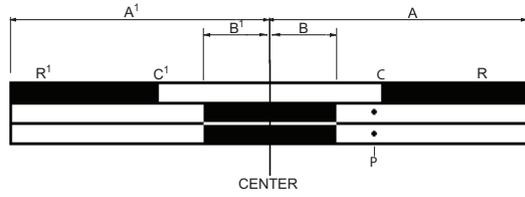
Comepi Safety Limit Switches

Bar charts for cable pulls

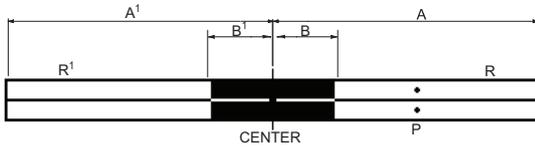
X11



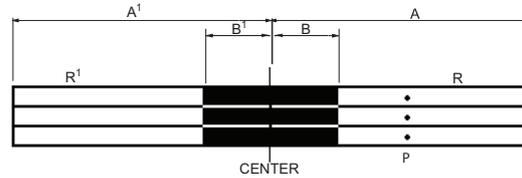
X12



W02



W03



Pull Tension from Center

A = Max. travel of the operator in mm

B = Tripping travel of the N.C. contact

C = Tripping travel of the N.O. contact

P = Point from which positive opening is assured

R = Reset latch activates

Lax Tension from Center

A¹ = Max. travel of the operator in mm

B¹ = Tripping travel of the N.C. contact

C¹ = Tripping travel of the N.O. contact

R¹ = Reset latch activates



Part Series	Contact Configuration	Displacement Values mm(in)									
		A	B	C	P	R	Center**	A ¹	B ¹	C ¹	R ¹
SBM2K97* SBM2K99 SCM2K97* SCM2K99	X11	4 (0.16)	1.4(0.06)	2.3 (0.09)	2.6 (0.10)	3.7 (0.15)	0	6 (0.24)	1.4 (0.06)	2.4 (0.09)	4.7 (0.19)
	W02	4 (0.16)	1.2 (0.05)	—	2.4 (0.09)	3.7 (0.15)	0	6 (0.24)	1.2 (0.05)	—	4.7 (0.19)
	X12	4 (0.16)	1.5 (0.06)	3.0(0.12)	2.7 (0.11)	3.7 (0.15)	0	6 (0.24)	1.5 (0.06)	3.0 (0.12)	4.7 (0.19)
	W03	4 (0.16)	1.4 (0.06)	—	2.6 (0.10)	3.7 (0.15)	0	6 (0.24)	1.4 (0.06)	—	4.7 (0.19)
SDM2K96 SDM2K98	X11	4 (0.16)	1.4 (0.06)	2.3 (0.09)	2.6 (0.10)	3.7 (0.15)	0	6 (0.24)	1.4 (0.06)	2.4 (0.09)	4.7 (0.19)
	W02	4 (0.16)	1.2 (0.05)	—	2.4 (0.09)	3.7 (0.15)	0	6 (0.24)	1.2 (0.05)	—	4.7 (0.19)

Part Series	Contact Configuration	Force Values N									
		A	B	C	P	R	Center**	A ¹	B ¹	C ¹	R ¹
SBM2K97* SBM2K99 SCM2K97* SCM2K99	X11	300	170	190	240	260	100	0	70	55	40
	W02	300	170	—	240	260	100	0	70	—	40
	X12	300	170	190	240	260	100	0	70	55	40
	W03	300	170	—	240	260	100	0	70	—	40
SDM2K96 SDM2K98	X11	140	95	100	115	120	70	0	50	40	30
	W02	140	95	—	115	120	70	0	50	—	30

Notes:

* K97 models do not support Rest Latch (R).

