Machine Safety & Limit Switches

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Tongue Operated Switches

Elf 3 - IP67

Miniature tongue actuated safety interlock. Features two sets of contacts, same size and footprint as original Elf, stainless steel GD2 head option.

- 2NC or 1NC 1NO contacts
- Full IP 67 rating on all Elf 3 models
- Swivel head allows eight possible actuator entry points
- Actuator included
- Door catch may be added to hold larger guard doors shut

Switching rating 6A
Contacts DPDT-NC or 1NC 1NO
Temperature Rating -25°C to 80°C

Contacts DPDT-NC + 1NO
Door catch may be added to hold larger guard doors shut

Cadet 3 - IP67

Tongue actuated safety interlock on a standard DIN 50077 footprint, interchangeable with a wide range of manufacturers' products. Features three sets of contacts.

- 2NC 1NO contacts
- Full IP 67 rating on all Cadet 3 models
- Stainless steel GD2 kit available
- Swivel head allows eight possible actuator entry points
- 90° actuator included
- Door catch may be added to hold larger guard doors shut

Switching rating 5A
Contacts DPDT-NC + 1NO
Temperature Rating -25°C to 80°C

Trojan T15

Standard footprint tongue actuated safety interlock, interchangeable with a wide range of manufacturers' products.

Switching rating 5A
Contacts DPDT-NC or 1NC 1NO
Temperature Rating -25°C to 80°C

Trojan 6 / GD2

Standard footprint tongue actuated safety interlock with four sets of contacts, interchangeable with a wide range of manufacturers' products. Stainless steel headed GD2 version for demanding applications.

Switching rating 5A
Contacts DPDT-NC or 1NO
Temperature Rating -25°C to 80°C

A2 17 Compact - IP67

Thermoplastic enclosure
Small body
Multiple coding
Long life
Double insulated
Pig cable gland
Slot seal plug included

High level of contact reliability with low voltages and currents
Not sensitive to dirty conditions by virtue of patented roller system
8 actuating planes
Cut clamp termination

SCHMERSAL

Automation
37

Machine Safety & Limit Switches

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farnell.com element14.com
Interlocking safety switches

SK Type

- Actuator operated safety switch
- Separate actuator
- Reversible head allows for 8 actuator approaches
- Hinged snap-shut lid seals to IP65

<table>
<thead>
<tr>
<th>Contact Type</th>
<th>Reference</th>
<th>Price Each</th>
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</thead>
<tbody>
<tr>
<td>1 NC + 1 NO</td>
<td>SK-U7Z M</td>
<td>331-235</td>
</tr>
<tr>
<td>2 NC + 1 NO</td>
<td>SK-U7Z M</td>
<td>331-284</td>
</tr>
</tbody>
</table>

Accessories

- Metal Actuator: 391.1451.914 [331-648]
- Adjustable Actuator: 391.1432.058 [331-661]

Price Each

<table>
<thead>
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<th>Mftrs. List No.</th>
<th>Order Code</th>
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<th>10+</th>
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<td>SK-U7Z M</td>
<td>189-31620</td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

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IMPRESSED BACK ORDER DELIVERY

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Heavy Duty Key Operated Switch

- Metal bodied, available with/without locking of operating key
- Can only be operated with the specifically designed actuator order separately
- 3 positive opening contacts as standard
- Positive opening
- Complies with EN1088, EN60947
- Contact rating for 1 million ops 24Vac/6A, 110Vac/3A, 230Vac/2A - 24Vdc/0.5A

Hinge Guard Switch

- TV108 Series
- Metal enclosure
- Tamper resistant
- Positive-break NC contacts
- Meets IP67 withstand and immersion requirements
- Good resistance to oil and petroleum
- Actuator heads can be repositioned by 4 x 90°
- Actuator shaft can be turned 360°
- 1 Cable entry M20 x 1.5
- BG Approved, UL Recognised

The TV335 Series is designed for use with hinged movable machine guards which may be closed for operator safety. Their tamper-resistant design and positive-break NC contacts provide a significantly higher level of safety than conventional, spring-driven limit switches often used to monitor hinged-guard position. Their IP67 rating make them ideal for interlocking safety guards in hostile environments.

The TVS335 is a single-piece, electromechanical safety interlock switch which is designed to mount to a hinged machine guard. After opening the guard only 3° of door movement, the unit’s positive-break, normally-closed contacts are forced to open by a direct (non-resilient) actuating mechanism. These positive-break contacts ensure circuit interruption (and machine stoppage).

Hinged Guard Switch

- TVS 400 Series
- Thermoplastic enclosure
- Double-insulated
- Good resistance to oil and petroleum spirit
- Simple fitting, especially on 40 mm profiles
- Universal fitting on guards fitted on left or right-hand side
- Fixing holes for M6 countersunk screws to DIN 965
- 2 Cable entries M20 x 1.5
- BG Approved, UL Recognised

Hinge & Lever Switches

- 'Rotocam' - Hinge Actuation
  - Designed for interlocking hinged guard doors and access flaps
  - Housed in a heavy duty diecast alloy case
  - Positive isolation operates with an in 3° of door movement
  - Stainless steel operating shaft can be used as hinge point
  - Supplied with anti-tamper lid screws
  - Door catch may be added to hold vibrating or larger guard doors shut
  - Sealed to IP66
  - Conforms to EN1088, EN60947-S-1, BG, CSA, SA, SVA

Hinge Guard Switch

- TVS 410 Series
- Metal enclosure
- Good resistance to oil and petroleum spirit
- For Left or Right hinged doors
- Simple mounting
- Adjustable switching angle
- 230V ac @ 4A (AC-15), 24V dc @ 1A (DC-13) switching capacity
- BG Approved, UL Recognised

Accessories

- Additional Hinge 2 400

- TVS 400, Hinged Safety Switch - IP67

- Standard features
  - Thermoplastic enclosure
  - Double-insulated
  - Good resistance to oil and petroleum spirit
  - Simple fitting, especially on 40 mm profiles
  - Universal fitting on guards fitted on left or right-hand side
  - Fixing holes for M6 countersunk screws to DIN 965
  - 2 cable entries
  - BG Approved, UL Recognised

TVS 410 Series

- Hinge Guard Switch

- Metal enclosure
- Good resistance to oil and petroleum spirit
- For Left or Right hinged doors
- Simple mounting
- Adjustable switching angle
- 230V ac @ 4A (AC-15), 24V dc @ 1A (DC-13) switching capacity
- BG Approved, UL Recognised

Accessories

- Additional Hinge 2 410
**Hinge & Lever Switches - continued**

### AZ335 Actuators
- **Straight**
- The axis of the hinge should be 52.7 mm above the top edge of the safety switch and in the same plane.
- On hinged guards, minimum actuating radius of 700mm at 90° to the plane of the actuator is needed.
- Minimum actuating radius of 900mm on hinged guards in line with the plane of the actuator.
- Max. 200 Ncm tightening torque for mounting the actuator.

### Safety hinge Switch
- **SHS3 Series**
- SHS3 hinge switch has virtually no limits in terms of its installation flexibility. Not only does the entire system need to be converted: With the aid of a change kit, the user can redefine the switching point which can be set in an angle range of 270°, this hinge switch can also be installed in places that were previously not possible.
- Switching point is also freely selectable within this range. The axis of the hinge should be 52.7 mm above the top edge of the safety switch and in the same plane.
- The switching point is also freely selectable within this range. The axis of the hinge should be 52.7 mm above the top edge of the safety switch and in the same plane.

### Hinged Safety Switch - SHS
- **For hinged guards with a rotation angle between 0° and 270°**
- **Simple re-adjustment with integrated system**
- **2 Forced disconnect safety contacts**
- **Integrated cable connection**
- **Axial direction of connection**
- **Suitable for use in systems in control category 4 to EN 954-1**
- **Protection IP67**
- **Elongated mounting holes**
- **Suitable for use in systems in control category 4 to EN 954-1**
- **Protection IP67**

### Non-Contact Switches
- **Ferrogard 1 and 2 - Magnetically Actuated**
  - Magnetic actuated safety switch
  - Housed in glass-reinforced polycarbonate case and sealed to IP67
  - Ideal for environments where contamination could be a problem
  - Anti-tamper fixing screws and security key supplied
  - Door catch may be added to hold vibrating or larger doors shut
  - Approved to BS5304

#### Switch
- **For H=76 (excl. gland), W=30, D=17 (overall)**
- **For H=76, W=30, D=17 (overall)**

#### Mounting slots
- **M4 clear**
- **M4 clear**

#### Contact rating
- **SPST-N0**
- **SPST-N0**

#### Power rating
- **100VA @ 50V, 500VA @250V ac**
- **100VA @ 50V, 500VA @250V ac**

#### Auxiliary contact rating (1 N/C)
- **0.5A @ 300Vac/250V ac**
- **0.5A @ 300Vac/250V ac**

#### Auxiliary power rating
- **150/10W**
- **150/10W**

### Ferrogard 4’ - Magnetically Actuated
- **Ferrogard GD2 - Magnetically Actuated**
  - Stainless Steel housing BS3146 ANC48
  - Sealed to IP68 - Can be pressure hosed. (Ideal where hygiene is paramount)
  - Can be used up to +125°C
  - Supplied with 3mrt cable (pre-wired)
  - Available in three contact configurations
  - Conforms to BS EN 1088 6.3.5

#### Switch
- **For H=76, W=33.5, D=16**
- **For H=76, W=33.5, D=16**

#### Mounting slots
- **M4 clear**

### Ferrogard 6 and 9’ - Magnetically Actuated
- **Ferrogard 1 and 2 - Magnetically Actuated**
  - Magnetic actuated safety switch
  - Switch can be activated from the front or side eliminating the need for a mounting bracket
  - Anti-tamper fixing screws and security key supplied
  - Sealed to IP67
  - Approved to BS5304

#### Doors catch may be added to hold vibrating or larger doors shut

#### Switch
- **For H=82 (excl. gland), W=18, D=18mm**
- **For H=82, W=18, D=18mm**

#### Mounting slots
- **M4 clear**

#### Sensing distance
- **Make 10mm/mem Test**

### Standard Connection
- **Switch & Actuator AC**
  - **440V-60/2203 176-358**
  - **440V-60/2204 594-180**
Coded Magnetic Switch

- Thermoplastic enclosure, sealed for sub-mersibility
- Tamper-resistant cannot be bypassed with simple magnets
- Shock and vibration tolerant to withstand mechanical abuse
- Rugged, corrosion-resistant housing tolerates most industrial environments
- No mechanical wear - Long-life
- BG Approval, UL Recognised

Coded Magnetic Door Switch

- Thermoplastic enclosure
- Non-contact safety switch
- Does not protrude into the door opening
- Substitutes door-handle and safety switch, no further door fittings required
- Modern unit symmetric design
- Tamper-proof because of integral coded safety sensor
- Ergonomic operation
- Suitable for hinged and sliding guards
- No protruding actuator
- Simple mounting with 4 Screws
- BG Approved, UL Recognised

The Series BNS280 coded-magnet sensors are designed for use as a safety interlock switch on movable machine guards/articulating robot arms. Each sensor set consists of a multiple reed switch unit and a coded-magnet actuator. The reed switches, wired in series, will only close in the presence of their matched magnetic field array. Both switch and magnet assemblies are sealed to IP67 (submersible) standards. Their tamper-resistant design prevents bypassing with a simple magnet or improperly coded magnetic field. In addition, the reed switch is typically mounted to a stationary portion of a guard structure, with the coded-magnet assembly mounted to the movable element of the machine guard.

