

# IDEM Explosion-Proof Interlock Safety Switches

**KP-EX-200026****K-SS-EX-208026****KM-EX-203026****KM-SS-EX-204026**

IDEM's range of explosion-proof, tongue interlock switches has been developed to satisfy the latest IECEx and ATEX Standards and to provide explosion-proof switching for use in hazardous locations created within the oil, chemical, pharmaceutical, food processing, packaging and other hazardous industries.

Designed to fit to the leading edge of sliding, hinged or lift-off machine guards, these switches provide positively operated switching contacts plus a tamper resistant key mechanism that is not easily defeated. They combine explosion-proof protection and satisfy high functional safety requirements all in one device.

They are available in a variety of housings to satisfy virtually all applications where the potential for explosion exists.

These switches are manufactured with ATEX Exd IIC T6 certified explosion proof contact blocks. All electrical switching elements are fully encapsulated.

## Features

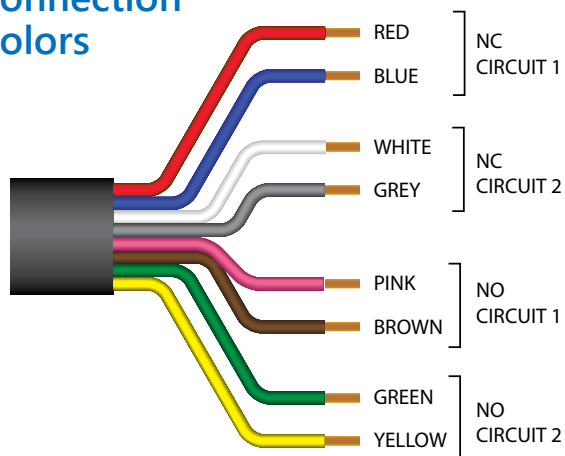
- 3m [9.84 ft] prewired pigtail cable
- Force guided NC contacts
- Two NO and two NC contacts
- Plastic, aluminum and stainless steel 316 options available
- Includes one tamper-proof T20 Torx bit (KM models only)
- Purchase actuating key separately. (See accessories)



## IDEM Explosion Proof Interlock Safety Switches

Part Number	Price	Body Material	Head Adjustability	Entry Positions	Actuator Travel	Force for Positive Opening	Contacts	Weight lb [kg]	Drawings
<a href="#"><u>KP-EX-200026</u></a>	\$;054a1:	Plastic	180°	4	6mm [0.24 in]	12N	2 NO, 2 NC	0.88 [0.40]	<a href="#"><u>PDF</u></a>
<a href="#"><u>K-SS-EX-208026</u></a>	\$054a?:	Stainless steel 316	180°	4	6mm [0.24 in]	12N	2 NO, 2 NC	1.98 [0.90]	<a href="#"><u>PDF</u></a>
<a href="#"><u>KM-EX-203026</u></a>	\$054b2:	Die-cast aluminum	90°	8	6mm [0.24 in]	12N	2 NO, 2 NC	1.18 [0.54]	<a href="#"><u>PDF</u></a>
<a href="#"><u>KM-SS-EX-204026</u></a>	\$054b3:	Stainless steel 316	90°	8	6mm [0.24 in]	12N	2 NO, 2 NC	2.18 [0.99]	<a href="#"><u>PDF</u></a>

## Connection Colors



# IDEM Explosion-Proof Safety Switches Specifications



Specifications					
	HLM-EX / HLM-SS-EX	KM-EX / KM-SS-EX	KP-EX / K-SS-EX	GLS-EX / GLS-SS-EX	GLHx-EX
Safety Classification and Reliability Data					
Switching Reliability (B10 <sub>d</sub> )	2.5 x 10 <sup>6</sup> operations at 100mA load			1.5 x 10 <sup>6</sup> 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				
MTTF <sub>d</sub>	356 years			214 years	
Agency Approvals	ATEX, IECEx, CE The contact block is cURus Hazardous Location rated (E358295)				
Electrical and General Specifications					
Utilization Category	B300 (pilot duty)				
Minimum Switch Current	5mA, 5VDC				
Thermal Current	2.5 A max				
Maximum Switching Current	250VAC/DC, 2.5 A maximum				
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	-20°C to 60°C [-4°F to 140°F]				
Vibration	IEC 68-2-6, 10Hz to 55Hz 0.35mm [0.01 in]	IEC 68-2-6, 10Hz to 55Hz + 1Hz			
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 2 N•m [1.48 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.