**At center line, green ring on switch will be visible.

Comepi Safety Limit Switches



KEY13



KEY14



KEY15

KEY35



KEY16

KEY36



KEY17



KEY18

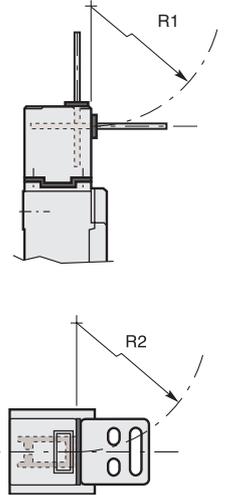


KEY19

KEY39

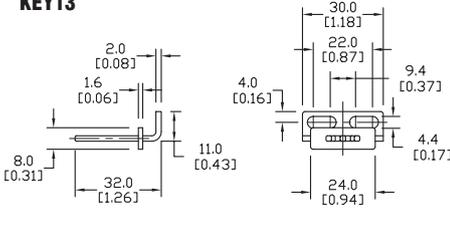
Safety Limit Switches Operating Keys

Part Number	Price	Description	Weight (lbs.)	Mounting Holes Spacing mm [in]	Use With	Minimum Values mm [in]	
						R1	R2
KEY13	\$1.25	Actuator tongue. Key with 90-degree bent mounting tab.	0.1	22 [0.87]	SP2K and SDM2K series safety switches	400 [15.75]	400 [15.75]
KEY14	\$1.25	Actuator tongue. Key with straight mounting tab.	0.1	22 [0.87]		400 [15.75]	400 [15.75]
KEY15	\$1.25	Actuator tongue. Key with 90-degree bent mounting tab.	0.1	13 [0.51]		400 [15.75]	400 [15.75]
KEY16	\$1.00	Actuator tongue. Key with straight mounting tab.	0.1	13 [0.51]		400 [15.75]	400 [15.75]
KEY17	\$2.50	Shock-absorbing actuator tongue. Key with 90-degree bent mounting tab.	0.1	15 [0.59]		250 [9.84]	350 [13.78]
KEY18	\$2.50	Shock-absorbing actuator tongue. Key with straight mounting tab.	0.1	15 [0.59]		350 [13.78]	350 [13.78]
KEY19	\$3.25	Actuator tongue. Key with adjustable mounting tab.	0.1	40 [1.57]	SBM2K and SCM2K series safety switches	180 [7.09]	200 [7.87]
KEY35	\$1.75	Actuator tongue. Key with 90-degree bent mounting tab.	0.1	13 [0.51]		400 [15.75]	400 [15.75]
KEY36	\$1.50	Actuator tongue. Key with straight mounting tab.	0.1	13 [0.51]		400 [15.75]	400 [15.75]
KEY39	\$3.75	Actuator tongue. Key with adjustable mounting tab.	0.1	40 [1.57]		180 [7.09]	200 [7.87]

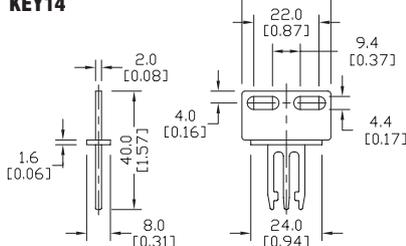


Dimensions mm[in]

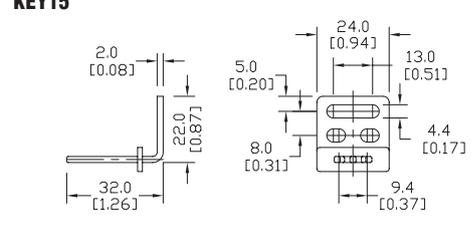
KEY13



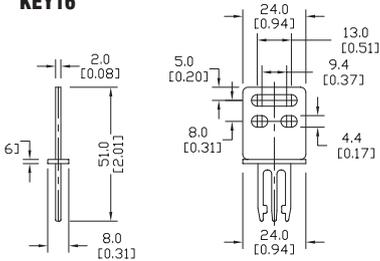
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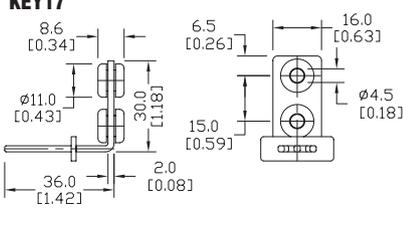
KEY15