When the guard is closed, and the matched magnetic field aligns with the reed switch unit, the switches will close. When the guard is open, or the required magnetic-field array is not properly aligned with the reed switch assembly, the sensor output will remain OFF.
**Non-Contact Switches - continued**

**Coded Magnetic Door Switch - continued**

BNS-820 Series - continued

unit is typically mounted to the stationary portion of the guard structure, with the coded-magnet/handle assembly mounted to the movable element of the machine guard. When the guard is closed, the matched magnetic fields align with the reed switch actuator, closing the switch. When the guard is open, or the magnetic fields are not properly aligned with their reed switch array, the sensor output will remain OFF.

**Coded Magnetic Switch BNS 33 Series**

- Compact size
- Thermoplastic enclosure, sealed for submersibility
- Tamper-resistant cannot be bypassed with simple magnets
- Shock and vibration tolerant to withstand mechanical abuse
- Insensitive to transverse misalignment
- No mechanical wear - Long-life
- Rugged, corrosion-resistant housing tolerates most industrial environments
- Shock and vibration tolerant to withstand mechanical abuse
- Tamper-resistant cannot be bypassed with simple magnets
- Thermoplastic enclosure, sealed for submersibility
- Certified safety solution when used with PREVENTA XPSDM safety relays
- Tolerant of up to 6mm misalignment
- Integrated 2m cable
- Supply voltage 24V ac/dc
- IP67 Protection

**Coded Magnetic Switch BNS 33 Series - continued**

- The Series BNS30 and BNS303 coded-magnet sensors are designed for use as a safety interlock switch on movable machine guards/articulating robot arms. Each sensor set consists of a multiple reed switch unit and a coded-magnet actuator. The reed switches, wired in series, will only close in the presence of their matched magnetic field array. In addition, the Series BNS30 features an integral monitoring and control circuit which detects faults in the reed switch array (satisfying EN954, Category 1 without use of an ancillary safety relay module). Both switch and magnet assemblies are sealed to IP67 (submersible) standards.
- Their tamper-resistant design prevents bypassing with a simple magnet or improperly coded magnetic field. The BNS Series module features an integral LED display of switch status and a 1-meter long precured pigtail.
- In addition, the BNS300 features an integral monitoring and control circuit which detects faults in the reed switch array (satisfying EN954, Category 1 without use of an ancillary safety relay module).

**Cylindrical Coded Magnetic Switch**

BNS300/303 Series

- Termination Contacts Voltage List No.
  - 189-0450
  - 189-0456
  - 189-0460
  - 189-0462

**Cylindrical Coded Magnetic Switch - continued**

BNS-820 Series - continued

- Termination Contacts Voltage List No.
  - 189-0440
  - 189-0446
  - 189-0448
  - 189-0449
  - 189-0450
  - 189-0452
  - 189-0453
  - 189-0454
  - 189-0455
  - 189-0456

**Cylindrical Coded Magnetic Switch - compact**

BNS-300 Body - L = 78, Dia. = M30 x 1.5
- Compact size
- Thermoplastic enclosure, sealed for submersibility
- Tamper-resistant cannot be bypassed with simple magnets
- Shock and vibration tolerant to withstand mechanical abuse
- Rugged, corrosion-resistant housing tolerates most industrial environments
- No mechanical wear - Long-life
- Integral LED switching condition indicator
- Insensitive to transverse misalignment
- Terminated by 1m pigtail lead
- BG Approved, UL Recognised

The Series BNS300 and BNS303 coded-magnet sensors are designed for use as a safety interlock switch on movable machine guards/articulating robot arms. Each sensor set consists of a multiple reed switch unit and a coded-magnet actuator. The reed switches, wired in series, will only close in the presence of their matched magnetic field array. In addition, the Series features an integral monitoring and control circuit which detects faults in the reed switch array (satisfying EN954, Category 1 without use of an ancillary safety relay module). Both switch and magnet assemblies are sealed to IP67 (submersible) standards. Their tamper-resistant design prevents bypassing with a simple magnet or improperly coded magnetic field. The BNS Series module features an integral LED display of switch status and a 1-meter long precured pigtail.

In addition, the BNS300 features an integral monitoring and control circuit which detects faults in the reed switch array (satisfying EN954, Category 1 without use of an ancillary safety relay module).
Tongue Operated Safety Interlock Switch

Power to Release - TLS1-0D2

- Locks guard shut until machine is safe
- High locking force up to 5500N
- Heavy-duty die-cast alloy IP65 housing, ideal for harsh environments
- Patented self-aligning head, tolerates actuator misalignment
- 2 N/C positive break safety + 1 N/O auxiliary contact
- 10A Thermal current
- Conforms to EN 1088, EN 60947-5-1 & EN60204-1

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Power to Release</th>
<th>List No.</th>
<th>Order Code</th>
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</thead>
<tbody>
<tr>
<td>110V ac</td>
<td>4406-T127224</td>
<td>327-6806</td>
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<tr>
<td>230V ac</td>
<td>4406-T127225</td>
<td>327-6816</td>
<td></td>
</tr>
</tbody>
</table>

Actuators

| Flexible | 4406-A27143 | 327-6831 |

Heavy Duty Tongue Operated Safety Interlock Switch

Atlas 5 - Standard

- Locks guard shut until machine is safe
- High locking force up to 5500N
- Heavy-duty die-cast alloy IP65 housing, ideal for harsh environments
- Patented self-aligning head, tolerates actuator misalignment
- 2 N/C positive break safety + 1 N/O auxiliary contact
- 10A Thermal current
- Conforms to EN 1088, EN 60947-5-1 & EN60204-1

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Power to Release</th>
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<td>24V ac/dc</td>
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<td>110V ac/dc</td>
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<td>230V ac/dc</td>
<td>4406-L07267</td>
<td>327-6867</td>
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</tbody>
</table>

AZM170 Safety Interlock Switch

Solenoid-Latching Machine Guard

The AZM170 Series is designed for machines/work cells where access to a hazardous work area must be controlled until safety 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. The unit features independent actuator key (guard) position and solenoid-latching monitoring contacts. There is a mechanical linkage preventing the solenoid position contacts from changing unless the key is inserted (guard closed). The AZM161 consists of an electromechanical safety interlock switch section with positive-break NC contacts and an actuator key. In addition, the solenoid mechanism features 1 N0 and 2 NC solenoid-latching monitoring contacts, and an auxiliary manual unlocking device. The latter provided to aid in installation and for use in the event of a power failure.

AZM161 Safety Interlock Switch

Solenoid-Latching

Body - H = 90, W = 130, D = 30mm

- Solenoid-latching design
- Highly tamper-resistant, reducing the liability exposure
- Positive-break NC contacts
- Conditional safe outputs
- Meets IP67 environmental requirements
- High-strength, stainless-steel actuator key
- Rugged, corrosion-resistant housing
- Four optional key entry locations for installation flexibility
- Independent actuator key position and locking pin position monitoring contacts
- Manual release
- 4 - M16 x 1.5 cable entries
- Available in solenoid-locking and solenoid-unlocking models
- BG and CCC Approvals, UL Recognised

AZM190 Safety Interlock Switch

Solenoid-Latching Machine Guard

Body - H = 60, W = 90, D = 30mm

- Thermostatic enclosure
- Interlock with protection against incorrect locking
- Actuating head can be repositioned by 4 x 90°
- 2 cable entries M 20 x 1.5
- Manual release
- Wiring compartment
- 3mm design, particularly suitable for fitting on hinged doors, aluminium profiles and fencing
- Sealing mechanism to prevent the ingress of dirt
- Cut clamp termination
- BG and CCC Approvals, UL Recognised

TROUBLESHOOTING TIPS
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### AZM415 Safety Interlock Switch

**Heavy Duty Solenoid-Latching**

The AZM415 is designed for movable machine guards where access to a hazardous work area must be controlled until safe conditions exist. The 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. 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.

- Solenoid-locking design
- Highly tamper-resistant
- Positive-break NC contacts
- Meets IP67 washdown requirements.
- High-strength metal actuator key
- Rugged enamel-coated metal housing.

#### Accessories

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actuator Key</td>
<td>Small radius correcting AZ/AZM415-B2</td>
</tr>
<tr>
<td>Triangular Key</td>
<td>Manual Release AZM M5 KEY</td>
</tr>
<tr>
<td>Actuator Key</td>
<td>Small radius correcting AZ/AZM415-B2</td>
</tr>
</tbody>
</table>

#### Technical Specifications

- **Operating Temperature**: -10 to 55°C
- **Rated Operational Voltage**: 250V
- **Rated Impulse Withstand Voltage**: 6kV
- **Rated Enclosed Thermal Current**: 10A
- **Solenoid**: 24Vdc
- **Positive opening travel**: 20mm
- **Operating temperature**: -10 to 55°C
- **Enclosure Rating**: IP67

<table>
<thead>
<tr>
<th>Contacts</th>
<th>Mtrs.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>2NO / 2NC</td>
<td>24V AC/DC</td>
<td>250V</td>
</tr>
</tbody>
</table>

**Order Code**

189-0406

**Accessories**

- **Order Code**: 189-0376

### AZ3350 Safety Interlock Switch

**Tamper Resistant - Moveable Head**

The AZ3350 Series 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. The switch’s tamper-resistant design prevents bypassing with simple tools, bent wires or other readily available means. Their rugged metal housing and IP67 tamper-resistant design prevents bypassing with simple tools, bent wires or other readily available means. Their rugged metal housing and IP67 washdown requirements meet the requirement for harsh environments.