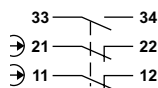
### Snap-action contact:

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

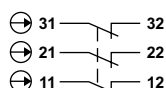
### 1 NO and 2 NC

Slow-make/slow-break contacts



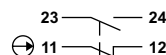
### 3 NC

Slow-make/slow-break contacts



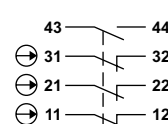
### 1 NO and 1 NC

Snap action contacts



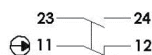
### 1 NO and 3 NC

Slow-make/slow-break contacts



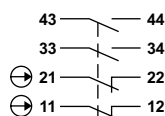
### 1 NO and 1 NC

Slow-make/slow-break contacts



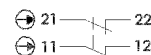
### 2 NO and 2 NC

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

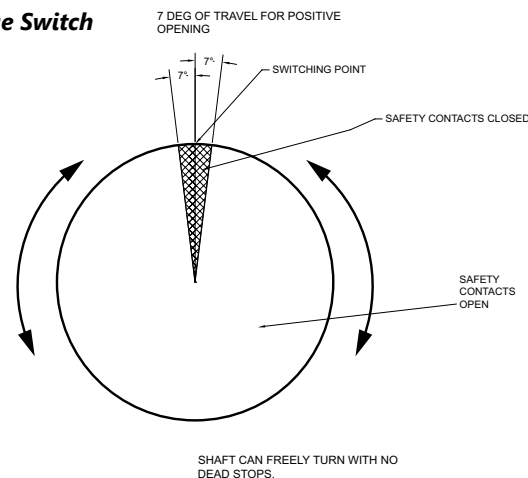
2NC 2NO 6.8 6.0 0 mm

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		

# IDEM Interlock Safety Accessories

## Actuator Keys For Use With KP/K15 and K-SS/KM/KM-SS

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



### IDEM Interlock Safety Switch Actuator Tongue (Keys)

Part Number	Price	Description	Use With		Minimum Entry Radius Radius (mm [in])	Weight (lb [g])	Drawings
			KP/K-15	K-SS/KM/ KM-SS			
<a href="#">140106</a>	\$04g#:	40mm mounting hole spacing, 90° stainless steel key/mounting tab	✓*		175mm [6.89]	0.07 [31.8]	<a href="#">PDF</a>
<a href="#">140107</a>	\$;04g!:	40mm mounting hole spacing, 90° stainless steel key/mounting tab	✓**	✓	175mm [6.89]	0.07 [31.8]	<a href="#">PDF</a>
<a href="#">140108</a>	\$04g?:	20mm mounting hole spacing, straight stainless steel key with plastic stop	✓	✓	175mm [6.89]	0.07 [31.8]	<a href="#">PDF</a>
<a href="#">140109</a>	\$;04g,::	40mm mounting hole spacing, stainless steel key with polyester flexible mounting tab	✓	✓	100mm [3.94]	0.10 [45.4]	<a href="#">PDF</a>
<a href="#">140110</a>	\$04h0:	40mm mounting hole spacing, stainless steel key with black painted aluminum flexible mounting tab	✓	✓	100mm [3.94]	0.16 [72.6]	<a href="#">PDF</a>
<a href="#">140111</a>	\$04h1:	40mm mounting hole spacing, stainless steel key with mirror polished stainless steel flexible mounting tab	✓	✓	100mm [3.94]	0.22 [99.8]	<a href="#">PDF</a>
<a href="#">140130</a>	\$06up:	IDEM lockout actuator, stainless steel, for use with IDEM tongue (key) switches	✓	✓	NA	0.10 [45.4]	<a href="#">PDF</a>

\* For KP and K-15 series with plastic heads

\*\* For KP and K-15 series with stainless steel heads

# 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.*