

IDEM KLP-Z/KLM-Z/KL3-Z Tongue Interlock Safety Switches with Guard Locking and RFID Coding



Description

IDEM's KLP/KLM/KL3 Series of RFID Coded Safety Switches has been designed to fit into the leading edge of machine guard doors to provide robust guard locking while also providing a double tamper resistant interlock mechanism.

They are designed to provide robust position interlock detection for moving guards and will remain locked until the solenoid voltage is applied to the switch.

These switches can be used in conjunction with delay timers to provide the solenoid energize signal only after a pre-determined amount of time has passed.

When used in combination with a dual channel safety relay or control device, Non-Contact Safety Switches can be used to provide protection up to Category 4 and PLe to ISO13849-1.

Features

- Highly effective anti-tamper RFID coding.
- Holding force of 3000N to keep guard doors closed until hazards have been removed.
- Unique rotating head offers both front and end actuation.
- Diecast housing fitting with a robust 316 stainless steel head.
- Choice of standard or flexible actuators.
- For use as directed by ISO14119 and EN ISO12100

KLP/KLM/KL3 Tongue Interlock Safety Switches with Guard Locking and RFID Coding Selection Guide								
Part Number	Price	Body Material	Actuator Type *	Connection	Circuits	Head	Holding Force	To Unlock
<u>KLP-Z-455002AZ</u>	\$291.00	Polyester	Standard actuator	Two 0.5 in [12.7 mm] NPT cable entries	2 OSSD outputs	90° adjustable	2000N	24VDC
<u>KLP-Z-455002HFZ</u>	\$322.00	Polyester	Flexible actuator	Two 0.5 in [12.7 mm] NPT cable entries	2 OSSD outputs	90° adjustable	2000N	24VDC
<u>KLP-Z-455003AZ</u>	\$353.00	Polyester	Standard actuator	8-pin M12 quick-disconnect	2 OSSD outputs	90° adjustable	2000N	24VDC
<u>KLP-Z-455003HFZ</u>	\$384.00	Polyester	Flexible actuator	8-pin M12 quick-disconnect	2 OSSD outputs	90° adjustable	2000N	24VDC
<u>KLM-Z-454002AZ</u>	\$345.00	Die-cast aluminum	Standard actuator	Two 0.5 in [12.7 mm] NPT cable entries	2 OSSD outputs	90° adjustable	3000N	24VDC
<u>KLM-Z-454002HFZ</u>	\$377.00	Die-cast aluminum	Flexible actuator	Two 0.5 in [12.7 mm] NPT cable entries	2 OSSD outputs	90° adjustable	3000N	24VDC
<u>KLM-Z-454003AZ</u>	\$407.00	Die-cast aluminum	Standard actuator	8-pin M12 quick-disconnect	2 OSSD outputs	90° adjustable	3000N	24VDC
<u>KLM-Z-454003HFZ</u>	\$439.00	Die-cast aluminum	Flexible actuator	8-pin M12 quick-disconnect	2 OSSD outputs	90° adjustable	3000N	24VDC
<u>KL3-SS-Z-456002AZ</u>	\$454.00	316 stainless steel	Standard actuator	Two 0.5 in [12.7 mm] NPT cable entries	2 OSSD outputs	90° adjustable	3000N	24VDC
<u>KL3-SS-Z-456002HFZ</u>	\$486.00	316 stainless steel	Flexible actuator	Two 0.5 in [12.7 mm] NPT cable entries	2 OSSD outputs	90° adjustable	3000N	24VDC
<u>KL3-SS-Z-456003AZ</u>	\$516.00	316 stainless steel	Standard actuator	8-pin M12 quick-disconnect	2 OSSD outputs	90° adjustable	3000N	24VDC
<u>KL3-SS-Z-456003HFZ</u>	\$548.00	316 stainless steel	Flexible actuator	8-pin M12 quick-disconnect	2 OSSD outputs	90° adjustable	3000N	24VDC

