

Description

The AZM415 Series is designed for movable machine guards where access to a hazardous work area must be controlled until safe conditions exist. Their solenoid-latching feature permits locking a machine guard until dangerous conditions, which may exist immediately after removal of power, have abated. Solenoid-latching may be controlled by a time-delay, motion detector, position sensor or other suitable component.

Latching may occur upon energizing or de-energizing the solenoid — depending upon model. In addition the AZM415 features “positive-break” NC contacts, and an adjustable-force ball latch which maintains a holding force on the guard when the key is in the unlocked state.

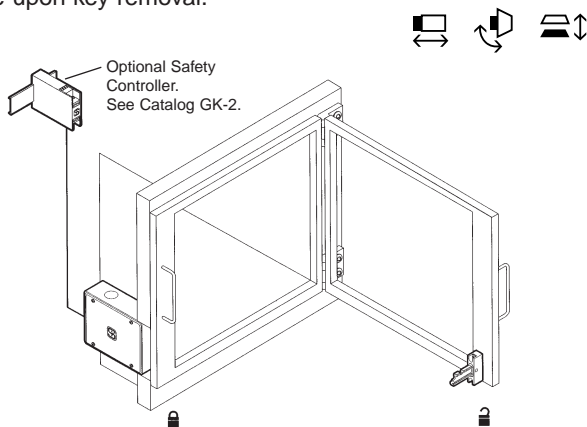
A two-key model is also available for guards which may be open in two directions (Model AZM415-33zpdk).

Operation

The AZM415 two-piece electromechanical safety interlock switch consists of a rugged switch and solenoid-latching mechanism and a geometrically-unique actuating key. The switch actuating key is typically mounted to a movable machine guard.

When the guard is closed, the actuator key is locked in position by a toggle-lever system. The guard may only be opened by energizing or de-energizing (depending upon model) the solenoid-latching mechanism.

Upon opening of the guard the switch’s “positive-break” NC contacts are forced to open through a direct (non-resilient) mechanical linkage with the actuating key. The NO contacts close upon key removal.



Features & Benefits

- **Solenoid-locking design** ... controls access to hazardous areas until safe conditions exist.
- **Highly tamper-resistant** ... difficult to defeat.
- **“Positive-break” NC contacts** ... assure circuit interruption upon actuator key removal.
- **Watertight design** ... meets IP67 washdown requirements.
- **High-strength, metal actuator key** ... tolerates mechanical abuse without damage.
- **Rugged, enamel-coated metal housing** ... tolerates the most hostile environments.
- **Adjustable actuator key holding force up to 110 pounds** ... permits use of switch as door latch.
- **Available in “solenoid-locking” and “solenoid-unlocking” models** ... for application versatility.
- **Meets rigid safety agency standards** ... UL, CSA, IEC, BG and VDE.
- **Industrial-strength locking force** ... up to 560 pounds.
- **Patented toggle-lever locking system** ... facilitates easy unlocking of (even heavily misaligned) guards.
- **Two-key model** ... for double-sided guards (AZM415-33zpdk).
- **Optional B4 Actuator Key** ... prevents unintentional guard closure.

AVAILABLE STANDARD MODELS (Actuator key sold separately ... see chart below)

| Part Number | Contacts | Description |
|---|-------------|--|
| AZM415-22zpk-* | 2 NO & 2 NC | Actuating key locked by spring and unlocked by energizing solenoid. |
| AZM415-22zпка-* | 2 NO & 2 NC | Actuating key locked by energizing solenoid and unlocked by de-energizing solenoid. |
| AZM415-33-zpdk- (Dual-entry model. Two actuator keys required.) | 3 NO & 3 NC | Actuating keys locked by spring and unlocked by energizing solenoid. |
| AZM415-33-zpdka- (Dual-entry model. Two actuator keys required.) | 3 NO & 3 NC | Actuating keys locked by energizing solenoid and unlocked by de-energizing solenoid. |

*Please specify solenoid operating voltage via addition of one of the following suffix codes:

| | |
|----------------|-------------------|
| Voltage | Add Suffix |
| 24VAC/DC | -24VAC/DC |
| 120VAC | -120VAC |

ACTUATING KEYS & ACCESSORIES

| Description | Part Number |
|---|--------------------|
| Linear entry actuator key (For sliding lift-off guards) | AZM415-B1 |
| Small radius (250mm) x-axis entry actuator key (For hinged guards) | AZM415-B2 |
| Small radius (250mm) y-radius entry actuator key (For hinged guards) | AZM415-B3 |
| Slide bolt actuator key (For sliding guards) | AZ/AZM415-B4pS |
| Safety door handle assembly (Please see page 82) | AZ/AZM415-B30-XX |
| Fail-to-Safe Timer | AZS2305 (Page 80) |
| Fail-to-Safe Standstill Monitor | FWS1205B (Page 80) |

