Safety detection solutions
Guard switches
Metal, turret head, types XCS A, XCS B, XCS C and XCS E

Separate components

<table>
<thead>
<tr>
<th>Description</th>
<th>For use with</th>
<th>Supply voltage</th>
<th>Reference</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 orange LED indicator module with cover, seal and 2 fixing screws</td>
<td>XCS A, XCS B, XCS C</td>
<td>~24V or ~48V</td>
<td>XCS Z31</td>
<td>0.040</td>
</tr>
<tr>
<td>1 orange LED + 1 green LED indicator module with cover + lock (1), seal and 4 fixing screws (2 keys included for lock)</td>
<td>XCS E73</td>
<td>~24V or ~48V</td>
<td>XCS Z43</td>
<td>0.175</td>
</tr>
</tbody>
</table>

(1) Lock incorporated as standard on guard switches XCS E: key withdrawal in LOCK and UNLOCK positions.

<table>
<thead>
<tr>
<th>Description</th>
<th>For use with</th>
<th>Key withdrawal positions from lock</th>
<th>Unit reference</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blanking plugs for operating head slot (Sold in lots of 10)</td>
<td>XCS A, XCS B, XCS C, XCS E</td>
<td>–</td>
<td>XCS Z27</td>
<td>0.050</td>
</tr>
<tr>
<td>Keys for interlock “forced opening” device (Sold in lots of 10)</td>
<td>XCS B, C, XCS E</td>
<td>–</td>
<td>XCS Z25</td>
<td>0.100</td>
</tr>
<tr>
<td>Padlocking device to prevent insertion of actuator, for up to 3 padlocks (padlocks not included)</td>
<td>XCS A, XCS B, XCS C, XCS E</td>
<td>–</td>
<td>XCS Z90</td>
<td>0.055</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>For use with</th>
<th>Unit reference</th>
<th>Weight kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2” NPT conduit adaptor (Sold in lots of 5)</td>
<td>XCS A, XCS B, XCS C, XCS E</td>
<td>DE9 RA2012</td>
<td>0.048</td>
</tr>
<tr>
<td>M20 x 1.5 adaptor (Sold in lots of 5)</td>
<td>XCS A, XCS B, XCS C, XCS E</td>
<td>DE9 RA13520</td>
<td>0.010</td>
</tr>
</tbody>
</table>
## Safety detection solutions

Guard switches

Metal, turret head, types XCS A, XCS B, XCS C and XCS E

### Dimensions

<table>
<thead>
<tr>
<th>Guard switches</th>
<th>XCS B***, XCS C***</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>XCS A</strong>*</td>
<td></td>
</tr>
<tr>
<td><strong>XCS B</strong>*</td>
<td></td>
</tr>
<tr>
<td><strong>XCS C</strong>*</td>
<td></td>
</tr>
<tr>
<td><strong>XCS E</strong>*</td>
<td></td>
</tr>
</tbody>
</table>

### Guard switches

**XCS E***

- (1) 1 tapped entry for cable gland
- Ø: 2 elongated holes Ø 5.3 x 7.3

**M20 x 1.5 adaptor**

- DE9 RA13520

(1) M20 x 1.5 tapped entry
(2) Pg 13.5 threaded shank

**1/2" NPT conduit adaptor**

- DE9 RA2012

(1) Tapped entry for 1/2" NPT conduit
(2) M20 x 1.5 threaded shank

### References:

Pages: 32924-EN/2 to 32925-EN/5

Schematics: page 32923-EN/S

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(1) 1 tapped entry for cable gland
- Ø: 2 elongated holes Ø 5.3 x 7.3
### Safety detection solutions
Guard switches
Metal, turret head, types XCS A, XCS B, XCS C and XCS E

#### Dimensions (continued)

<table>
<thead>
<tr>
<th>XCS Z01</th>
<th>XCS Z02</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adaptor shank (1)</strong></td>
<td></td>
</tr>
<tr>
<td>Ø: 2 elongated holes Ø 5.3 x 10</td>
<td>Ø: 2 elongated holes Ø 5.3 x 10</td>
</tr>
</tbody>
</table>

(1) Adaptor (included with actuator XCS Z01) for replacing, without drilling additional fixing hole, a guard switch XCK J with actuator ZCK Y07 by a guard switch XCS A, B, C or E with actuator XCS Z01.

