

Components for safety applications

Guard switches

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

Double insulated, turret head, types XCS-PA, XCS-TA and XCS-TE

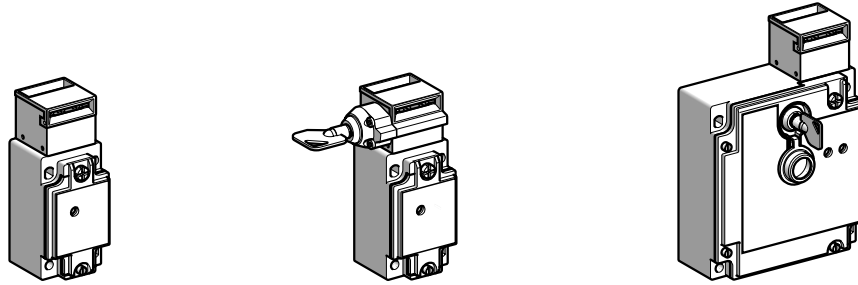
Presentation

2

Metal,
types XCS-A,
XCS-C, XCS-E



Switches with or without locking of the actuator

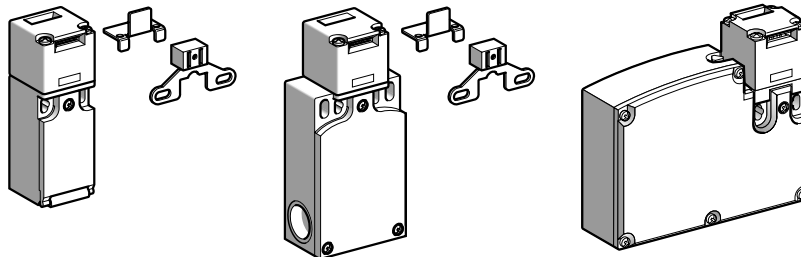


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Double insulated,
types XCS-PA,
XCS-TA, XCS-TE



Switches with or without locking of the actuator



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Components for safety applications

Guard switches

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

Double insulated, turret head, types XCS-PA, XCS-TA and XCS-TE

General characteristics

2

Environment

| | | |
|---|---|---|
| Limit switch type | XCS-A, XCS-C, XCS-E (metal case) | XCS-PA, XCS-TA, XCS-TE (double insulated case) |
| Conforming to standards | Products | IEC 947-5-1, EN 60 947-5-1, UL 508, CSA C22-2 n° 14, JIS C4520 |
| | Machine assemblies | IEC 204-1, EN 60 204-1, EN 1088, EN 292 |
| Product certifications | UL, CSA, BG | UL, CSA, BG (pending) |
| Protective treatment | Standard version : "TC" | |
| Ambient air temperature | Operation : - 25...+ 70 °C (- 25...+ 40 °C for XCS-E and - 25...+ 60 °C for XCS-TE) Storage : - 40...+ 70 °C | |
| Vibration resistance | 5 gn (10...500 Hz) conforming to IEC 68-2-6 | |
| Shock resistance | 10 gn (duration 11 ms) conforming to IEC 68-2-27 | |
| Electric shock protection | Class I conforming to IEC 536 | Class 2 conforming to IEC 536 |
| Degree of protection | IP 67 conforming to IEC 529 (1) and IEC 947-5-1 | |
| Cable entry (Country specific references) | 1 entry (XCS-A and XCS-E) or 2 entries (XCS-E) tapped for Pg 13.5 (n° 13) cable gland, tapped M20 or tapped 1/2" NPT | 1 entry (XCS-PA and XCS-TE) or 2 entries (XCS-TA) tapped for Pg 11 (n° 11) cable gland, tapped M16 or tapped 1/2" NPT (with adaptor) for XCS-TA and XCS-TE |

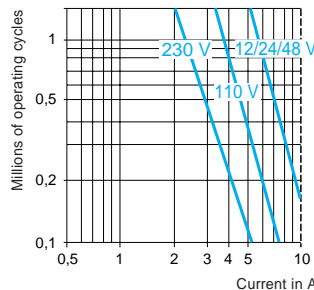
Contact block characteristics

| | |
|---|--|
| Rated operational characteristics | XCS-A, XCS-C, XCS-PA, XCS-TA : \sim AC-15, A300 : $U_e = 240$ V, $I_e = 3$ A or $U_e = 120$ V, $I_e = 6$ A XCS-E, XCS-TE : \sim AC-15, B300 : $U_e = 240$ V, $I_e = 1.5$ A or $U_e = 120$ V, $I_e = 3$ A All models : \sim DC-13, Q300 : $U_e = 250$ V, $I_e = 0.27$ A or $U_e = 125$ V, $I_e = 0.54$ A conforming to IEC 947-5-1, EN 60 947-5-1 |
| Rated thermal current in enclosure | XCS-A, XCS-C, XCS-PA, XCS-TA : $I_{the} = 10$ A XCS-E, XCS-TE : $I_{the} = 6$ A |
| Rated insulation voltage | $U_i = 500$ V conforming to IEC 947-5-1 $U_i = 300$ V conforming to UL 508, CSA C22-2 n°14 |
| Rated impulse withstand voltage | XCS-A, XCS-C, XCS-PA, XCS-TA : $U_{imp} = 6$ kV conforming to IEC 947-5-1 XCS-E, XCS-TE : $U_{imp} = 4$ kV conforming to IEC 947-5-1 |
| Positive operation | N/C contact with positive opening operation conforming to IEC 947-5-1 Section 3, EN 60 947-5-1 |
| Resistance across terminals | ≤ 30 m Ω conforming to IEC 957-5-4 |
| Short-circuit protection | 10 A cartridge fuse type gG (gl) |
| Cabling | Screw clamp terminals. Clamping capacity, min. : 1 x 0.5 mm ² , max. : 2 x 1.5 mm ² with or without cable end |

Electrical durability

Conforming to IEC 947-5-1 Appendix C.
Utilisation categories AC-15 and DC-13.
Maximum operating rate : 3600 operating cycles per hour.
Load factor : 0.5

a.c. supply \sim 50/60 Hz
 \sim inductive circuit



d.c. supply \sim

Power broken in W for 1 million operating cycles

| | | | | |
|---------|---|----|----|-----|
| Voltage | V | 24 | 48 | 120 |
| \sim | W | 13 | 9 | 7 |

(1) Live parts of the switches are protected against the penetration of dust and water. However, when installing take all necessary precautions to prevent the penetration of solid bodies, or liquids with a high dust content, into the actuator aperture. Not recommended for use in saline atmospheres.