AZM415 TECHNICAL DATA

MECHANICAL SPECIFICATIONS

| | |
|--------------------------------------|--|
| Housing | Die-cast aluminum with brown enamel finish |
| Actuator Key | Die-cast aluminum |
| Degree of Protection | IP67 |
| Travel for Positive-Break | 5mm (0.2 inches) |
| Force to Reach Positive-Break | Depending upon ball catch setting (3.5 pounds minimum) |
| Solenoid Locking Force | 560 pounds |
| Actuator Key Holding Force | Adjustable, 2.2 to 110 pounds |
| Operating Temperature | -13°F to +175°F |
| Mechanical Life | 1 million operations |
| Conformity to Standards | IEC 947-5-1 BG-GS-ET-19 VDE 0660 UL CSA |
| Minimum Closing Radius | 9.8" (250mm) |

ELECTRICAL SPECIFICATIONS

| | |
|--|--|
| Contacts | Fine silver |
| Contact Configuration | Double-pole, double-break with electrically separated contact bridges |
| Contact Gap | 2mm x 2mm |
| Contact Rating | 4A (230VAC) |
| Switching Action | Slow-action, positive-break NC contacts |
| Short Circuit Protection | Fuse 6A (slow-blow) |
| Rated Insulation Voltage | 250VAC |
| Rated Impulse Withstand | 4kV |
| Type Terminals | Screw terminals with self-lifting clamps for up to 13AWG flexible stranded wire (1.5 mm ²) |
| Available Solenoid Supply Voltages (Vs) | 24VAC/DC 115VAC/60Hz 230VAC/50Hz |
| Solenoid Power Consumption | 10W (maximum) |
| Solenoid Duty Cycle | 100% |

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WIRING SCHEMATICS & SWITCHING DIAGRAMS

Solenoid De-energized

Spring to lock
(Closed and locked position)
AZM415-22zpk

Solenoid De-energized

Power to lock
(Closed and unlocked position)
AZM415-22zpk

Solenoid De-energized

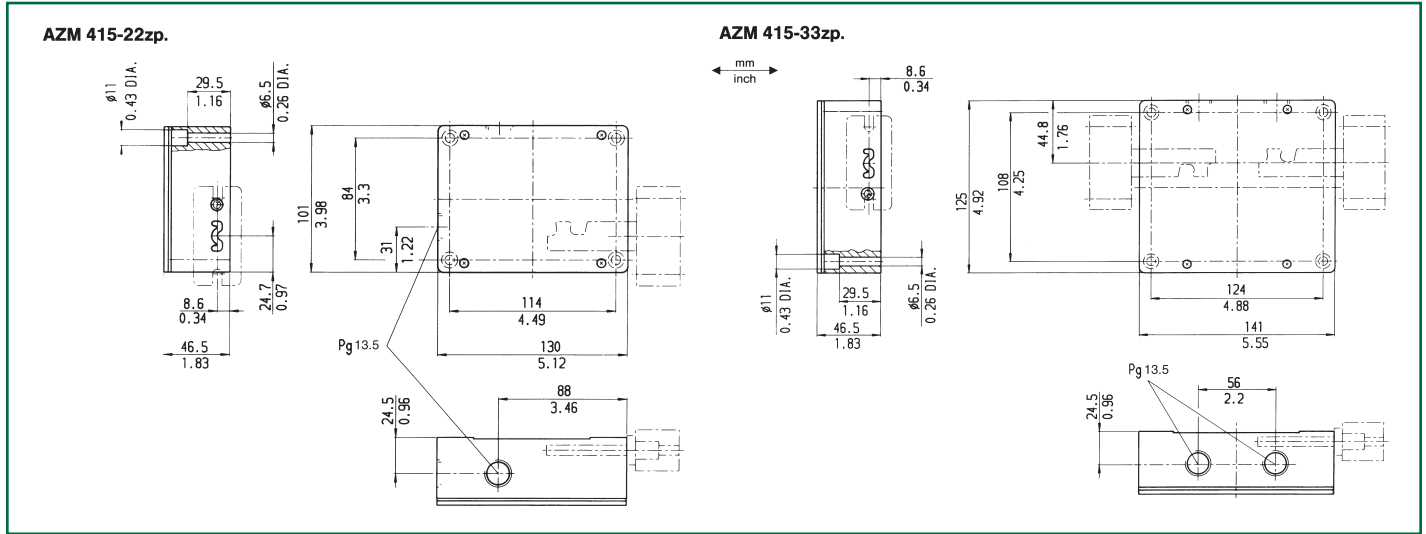
Spring to lock
(Closed and locked position)
AZM415-33zpdk

