

# Guard Locking Safety Switches **NEW**



**KLM-202002-SS** die cast safety switch with stainless steel head.

**KLP-201002** plastic safety switch with stainless steel head.

**KL3-SS-205002** stainless steel safety switch.

All models shown smaller than actual size. 140111 heavy-duty flexible stainless steel actuators, sold separately.

## KLM, KLP and KL3-SS Series

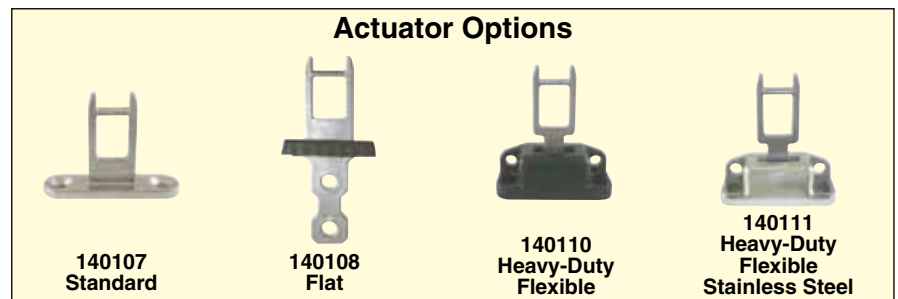


- ✓ Solenoid Locking Interlock Safety Switch
- ✓ High Holding Force Keeps Guard Doors Closed Until Hazard can be Removed
- ✓ 8 Actuator Entry Positions—Designed with a Rotatable Head
- ✓ KLM Series: Die Cast Metal Body with Die Cast or 316 SS Head
- ✓ KLP Series: Polyester Body with 316 SS Head
- ✓ KL3-SS Series: 316 SS Body and Head—Mirror Polished to Ra10
- ✓ LED Indicators for Status of Solenoid Applied Power (LED1) and Guard Lock Status (LED2)
- ✓ 2 Normally-Closed (NC) Safety Circuits: Solenoid Lock and Actuator/Guard Wired in Series
- ✓ 2 Normally-Open (NO) Auxiliary Contacts: One for Indication of Actuator Status and One for Lock Status
- ✓ 2 Emergency Manual Release Points

Guard locking switches are designed to provide robust position interlock detection for moving guards and provide a lock mechanism to keep the guard closed until the hazard has been removed. They are tongue operated and are designed to fit to the leading edge of sliding or hinged machine guards to provide positively operated switching contacts and provide a tamper resistant key mechanism that is not easily defeatable.

Depending upon the risk assessment for the application, they can be used independently to provide positively operated contacts to EN60947-5-1 or they can be used in combination with any dual channel safety monitoring relays to provide up to PLe Category 4 to ISO13849-1 or SIL3 EN62061. They are offered with a choice of various actuators to aid installation and maintain durability throughout the rigorous applications of Factory Automation, Packaging, Food Processing, Pharmaceutical and Petro-Chemical Industries.

The switch is rigidly mounted to the frame of the guard or machine. The actuator is fitted to the moving part (frame) of the guard and is aligned to the switch entry aperture. The actuator profile is designed to match a cam mechanism within the switch head and provides a positively operated interlock switch. When the actuator is inserted into the switch the safety contacts can be closed and allow the machine start circuit to be enabled. When the solenoid receives the required signal the safety contacts are positively opened, the machine circuit is broken and the guard door can be opened. They can be used in combination with safety timers to provide a delay before allowing the guard to open (e.g. for machines which require run down). Standard versions automatically spring lock at the insertion of the actuator and will only unlock when power is applied to the solenoid. These switches are sealed to NEMA 6 (IP67) and provide long term protection against moisture ingress.