Components for safety applications

Guard switches

Metal, turret head (1), types XCS-A, XCS-C and XCS-E

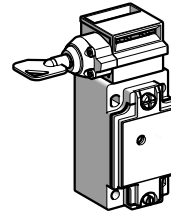
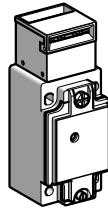
Cable entries tapped M20 x 1.5

Dimensions :
pages 2/23 and 2/24
Schemes :
page 2/25

References, characteristics

| | | |
|----------------|-----------------------------|------------------------------------|
| Type of switch | Without locking of actuator | With locking, manual unlocking (2) |
|----------------|-----------------------------|------------------------------------|

2



| | | | | | | |
|---|---------|--------------------------------|-----------------------------|---------|--------------------------------|-----------------------------|
| LED indication on opening of N/C contacts | Without | 1 orange LED ~ or = 24/48 V | 1 orange LED ~ 110/240 V | Without | 1 orange LED ~ or = 24/48 V | 1 orange LED ~ 110/240 V |
|---|---------|--------------------------------|-----------------------------|---------|--------------------------------|-----------------------------|

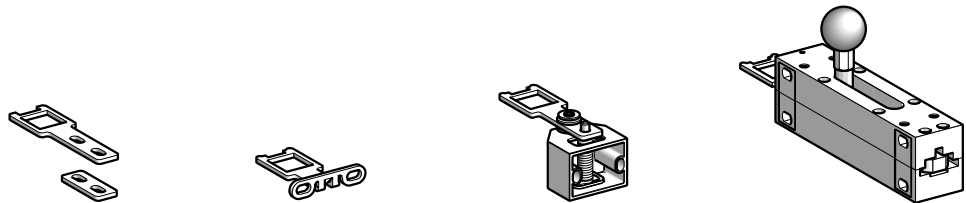
References of switches without actuator (⊕ N/C contact with positive opening operation)

| | | | | | | | |
|---|-------|------------|------------|------------|------------|------------|------------|
| 3-pole N/C + N/O + N/O (2 N/O staggered) slow break (3) | | XCS-A502 ⊕ | XCS-A512 ⊕ | XCS-A522 ⊕ | XCS-C502 ⊕ | XCS-C512 ⊕ | XCS-C522 ⊕ |
| 3-pole N/C + N/C + N/O (N/O staggered) slow break (3) | | XCS-A702 ⊕ | XCS-A712 ⊕ | XCS-A722 ⊕ | XCS-C702 ⊕ | XCS-C712 ⊕ | XCS-C722 ⊕ |
| 3-pole N/C + N/C + N/C slow break (3) | | XCS-A802 ⊕ | - | - | XCS-C802 ⊕ | - | - |
| Weight (kg) | 0.440 | 0.440 | 0.440 | 0.480 | 0.480 | 0.480 | |

Complementary characteristics not shown under general characteristics (page 2/15)

| | |
|--|---|
| Actuation speed | Maximum : 0.5 m/s, minimum : 0.01 m/s |
| Resistance to forcible withdrawal of actuator | XCS-C : > 1500 N ; XCS-E : 2000 N |
| Mechanical durability | > 1 million operating cycles |
| Maximum operating rate | For maximum durability : 600 operating cycles per hour |
| Minimum force for positive opening | 20 N |
| Cable entry | XCS-A, XCS-C : 1 cable entry. XCS-E : 2 cable entries. Entries tapped M20 x 1.5 for ISO cable gland. Clamping capacity 7 to 13 mm. |

References of actuators



| | | | | |
|--------------------------------|-------------------|---------------|-------------------|---|
| Description | Straight actuator | Wide actuator | Pivoting actuator | (Padlock in open position) Latch for sliding doors |
| For guard switches XCS-A, C, E | XCS-Z01 | XCS-Z02 | XCS-Z03 | XCS-Z05 |
| Weight (kg) | 0.021 | 0.021 | 0.095 | 0.600 |

(1) Adjustable throughout 360° in 90° steps. Blanking plug for operating head slot included with switch.

(2) Unlocking by key operated lock.

(3) Schematic diagrams shown represent the contact states whilst the actuator is inserted in the head of the switch.

Components for safety applications

Guard switches

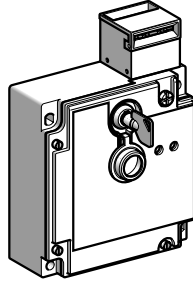
Metal, turret head (1), types XCS-A, XCS-C and XCS-E

Cable entries tapped M20 x 1.5

Dimensions :
pages 2/23 and 2/24
Schemes :
pages 2/25 to 2/27

References, characteristics

| | |
|----------------|--|
| Type of switch | With interlocking, locking by solenoid |
|----------------|--|



2

| | | | | |
|----------------------------|---|----------------------------------|---|---|
| Type of interlocking | Locking on de-energisation and unlocking on energisation of solenoid (2). To order a limit switch with locking on energisation and unlocking on de-energisation of the solenoid, replace the 2 nd number (3) by 5 in the references shown below. Example : XCS-E5312 becomes XCS-E5512. | | | |
| LED indication | Orange LED : "guard open" signalling. Green LED : "guard closed and locked" signalling. | | | |
| Supply voltage of solenoid | ~ or --- 24 V (50/60 Hz on ~) | ~ or --- 48 V (50/60 Hz on ~) | ~ or --- 110/120 V (3) (50/60 Hz on ~) | ~ or --- 220/240 V (3) (50/60 Hz on ~) |

References of switches without actuator (⊖ N/C contact with positive opening operation)

| | | | | | |
|---|-------|-----------------|-----------------|-----------------|-----------------|
| 3-pole N/C + N/O + N/O (2 N/O staggered) slow break (4) | | XCS-E5312 ⊖ | XCS-E5322 ⊖ | XCS-E5332 ⊖ | XCS-E5342 ⊖ |
| 3-pole N/C + N/C + N/O (N/O staggered) slow break (4) | | XCS-E7312 ⊖ | XCS-E7322 ⊖ | XCS-E7332 ⊖ | XCS-E7342 ⊖ |
| 3-pole N/C + N/C + N/C slow break (4) | | XCS-E8312 (5) ⊖ | XCS-E8322 (5) ⊖ | XCS-E8332 (5) ⊖ | XCS-E8342 (5) ⊖ |
| Weight (kg) | 1.140 | 1.140 | 1.140 | 1.140 | |

Solenoid characteristics

| | | | | |
|---------------------------|---|---------------|--------------------|--------------------|
| Load factor | 100 % | | | |
| Rated operational voltage | ~ or --- 24 V | ~ or --- 48 V | ~ or --- 110/120 V | ~ or --- 220/240 V |
| Voltage limits | - 20 %, + 10 % of the rated operational voltage (including ripple on ---) conforming to IEC 947-1 | | | |
| Service life | 20,000 hours | | | |
| Consumption | Inrush : 10 VA. Sealed : 10 VA | | | |

LED indicator characteristics

| | | |
|---------------------------------|--|--|
| Rated insulation voltage | 50 V conforming to IEC 947-1 | 250 V conforming to IEC 947-1 |
| Current consumption | 7 mA | 7 mA |
| Rated operational voltage | ~ or --- 24/48 V | ~ 110/240 V |
| Voltage limits | ~ or --- 20...52 V (including ripple on ---) | ~ 95...264 V (including ripple on ---) |
| Service life | 100,000 hours | 100,000 hours |
| Protection against overvoltages | Yes | Yes |

- (1) Adjustable throughout 360° in 90° steps. (2) A key operated lock enables the forced opening of the interlocking mechanism by authorised personnel, allowing key withdrawal and subsequent opening of the N/C safety contacts.
 (3) For use on --- 110/120 V or --- 220/240 V, remove the LED indicator module.
 (4) Schematic diagrams shown represent the contact states whilst the actuator is inserted in the head of the switch.
 (5) Units supplied with a single green LED.