Solenoid De-energized

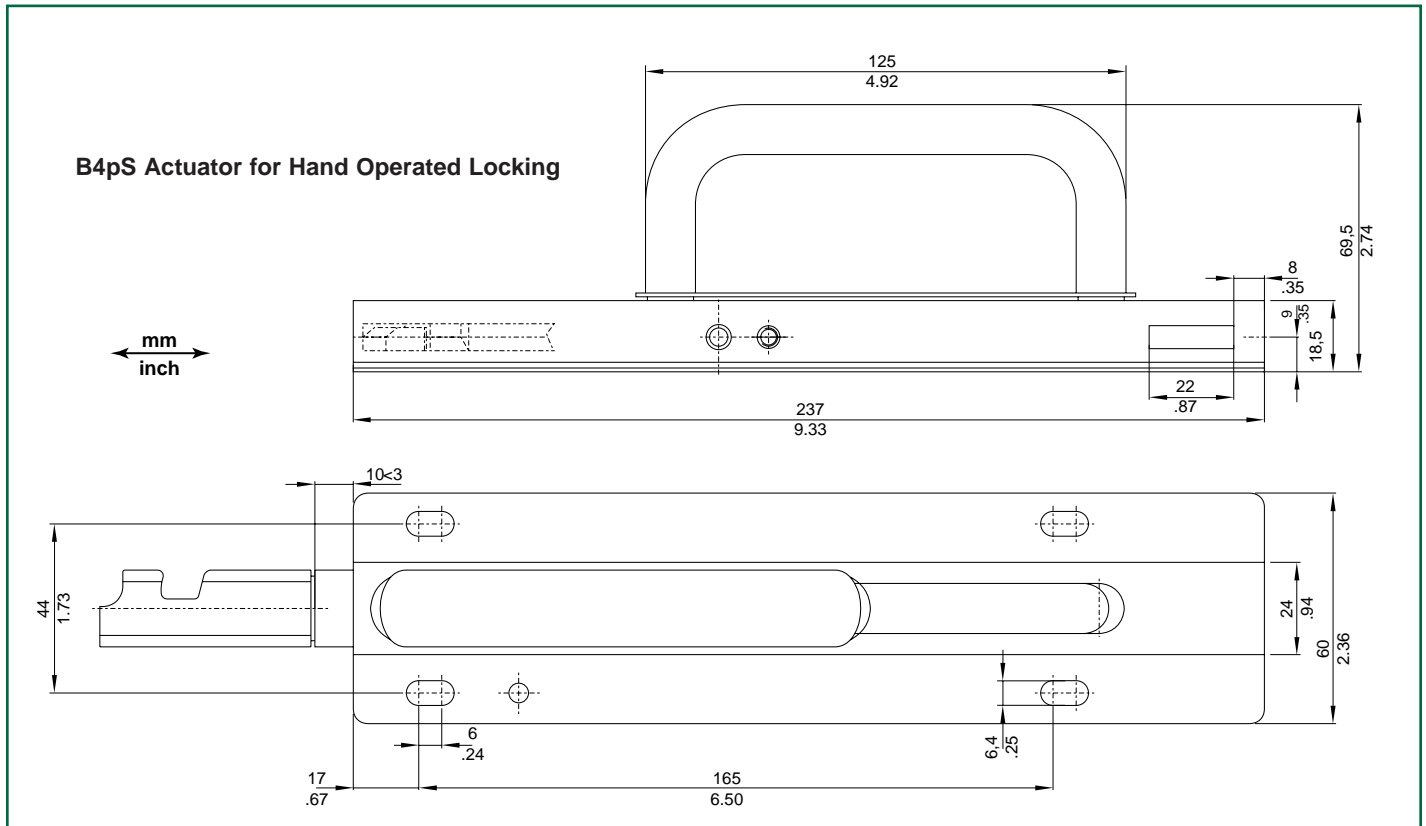
Power to lock
(Closed and unlocked position)
AZM415-33zpdk

AZM415 TECHNICAL DATA

DIMENSIONS



ACTUATOR KEY DIMENSIONS



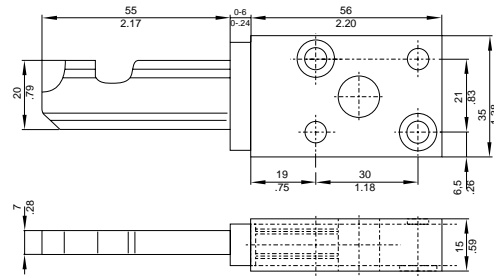
Hand operated locking actuator

The hand operated lock bolt with hold-back spring has the following advantages:

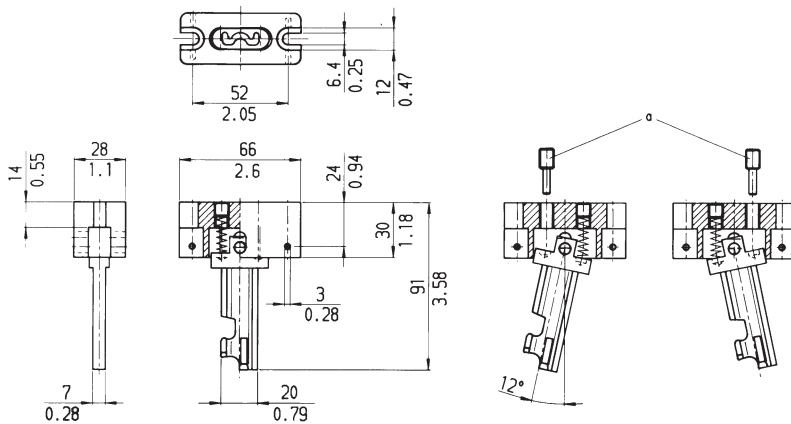
1. No further mechanical expenditures such as handles or levers are necessary.
2. The shearing forces on the actuator is 25,000 N (5,500 lbs.).
3. Simple installation of the unit.
4. Observing the actuating radius is not necessary.
5. An open guard door cannot fall shut and lock, causing the switch to be actuated. The door must be manually closed and locked.
6. The hold back spring also ensures that the actuator is held inside the housing preventing any damage to the actuator.
7. To insure personal safety when hazardous conditions are present, three holes are provided for padlocking which prevents the door from being locked.

AZM415 TECHNICAL DATA

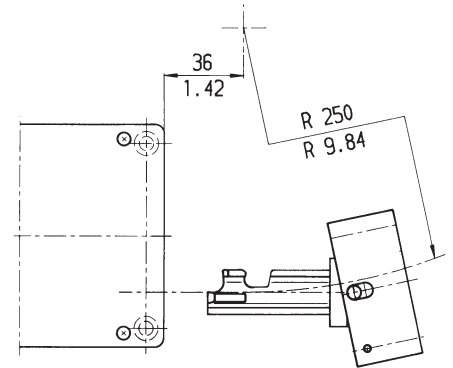
ACTUATOR KEY DIMENSIONS



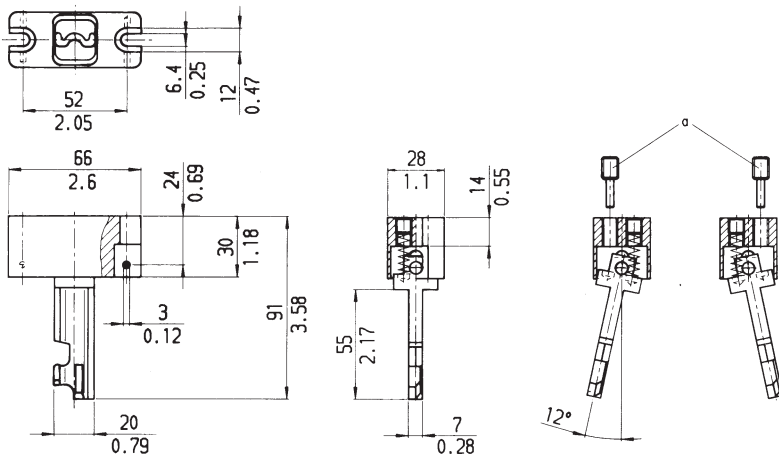
B1 Actuator



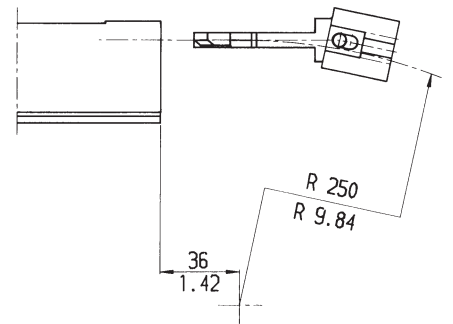
B2 Actuator



B2 Actuating radii
For hinged doors over the wide edge of the actuator



B3 Actuator



B3 Actuating radii
For hinged doors over the small edge of the actuator

Dowel holes are also provided in the actuator body. With the use of dowel pins the removal of the actuator can be prevented.

By turning the adjusting screw "a," the actuator can be brought into any desired position.

Both actuators can also be used on sliding doors.