

SERIES AZ15/16

Tamper-Resistant Movable Machine Guard Safety Interlock Switch



Description

The Series AZ15/16 is designed for use with movable machine guards/access gates which must be closed for operator safety. Their positive-opening NC contacts provide a significantly higher level of safety than conventional spring-driven switches whose contacts can weld or stick shut. And their tamper-resistant design prevents bypassing with simple tools, bent wires or other readily available means. Their IP67 rating makes them ideal for interlocking safety guards in hostile environments.

Operation

The AZ15/16 electromechanical safety interlock switch consists of a rugged switch mechanism and a geometrically-unique actuating key. The key is mounted to the movable guard. Upon opening of the guard the NC contact(s) are forced to open through a direct (non-resilient) mechanical linkage with the actuating key. These positive-break NC contacts assure circuit interruption (and machine stoppage) upon removal of the actuator key. (The NO contact closes upon key removal.)

When the guard is closed, the actuating key forces the NC contacts to close and the NO contacts to re-open.

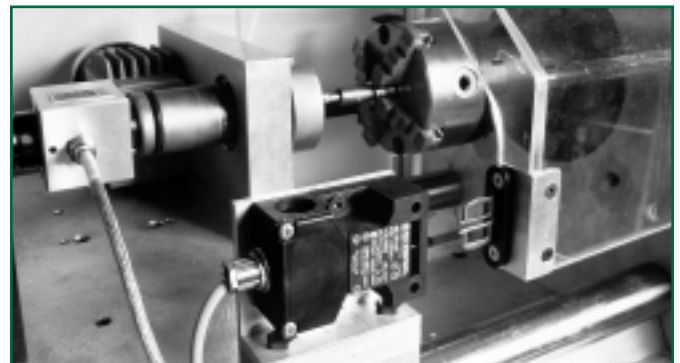
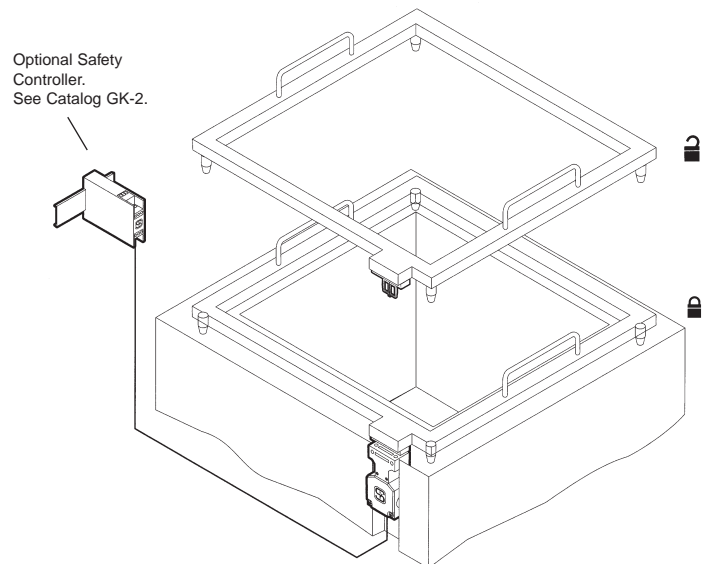
Typical Applications



The AZ15/16 is intended for use as a safety interlock switch on movable machine guards which, when open, expose the operator/maintenance personnel to machine hazards. Typical applications are the interlocking of protective gratings, access doors/gates, hinged covers, access panels and other movable guards.

Features & Benefits

- **Highly tamper-resistant actuating mechanism** ... difficult to defeat with simple tools, tape, bent wires, etc. Reduces liability exposure.
- **Non-removable actuating head** ... heightens tamper-resistance.
- **Four optional key entry locations** ... provide installation flexibility.
- **Individually-coded actuator key option (15,000 codes)** ... provides extra security in high-risk applications. See AZ16zi.
- **“Positive-Break” NC contacts** ... assure circuit interruption upon actuator key removal.
- **High key retention force (7 pounds)** ... eliminates inadvertent opening of guard due to shock/vibration.
- **Watertight design** ... meets IP67 washdown requirements.
- **High-strength, stainless-steel actuator key** ... tolerates mechanical abuse without damage.
- **Rugged, corrosion-resistant housing** ... tolerates the most hostile environments.
- **Wide selection of accessories** ... to meet diverse application requirements.
- **Padlockable key** ... for added security during equipment maintenance.
- **Meets rigid safety agency standards** ... BG, UL and CSA.
- **Explosion-proof model and M12x1 quick-connect (“ST”) available** (Please consult factory).