* All actuators feature uniquely coded RFID

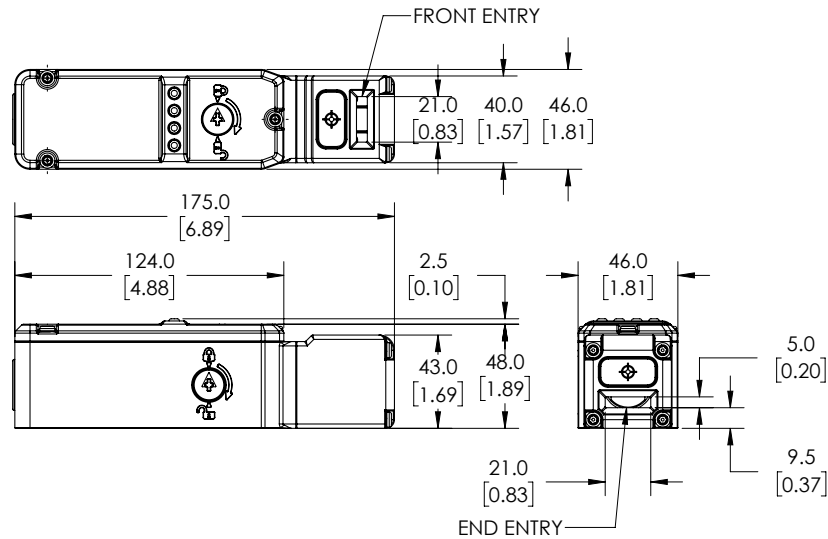
Female Quick Disconnect Lead			
Part Number	Price	Description	Exit Type/Cable Length
<u>140101</u>	\$33.00	Female QD Lead	M12 Female 5m [16.4 ft], 8-pin
<u>140102</u>	\$54.00	Female QD Lead	M12 Female 10m [32.8 ft], 8-pin



IDEM KLP-Z/KLM-Z/KL3-Z Tongue Interlock Safety Switches with Guard Locking and RFID Coding

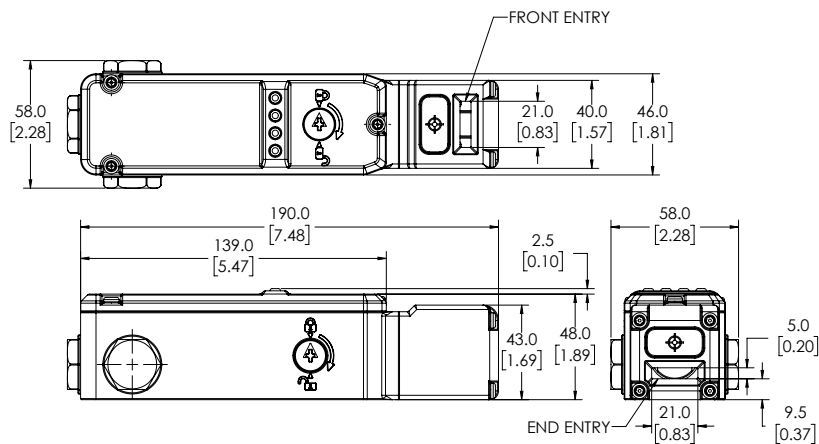
Dimensions (KLP Series)

mm [inch]



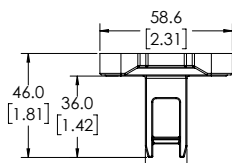
Dimensions (KLM Series and KL3 Series)

mm [inch]



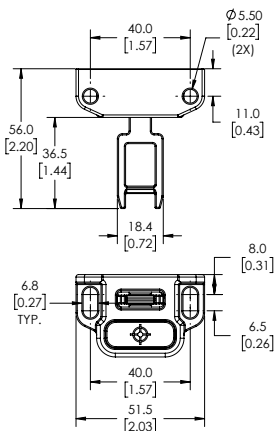
Key (AZ Standard Actuator)

mm [inch]



Key (HFZ Flexible Actuator)

mm [inch]



See our website www.AutomationDirect.com for complete engineering drawings.