Components for safety applications

Guard switches

Metal, turret head (1), types XCS-A, XCS-C and XCS-E

Cable entries tapped for Pg 13.5 (n° 13) cable gland

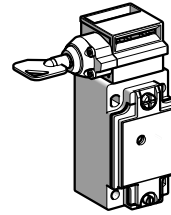
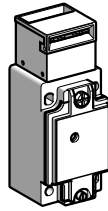
Dimensions :
pages 2/23 and 2/24
Schemes :
page 2/25

References, characteristics

| | | |
|----------------|-----------------------------|------------------------------------|
| Type of switch | Without locking of actuator | With locking, manual unlocking (2) |
|----------------|-----------------------------|------------------------------------|

For UK market, please refer to pages 2/16 and 2/17

2



| | | | | | | |
|---|---------|--------------------------------|-----------------------------|---------|--------------------------------|-----------------------------|
| LED indication on opening of N/C contacts | Without | 1 orange LED ~ or = 24/48 V | 1 orange LED ~ 110/240 V | Without | 1 orange LED ~ or = 24/48 V | 1 orange LED ~ 110/240 V |
|---|---------|--------------------------------|-----------------------------|---------|--------------------------------|-----------------------------|

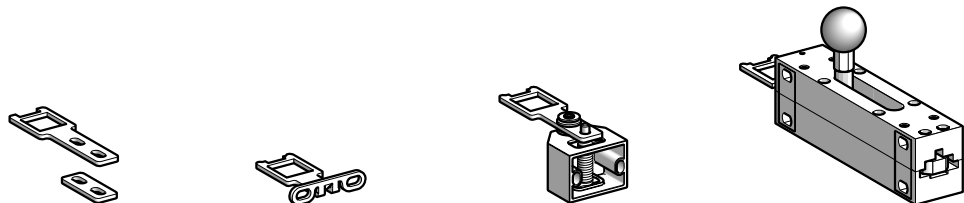
References of switches without actuator (⊕ N/C contact with positive opening operation)

| | | | | | | | |
|---|--|------------|------------|------------|------------|------------|------------|
| 3-pole N/C + N/O + N/O (2 N/O staggered) slow break (3) | | XCS-A501 ⊕ | XCS-A511 ⊕ | XCS-A521 ⊕ | XCS-C501 ⊕ | XCS-C511 ⊕ | XCS-C521 ⊕ |
| 3-pole N/C + N/C + N/O (N/O staggered) slow break (3) | | XCS-A701 ⊕ | XCS-A711 ⊕ | XCS-A721 ⊕ | XCS-C701 ⊕ | XCS-C711 ⊕ | XCS-C721 ⊕ |
| 3-pole N/C + N/C + N/C slow break (3) | | XCS-A801 ⊕ | - | - | XCS-C801 ⊕ | - | - |
| Weight (kg) | | 0.440 | 0.440 | 0.440 | 0.480 | 0.480 | 0.480 |

Complementary characteristics not shown under general characteristics (page 2/15)

| | |
|--|---|
| Actuation speed | Maximum : 0.5 m/s, minimum : 0.01 m/s |
| Resistance to forcible withdrawal of actuator | XCS-C : > 1500 N ; XCS-E : 2000 N |
| Mechanical durability | > 1 million operating cycles |
| Maximum operating rate | For maximum durability : 600 operating cycles per hour |
| Minimum force for positive opening | 20 N |
| Cable entry | XCS-A, XCS-C : 1 cable entry. XCS-E : 2 cable entries. Entries tapped for n° 13 cable gland conforming to NF C 68-300 (DIN Pg 13.5). Clamping capacity 9 to 12 mm. |

References of actuators



| | | | | |
|--------------------------------|-------------------|---------------|-------------------|---|
| Description | Straight actuator | Wide actuator | Pivoting actuator | Latch for sliding doors (Padlock in open position) |
| For guard switches XCS-A, C, E | XCS-Z01 | XCS-Z02 | XCS-Z03 | XCS-Z05 |
| Weight (kg) | 0.021 | 0.021 | 0.095 | 0.600 |

(1) Adjustable throughout 360° in 90° steps. Blanking plug for operating head slot included with switch.

(2) Unlocking by key operated lock.

(3) Schematic diagrams shown represent the contact states whilst the actuator is inserted in the head of the switch.

Components for safety applications

Guard switches

Metal, turret head (1), types XCS-A, XCS-C and XCS-E

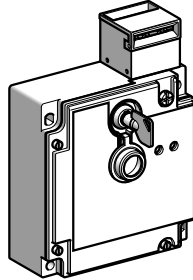
Cable entries tapped for Pg 13.5 (n° 13) cable gland

Dimensions :
pages 2/23 and 2/24
Schemes :
pages 2/25 to 2/27

References, characteristics

| | |
|----------------|--|
| Type of switch | With interlocking, locking by solenoid |
|----------------|--|

For UK market, please refer to pages 2/16 and 2/17



2

| | | | | |
|---------------------------------|---|----------------------------------|---|---|
| Type of interlocking | Locking on de-energisation and unlocking on energisation of solenoid (2). To order a limit switch with locking on energisation and unlocking on de-energisation of the solenoid, replace the 2 nd number (3) by 5 in the references shown below. Example : XCS-E5311 becomes XCS-E5511. | | | |
| LED indication | Orange LED : "guard open" signalling. Green LED : "guard closed and locked" signalling. | | | |
| Supply voltage of electromagnet | ~ or --- 24 V (50/60 Hz on ~) | ~ or --- 48 V (50/60 Hz on ~) | ~ or --- 110/120 V (3) (50/60 Hz on ~) | ~ or --- 220/240 V (3) (50/60 Hz on ~) |

References of switches without actuator (⊖ N/C contact with positive opening operation)

| | | | | | |
|---|-------|-----------------|-----------------|-----------------|-----------------|
| 3-pole N/C + N/O + N/O (2 N/O staggered) slow break (4) | | XCS-E5311 ⊖ | XCS-E5321 ⊖ | XCS-E5331 ⊖ | XCS-E5341 ⊖ |
| 3-pole N/C + N/C + N/O (N/O staggered) slow break (4) | | XCS-E7311 ⊖ | XCS-E7321 ⊖ | XCS-E7331 ⊖ | XCS-E7341 ⊖ |
| 3-pole N/C + N/C + N/C slow break (4) | | XCS-E8311 (5) ⊖ | XCS-E8321 (5) ⊖ | XCS-E8331 (5) ⊖ | XCS-E8341 (5) ⊖ |
| Weight (kg) | 1.140 | 1.140 | 1.140 | 1.140 | |