- **Highly tamper-resistant to reduces liability exposure.**
- **Meets IP67 washdown requirements.**
- **Four optional key entry locations**
- **Funnel shaped key entry forgiving of key misalignment.**
- **BG and CCC Approved, UL Recognised.**

#### Accessories

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actuator Key</td>
<td>326-367</td>
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<tr>
<td>Straight Key</td>
<td>326-379</td>
</tr>
<tr>
<td>90° Key</td>
<td>326-392</td>
</tr>
</tbody>
</table>

#### Technical Specifications

- **Mounting with M5 screws according to DIN EN 50041**
- **Rated operational voltage**: 250V
- **Rated Impulse Withstand Voltage**: 6kV
- **Rated Enclosed Thermal Current**: 10A
- **Solenoid**: 24Vdc
- **Positive opening travel**: 20mm
- **Operating temperature**: -10 to 55°C
- **Enclosure Rating**: IP67

<table>
<thead>
<tr>
<th>Contacts</th>
<th>Mtrs.</th>
<th>Price Each</th>
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<tbody>
<tr>
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<td>250V</td>
</tr>
</tbody>
</table>

**Order Code**

189-0406

**Accessories**

- **Order Code**: 189-0376

### Safety Interlocking Door Switch

**D4NS with Polymere Housing**

- **Intended for guards that have to be closed during operation.**
- **If guard is opened, the shut down time of machine is faster than access time to the danger zone.**
- **Rotatable actuator head offering 5 key entry positions.**
- **One or two conduit entry versions.**
- **Three different key types available.**
- **Enclosure rated at IP65**

#### Accessories

- **Order Code**: 189-0376

#### Technical Specifications

- **Machine Height**: 140mm
- **Conduit opening**: PG13.5
- **Rated operational voltage**: 250V
- **Rated Impulse Withstand Voltage**: 6kV
- **Rated Enclosed Thermal Current**: 10A

<table>
<thead>
<tr>
<th>Contacts</th>
<th>Mtrs.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>2NO / 2NC</td>
<td>24V AC/DC</td>
<td>250V</td>
</tr>
</tbody>
</table>

**Order Code**

189-0406

**Accessories**

- **Order Code**: 189-0376

### D4BL - Guard Lock Safety Interlocking Door Switch

**Metal Housing**

- **Intended for guards that have to be closed during operation.**
- **If guard is opened, the shut down time of machine is faster than access time to the danger zone.**
- **Automatically locks when operating key is inserted.**
- **Locking mechanism released when voltage is imposed on solenoid.**
- **Auxiliary key allows easy maintenance and unlocks door in case of power failure.**
- **Equipped with horizontal and vertical conduit opening.**
- **Three different key types available.**
- **Suitable for harsh environments.**

#### Conformity Standards

- **BVK / CSA / EN / IEC / UL**

#### Technical Specifications

- **Rated Operational Voltage**: 250V
- **Rated Impulse Withstand Voltage**: 6kV
- **Rated Enclosed Thermal Current**: 10A
- **Solenoid**: 24Vdc
- **Positive opening travel**: 20mm
- **Operating temperature**: -10 to 55°C
- **Enclosure Rating**: IP67
- **Dimension**: H=124 inc. head, W=115 inc.

<table>
<thead>
<tr>
<th>Mtrs.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+ 5+ 10+ 25+</td>
<td></td>
</tr>
</tbody>
</table>

**Order Code**

327-001

### Interlocking Solenoid Safety Switch

**SLM Series - Spring Force**

- **All elements are enclosed in one metal housing.**
- **High resistance to heavy industrial use.**
- **Compact housing for space saving installation.**
- **Triple coded actuator with high interference protection.**
- **Simple alteration of actuator approach direction in 90 positions.**
- **All switch functions enclosed in inner module.**
- **Safe and easy wiring due to terminals in separate connection area.**
- **Individual contact configuration possible.**
- **Integrated safety circuit protects against voltage peaks and incorrect termination.**
- **Mounting with M5 screws according to DIN EN 50041.**
- **BG and CSA Approved, UL Recognised.**

#### Accessories

- **Order Code**: 327-001

#### Technical Specifications

- **Machine Height**: 140mm
- **Conduit opening**: PG13.5
- **Rated operational voltage**: 250V
- **Rated Impulse Withstand Voltage**: 6kV
- **Rated Enclosed Thermal Current**: 10A

<table>
<thead>
<tr>
<th>Mtrs.</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+ 5+ 10+ 25+</td>
<td></td>
</tr>
</tbody>
</table>

**Order Code**

327-001

### INTELLIGENT ONLINE BUYING

**System Providing**

- **Complete cost control, reduced administration time, visibility of your spend, flexibility and personalisation to your company’s needs.**

---

**farnell.com/ibuy**
**Locking Safety Switch**

**SK Series**
- 2000N Locking force
- NO / 1 NC contact
- Independent safety contacts separately monitor actuator (guard) position and lock status
- Vertical or horizontal actuator approach directions
- Head rotates without removing screws
- Head securely locked when switch is mounted
- 24V ac/dc operating voltage
- Wide operating temperature range -25°C to +70°C
- Sealed to IP67

**Rope Safety Switch**

**SR Series**
- 2000N Locking force
- NO / 1 NC contact
- Independent safety contacts separately monitor actuator (guard) position and lock status
- Vertical or horizontal actuator approach directions
- Head rotates without removing screws
- Head securely locked when switch is mounted
- 24V ac/dc operating voltage
- Wide operating temperature range -25°C to +70°C
- Sealed to IP67

**Grab Wire Switches**

**'Lifeline 4' - Grabwire Operated (EN418)**
- Safety switch operated by a red PVC coated steel rope 'Grab wire', (order separately) designed for the safeguarding of exposed machinery, conveyors and handling equipment. The switch which is immune to nuisance tripping caused by machine vibration, has been manufactured in accordance with EN418. Housed in yellow epoxy coated heavy duty diecast alloy sealed to IP65. If the rope is pulled in an emergency or cut, the safety contacts are operated disconnecting the power supply. A latch ensures the machine cannot be reset until the hazard has passed and the switch is reset by turning the blue reset knob. The unit also has an integral emergency stop button which operates the same mechanism. A viewing window allows you to see the exact position of the rope for easy setting and adjustment. A dial indicator shows the state of the rope/system, machine 'RUN', emergency stop 'ROPE PULLED' or 'SLACK WIRE', the unit also has a rope tension indicator.

**Rope Tensioning System - LRTS**
- Unique rope tensioning system enabling quicker installation of rope operated emergency stop devices, including the Guardmaster Lifeline 3 and 4 products. The LRTS utilizes a unique tensioning system and rope gripping method which offer a quick, simple and effective method of installation.
- Can be installed in approximately 3 minutes
- Kit includes:
  - Two grippers (one for each end) + fixing instructions
  - One tensioner + allen key
  - Length of rope
  - Eyebolts
- Simple installation - no specialist tools required

**Safety Relays - Pilz**

**Safety Relays - PNOZ X1**

Category 2 EN 954-1
- Relay output 3 N/O safety, 1 N/C Aux. contact
- Single channel input operation
- Feedback control loop for monitoring of external contacts/relays
- 22.5mm wide housing

**PNOZ X2/X2.1**

Category 4 EN 954-1
- Relay output – 2 N/O safety contacts
- Single/dual channel input operation with short-circuit detection
- Feedback control loop
- 22.5mm wide housing
- LED status indication

**Automation**

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Log on, research, refine and design
### Safety Relays - Pilz - continued

**PNOZ X2.8P**  
Category 4 EN 954-1 Safety relay  
- Relay output - 3N/O Safety contacts  
- 1 N/C Auxiliary contact  
- Single or dual-channel operation  
- Feedback control loop for monitoring external contacts/relays  
- 22.5mm Slimline housing  
- LED status/power indication  
- 35mm symmetric DIN rail mounting  
- Automatic or Manual reset  
- BG, UL approvals

**Technical Data**  
- Operating voltage/s: 24VAC/DC  
- Switching capability: EN 60947-4-1

**Output contacts must be protected by a suitable fuse. - 6A quick. 4A slow**  

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>24V ac/dc</td>
<td>443-9340</td>
<td>1+ 5+ 10+</td>
</tr>
</tbody>
</table>

**PNOZ X3**  
Category 4 EN 954-1  
- Relay output 3 N/O safety, 1 N/C contact  
- Single/dual channel input operation with short-circuit detection  
- Feedback control loop for monitoring of external contacts/relays  
- 45mm wide housing  
- LED status indication  
- 35mm symmetric DIN rail mounting  
- In accordance with EN 60204-1  
- BG approval. UL, cUL Recognised

**Technical Data**  
- Operating voltage/s: 24VDC/ac  
- Switching capability: EN 60947-5-1

**Output contacts must be protected by a suitable fuse**  

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>24VDC/AC</td>
<td>443-9334</td>
<td>1+ 5+ 10+</td>
</tr>
<tr>
<td>230V AC</td>
<td>443-9338</td>
<td>1+ 5+ 10+</td>
</tr>
</tbody>
</table>

**PNOZ X4**  
Category 4 EN 954-1  
- 45mm P-97 housing, on standard rail, snap-on  
- Relay output 3 N/O safety, 1 N/C aux. contact  
- Low inrush current suitable for transistorised semi-conductor outputs from light barriers eg. safety light curtains  
- Single/dual channel input operation with short-circuit detection  
- Connection possibilities for EMERGENCY STOP switch Safety gate limit switch Start switch  
- 45mm wide housing  
- LED switching status indication for Channel 1 and 2 and Power supply  
- In accordance with EN 60204-1  
- BG approval. UL, cUL Recognised

**Technical Data**  
- Operating voltage/s: 24VDC  
- Switching capability: EN 60947-4-1

**Output contacts must be protected by a suitable fuse**  

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>24VDC</td>
<td>430-1237</td>
<td>1+ 5+ 10+</td>
</tr>
</tbody>
</table>