## Specifications

**Standards:** ISO14119, EN60947-5-1, EN60204-1, ISO13849-1, EN62061 UL508

**Safety Classification and Reliability Data:**

**Mechanical Reliability B10d:**  $2.5 \times 10^6$  operations at 100 mA load

**ISO13849-1:** Up to PLe depending upon system architecture

**EN62061:** Up to SIL3 depending upon system architecture

**Safety Data—Annual Usage:** 8 cycles per hour/24 hours per day/365 days

**PFHd:**  $3.44 \times 10^{-8}$

**Proof Test Interval (Life):** 35 years

**MTTFd:** 356 years

**Solenoid Voltage:** 110 Vac or 24 Vdc/Vac (see To Order table)

**Solenoid Wattage:** 12W

**LED2 Supply Voltage:** 24 Vdc

**Utilization Category:** AC15 A300 3A

**Thermal Current (Ith):** 5A

**Rated Insulation/Withstand Voltages:** 600 Vac/2500 Vac

**Travel for Positive Opening:** 10 mm (0.39")

**Actuator Entry Minimum Radius:**

**Standard:** 175 mm (6.89")

**Heavy-Duty:** 100 mm (3.93")

**Maximum Approach/Withdrawal**

**Speed:** 600 mm/s

**Holding Force:**

**KLP Series:** F1Max, 1800N, Fzh 1384N

**KLM, KL3-SS Series:** F1Max, 2000N, Fzh 1538N

**Body Material:**

**KLM Series:** Die cast (painted red)

**KLP Series:** Polyester

**KL3-SS Series:** 316 Stainless Steel

**Head Material:**

**KLM Series:** Die cast (painted red) or 316 stainless steel

**KLP Series:** 316 stainless steel

**KL3-SS Series:** 316 stainless steel

**Enclosure Protection:**

**KLM, KLP Series:** NEMA 6 (IP67)

**KL3-SS Series:** NEMA PW12 (IP67K), NEMA 6 (IP67)

**Operating Temperature:** -25 to 50°C (-13 to 122°F)

**Vibration:** IEC 68-2-6 10 to 55 Hz + 1 Hz; excursion: 0.35 mm 1 octave/min

**Conduit Entry:** ½ NPT or M23 12-way (see To Order table)

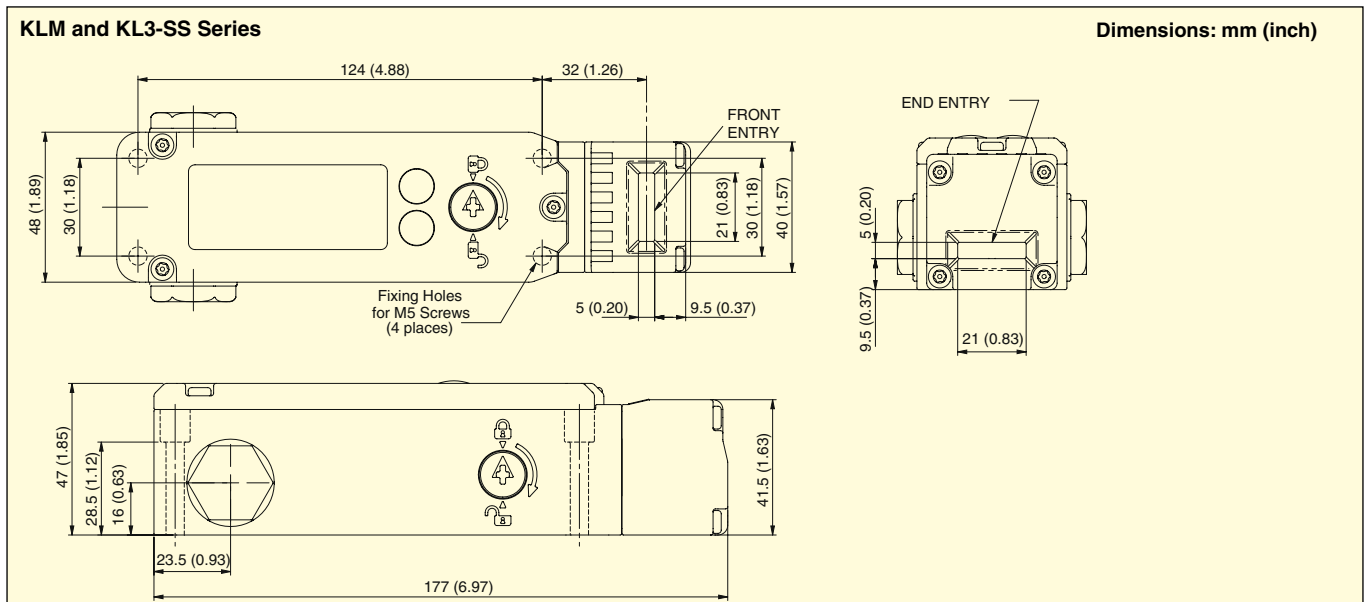
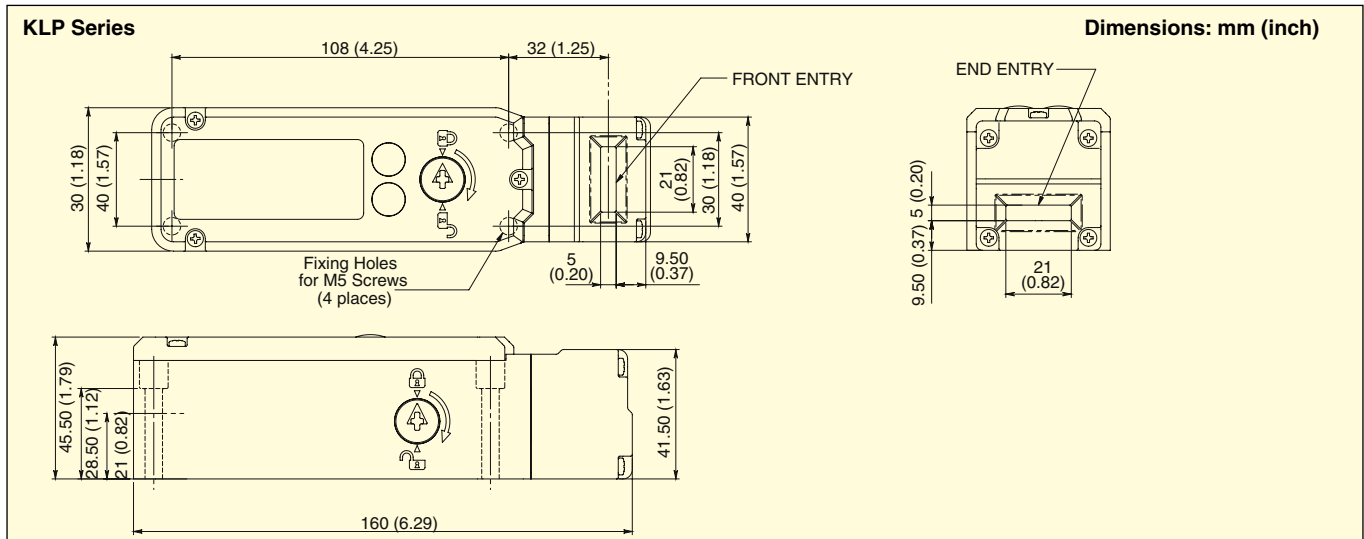
**Fixing:** 4 x M5