Solenoid characteristics

| | | | | |
|---------------------------|---|---------------|--------------------|--------------------|
| Load factor | 100 % | | | |
| Rated operational voltage | ~ or --- 24 V | ~ or --- 48 V | ~ or --- 110/120 V | ~ or --- 220/240 V |
| Voltage limits | - 20 %, + 10 % of the rated operational voltage (including ripple on ---) conforming to IEC 947-1 | | | |
| Service life | 20,000 hours | | | |
| Consumption | Inrush : 10 VA. Sealed : 10 VA | | | |

LED indicator characteristics

| | | |
|---------------------------------|--|--|
| Rated insulation voltage | 50 V conforming to IEC 947-1 | 250 V conforming to IEC 947-1 |
| Current consumption | 7 mA | 7 mA |
| Rated operational voltage | ~ or --- 24/48 V | ~ 110/240 V |
| Voltage limits | ~ or --- 20...52 V (including ripple on ---) | ~ 95...264 V (including ripple on ---) |
| Service life | 100,000 hours | 100,000 hours |
| Protection against overvoltages | Yes | Yes |

(1) Adjustable throughout 360° in 90° steps. (2) A key operated lock enables the forced opening of the interlocking mechanism by authorised personnel, allowing withdrawal of actuator and subsequent opening of the N/C safety contacts.

(3) For use on --- 110/120 V or --- 220/240 V, remove the LED indicator module.

(4) Schematic diagrams shown represent the contact states whilst the actuator is inserted in the head of the switch.

(5) Units supplied with a single green LED.

Components for safety applications

Guard switches

Metal, turret head (1), types XCS-A, XCS-C and XCS-E

Cable entries tapped 1/2" NPT

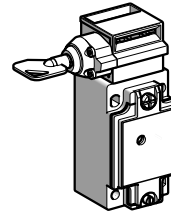
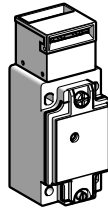
Dimensions :
pages 2/23 and 2/24
Schemes :
page 2/25

References, characteristics

| | | |
|----------------|-----------------------------|------------------------------------|
| Type of switch | Without locking of actuator | With locking, manual unlocking (2) |
|----------------|-----------------------------|------------------------------------|

For UK market, please refer to pages 2/16 and 2/17

2



| | | | | | | |
|---|---------|--------------------------------|-----------------------------|---------|--------------------------------|-----------------------------|
| LED indication on opening of N/C contacts | Without | 1 orange LED ~ or = 24/48 V | 1 orange LED ~ 110/240 V | Without | 1 orange LED ~ or = 24/48 V | 1 orange LED ~ 110/240 V |
|---|---------|--------------------------------|-----------------------------|---------|--------------------------------|-----------------------------|

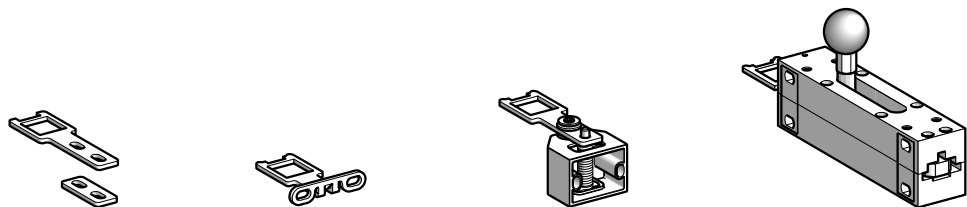
References of switches without actuator (⊕ N/C contact with positive opening operation)

| | | | | | | | |
|---|-------|------------|------------|------------|------------|------------|------------|
| 3-pole N/C + N/O + N/O (2 N/O staggered) slow break (3) | | XCS-A503 ⊕ | XCS-A513 ⊕ | XCS-A523 ⊕ | XCS-C503 ⊕ | XCS-C513 ⊕ | XCS-C523 ⊕ |
| 3-pole N/C + N/C + N/O (N/O staggered) slow break (3) | | XCS-A703 ⊕ | XCS-A713 ⊕ | XCS-A723 ⊕ | XCS-C703 ⊕ | XCS-C713 ⊕ | XCS-C723 ⊕ |
| 3-pole N/C + N/C + N/C slow break (3) | | XCS-A803 ⊕ | - | - | XCS-C803 ⊕ | - | - |
| Weight (kg) | 0.440 | 0.440 | 0.440 | 0.480 | 0.480 | 0.480 | |

Complementary characteristics not shown under general characteristics (page 2/15)

| | |
|--|--|
| Actuation speed | Maximum : 0.5 m/s, minimum : 0.01 m/s |
| Resistance to forcible withdrawal of the actuator | XCS-C : > 1500 N ; XCS-E : 2000 N |
| Mechanical durability | > 1 million operating cycles |
| Maximum operating rate | For maximum durability : 600 operating cycles per hour |
| Minimum force for positive opening | 20 N |
| Cable entry | XCS-A, XCS-C : 1 cable entry. XCS-E : 2 cable entries. Entries tapped for 1/2" NPT (USAS B2-1) conduit. |

References of actuators



| | | | | |
|--------------------------------|-------------------|---------------|-------------------|---|
| Description | Straight actuator | Wide actuator | Pivoting actuator | (Padlock in open position) Latch for sliding doors |
| For guard switches XCS-A, C, E | XCS-Z01 | XCS-Z02 | XCS-Z03 | XCS-Z05 |
| Weight (kg) | 0.021 | 0.021 | 0.095 | 0.600 |

(1) Adjustable throughout 360° in 90° steps. Blanking plug for operating head slot included with switch.

(2) Unlocking by key operated lock.

(3) Schematic diagrams shown represent the contact states whilst the actuator is inserted in the head of the switch.

Components for safety applications

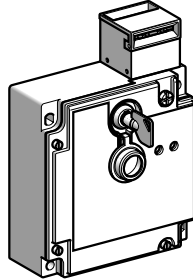
Guard switches
Metal, turret head (1), types XCS-A, XCS-C and XCS-E
Cable entries tapped 1/2" NPT

Dimensions :
pages 2/23 and 2/24
Schemes :
pages 2/25 to 2/27

References, characteristics

| | |
|----------------|--|
| Type of switch | With interlocking, locking by solenoid |
|----------------|--|

For UK market, please refer to pages 2/16 and 2/17



2

| | | | | |
|----------------------------|---|--------------------------------|---|---|
| Type of interlocking | Locking on de-energisation and unlocking on energisation of solenoid (2). To order a limit switch with locking on energisation and unlocking on de-energisation of the solenoid, replace the 2 nd number (3) by 5 in the references shown below. Example : XCS-E5313 becomes XCS-E5513. | | | |
| LED indication | Orange LED : "guard open" signalling. Green LED : "guard closed and locked" signalling. | | | |
| Supply voltage of solenoid | ~ or = 24 V (50/60 Hz on ~) | ~ or = 48 V (50/60 Hz on ~) | ~ or = 110/120 V (3) (50/60 Hz on ~) | ~ or = 220/240 V (3) (50/60 Hz on ~) |