**PNOZ X7 24V DC/AC, PNOZ X7 AC**  
Category 2 EN 954-1  
- Relay output - 2N/O contacts.  
- Single channel input operation  
- Feedback control loop for monitoring external contacts/relays  
- 22.5mm Slimline housing  
- LED status/power indication  
- 35mm symmetric DIN rail mounting  
- Automatic or Manual reset  
- For connection to E-stop pushbuttons  
- BG, UL, cUL approvals

**Technical Data**  
- Operating voltage/s: 24VDC/AC  
- Switching capability: EN 60947-5-1

**Output contacts must be protected by a suitable fuse. - 6A quick. 4A slow**  

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>24VDC/AC</td>
<td>443-9341</td>
<td>1+ 5+ 10+</td>
</tr>
<tr>
<td>230VAC</td>
<td>443-9339</td>
<td>1+ 5+ 10+</td>
</tr>
</tbody>
</table>

**FREE GLOBAL LEGISLATION SUPPORT**  
RoHS, REACH, WEEE, ErP, Batteries Directive - latest updates, free white papers and live online Q&A at element14.com/legislation
**Safe Monitoring - PNOZsigma**

- Safety monitoring of E-STOP, safety gate, light grid and two handed control
- 3 NO Safety contacts
- 1 NC auxiliary contact
- 1 semiconductor output
- Supply voltage 24 V dc
- Standards - EN 954-1, EN 62061-1, EN 62061
- Approvals - BG, CCC, GOST and UL Recognised

**Supply**

- **Mfrs.**
- **Voltage**
- **List No.**
- **Order Code**
- **Price Each**
  - 24 VDC: 750109 170-4489E 10+

**Safe Monitoring - PNOZsigma**

- Safety monitoring of E-STOP, safety gate, light grid and two handed control
- 3 NO Safety contacts
- 1 NC auxiliary contact
- 1 semiconductor output
- Supply voltage 24 V dc
- Standards - EN 954-1, EN 62061-1, EN 62061
- Approvals - BG, CCC and UL Recognised

**Supply**

- **Mfrs.**
- **Voltage**
- **List No.**
- **Order Code**
- **Price Each**
  - 24 VDC: 750109 170-4489E 10+

**Safe Monitoring - PNOZsigma**

- Safety gate monitor, instantaneous E-STOP monitoring, Limit switch
- 2 NO Safety contacts
- 1 semiconductor output
- Supply voltage 24 V dc
- Standards - EN 60942-1, EN 62061, VDE 0113-1, EN 954-1
- Approvals - BG, CCC, GOST and UL Recognised

**Supply**

- **Mfrs.**
- **Voltage**
- **List No.**
- **Order Code**
- **Price Each**
  - 24 VDC: 750109 170-4489E 10+

**MSR6R/T - Dual Channel Universal Monitoring**

- Single or double input channel operation
- Manual or automatic test/reset
- For use with interlocks and emergency stop switches
- Provides redundancy (2 channel) with circuit fault detection
- Monitors contacts and safety inputs
- Full-safe internal monitoring

**Input Expanders**

- 1 NO + 1 NC PROTECT-IE-02
- 2 NO PROTECT-IE-11

**Input Expansion Modules**

- Input expansion modules provide more and clear visualisation also diagnostic signals and time saving in the wiring of series connections in safety circuits.
- Up to 4 (2-channel) emergency stop control devices, safety switches and/or other protective devices with floating contacts can be connected to every module by means of 1:1 wiring of the safety contact.
- Up to 20 modules (80 sensors) can be cascaded together in this fashion.

**Supply**

- **Mfrs.**
- **List No.**
- **Order Code**
- **Price Each**
  - 2 NO: PROTECT-IE-02 189-0342 1+ 5+ 10+ 25+
  - 1 NO + 1 NC: PROTECT-IE-11 189-0343 1+ 5+ 10+ 25+
**Safety Relays - Schmersal - continued**

**Output Expander**
DIN Rail Mounting

- Output expanders with adjustable delay fulfill Stop Category 1 to EN 60204-1 and are used in order to securely switch off variable speed drives, for example. Depending on the external circuit arrangement, it is possible to secure the guard device up to Control Category 4 to EN 60544-1. This output expander operates using conventional relay technology. The unit has redundant circuit internal design. It is equipped with safety relays with monitored positive-guided contacts. The enabling paths comprise the relay contacts wired in series.

- **H** = 100, **W** = 22.5, **D** = 121mm
- **Expander module for contact expansion**
- **24 V dc Operating voltage**
- **4 enabling paths**
- **2 indication contacts (NC)**
- **LED to show switching conditions**
- **Control category 4 to EN 954-1 depending on the used safety relay module**
- **UL Recognised**

---

**Safety Relays - Telemecanique**

Preventa XPS - Safety Relays

<table>
<thead>
<tr>
<th>Model</th>
<th>Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>XPSAC</td>
<td>24Vdc</td>
</tr>
<tr>
<td>XPSAF</td>
<td>24Vdc</td>
</tr>
<tr>
<td>XPSTSW</td>
<td>24Vdc</td>
</tr>
</tbody>
</table>

- **Internal electronic fuse protection**
- **Normally open safety relay outputs**
- ** Normally closed signalling contacts and solid state “status” outputs available**
- **Suitable for safety categories within EN954**

---

**Safety Relays - Phoenix Contact**

**Universal Safety Relay**
PSR-SCF Series

- **Two PDT contacts**
- **Safe isolation (input/output)**
- **Housing width 17.5 mm**
- **Operating temperature range from -20°C to +55°C**

---

**Safety Relays**
PSR-SCP Series

- **Safety category 4 according to EN 954-1**
- **Plug-in screw or spring-cage connection terminal blocks**
- **Safe isolation**
- **Certifications: CUL, GOST, TUEV-RH and UL**
- **Standards/regulations: DIN EN 50178 / VDE 0160**

---

**Safety Relays**
PSR-SCP-24UC/UM 2X2

<table>
<thead>
<tr>
<th>Input</th>
<th>Contact</th>
<th>Voltage</th>
<th>List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>60mA</td>
<td>2NO / 1NC</td>
<td>24V DC/AC</td>
<td>501-9072</td>
<td>206-4570</td>
</tr>
<tr>
<td>47mA</td>
<td>2NO / 2NC</td>
<td>24V DC/AC</td>
<td>501-9068</td>
<td>206-4572</td>
</tr>
<tr>
<td>30mA</td>
<td>5NO / 1NC</td>
<td>24V DC/AC</td>
<td>501-9069</td>
<td>206-4580</td>
</tr>
</tbody>
</table>

---

**For 2 Hand Trip**
Universal 5N/O-2NC

<table>
<thead>
<tr>
<th>Cal Volts (V DC/AC)</th>
<th>Input Current (mA)</th>
<th>Contact Configuration</th>
<th>List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>60</td>
<td>2NO / 1NC</td>
<td>PSR-SCP-24UC/THC4/2X1/1X2</td>
<td>206-4570</td>
</tr>
<tr>
<td>24</td>
<td>47</td>
<td>5NO / 1NC</td>
<td>PSR-SCP-24UC/URM/5X1/2X2</td>
<td>206-4572</td>
</tr>
<tr>
<td>24</td>
<td>90</td>
<td>5NO / 1NC</td>
<td>PSR-SCP-24UC/URM/3X1/2X2</td>
<td>206-4580</td>
</tr>
</tbody>
</table>
Machine Safety & Limit Switches

Safety Relays

<table>
<thead>
<tr>
<th>List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSR-SCP-24DC/ESD/4X1/2X1</td>
<td>206-4596</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24DC/ESD/4X1/2X2/B</td>
<td>206-4594</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24DC/ESD/4X1/30/1X2</td>
<td>206-4571</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24DC/ESD/4X1/4X1/1X2</td>
<td>206-4586</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24DC/ESD/4X1/4X1/2X1/1X2</td>
<td>206-4585</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24DC/ESD/4X1/4X1/2X2/B</td>
<td>206-4587</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24DC/ESD/4X1/4X1/2X2/B</td>
<td>206-4588</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24DC/ESD/4X1/4X1/300</td>
<td>206-4597</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24DC/ESD/4X1/4X1/300</td>
<td>206-4598</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24UC/ESM4/3X1/1X2/B</td>
<td>206-4589</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24UC/ESA4/2X1/1X2</td>
<td>206-4580</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24UC/ESA4/3X1/1X2/B</td>
<td>206-4581</td>
<td>99</td>
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<tr>
<td>PSR-SCP-24UC/ESA4/3X1/2X1/B</td>
<td>206-4582</td>
<td>99</td>
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<tr>
<td>PSR-SCP-24UC/ESA4/3X1/2X2/B</td>
<td>206-4583</td>
<td>99</td>
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<tr>
<td>PSR-SCP-24UC/ESA4/3X1/2X2/B</td>
<td>206-4584</td>
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<tr>
<td>PSR-SCP-24UC/ESA4/3X1/300</td>
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<tr>
<td>PSR-SCP-24UC/ESA4/3X1/300</td>
<td>206-4586</td>
<td>99</td>
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</tbody>
</table>

Safety Relay ESTOP

SAFETY RELAY, ESTOP SAFETY DOOR SIL3

<table>
<thead>
<tr>
<th>List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSR-SCP-24UC/THC4/2X1/1X2</td>
<td>206-4599</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24UC/THC4/2X1/1X2/B</td>
<td>206-4572</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24UC/URD3/4X1/2X2/B</td>
<td>206-4580</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24UC/URM4/3X1/2X2/B</td>
<td>206-4566</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24UC/URD3/4X1/2X2</td>
<td>206-4578</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24UC/URM4/3X1/2X2/B</td>
<td>206-4567</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24UC/URM4/3X1/2X2/B</td>
<td>206-4568</td>
<td>99</td>
</tr>
<tr>
<td>PSR-SCP-24UC/URM4/3X1/2X2/B</td>
<td>206-4569</td>
<td>99</td>
</tr>
</tbody>
</table>

