

LS-Titan Safety Interlock Switches



LS-Titan Safety Interlock Switches

Product Description

Eaton's LS-Titan safety interlock switches have been specifically designed for monitoring the position of protective guards, such as doors, flaps, hoods and grilles. All switches in this family are safety-rated, include positively opening NC contacts, and cannot be defeated using simple tools, such as pliers, screwdrivers and nails.

The LS-Titan safety interlock family is comprised of three types of safety switches: key interlock, door-flap and door-hinge switches.

Key interlock switches are a two-piece design, made up of the switch and key (actuator). The key portion of the switch is affixed to a movable door, cover or other such guard. The switch itself is mounted to a rigid portion of the machine. When the guard is opened, the key is removed from the switch, thereby positively breaking the NC contacts. This interrupts the control circuit, stopping machine operation.

The door-flap and door-hinge switches are one-piece designs, suitable for when a key cannot be mounted in the application. When an attempt is made to open a protected door hinge or flap during operation, these switches disconnect the power supply to the machine or installation. Both switches feature four-way adjustable heads.

All LS-Titan safety interlock switches are approved to protect personnel and processes.

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Features

- Broad family of safety interlock switches in industry-standard enclosure sizes: miniature DIN; full-size DIN; and larger, solenoid key interlocks providing the highest degree of personnel and process protection
- Large selection of actuators (keys), including those for sliding doors, swing doors and doors that do not close precisely
- Miniature DIN models have a five-way adjustable head, while full-size DIN models have four-way adjustable heads
- Fully safety-rated as interlocking devices per EN 1088, with safety function by positive opening contacts per IEC/EN 60947-5-1
- Door-flap and door-hinge safety switches provide a unique solution when actuators (keys) cannot be used
- IP65 degree of protection

Standards and Certifications

- UL® listed
- CSA® approved
- CCC



- Positive opening NC contacts per EN 60947-5-1



Safety Notes

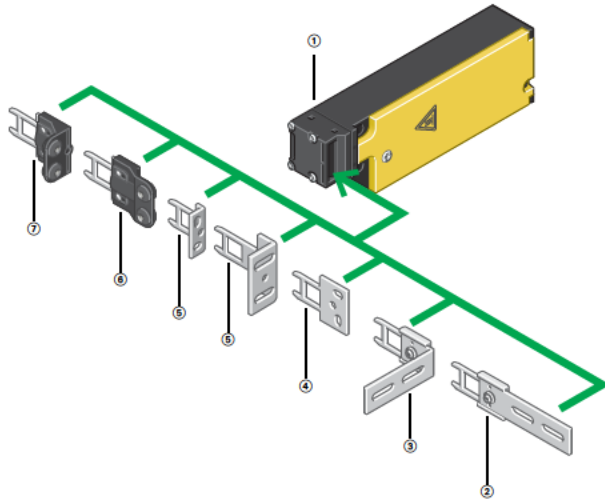
Do not use as a mechanical stop/shipping brace.

Any change to an original Eaton safety position switch is not permitted and automatically leads to the loss of all approvals.

Switch must never be used as a mechanical stop.

Product Identification

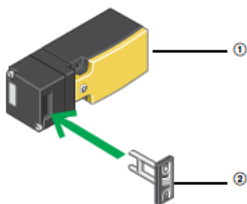
Solenoid Safety Interlock Switches (LS-...ZBZ)



Notes

- ① **Basic device** (see Page V8-T1-7)
Spring or magnet-powered interlock
For increased personnel and process protection
Tamper-proof
Multiple coded actuators
Contacts: 1NO-1NC or 2NC
- ② **Flat flexible actuator** (see Page V8-T1-8)
For doors that do not close precisely
- ③ **Angled flexible actuator** (see Page V8-T1-8)
For doors that do not close precisely
- ④ **Flat actuator** (see Page V8-T1-8)
For sliding doors
- ⑤ **Angled actuator** (see Page V8-T1-8)
For sliding doors
- ⑥ **Flat compensating actuator** (see Page V8-T1-8)
For increased tolerance compensation in the direction of door closure
- ⑦ **Angled compensating actuator** (see Page V8-T1-8)
For increased tolerance compensation in the direction of door closure

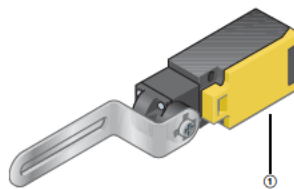
Miniature DIN Safety Interlock Switch (LS-...ZB)



Notes

- ① **Complete device** (see Page V8-T1-6)
For personnel protection
Contacts: 1NC, 1NO-1NO or 2NC
Five directions of operation possible
- ② **Actuator** (see Page V8-T1-6)
Included with switch
Multiple coding protection against tampering

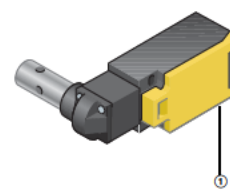
Door Flap Safety Switch (LSR-...TKG)



Note

- ① **Complete device** (see Page V8-T1-6)
For personnel protection
Contacts: 1NO-1NC or 2NC
For swing doors with fixed connection to the door/hinge pin

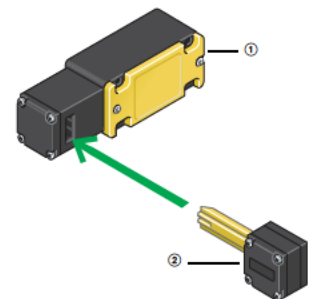
Door Hinge Safety Switch (LSR-...TS)



Note

- ① **Complete device** (see Page V8-T1-6)
For personnel protection
Contacts: 1NO-1NC or 2NC
For swing doors with fixed connection to the door/hinge pin

Full-Size DIN Safety Interlock Switch (LS4-...ZB)



Notes

- ① **Complete device** (see Page V8-T1-7)
Narrow enclosure version
For personnel protection
Contacts: 1NO, 1NO-1NC
- ② **Actuator**
Included with switch, not orderable as a separate item
Multiple coding
For horizontal or vertical operation

Product Selection

LS-Titan Miniature DIN Safety Interlock Switches

Key Interlock Switch



Key Interlock Switch—LS...ZB ①

Contacts	Contact Sequence	Contact Travel	Connection	Catalog Number (Includes Key)
2NC with positive opening		—	Screw terminal	LS-S02-ZB
1NO and 1NC with positive opening		—	Screw terminal	LS-S11-ZB
		Snap action contacts	Screw terminal	LS-S11S-ZB

Door-Flap Switch



Door-Flap Switch—LSR...TKG ①

Contacts	Contact Sequence	Contact Travel	Connection	Catalog Number (Includes Key)
2NC with positive opening			Screw terminal	LSR-S02-1-I-TKG
1NO and 1NC with positive opening			Screw terminal	LSR-S11-1-I-TKG

Door-Hinge Switch



Door-Hinge Switch—LSR...TS ①

Contacts	Contact Sequence	Contact Travel	Connection	Catalog Number (Includes Key)
2NC with positive opening			Screw terminal	LSR-S02-1-I-TS
1NO and 1NC with positive opening			Screw terminal	LSR-S11-1-I-TS

Replacement Safety Interlock Key



Replacement Safety Interlock Key ①

Description	Catalog Number
Replacement key for miniature DIN key interlock switches (only models LS...ZB).	LS-XB-ZB

Note

① For dimensions, see **Page V8-T1-11**.