References of switches without actuator (⊖ N/C contact with positive opening operation)

| | | | | | |
|---|-------|-----------------|-----------------|-----------------|-----------------|
| 3-pole N/C + N/O + N/O (2 N/O staggered) slow break (4) | | XCS-E5313 ⊖ | XCS-E5323 ⊖ | XCS-E5333 ⊖ | XCS-E5343 ⊖ |
| 3-pole N/C + N/C + N/O (N/O staggered) slow break (4) | | XCS-E7313 ⊖ | XCS-E7323 ⊖ | XCS-E7333 ⊖ | XCS-E7343 ⊖ |
| 3-pole N/C + N/C + N/C slow break (4) | | XCS-E8313 (5) ⊖ | XCS-E8323 (5) ⊖ | XCS-E8333 (5) ⊖ | XCS-E8343 (5) ⊖ |
| Weight (kg) | 1.140 | 1.140 | 1.140 | 1.140 | |

Solenoid characteristics

| | | | | |
|---------------------------|---|-------------|------------------|------------------|
| Load factor | 100 % | | | |
| Rated operational voltage | ~ or = 24 V | ~ or = 48 V | ~ or = 110/120 V | ~ or = 220/240 V |
| Voltage limits | - 20 %, + 10 % of the rated operational voltage (including ripple on =) conforming to IEC 947-1 | | | |
| Service life | 20,000 hours | | | |
| Consumption | Inrush : 10 VA. Sealed : 10 VA | | | |

LED indicator characteristics

| | | |
|---------------------------------|--|------------------------------------|
| Rated insulation voltage | 50 V conforming to IEC 947-1 | 250 V conforming to IEC 947-1 |
| Current consumption | 7 mA | 7 mA |
| Rated operational voltage | ~ or = 24/48 V | ~ 110/240 V |
| Voltage limits | ~ or = 20...52 V (including ripple on =) | ~ 95/264 V (including ripple on =) |
| Service life | 100,000 hours | 100,000 hours |
| Protection against overvoltages | Yes | Yes |

- (1) Adjustable throughout 360° in 90° steps. (2) A key operated lock enables the forced opening of the interlocking mechanism by authorised personnel, allowing key withdrawal and subsequent opening of the N/C safety contacts.
(3) For use on = 110/120 V or = 220/240 V, remove the LED indicator module.
(4) Schematic diagrams shown represent the contact states whilst the actuator is inserted in the head of the switch.
(5) Units supplied with a single green LED.

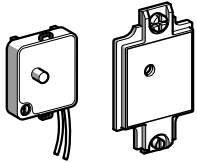
Components for safety applications

Guard switches
Metal, turret head, types XCS-A, XCS-C and XCS-E

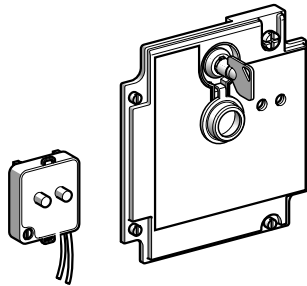
Dimensions :
pages 2/23 and 2/24
Schemes :
pages 2/25 to 2/27

References of spare parts

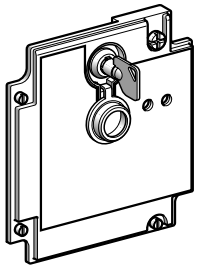
Spare parts



XCS-Z3●



XCS-Z4●



XCS-Z5●
XCS-Z6●

| Description | For use with | Supply voltage | Reference | Weight kg |
|--|---------------------------|---------------------------------------|----------------|-----------|
| 1 orange LED indicator module with cover, seal and 2 fixing screws | XCS-A | ~ or = 24/48 V | XCS-Z31 | 0.040 |
| | XCS-C | ~ 110/240 V | XCS-Z32 | 0.040 |
| 1 orange LED + 1 green LED indicator module with cover + lock (1), seal and 4 fixing screws (lock supplied with 2 keys) | XCS-E53●● | ~ or = 24/48 V | XCS-Z41 | 0.175 |
| | | ~ 110/240 V | XCS-Z45 | 0.175 |
| | XCS-E55●● | ~ or = 24/48 V | XCS-Z42 | 0.175 |
| | | ~ 110/240 V | XCS-Z46 | 0.175 |
| | XCS-E73●● | ~ or = 24/48 V | XCS-Z43 | 0.175 |
| | | ~ 110/240 V | XCS-Z47 | 0.175 |
| | XCS-E75●● | ~ or = 24/48 V | XCS-Z44 | 0.175 |
| | | ~ 110/240 V | XCS-Z48 | 0.175 |
| Description | For use with | Positions of key withdrawal from lock | Reference | Weight kg |
| Cover + lock with seal and 4 fixing screws (lock supplied with 2 keys) | XCS-E53●● | LOCK : yes/UNLOCK : yes | XCS-Z51 | 0.025 |
| | | LOCK : yes/UNLOCK : no | XCS-Z55 | 0.025 |
| | | LOCK : no/UNLOCK : yes | XCS-Z59 | 0.025 |
| | XCS-E55●● | LOCK : yes/UNLOCK : yes | XCS-Z52 | 0.025 |
| | | LOCK : yes/UNLOCK : no | XCS-Z56 | 0.025 |
| | | LOCK : no/UNLOCK : yes | XCS-Z60 | 0.025 |
| | XCS-E73●● | LOCK : yes/UNLOCK : yes | XCS-Z53 | 0.025 |
| | | LOCK : yes/UNLOCK : no | XCS-Z57 | 0.025 |
| | | LOCK : no/UNLOCK : yes | XCS-Z61 | 0.025 |
| | XCS-E75●● | LOCK : yes/UNLOCK : yes | XCS-Z54 | 0.025 |
| | | LOCK : yes/UNLOCK : no | XCS-Z58 | 0.025 |
| | | LOCK : no/UNLOCK : yes | XCS-Z62 | 0.025 |
| | XCS-E83●● | LOCK : yes/UNLOCK : yes | XCS-Z63 | 0.025 |
| | | LOCK : yes/UNLOCK : no | XCS-Z64 | 0.025 |
| | | LOCK : no/UNLOCK : yes | XCS-Z65 | 0.025 |
| | XCS-E85●● | LOCK : yes/UNLOCK : yes | XCS-Z66 | 0.025 |
| | | LOCK : yes/UNLOCK : no | XCS-Z67 | 0.025 |
| | | LOCK : no/UNLOCK : yes | XCS-Z68 | 0.025 |
| Set of 10 blanking plugs for operating head slot | XCS-A, XCS-C, XCS-E | – | XCS-Z27 | 0.050 |
| Set of 10 pairs of keys for interlock "forced opening" device | XCS-C, XCS-E | – | XCS-Z25 | 0.100 |

(1) Lock supplied as standard with XCS-E switches : key withdrawal in LOCK and UNLOCK positions.