Monitoring Relays

Supply Monitoring Relays SM 501 and SM 500 Series

- Protects against phase loss, phase reversal and phase-phase unbalance
- LED indication for all faults and for change in settings during run time for better security
- Selectable Under voltage / over voltage / asymmetry levels
- Adjustable time delay
- Selectable over/under voltage trip level
- Model for selectable phase asymmetry
- LED indications for power and fault conditions
- Voltage sensing principle
- Operating temperature: -10°C to +55°C
- Frequency: 48 to 63 Hz
- Degree of protection: IP20 for terminals and IP40 for Enclosures
- Relay output: 2 C/O (SPDT)
- Supply Power: Voltage Consumption
- Supply Voltage: 240 VAC
- Power Consumption: 3 VA
- Operating temperature: -15°C to +60°C
- Degree of protection: IP00 for terminals and IP40 for Enclosures
- Relay output: 1 C/O (SPDT)
- On Delay: 0.5 to 15 sec
- Off Delay: 5 sec
- Supply Voltage: 415 VAC
- Power Consumption: 10 VA
- Degree of protection: IP00 for terminals and IP40 for Enclosures
- Relay output: 1 C/O (SPDT)
- On Delay: 0.5 to 15 sec
- Off Delay: 5 sec
- Supply Voltage: 240 VAC
- Power Consumption: 5 VA

Supply Monitoring Relays SM 175 Series

- Controls correct sequence of three phases and own supply voltage
- LED indication for all faults and for change in settings during run time for better security
- Selectable under voltage / over voltage / asymmetry levels
- Adjustable time delay
- Supply voltage: 208 to 480 VAC
- Power consumption: 3 VA
- Operating temperature: -15°C to +60°C
- Degree of protection: IP20 for terminals and IP40 for Enclosures
- Relay output: 1 C/O (SPDT)
- On Delay: 0.5 to 100 sec
- Off Delay: 5 sec
- Supply Voltage: 415 VAC
- Power Consumption: 10 VA
- Degree of protection: IP00 for terminals and IP40 for Enclosures
- Relay output: 1 C/O (SPDT)
- On Delay: 0.5 to 15 sec
- Off Delay: 5 sec
- Supply Voltage: 240 VAC
- Power Consumption: 5 VA

Troubleshooting Tips

Chat online to one of our technical engineers at farnell.com

The first online technical portal for design engineers Log on, research, refine and design
Monitoring Relays - continued
Earth Leakage Relays
CMR Series
- Monitors, detects and protects power systems from earth leakage faults
- Instantaneous trip for 5 times of set value of leakage current
- Test feature to check complete product functionality
- LED indication for relay status, CT open, earth leakage fault and test/reset switch short
- Manual/remote reset feature
- 1 CO and 1 NO relay output

### Description
- Earth leakage current: 30 mA to 30 A
- Frequency: 50/60 Hz
- Operating temperature: -15°C to +60°C
- Humidity: 95% (RH)
- Degree of protection: IP30 for terminals and IP40 for Enclosures

<table>
<thead>
<tr>
<th>Mfrs. No.</th>
<th>Description</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>17G715GF3</td>
<td>110 to 240 VAC, Manual Reset</td>
<td>2ND-41250**</td>
</tr>
<tr>
<td>206-41250</td>
<td>220 to 415 VAC, Manual Reset</td>
<td>2ND-41250**</td>
</tr>
<tr>
<td>17G715GF2</td>
<td>35 mm, Core balanced CT</td>
<td>2ND-41250**</td>
</tr>
<tr>
<td>17G700F3</td>
<td>65 mm, Core balanced CT</td>
<td>2ND-41250**</td>
</tr>
<tr>
<td>17G700F3</td>
<td>100 mm, Core balanced CT</td>
<td>2ND-41250**</td>
</tr>
</tbody>
</table>

Machine Warning Devices
Stacking Beacons - XV8 Series
- Stacking beacons of 70mm diameter, composed of light and sound modules
- Simultaneous assembly and interlocking of units
- Available with either incandescent or LED illumination
- May be assembled with up to 5 light modules or 1 sound module
- Buzzer has continuous and intermittent modes
- Base & cover need to be ordered separately for mounting
- Coloured pins are used to indicate the position of lens
- Filing of modules does not require specific tools
- Incandescent light units need bulb, available separately
- Protection to IP67

### Description
- Stackable units: 1+ 5+ 10+

<table>
<thead>
<tr>
<th>Mfrs. No.</th>
<th>Description</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>XV8-C33</td>
<td>Green</td>
<td>531-5115</td>
</tr>
<tr>
<td>XV8-C34</td>
<td>Red</td>
<td>531-5127</td>
</tr>
<tr>
<td>XV8-C35</td>
<td>Orange</td>
<td>531-5139</td>
</tr>
<tr>
<td>XV8-C36</td>
<td>Blue</td>
<td>531-5140</td>
</tr>
<tr>
<td>XV8-C38</td>
<td>Yellow</td>
<td>531-5164</td>
</tr>
<tr>
<td>XV8-C3B</td>
<td>Static Beams - LED 24V</td>
<td>531-5577</td>
</tr>
<tr>
<td>XV8-C3B</td>
<td>Red</td>
<td>531-5589</td>
</tr>
<tr>
<td>XV8-C3B</td>
<td>Orange</td>
<td>531-5590</td>
</tr>
<tr>
<td>XV8-C3B</td>
<td>Yellow</td>
<td>531-5620</td>
</tr>
<tr>
<td>XV8-C3B</td>
<td>For Stackable Units</td>
<td>531-5729</td>
</tr>
<tr>
<td>XV8-C8B</td>
<td>BUZZER12 to 48V</td>
<td>531-5747</td>
</tr>
<tr>
<td>DL1-80D3</td>
<td>REPLACEMENT LEDS 24V</td>
<td>531-5292</td>
</tr>
<tr>
<td>DL1-80D4</td>
<td>Red</td>
<td>531-5309</td>
</tr>
<tr>
<td>DL1-80D3</td>
<td>REPLACEMENT LED 24V</td>
<td>531-5371</td>
</tr>
</tbody>
</table>

Safety Cable Pull Switch
SRM Series
- Maximum span length 37.5 metres
- Rope tension indicator
- Continuously variable adjustment of the rope tension
- Cable entry: 3 x M20 x 1.5
- Protection class IP67 to IEC/EN 60529
- Enclosure manufactured from aluminium
- Actuator can be repositioned by 4 x 90°
- Connection designation conforming to DIN EN 50013
- 3A @ 240V ac (AC-15) Switching capacity

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Description</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>3A@240V (AC-15)</td>
<td>SRM 175N TENSIONER SPRING WITH QUICK FIX</td>
<td>189-3149B</td>
</tr>
</tbody>
</table>

Standard Cable Pull Switch
SEM and SIEM Series
- Maximum span length 6m
- Aluminium case
- IP65 protection class
- 1 x M20 x 1.5 Cable entry
- 3A @ 240V ac Switching capacity (AC-15)

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Description</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEM/SIEM2</td>
<td>Body: H = 77.5, W = 40, D = 42mm</td>
<td>109-31540B</td>
</tr>
<tr>
<td>SIEM2 PAST</td>
<td>Body: H = 77.5, W = 40, D = 42mm</td>
<td>109-31540B</td>
</tr>
</tbody>
</table>

### Accessories - Rope Pull Kits
- 2m long: TP4-SRP | 109-31540B
- 10m long: TP4-SRT10 | 109-31540B
- 15m long: TP4-SRT15 | 109-31540B

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Plastic Enclosed Limit Switches

i88 Series

- Snap-on cover can be released with screwdriver
- Cover opening range 135° (cover can also be detached from hinge)
- Cover protects switching element during installation
- Screw connections with self-lifting clamping plates
- Easy-action cover lock (close and press)
- Cover additionally secured with screw
- Cable entry M16 x 1.5
- Standard switch conforming to DIN EN 50047
- Protection class IP65 to VDE 0470 T1
- Enclosure and cover PA 6, self-extinguishing (UL-94-V0)
- Actuator can be repositioned by 4 x 90°
- Connection designation conforming to DIN EN 50013

Safety Action - Sub-Miniature

Safety Action, Sub-Miniature

- CSA Approved, UL Recognised

Switch

Contacts Action Mfrs. List No. Order Code 1+ 5+ 10+

Plunger

1NC, 1NO Slow make/break 608-8010-001 320-6974
Adjustable Plunger

1NC, 1NO Slow make/break 600-8144-003 320-6728
2NC Slow make/break 600-8094-009 320-6474
1NC, 1NO Snap action 600-8354-006 320-6753
Roller Plunger

1NC, 1NO Slow make/break C2-U2ZR 306-0056
2NC Slow make/break C2-A2ZR 306-0081
2NO Slow make/break C2-E2R 306-0070
1NC, 1NO Snap action C2-U2JR 306-0056
2NC Snap action 600-8866-014 ROLLER 320-4819
Adjustable Button

2NC Snap action 600-8857-022 320-4868

Safety Action, Sub-Miniature 'Tiny 2'

- Slow make/break or Snap-action
- Positive drive forced disconnect on all NC contacts
- Suitable for limit or safety applications
- Hinged snap-shut lid sealed to IP65
- Mounting to DIN50047

Plunger

1NO, 1NO Slow make/break 608-8103-001 320-4670
1NC, 1NO Snap-action 608-8153-002 320-4693
2NC Snap-action 608-8853-004 320-4900
Roller Plunger

1NO, 1NO Slow make/break 608-8117-007 320-5046
1NC, 1NO Snap-action 608-8167-008 320-5080
2NC Snap-action 608-8687-010 320-5071
Roller Lever

1NO, 1NO Slow make/break 608-8121-015 320-5083
1NC, 1NO Snap-action 608-8771-016 320-5181
2NC Snap-action 608-8871-016 320-5113
Turret Roller Lever

1NO, 1NO Slow make/break 608-8135-021 320-5125
1NC, 1NO Snap-action 608-8185-022 320-5149

Standard DIN 50041 Insulated Plastic Body - ENK Series

- High quality plastic body
- Die-cast metal actuator heads
- Suitable for limit of safety applications ( NOT Adjustable or Wobble stick)
- Hinged snap-shut lid sealed to IP65
- Positive drive forced disconnect on all NC contacts
- CSA Approved, UL Recognised

Switch

Contacts Action Mfrs. List No. Order Code 1+ 5+ 10+

Plunger

1NC, 1NO Snap action 608-1152-007 320-5174
Roller Plunger

1NC, 1NO Snap action 608-1167-008 320-5204
Turret Roller Lever

1NC, 1NO Slow make/break 608-1135-003 320-5230
1NC, 1NO Snap action 608-1166-009 320-5241
Adjustable Turret Roller Lever

1NC, 1NO Snap action 608-1166-018 320-5307
Wobble Stick

1NC, 1NO Snap action 608-1190-045 320-8746

Standard DIN 50041 Metal Body - EMM2 Series

- Die-cast metal body
- Rugged metal actuator heads
- Suitable for limit of safety applications ( NOT Adjustable or Wobble stick)
- Hinged snap-shut lid sealed to IP65
- Positive drive forced disconnect on all NC contacts
- CSA Approved, UL Recognised