AZ15/16 AVAILABLE MODELS AND ACCESSORIES

AVAILABLE MODELS (Includes 1/2" NPT Plastic Adapter** Actuator Key Sold Separately)

| Part Number | Contacts (with actuator key inserted) |
|---|---------------------------------------|
| AZ15-zvk (key spring returned) | 1 NC |
| AZ15-zvrk (key maintained upon insertion)* | 1 NC |
| AZ16-zvk (key spring returned) | 1 NO & 1 NC |
| AZ16-zvrk (key maintained upon insertion)* | 1 NO & 1 NC |
| AZ16-02zvkc (key spring returned) | 2 NC |
| AZ16-02zvrkc (key maintained upon insertion)* | 2 NC |
| AZ16-12zvkc (key spring returned) | 1 NO & 2 NC |
| AZ16-12zvrkc (key maintained upon insertion)* | 1 NO & 2 NC |
| AZ16-03zvkc (key spring returned) | 3 NC |
| AZ16-03zvrkc (key maintained upon insertion)* | 3 NC |

*Feature 7 pound key retention force. For lighter key retention force (1-2 pounds) add suffix "2254".

**To order unit with cordgrip instead of 1/2" NPT adapter, add suffix "CG" to part number...eg. AZ15-zvk-CG.

Short-radius actuator keys available. See below.

ACTUATOR KEYS

| Part Number | Description |
|-----------------|--|
| AZ15/16-B1 | Standard Key (5.9" minimum closing radius) |
| AZ15/16-B2 | Small radius actuating key (1.8" minimum closing radius) |
| AZ15/16-B3 | Small radius actuating key (1.3" minimum closing radius) |
| AZ15/16-B6 | Flexible-movement actuating key |
| AZ15/16-B1-2177 | Funnel entry adapter with elongated straight actuating key |
| AZ15/16-B6-2177 | Funnel entry adapter with elongated flexible-movement actuating key |
| AZ16-B1-KRH | Key Removal Hand-Grip Assembly with Key Retention Chain (for use with AZ15...zvrk and AZ16...zvrk) |

ACCESSORIES for AZ15/16 Keyed-Interlock Switches

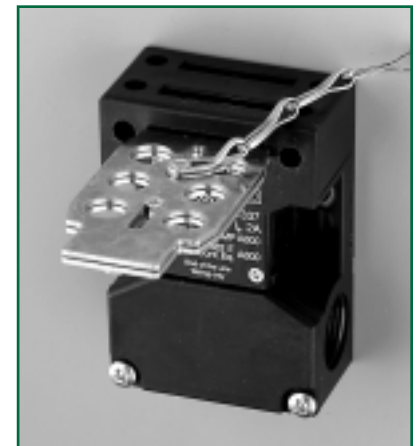
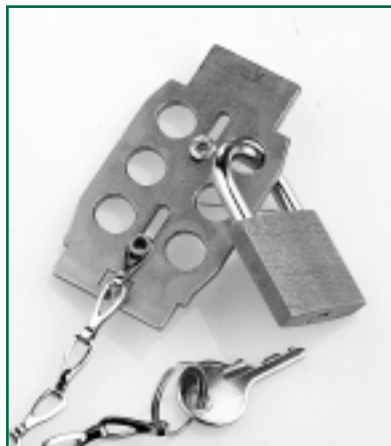
| Part Number | Description |
|---|--|
| AZ15/16-2024 | Gasketed key caps |
| AZ15/16-CAP | Key entry closure caps (for unused entry slots) |
| M20-CG | Cord grip (cable gland) |
| M20-1/2"P | Plastic 1/2" NPT adapter |
| M20-1/2"M | Metal 1/2" NPT adapter |
| AZ15/16-BI-1747 | Door holding magnet kit (7 pound holding force) (for use with AZ16...zvr-2254 models) |
| AZ15/16-B2-1747 | |
| AZ15/16-B3-1747 | |
| PL-M20-24V | 24VAC/DC pilot light kit |
| PL-M20-120V | 120VAC/DC pilot light kit |
| Add suffix -1637 to basic part number when ordering | Gold contacts (for AZ15/16zvr) |
| AZ15/16-BI-2053 (for use with AZ16...zvrk) | Ball latch kit (Adjustable holding force up to 22 pounds) |
| AZ-Align | Actuator key alignment device for sliding doors |
| #6-3/8"SPH (Package of 6) | #6-3/8" Spanner Pan Head Tamper-resistant sheet metal screws (for actuator key mounting or switch contact cover) |
| #10-32x1/2" OWOH (Package of 6) | #10-32 One-Way Oval Head Tamper-resistant machine screws |
| SZ16/335 | Actuator Key Lockout Device (Accepts up to 6 padlocks) |
| AZ15/16-AP | Alignment Pins (Set of 2) |
| MS AZ 15/16 (See Illustration Page 29) | Adjustable mounting kit (Eases installation and facilitates adjustments due to guard misalignment) |
| Suffix "-ST" | Optional M12x1 quick-connect (AZ16-02 models only) |