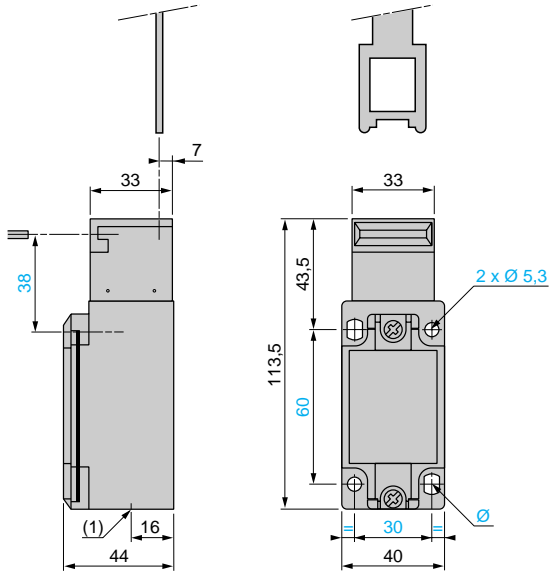
Components for safety applications

Guard switches
Metal, turret head, types XCS-A, XCS-C and XCS-E

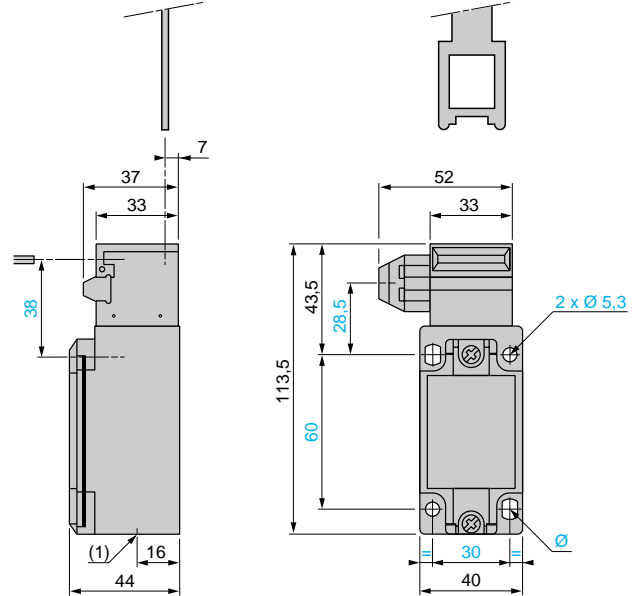
References :
pages 2/18 to 2/21
Schemes :
pages 2/25 to 2/27

Dimensions

XCS-A●●●



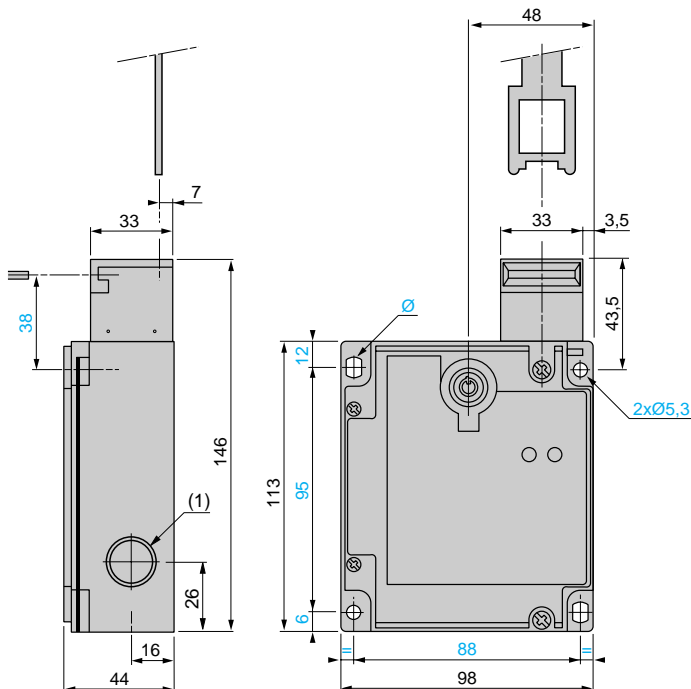
XCS-C●●●



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

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

XCS-E●●●●



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

Components for safety applications

Guard switches
Metal, turret head, types XCS-A, XCS-C and XCS-E

Dimensions

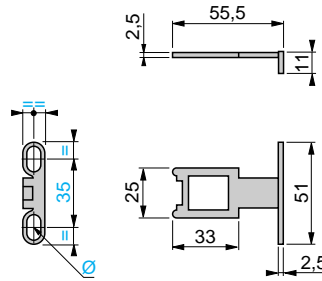
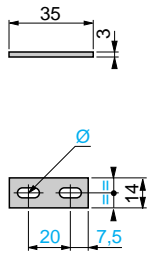
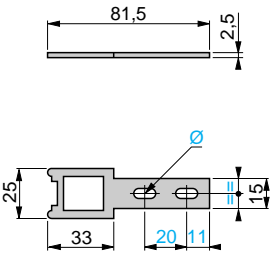
Dimensions

XCS-Z01

Adaptor shank (1)

XCS-Z02

2



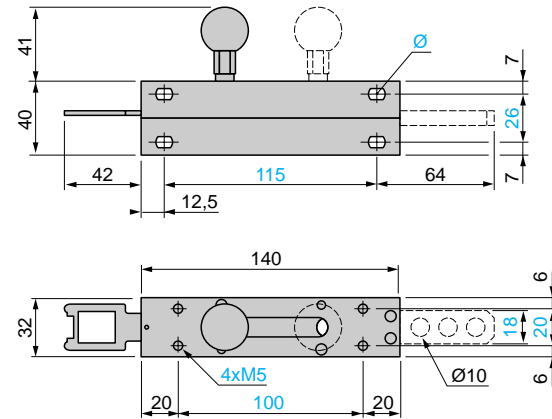
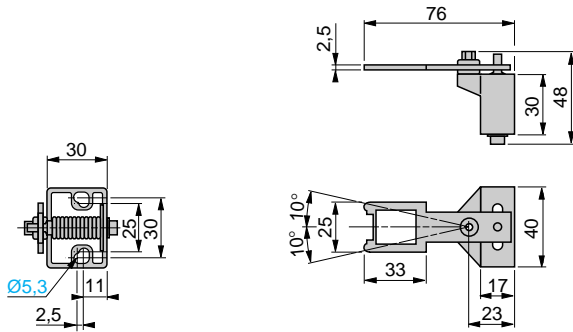
(1) Adaptor (supplied with actuator XCS-Z01) for replacing, without drilling additional fixing hole, an XCK-J safety limit switch with actuator ZCK-Y07 by an XCS-A, C or E safety limit switch with actuator XCS-Z01