Switch

Contacts Action Mfrs. List No. Order Code 1+ 5+ 10+

Plunger

1NC, 1NO Snap action 608-7352-002 320-5344
Roller Plunger

1NC, 1NO Snap action 608-7367-005 320-5368
Turret Roller Lever

1NC, 1NO Snap action 608-7385-014 320-5391
Adjustable Turret Roller Lever

1NC, 1NO Snap action 608-7386-017 320-5409
Adjustable Rod Lever

1NC, 1NO Snap action 608-7387-019 320-5423
Wobble Stick

1NC, 1NO Snap action 608-7390-032 320-5435

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**Limit Switches - Camdenboss**

**Series CE**
- Double insulated plastic
- Snap action contacts
- Other types available
- Rated to IP67

**Machine Safety & Limit Switches**
- Devices conform to IEC 947-5-1 and EN 60947-5-1 Standards
- Operating current AC15 - 10A @ 24V ac, 1.8A @ 400V ac

**CE10 and CE41 Series**
- 10A Max. AC, 2.8A Max. DC
- Current Rating DC 2.8 A
- Current Rating AC 10 A
- Switch Operation Snap Action
- Operating Time 0.05mm - 1ms
- Switching Frequency 3600 cycles/h
- Degree of Protection IP67

**Metal Casing**
- 10A Max. AC, 2.8A Max. DC

**Limit Switches - Guardmaster**

**IMP Series**
- Positive acting forced disconnection contacts
- Glass reinforced plastic housing to IP30
- Small size for use in confined spaces

**Miniature Limit Switch**
- H = 37, W = 24.5, D = 23mm

**Wireless Limit Switches - Honeywell**

**Limitless™ Series**
- Radio (license-free and global): WPAN 802.15.4, 2.4 GHz, point-to-point
- FCC 15, IC, ACMA & ETSI
- EMI Immunity
- Up to 304 m [1000 ft] communication range when used with a Limitless™ wireless monitor or receiver module (sold separately)
- Reliable, flexible, and secure wireless transmission
- Standard replaceable battery with ultra-low power consumption
- Direct or remote mount antenna options

**Honeywell Limitless™ series of wireless limit switches combine great flexibility with proven hassle-free packaging to increase efficiencies and improve safety for machines, equipment, OEMs, and operators. The new Limitless™ Series of switches and monitors offers a new way of working that delivers more flexibility, more uptime, more reliability, and more freedom. This technology has been developed to be a truly cutting-edge, cost-saving solution. The new Limitless™ product line combines the best of MICRO SWITCH™ global switches with wireless technology. Limitless™ WGLA Series limit switches feature the latest commercial-off-the-shelf wireless technology, especially beneficial for remote monitoring applications where wiring, or wiring maintenance, is not physically possible or economically feasible. Limitless™ wireless switches and monitors use 802.15.4 as it is license free, globally accepted, and requires low power consumption. They also employ WLAN RF 2.4 GHz standard radio bands, conform to international IEEE 802.15.4 standards, and feature a 16-bit address and 128-bit security key.**

**Up to 16 Limitless™ switches may be networked together and paired with one Limitless™ WM44 monitor. When used together, Limitless™ components have up to a 304 m [1000 ft] line-of-sight communication range. These switches may be used in a variety of remote monitoring applications, including valves, construction/agricultural machines, cranes, grain diversifiers/flaps, lifts, material handling, door positioning, conveyors, presses, and specialty machines.**

---

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**Metal Snap Action Miniature - Type 14CE**
5A @ 250V ac or 30V dc

- SPDT snap action switching
- Pre-wired with 1 metre cable
- Strong diecast aluminium housing, protection to IP65
- Sealed version prevents contaminants from impeding plunger movement.
- Side rotary version has auxiliary actuators available for versatility.

**Electrical life** 60000 ops
**Operating temperature** 0°C to +70°C
5A @ 250V ac or 30V dc

**Metal Positive Break Miniature - Type 24CE**
5A @ 250V ac or 30V dc

- Positive break safety type
- Two circuit double break switches with break-before-make contacts
- Strong diecast aluminium housing, protected to IP66
- Pre-wired with 2 metres 5-cone cable

**Electrical life** 1500000 ops
**Operating temperature** 0°C to +70°C

**Sub-Miniature Limit Switch, SZL-VL Series**

<table>
<thead>
<tr>
<th>Actuator Type</th>
<th>List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Side Roller Lever</td>
<td>GLCB-011A</td>
<td>674-485</td>
<td></td>
</tr>
<tr>
<td>Side Adjustable Roller Lever</td>
<td>GLCB-012A</td>
<td>674-497</td>
<td></td>
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<tr>
<td>Side Rotary Adjustable Rod</td>
<td>GLCB-014A</td>
<td>674-503</td>
<td></td>
</tr>
<tr>
<td>Pin Plunger</td>
<td>GLCB-015B</td>
<td>674-515</td>
<td></td>
</tr>
<tr>
<td>Wobble Coil Spring Lever</td>
<td>GLCB-016C</td>
<td>674-527</td>
<td></td>
</tr>
<tr>
<td>Roller Plunger</td>
<td>GLCB-017D</td>
<td>674-540</td>
<td></td>
</tr>
<tr>
<td>Coil spring</td>
<td>GLCB-017E</td>
<td>674-552</td>
<td></td>
</tr>
</tbody>
</table>

**Safety Type, Miniature - Type GLS**

- DIN Standard 10A Thermal (tin) (IEC947-5-1) / Low Energy 100mA @ 50V
- High quality miniature Global Limit Switches conforming to EN50047
- Birfurcated silver snap-action contacts suitable for high energy switching
- Low energy gold contact version - ideal for PLC interface 1A to 100mA switching
- Two circuits (1NO+1NC) with positive opening on the NC contacts suitable for safety applications according to IEC947-5-1-3
- Actuator heads are adjustable in 90° increments through 360°
- Choice of housings:- All metal (zinc diecast) Double insulated thermoplastic (glass filled polyester) with metal actuators
- UL Recognised and CSA approved
- Sealed to IP66

**Contact rating** 10A standard/100mA (max) Low energy
**Mechanical life** Up to 15 million operations
**Operating temperature** -20°C to +85°C
**Conduit entry** PG13.5
**Electrical according to** EN50047, EN60947-5-1, IEC947-5-1-3

Note: Coiled spring actuator is not suitable for safety applications.
Limit Switches - Honeywell - continued

Safety Type, miniature - Type GLS - continued
DIN Standard 10A Thermal (IB) (IEC947-5-1) / Low Energy 100mA @ 50V - continued

<table>
<thead>
<tr>
<th>Actuation Type</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double insulated Body (Thermoplastic) - Standard</td>
<td>GLDR-01G</td>
<td>560-405</td>
</tr>
<tr>
<td>GLDR-01D</td>
<td>560-410</td>
<td></td>
</tr>
<tr>
<td>GLDR-01E7B</td>
<td>560-420</td>
<td></td>
</tr>
<tr>
<td>Metal Body - Two Circuit (SPDT) - Standard</td>
<td>GLDA-01A</td>
<td>674-564</td>
</tr>
<tr>
<td>GLDA-01B</td>
<td>674-576</td>
<td></td>
</tr>
<tr>
<td>GLDA-01D4J</td>
<td>674-588</td>
<td></td>
</tr>
<tr>
<td>GLDA-01A5B</td>
<td>674-590</td>
<td></td>
</tr>
<tr>
<td>Pin Plunger</td>
<td>GLDA-01B</td>
<td>674-606</td>
</tr>
<tr>
<td>Roller Plunger</td>
<td>GLDA-01C</td>
<td>674-618</td>
</tr>
<tr>
<td>Roller Arm</td>
<td>GLDA-01D</td>
<td>674-620</td>
</tr>
<tr>
<td>Coil Spring</td>
<td>GLDA-01E7B</td>
<td>674-631</td>
</tr>
<tr>
<td>Metal Body - Two Circuit (SPDT) - Low Energy</td>
<td>GLDA-01A</td>
<td>988-503</td>
</tr>
<tr>
<td>Metal Body - Four Circuit (SPDT) - Standard</td>
<td>GLDA-241A</td>
<td>674-643</td>
</tr>
<tr>
<td>GLDA-242A</td>
<td>674-655</td>
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</tr>
<tr>
<td>GLDA-242C</td>
<td>674-667</td>
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</tr>
</tbody>
</table>

Safety Type, Standard - Type GLS
DIN Standard 10A Thermal (IB) (IEC947-5-1) / Low Energy 100mA @ 50V

<table>
<thead>
<tr>
<th>Actuation Type</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two Circuit (1NC+1NO)</td>
<td>GLAC-01A</td>
<td>566-251</td>
</tr>
<tr>
<td>GLAC-01B</td>
<td>566-275</td>
<td></td>
</tr>
<tr>
<td>Four Circuit (2NC+2NO)</td>
<td>GLAC-20A</td>
<td>381-2420</td>
</tr>
<tr>
<td>GLAC-20B</td>
<td>381-2443</td>
<td></td>
</tr>
</tbody>
</table>

GXS Explosion Proof Switches
This range of Explosion proof switches have been designed specifically for use in Hazardous area applications and comply to ATEX DIRECTIVE.