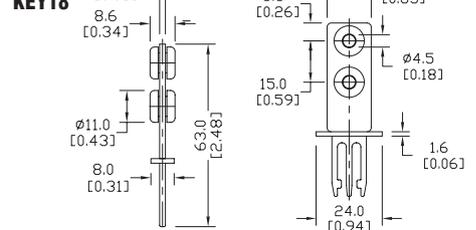
KEY16



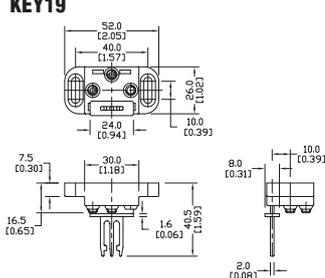
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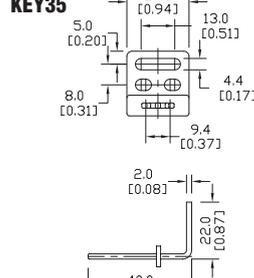
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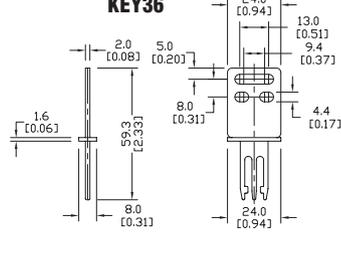
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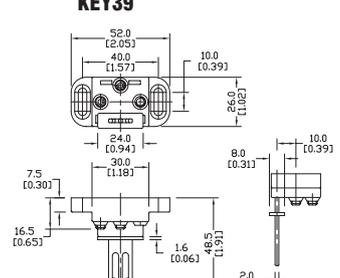
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KEY36



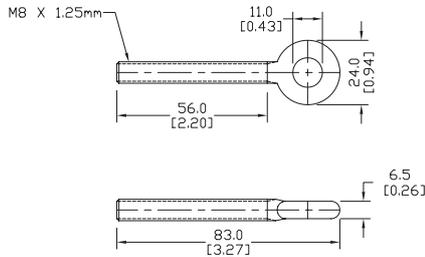
KEY39



Comepi Safety Limit Switches Accessories



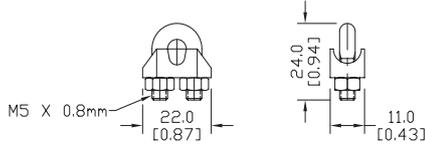
OCC08



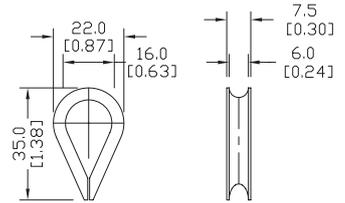
Safety Limit Switches Cable Pull Accessories			
Part Number	Price	Description	Weight (lbs.)
OCC08	\$1.00	Eye bolt	0.2
MOR05	\$1.00	Cable Clamp	0.1
RED05	\$1.00	Eye thimble	0.0
FUN05M015	\$13.00	15 meter length steel cable 5 mm diameter, Red	2.0
FUN05M025	\$20.00	25 meter length steel cable, 5 mm diameter, Red	3.3



MOR05



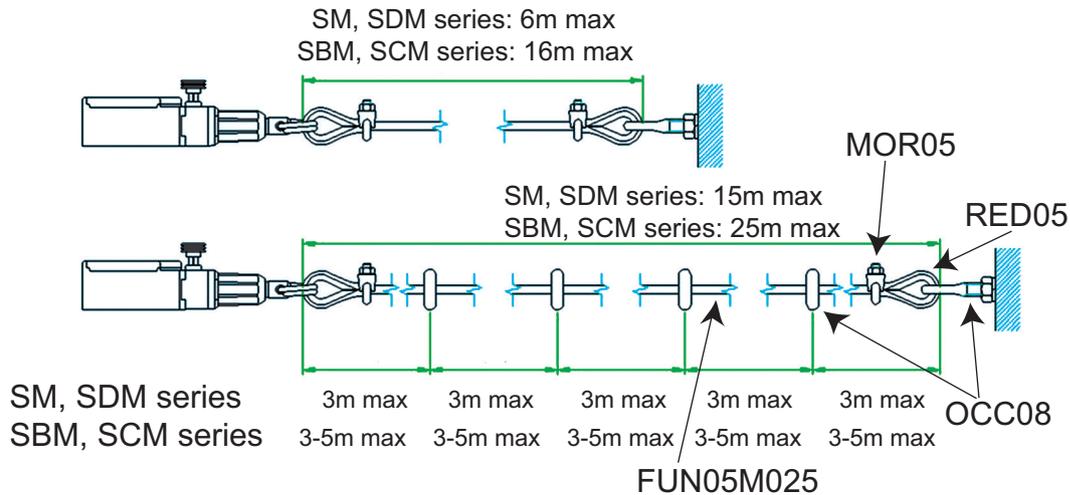
RED05



FUN05M025

All dimensions are in mm [in].

Installation example



Safety Products



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