Ø : 2 elongated holes Ø 5.3 x 10

Ø : 2 elongated holes Ø 5.3 x 10

XCS-Z03

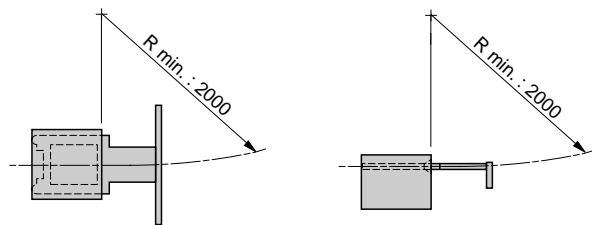
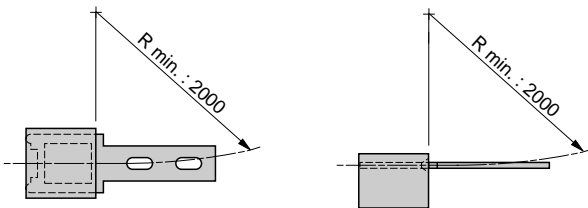
XCS-Z05



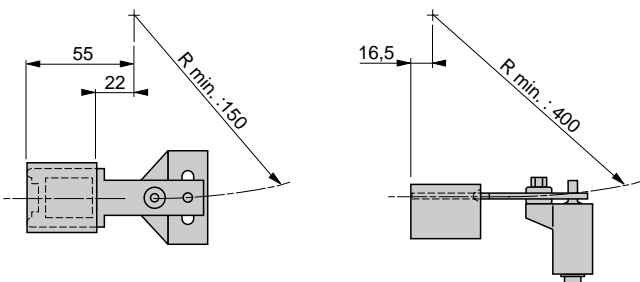
Ø : 4 elongated holes Ø 5.3 x 7.3

Operating radius required for actuator
XCS-Z01

XCS-Z02



XCS-Z03



Components for safety applications

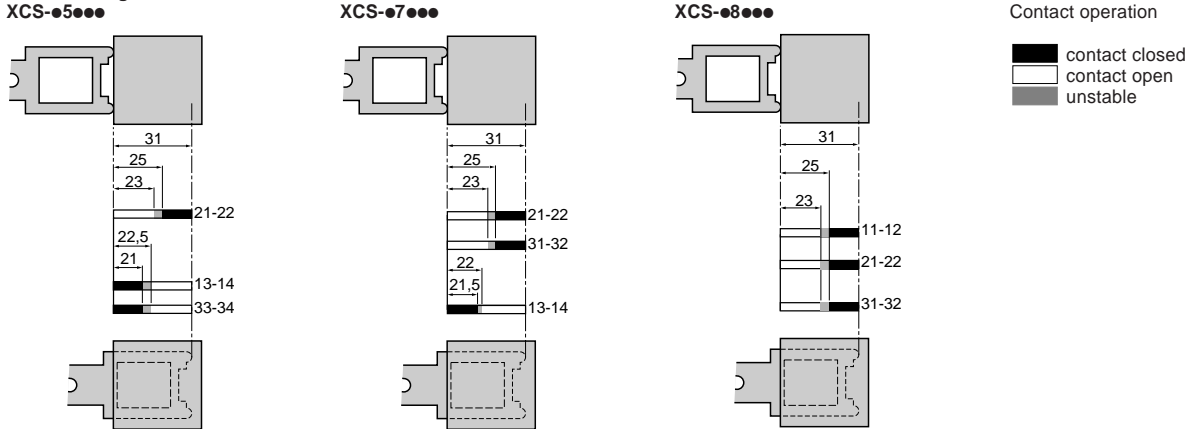
Guard switches
Metal, turret head, types XCS-A, XCS-C and XCS-E

References :
pages 2/18 to 2/21
Dimensions :
pages 2/23 and 2/24

Setting-up, schemes

Setting-up

Function diagrams

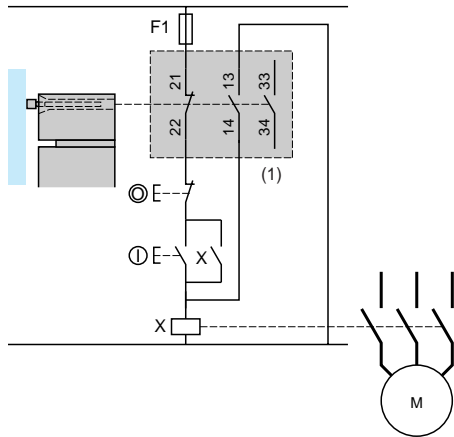


2

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

Wiring to category 1 (EN 954-1)

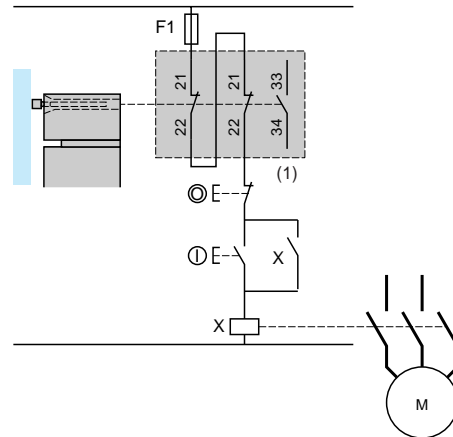
Example with 3-pole N/C + N/O + N/O contact and protection fuse to prevent shunting of the N/C contact, either by cable damage or by unauthorised tampering.



(1) Signalling contact

Wiring to category 3 (EN 954-1)

Example with 3-pole N/C + N/C + N/O contact without monitoring. (The guard switch should be used in conjunction with a safety limit switch to give mechanical/electrical redundancy)



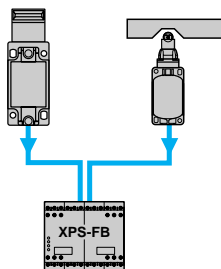
(1) Signalling contact

Wiring to category 4 (EN 954-1). Wiring method used in conjunction with PREVENTA safety module.

(The guard switch should be used in conjunction with a safety limit switch to give electrical/mechanical redundancy)

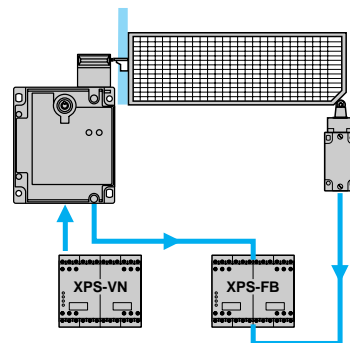
Method for machines with quick rundown time (low inertia)

Locking or interlocking mechanism uses the principles of redundancy and autocheck. The safety modules ensure these functions.



Locking by actuator and operation in positive mode associated with a safety module. See page 1/9.

Method for machines with long rundown time (high inertia)



Interlocking mechanism with actuator captive in the guard and zero speed detection. See page 1/9.

Components for safety applications

Guard switches with solenoid interlocking Metal, turret head, type XCS-E

Schemes

References :
pages 2/18 to 2/21
Dimensions :
pages 2/23 and 2/24

Wiring to category 1 (EN 954-1)

Wiring examples with protection fuse to prevent shunting of the N/C contact, either by cable damage or by unauthorised tampering.