**Weight (of Switch):**

**KLM Series:** 770 g (1.7 lb), 795 g (1.75 lb) with SS head

**KLP Series:** 575 g (1.3 lb)

**KL3-SS Series:** 1290 g (2.85 lb)





**KLM-202002-SS die cast safety switch with stainless steel head.**

**KLP-201002 plastic safety switch with stainless steel head.**

**KL3-SS-205002 stainless steel safety switch.**

All models shown smaller than actual size. 140111 heavy-duty flexible stainless steel actuators, sold separately.

<b>To Order</b>					
<b>*Model No.</b>	<b>Description</b>	<b>Body Material</b>	<b>Head Material</b>	<b>Solenoid Voltage</b>	<b>Conduit Entry</b>
<b>KLM-202002</b>	Guard locking safety switch	Die cast	Die cast	24 Vac/Vdc	½ NPT
<b>KLM-202002-SS</b>	Guard locking safety switch	Die cast	316 SS	24 Vac/Vdc	½ NPT
<b>KLM-202005</b>	Guard locking safety switch	Die cast	Die cast	110 Vac	½ NPT
<b>KLM-202005-SS</b>	Guard locking safety switch	Die cast	316 SS	110 Vac	½ NPT
<b>KLM-202003</b>	Guard locking safety switch	Die cast	Die cast	24 Vac/Vdc	M23 12-way
<b>KLM-202003-SS</b>	Guard locking safety switch	Die cast	316 SS	24 Vac/Vdc	M23 12-way
<b>KLM-202006</b>	Guard locking safety switch	Die cast	Die cast	110 Vac	M23 12-way
<b>KLM-202006-SS</b>	Guard locking safety switch	Die cast	316 SS	110 Vac	M23 12-way
<b>KLP-201002</b>	Guard locking safety switch	Plastic	316 SS	24 Vac/Vdc	½ NPT
<b>KLP-201005</b>	Guard locking safety switch	Plastic	316 SS	110 Vac	½ NPT
<b>KLP-201003</b>	Guard locking safety switch	Plastic	316 SS	24 Vac/Vdc	M23 12-way
<b>KLP-201006</b>	Guard locking safety switch	Plastic	316 SS	110 Vac	M23 12-way
<b>KL3-SS-205002</b>	Guard locking safety switch	316 SS	316 SS	24 Vac/Vdc	½ NPT
<b>KL3-SS-205005</b>	Guard locking safety switch	316 SS	316 SS	110 Vac	½ NPT
<b>KL3-SS-205003</b>	Guard locking safety switch	316 SS	316 SS	24 Vac/Vdc	M23 12-way
<b>KL3-SS-205006</b>	Guard locking safety switch	316 SS	316 SS	110 Vac	M23 12-way

\*KLM, KLP and KL3-SS Series guard locking safety switches (switch only, actuator sold separately).

**Ordering Example:** KLP-201003 guard locking safety switch with 24 Vac/Vdc solenoid, 140107 standard actuator and 140143 female quick connect cable, M23 12-way, 5 m (16.4') length.

**Accessories**

<b>Model No.</b>	<b>Description</b>
<b>140107</b>	Standard actuator for 316 SS head
<b>140108</b>	Flat actuator
<b>140110</b>	Heavy-duty flexible actuator
<b>140111</b>	Heavy-duty flexible stainless steel actuator
<b>140143</b>	Female quick connect cable, M23 12-way, 5 m (16.4') length
<b>140144</b>	Female quick connect cable, M23 12-way, 10 m (32.8') length