<table>
<thead>
<tr>
<th>Actuation Type</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two Circuit (SPDT) - Standard</td>
<td>GLCA-01A1B</td>
<td>560-327</td>
</tr>
<tr>
<td>GLCA-01A2W</td>
<td>184-925</td>
<td></td>
</tr>
<tr>
<td>GLCA-01A2B</td>
<td>674-679</td>
<td></td>
</tr>
<tr>
<td>GLCA-01A4J</td>
<td>674-680</td>
<td></td>
</tr>
<tr>
<td>Pin Plunger</td>
<td>GLCA-01B</td>
<td>674-339</td>
</tr>
<tr>
<td>Roller Plunger</td>
<td>GLCA-01C</td>
<td>680-340</td>
</tr>
<tr>
<td>Roller Arm</td>
<td>GLCA-01D</td>
<td>680-352</td>
</tr>
<tr>
<td>Coil Spring</td>
<td>GLCA-01E7B</td>
<td>680-364</td>
</tr>
<tr>
<td>Two Circuit (SPDT) - Low Energy</td>
<td>GLCA-07A2B</td>
<td>986-616</td>
</tr>
<tr>
<td>Four Circuit (SPDT) - Standard</td>
<td>GLCA-20A1B</td>
<td>674-692</td>
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<tr>
<td>GLCA-20A2B</td>
<td>674-709</td>
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<tr>
<td>Roller Plunger</td>
<td>GLCA-20C</td>
<td>674-710</td>
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</table>

Safety Type, Plug-In - Type GLS

<table>
<thead>
<tr>
<th>Actuation Type</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Side Rotary Roller Standard</td>
<td>GLDC02A1B</td>
<td>918-027</td>
</tr>
<tr>
<td>GLDC02A2B</td>
<td>918-039</td>
<td></td>
</tr>
<tr>
<td>Side Rotary Rod Adjustable</td>
<td>GLDC02A4J</td>
<td>918-040</td>
</tr>
</tbody>
</table>

Safety Type, Low Energy Switching - Type GSS
DIN Standard 10A Thermal (IEC 947-5-1)

<table>
<thead>
<tr>
<th>Actuation Type</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two Circuit (1NC+1NO)</td>
<td>GSGA021A</td>
<td>986-689</td>
</tr>
<tr>
<td>GSGA021C</td>
<td>986-707</td>
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</tr>
<tr>
<td>Four Circuit (2NC+2NO)</td>
<td>GSGA020A</td>
<td>986-760</td>
</tr>
<tr>
<td>GSGA020C</td>
<td>986-770</td>
<td></td>
</tr>
</tbody>
</table>

High Temperature - Type LS
10A @ 480Vac

<table>
<thead>
<tr>
<th>Actuation Type</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roller Lever</td>
<td>1LS34-4C</td>
<td>566-251</td>
</tr>
<tr>
<td>Roller Plunger</td>
<td>5LS1-4CN152</td>
<td>566-275</td>
</tr>
</tbody>
</table>

Compact Limit Switches

<table>
<thead>
<tr>
<th>Actuation Type</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Roller</td>
<td>GKS51C</td>
<td>381-2443</td>
</tr>
</tbody>
</table>

Limit Switches - IMO

<table>
<thead>
<tr>
<th>Application</th>
<th>Contact Block</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>General/Safety</td>
<td>Piston Plunger</td>
<td>FR501</td>
<td>993-9121</td>
</tr>
<tr>
<td>General/Safety</td>
<td>Roller Plunger</td>
<td>FR531</td>
<td>993-9172</td>
</tr>
</tbody>
</table>
Standard Limit Switches

- Metal Housing
- Turret head rotatable in 90° steps
- Removable contact block for ease of wiring
- IP65 protection
- UL Recognised and CSA approved
- Double break contacts with electrically separate N/O & N/C contacts

Mechanical Life 15000000 ops
Operating Temperature -25°C to +80°C

Contact Rating 6@230Vac FD20xx 1NC / 1NO

103-895 : Replacement coil spring actuator for 103-474

Contacts SPNO Electrical life 800000 ops

Actuator heads are adjustable in 90° increments through 360°

Dual circuit snap-action limit switches
- Actuator can be adjusted through 360° about rotary shaft on lever types
- Metal enclosure, protection to IP65

Contacts SP90 Mechanical Life 15000000 ops
Operating Temperature -30°C to 70°C

General Purpose - Type 'WL'
10A @ 240v ac or 500v ac

- Double break contacts with electrically separate N/O & N/C contacts
- Metal housing conformance to EN50041
- 1NO + 1NC Snap action contacts
- Suitable for safety applications to EN60947-5-1
- Protected to IP67
- CSA, TUV and VDE Approved, UL Recognised

Body - H = 101, W = 48, D = 43mm

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Chat online to one of our technical engineers at farnell.com
### Limit Switches - Schmersal

**Safety Limit Switches - EN 50047**

236 Thermoplastic - IP67

- **Thermoplastic enclosure**
- **Double insulated**
- **1NO + 1NC Contacts**
- **Snap action with constant contact pressure to switching point**
- **Wiring compartment**
- **Wide range of alternative actuators**

### Limit Switches - Telemecanique

**XCKJ Complete Assemblies**

- **Heavy duty (up to 1 million operations)**
- **Contacts**
  - Snap action/Slow break conforming to IEC 947-5-1 section 3
  - UL Listed

### Pull-wire Switch

**2D 700 Series**

- **Thermoplastic enclosure**
- **One-side operation/wire up to 10 m long**
- **Release push button**
- **Position indicator**
- **Large wiring compartment**
- **Twisting of towing eye not possible**
- **Wire pull and breakage detection**
- **One tension force for cable lengths up to 10 m**
- **8G and TUV Approved, UL Recognised**

### Miniature Compact Limit Switches - IP66

**Osiswitch**

- **1NO + 1NC Snap action contacts**
- **Up to 40% saving on installation time**
- **Quick disconnect cable**
- **Robust metal housing**
- **Head can be rotated in 15° steps**
- **CE and CSA Approvals, UL Recognised**

---

<table>
<thead>
<tr>
<th>Actuator</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roller Lever H</td>
<td>4VH336-112-M20</td>
<td>199-0400</td>
<td>↑ 1+</td>
</tr>
<tr>
<td>Snap action contacts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roller Lever H</td>
<td>4VH336-112-M20</td>
<td>199-0400</td>
<td>↑ 1+</td>
</tr>
<tr>
<td>Adj.roller lever 50mm</td>
<td>24VH336-112-M20</td>
<td>418-6928</td>
<td>↓</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Actuation Type</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plunger S</td>
<td>TS236-112-M20</td>
<td>189-0471</td>
<td>↑ 1+</td>
</tr>
<tr>
<td>Roller Plunger R</td>
<td>TR236-112-M20</td>
<td>189-0473</td>
<td>↑ 5+</td>
</tr>
<tr>
<td>Roller Lever TH</td>
<td>TV236-112-M20</td>
<td>189-0482</td>
<td>↑ 10+</td>
</tr>
<tr>
<td>Roller Lever K4</td>
<td>TK4-236-112-M20</td>
<td>189-0490</td>
<td>↑ 10+</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Actuator</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjustable Roller Lever</td>
<td>XCKJ10541H29</td>
<td>872-9913</td>
<td>↑ 1+</td>
</tr>
<tr>
<td>Adjustable Rod Lever</td>
<td>XCKJ10559H29</td>
<td>872-9921</td>
<td>↑ 5+</td>
</tr>
<tr>
<td>Plunger</td>
<td>XCKJ161H29</td>
<td>872-9930</td>
<td>↑ 10+</td>
</tr>
<tr>
<td>Roller Lever/Plastic</td>
<td>XCKJ161H29</td>
<td>872-9948</td>
<td>↑ 10+</td>
</tr>
<tr>
<td>Roller Plunger</td>
<td>XCKJ167H29</td>
<td>872-9956</td>
<td>↑ 10+</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Description</th>
<th>List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel Lever Plunger</td>
<td>ZKE23</td>
<td>872-9972</td>
<td>↑ 1+</td>
</tr>
<tr>
<td>Spring Rod</td>
<td>ZKE68</td>
<td>873-0006</td>
<td>↑ 5+</td>
</tr>
<tr>
<td>Slide Metal Plunger</td>
<td>ZKE63</td>
<td>873-1024</td>
<td>↑ 10+</td>
</tr>
<tr>
<td>Side Vertical Steel Roller Plunger</td>
<td>ZKE65</td>
<td>873-0040</td>
<td>↑ 10+</td>
</tr>
<tr>
<td>Steel Reinforced Roller Plunger</td>
<td>ZKE67</td>
<td>873-0067</td>
<td>↑ 10+</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Mfrs.</th>
<th>List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plunger</td>
<td>XCKJ10541H29</td>
<td>872-9913</td>
<td>↑ 1+</td>
</tr>
<tr>
<td>Adjustable Roller Lever</td>
<td>XCKJ10541H29</td>
<td>872-9913</td>
<td>↑ 5+</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Description</th>
<th>List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre venta XCSM</td>
<td>847-5-1 section 3</td>
<td>947-5-1</td>
<td>Conforming to IEC 60947-5-1 section 3</td>
</tr>
</tbody>
</table>
Universal Compact Limit Switches - IP67
OsiSwitch
- 1NO + 1NC Snap action contacts
- Up to 60% saving on installation time
- Removable contact blocks
- Dual cable entry
- Head can be rotated in 15° steps
- CE and CUL Approvals, UL Recognised

Mounting DIN Rail
Series RT
Safety Relays
Model Config Pole List No. Order Code

<table>
<thead>
<tr>
<th>Model</th>
<th>List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1T, 0S, 24DC</td>
<td>2TL010030R0000</td>
<td>209-7638</td>
</tr>
<tr>
<td>RT9 24V DC 4DC, 2NO</td>
<td>2TL010029R0000</td>
<td>209-7637</td>
</tr>
<tr>
<td>RT7 230AC 4NO/1NC/1.5S</td>
<td>2TL010028R2500</td>
<td>209-7636</td>
</tr>
<tr>
<td>RT7 115AC 4NO/1NC/3S</td>
<td>2TL010028R1500</td>
<td>209-7633</td>
</tr>
<tr>
<td>RT7 24VDC 4NO/1NC/3S</td>
<td>2TL010028R1000</td>
<td>209-7630</td>
</tr>
<tr>
<td>RT6 230AC 3NO/1NC</td>
<td>2TL010026R0500</td>
<td>209-7629</td>
</tr>
<tr>
<td>RT6 115AC 3NO/1NC</td>
<td>2TL010026R0400</td>
<td>209-7628</td>
</tr>
<tr>
<td>RT6 24VAC 3NO/1NC</td>
<td>2TL010026R0200</td>
<td>209-7627</td>
</tr>
</tbody>
</table>

Heavy Duty Limit Switch - IP66
Robust Heavy Duty Switch
- 11 operating sequences available
- Heavy duty lever arms available
- IP66 ingress protection
- Oil tight, dust tight, water tight and drip tight enclosure

Contacts Single throw double pole
Max. contact voltage 600V @ 5A, 120V @ 25A
H = 38, W = 59, D = 62

Limit Switch
Model Config Rating List No. Order Code

<table>
<thead>
<tr>
<th>Model</th>
<th>List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal Tub Limit Switch</td>
<td>9007UL1440R11</td>
<td>423-2864</td>
</tr>
<tr>
<td>18mm Roller 64mm Arm</td>
<td>900767</td>
<td>423-2996</td>
</tr>
</tbody>
</table>

Safety Relays
Series RT
Use the RT universal relay to manage both your safety devices and the internal safety of your machine. In addition you can select the safety level required for each installation, this is possible because the RT series has the most versatile input option arrangement available on the market. Many other relays can therefore be replaced by the RT series relays. The relay also comes with other options such as manual or automatic reset. The RT series relays also support output monitoring. These output monitoring will for example indicate if a gate is open or closed and if the safety relay needs to be reset.