AZ15/16-2053 with ball catch
Holding force up to 22 pounds



AZ15/16-1747 with holding magnet
Holding force 7 pounds



Lockout Device SZ16/335
(padlock not included)

AZ15/16 ACTUATOR KEY SPECIFICATIONS

AZ15/16-B1 Actuator Key

Minimum actuating radius with actuator B1/B1-1747

AZ15/16-B1-2177 Actuator Key

Minimum actuating radius with actuator B1/B1-1747

Actuator B1 is standard for AZ15/16; it allows a minimum actuating radius of 150 mm. **Please note that the center of rotation must be in the same plane as the upper edge of the safety switch.**

AZ15/16-B1 Actuator Key with AZ15/16-1747 Holding Magnet Kit

Ordering example: Switch, holding magnet and actuator:
AZ16-zv/B1-1747

AZ15/16-B2 Actuator Key

Minimum actuating radius with actuator B2/B2-1747

Actuator B2 is particularly suitable for **small actuating radii** over the wide edge of the actuator (R=45 to 150mm). The basic setting (angle 15°) provides a minimum radius of

45mm=1.8 in. For larger radii, the angle has to be adjusted correspondingly by turning the set screw counter-clockwise.

AZ15/16-B2 Actuator Key with AZ15/16-1747 Holding Magnet Kit

AZ15/16-B3 Actuator Key

Minimum actuating radius with actuator B3/B3-1747

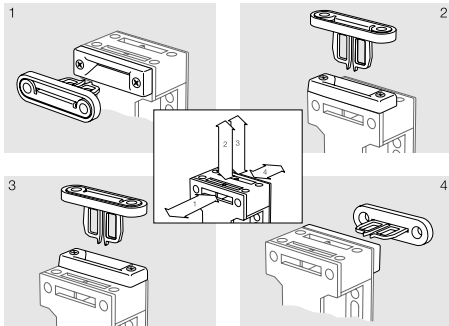
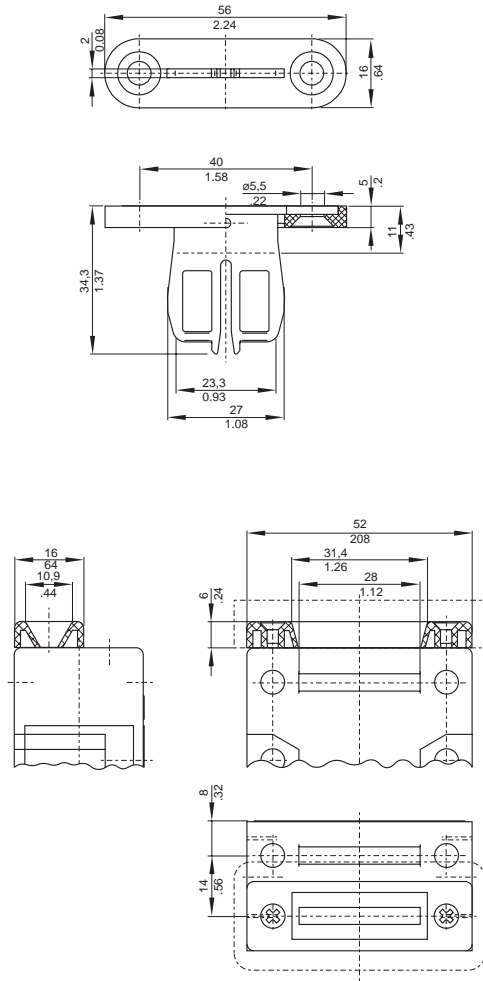
Actuator B3 is particularly suitable for small actuating radii over the narrow edge of the actuator (R=32 to 150mm). The basic setting (angle 10°) provides a minimum radius of

32mm=1.3in. For larger radii, the angle has to be adjusted correspondingly by turning the set screw clockwise.

AZ15/16-B3 Actuator Key with AZ15/16-1747 Holding Magnet Kit

AZ15/16 ACTUATOR KEY SPECIFICATIONS

**AZ15/16-B1-2177 Funnel Entry Adapter
(with straight actuating key)**



AZ15/16-B6 Flex Actuator Key