<table>
<thead>
<tr>
<th>XCS Z03</th>
<th>XCS Z05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>Dimensions</td>
</tr>
<tr>
<td>Ø: 5.3</td>
<td>Ø: 5.3</td>
</tr>
<tr>
<td>2.5</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Fixing axis % related to actuator

<table>
<thead>
<tr>
<th>XCS Z01</th>
<th>XCS Z02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating radius required for actuator</td>
<td>Operating radius required for actuator</td>
</tr>
<tr>
<td>R = 2000</td>
<td>R = 2000</td>
</tr>
<tr>
<td>85</td>
<td>85</td>
</tr>
</tbody>
</table>

XCS Z03

### R = minimum radius

References:
pages 32924-EN/2 to 32925-
Schemes:
page 32923-EN/5
Safety detection solutions
Guard switches
Metal, turret head, types XCS A, XCS B, XCS C and XCS E

Setting-up, schemes

Setting-up
Functional diagrams

<table>
<thead>
<tr>
<th>XCS 5</th>
<th>XCS 6</th>
<th>XCS 7</th>
<th>XCS 8</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="" alt="Diagram" /></td>
<td><img src="" alt="Diagram" /></td>
<td><img src="" alt="Diagram" /></td>
<td><img src="" alt="Diagram" /></td>
</tr>
</tbody>
</table>

Contact operation
- Contact closed
- Contact open
- Unstable

Schemes
Note: These schemes are given as examples only, the designer must refer to the relevant safety standards for guidance

Wiring to category 1 conforming to EN 954-1/ISO 13849-1
Example with 3-pole N/C + N/O + N/O contact and protection fuse to prevent shunting of the N/C contact, either by cable damage or by tampering.

Wiring to category 3 conforming to EN 954-1/ISO 13849-1
Example with 3-pole N/C + N/O + N/O contact with mixed redundancy of the contacts and the associated control relays. To activate K1, it is necessary to remove and re-insert the actuator when the supply is switched on.

Wiring to category 4 conforming to EN 954-1/ISO 13849-1. Wiring method used in conjunction with Preventa safety module
(1) Signalling contact
H1: “actuator not inserted” indicator

Method for machines with quick rundown time (low inertia)
Method for machines with long rundown time (high inertia)

Locking or interlocking device based on the principle of redundancy and self-monitoring. The safety modules ensure these functions.

(1) Signalling contact

References:
pages 32924-EN2 to 32925-
Dimensions:
pages 32923-EN3 and 32923-
Safety detection solutions
Guard switches with solenoid interlocking
Metal, turret head, type XCS E

Wiring to category 1 conforming to EN 954-1/ISO 13849-1
Wiring examples with protection fuse to prevent shunting of the N/C contact, either by cable damage or by tampering.

**Locking on de-energisation, N/C + N/O + N/O**

XCS E53

**Locking on energisation, N/C + N/O + N/O**

XCS E55

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(1) Solenoid
(2) Auxiliary contact
E1-E2: Solenoid supply
43-44: Solenoid signalling contact
13-14: Safety contact, available for redundancy
33-X1: LED (orange): actuator withdrawn
51-52: Safety pre-wiring obligatory

(1) Solenoid
(2) Auxiliary contact
E1-E2: Solenoid supply
51-52: Solenoid signalling contact
13-14: Safety contact, available for redundancy
33-X1: LED (orange): actuator withdrawn
43-X1: LED (green): actuator inserted and locked
21-44: Safety pre-wiring obligatory

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Note: These schemes are given as examples only, the designer must refer relevant safety standards for guidance.
Safety detection solutions
Guard switches with solenoid interlocking
Metal, turret head, type XCS E

Wiring to category 3 conforming to EN 954-1/ISO 13849-1
Wiring examples with redundancy for the guard switch contacts, without monitoring or redundancy in the power circuit

**Locking on de-energisation, N/C + N/C + N/O**

**XCS E73**

**Locking on de-energisation, N/C + N/C + N/O**

**XCS E73™7**

(1) Solenoid
(2) Auxiliary contact
E1-E2: Solenoid supply
43-44: Solenoid signalling contact
21-22 and 31-32: Safety contacts, available for redundancy
13-X1: LED (orange): actuator withdrawn
51-X1: LED (green): actuator inserted and locked
21-52: Safety pre-wiring obligatory

**Locking on energisation, N/C + N/C + N/O**

**XCS E75™**

(1) Solenoid
(2) Auxiliary contact
E1-E2: Solenoid supply
41-42 and 51-52: Solenoid signalling contacts
21-22 and 31-32: Safety contacts, available for redundancy
13-X1: LED (orange): actuator withdrawn
51-X1: LED (green): actuator inserted and locked
21-52 and 42-31: Safety pre-wiring obligatory

References:
pages 32924-EN/2 to 32925-
Dimensions:
pages 32923-EN/3 and 32923-