RT6-7 Series:
- Mounting DIN Rail
- Contact Voltas Nom 250VAC and 24VDC
- Contact Current 6A Maximum
- Height 84mm Depth 120mm Width 45mm (RT9 22.5mm)

Model Config Pole List No. Order Code

<table>
<thead>
<tr>
<th>Model</th>
<th>Config</th>
<th>Number of Poles</th>
<th>List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>RT6 24DC 3NO/1NC</td>
<td>3PST-NO / SPST-NC</td>
<td>4</td>
<td>2TL010026R0000</td>
<td>209-7626</td>
</tr>
<tr>
<td>RT6 24 AC 3NO/1NC</td>
<td>3PST-NO / SPST-NC</td>
<td>4</td>
<td>2TL010026R0400</td>
<td>209-7628</td>
</tr>
<tr>
<td>RT6 230AC 3NO/1NC</td>
<td>3PST-NO / SPST-NC</td>
<td>4</td>
<td>2TL010026R0500</td>
<td>209-7629</td>
</tr>
<tr>
<td>RT7 24V DC 4NO/1NC/3S</td>
<td>3PST-NO / SPST-NC</td>
<td>5</td>
<td>2TL010033R1000</td>
<td>209-7630</td>
</tr>
<tr>
<td>RT1 230AC 4NO/1NC/1.5S</td>
<td>3PST-NO / SPST-NC</td>
<td>5</td>
<td>2TL010033R1100</td>
<td>209-7631</td>
</tr>
<tr>
<td>RT7 24VDC 4NO/1NC/3S</td>
<td>3PST-NO / SPST-NC</td>
<td>5</td>
<td>2TL010033R1500</td>
<td>209-7633</td>
</tr>
<tr>
<td>RT7 24DC 4NO/1NC/1.5S</td>
<td>3PST-NO / SPST-NC</td>
<td>5</td>
<td>2TL010033R2000</td>
<td>209-7634</td>
</tr>
<tr>
<td>RT7 115AC 4NO/1NC/1.5S</td>
<td>3PST-NO / SPST-NC</td>
<td>5</td>
<td>2TL010033R2500</td>
<td>209-7635</td>
</tr>
<tr>
<td>RT7 24AC 4NO/1NC/1.5S</td>
<td>3PST-NO / SPST-NC</td>
<td>5</td>
<td>2TL010033R3000</td>
<td>209-7636</td>
</tr>
<tr>
<td>RT9 24V DC 4DC, 2NO</td>
<td>3PST-NO</td>
<td>2</td>
<td>2TL010030R0000</td>
<td>209-7637</td>
</tr>
<tr>
<td>RT7 24VDC 4NO/1NC/1.5S</td>
<td>3PST-NO / SPST-NC</td>
<td>5</td>
<td>2TL010033R3500</td>
<td>209-7638</td>
</tr>
</tbody>
</table>

Relays
Model Config Pole List No. Order Code

<table>
<thead>
<tr>
<th>Model</th>
<th>Config</th>
<th>Number of Poles</th>
<th>List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>R16 220VDC 3NO/1NC</td>
<td>3PST-NO / SPST-NC</td>
<td>4</td>
<td>2TL010026R0000</td>
<td>209-7626</td>
</tr>
<tr>
<td>R16 24 AC 3NO/1NC</td>
<td>3PST-NO / SPST-NC</td>
<td>4</td>
<td>2TL010026R0400</td>
<td>209-7628</td>
</tr>
<tr>
<td>R16 230AC 3NO/1NC</td>
<td>3PST-NO / SPST-NC</td>
<td>4</td>
<td>2TL010026R0600</td>
<td>209-7629</td>
</tr>
<tr>
<td>R16 24V DC 4NO/1NC/3S</td>
<td>3PST-NO / SPST-NC</td>
<td>5</td>
<td>2TL010033R1000</td>
<td>209-7630</td>
</tr>
<tr>
<td>R16 230AC 4NO/1NC/1.5S</td>
<td>3PST-NO / SPST-NC</td>
<td>5</td>
<td>2TL010033R1100</td>
<td>209-7631</td>
</tr>
<tr>
<td>R16 24VDC 4NO/1NC/3S</td>
<td>3PST-NO / SPST-NC</td>
<td>5</td>
<td>2TL010033R1500</td>
<td>209-7633</td>
</tr>
<tr>
<td>R16 24DC 4NO/1NC/1.5S</td>
<td>3PST-NO / SPST-NC</td>
<td>5</td>
<td>2TL010033R2000</td>
<td>209-7634</td>
</tr>
</tbody>
</table>

Failsafe Relay
Series BT50
Failsafe Relays are designed to connect safety devices, such as emergency stops, directly in the voltage supply circuit to the relay. Despite a maximum in width of 22.5 mm the relay is very powerful. With 3NO safety outputs, 1NC output (for monitoring purposes), a test input and complete internal supervision, the BT50 is quite unique. In addition, delayed outputs (BT50T) can be ordered.

Model Config Pole List No. Order Code

<table>
<thead>
<tr>
<th>Model</th>
<th>Config</th>
<th>Number of Poles</th>
<th>List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT50 24 250 6</td>
<td>1NO + 2NO + 5+</td>
<td></td>
<td>2TL010033R0000</td>
<td>209-7646</td>
</tr>
</tbody>
</table>

PLC’s
Series Pluto
The Pluto programmable logic controller (PLC) is a digital computer used for automation of electromechanical processes, such as control of machinery on factory assembly lines, amusement rides, or light fixtures. Unlike general-purpose computers, the PLC is designed for multiple inputs and output arrangements, extended temperature ranges, immunity to electrical noise, and resistance to vibration and impact.

Model Config Pole List No. Order Code

<table>
<thead>
<tr>
<th>Model</th>
<th>Config</th>
<th>Number of Poles</th>
<th>List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>S20</td>
<td>8+8+2+2</td>
<td>1NO</td>
<td>2TL020070R0000</td>
<td>208-7640</td>
</tr>
<tr>
<td>B20</td>
<td>8+8+2+2</td>
<td>1NO</td>
<td>2TL020070R0000</td>
<td>208-7641</td>
</tr>
<tr>
<td>B46</td>
<td>24+16+4+2</td>
<td>1NO</td>
<td>2TL020070R1700</td>
<td>208-7642</td>
</tr>
</tbody>
</table>

Accessories
Identifier | 2TL020070R0200 | 208-7644 |
USB Cable | 2TL020070R0500 | 208-7645 |

Complete cost control, reduced administration time, visibility of your spend, flexibility and personalised to your company’s needs.
ABB-Jokab Safety - continued

**Safety Switches**

These safety switches have three contacts which give both the two contacts needed for high safety level as well as a contact for indicating operating status. The advanced design offers the choice of four operating positions from only two actuator entries by simply rotating the head through 180°.

### Switches

<table>
<thead>
<tr>
<th>Model No</th>
<th>Config</th>
<th>Voltage (Max V AC)</th>
<th>Current (Max A)</th>
<th>Mftrs.</th>
<th>List No</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>JSNY5A</td>
<td>2NC+1NO, 10N</td>
<td>240</td>
<td>5</td>
<td>2TLJ020029R0000</td>
<td>JSNY5A</td>
<td>209-7647</td>
</tr>
<tr>
<td>JSNY5B</td>
<td>DPST-NC</td>
<td>240</td>
<td>5</td>
<td>2TLJ020029R1000</td>
<td>JSNY5B</td>
<td>209-7648</td>
</tr>
<tr>
<td>JSNY7R-3</td>
<td>3M Cable</td>
<td>250</td>
<td>10</td>
<td>2TLJ020029R0000</td>
<td>JSNY7R-3</td>
<td>209-7649</td>
</tr>
<tr>
<td>JSNY7R-6</td>
<td>4M Cable</td>
<td>250</td>
<td>10</td>
<td>2TLJ020029R1000</td>
<td>JSNY7R-6</td>
<td>209-7650</td>
</tr>
</tbody>
</table>

**Key**

- JSNY7R-6 Max Current AC: 100 Max Current AC: 100
- JSNY7R-3 2TLJ020023R0100 209-7649
- JSNY7R-6 2TLJ020024R0000 209-7651

**Safety Interlock Switch**

The JSNY9 series of safety interlock switches with locking function. The switch can be used for a passive lockout, meaning it can only be actuated by using a specific actuator. The switch head can be actuated from any direction (the switch head can be rotated 4x90 degrees). The actuation direction can be either linear or radial by using a specific actuator. The switch head can also be flipped upwards which allows both horizontal and vertical actuations directions. The holding force is 1500 N.

The JSNY9 is tamper-proof and cannot be actuated with screwdrivers, magnets or by other means. The switch can only be actuated with a specific triple coded actuator and the locking function. The switch can only be actuated using a corresponding triple coded actuator and the locking function.

The JSNY9 series of safety interlock switches with an advanced design offers the choice of four operating positions from only two actuator entries by simply rotating the head through 180°.

### Model No | Config | Voltage (Max V AC) | Current (Max A) | Mftrs. | List No | Order Code |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>JSNY9S</td>
<td>SPST-NO / SPST-NC</td>
<td>230</td>
<td>4</td>
<td>2TLJ020036R4500</td>
<td>JSNY9S</td>
<td>209-7652</td>
</tr>
<tr>
<td>JSNY9M</td>
<td>SPST-NC / SPST-NC</td>
<td>230</td>
<td>4</td>
<td>2TLJ020036R4500</td>
<td>JSNY9M</td>
<td>209-7653</td>
</tr>
<tr>
<td>JSNY7R-6</td>
<td>4M Cable</td>
<td>250</td>
<td>10</td>
<td>2TLJ020029R1000</td>
<td>JSNY7R-6</td>
<td>209-7650</td>
</tr>
</tbody>
</table>

**Key**

- JSNY7R-6 2TLJ020024R0000 209-7651

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