IDEM KLP-Z/KLM-Z/KL3-Z Tongue Interlock Safety Switches with Guard Locking and RFID Coding

LED Operation

GUARD		INPUT	
Guard Closed and Locked	Green (Steady)	Safety Inputs On	Green (Steady)
Guard Closed and Unlocked	Green (Flash)	Safety Input Missing	Green (Flash)
Code Incorrect	Red (Flash)	Safety Inputs Off	Off
Guard Open	Red	Internal fault	Red (Steady)

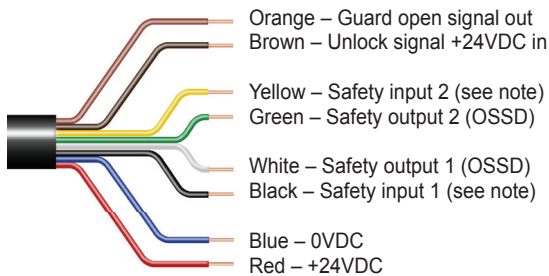
OUTPUT	
Safety Outputs On	Green (Steady)
Safety Outputs Off	Off
External fault	Red (Flashing)

SOLENOID	
Solenoid Energised	Red
Solenoid De-energised	Off

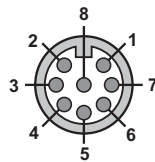


Wiring

IDEM Quick Disconnect Leads Color Coding



Connection Colors



Pin View from Switch
M12 Male

Coded Magnetic Switches - Electrical Connections			
Quick Disconnect Connector Pin Out	IDEM Quick Disconnect Leads Color Coding	Terminal	Switch Circuit
2	Red	R+	Supply +24 VDC
3	Blue	0V	Supply 0VDC
7	Black	11	Safety Input 1
1	White	12	Safety Output 1
4	Yellow	21	Safety Input 2
6	Green	22	Safety Output 2
8	Orange	44	Guard open signal +24VDC out
N/A	-	34	Guard unlocked signal +24VDC out
5	Brown	S+	Unlock signal Apply +24VDC

NOTE: Safety outputs 1 and 2 are OSSD signals
Safety inputs 1 and 2 are 24VDC if not in series or OSSD inputs if in series

Travel Charts

Actuator Insertion 15.0 mm 5.0 mm 0mm

11/12	Open	Closed
21/22	Open	Closed

44	Guard open signal ON	Guard open signal OFF
34	Guard unlocked signal (ON when solenoid energized)	

IDEM KLP-Z/KLM-Z/KL3-Z Tongue Interlock Safety Switches with Guard Locking and RFID

Solenoid Interlock Safety Switches Specifications			
	KLP-Z	KLM-Z	KL3-Z
Safety Classification and Reliability Data			
Switching Reliability (B10d)	2.5M operations at 100mA load		
EN 954-1	Up to Category 4 with Safety Relay		
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_d	771 years		
Agency Approvals	cULus E258676, CE		
Electrical and General Specifications			
Rated Insulation Voltage	500VAC		
Contact Terminals	Plated Brass, Max conductor 1mm ² , 16AWG; 0.7 N•m [0.52 lb•ft] torque		
Solenoid Wattage	12W		
Solenoid Voltage	24VDC		
Max. Switching Current	Safety contacts 2.5A @24VDC, 6A @ 120VAC, 3A @ 240VDC (720VA Break); Auxiliary contacts max 230V@0.5A		
Maximum Approach/Withdrawal Speed	1000 mm/s [39.37 in/s]	600 mm/s [23.62 in/sec]	600 mm/s [23.62 in/sec]
Enclosure Protection	IP67 (IP69K on all KL3-Z models)		
Operating Temperature	-25°C to +55°C [-13°F to +131°F]	-25°C to +55°C [-13°F to +131°F]	-25°C to +40°C [-13°F to +104°F]
Vibration	IEC 68-2-6, 10-55 Hz + 1Hz		
Lid Screws/Torque	Stainless steel; T20 Torx; 1.5 N•m [1.11 lb•ft]	Stainless steel; T20 Torx; 1N•m [0.74 lb•ft]	Stainless steel; T20 Torx; 1.5 Nm [1.11 lb•ft]
Recommended Mounting Screws/Torque	M5; 4N•m [2.95 lb•ft]		
Head Screws/Torque	Stainless steel, T20 Torx 1.5 N•m [1.11 lb•ft]	Stainless steel; T20 Torx; 1.5 N•m [1.11 lb•ft]	Stainless steel; T20 Torx; 1N•m [0.74 lb•ft]

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.