Locking on de-energisation

N/C + N/O + N/O

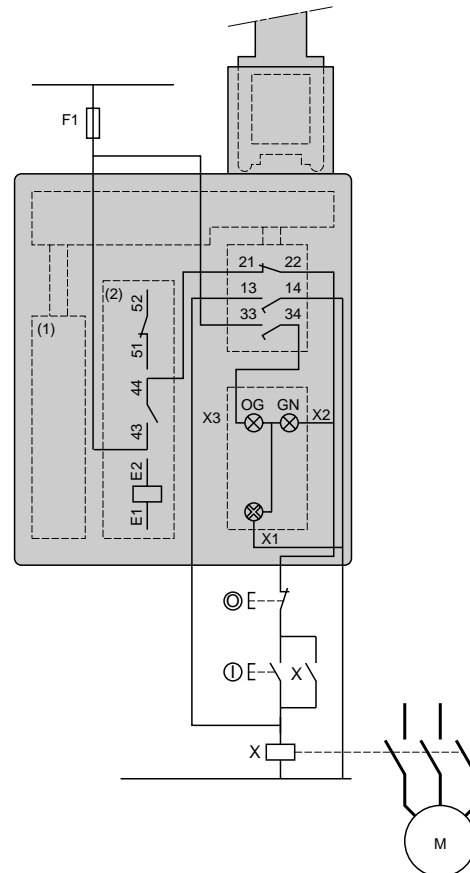
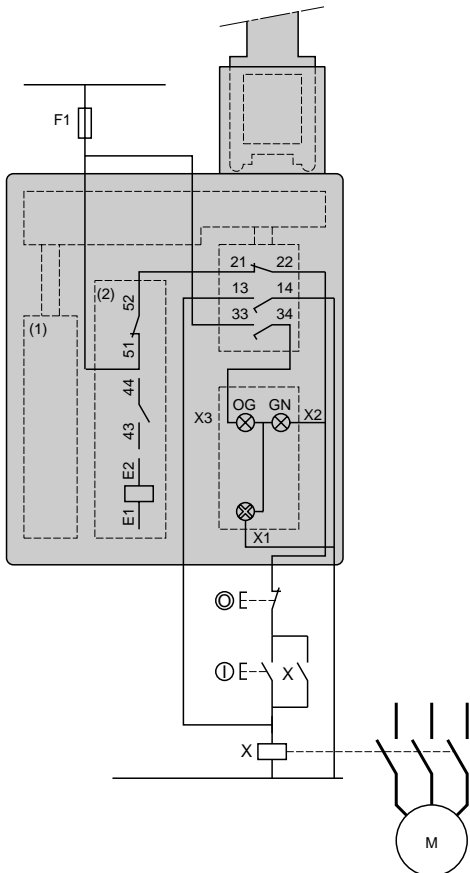
XCS-E53●3

Locking on energisation

N/C + N/O + N/O

XCS-E55●3

2



(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-X1 : LED (green) : actuator inserted and locked

(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

Note : these schemes are given as examples only, the designer must refer to EN 954-1 for guidance.

The risk assessment (EN 1050) will help the designer to determine the most appropriate risk reduction methods and the part played by the safety related parts of the control system in reducing the risk.

Components for safety applications

Guard switches with solenoid interlocking
Metal, turret head, type XCS-E

References :
pages 2/18 to 2/21
Dimensions :
pages 2/23 and 2/24

Schemes

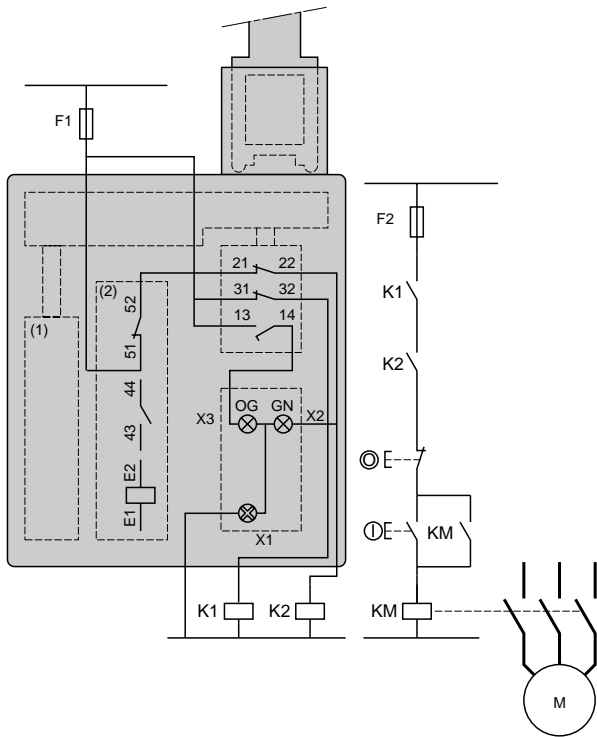
Wiring to category 3 (EN 954-1)

Wiring examples with redundancy in the guard switch contacts, without monitoring or redundancy in the power circuit.

Locking on de-energisation

N/C + N/C + N/O

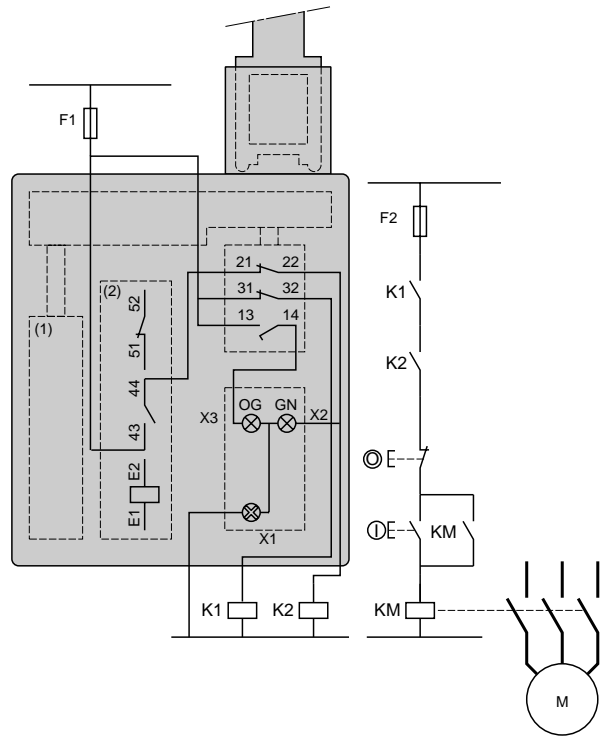
XCS-E73●3



Locking on energisation

N/C + N/C + N/O

XCS-E75●3



2

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

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

Note : these schemes are given as examples only, the designer must refer to EN 954-1 for guidance.

The risk assessment (EN 1050) will help the designer to determine the most appropriate risk reduction methods and the part played by the safety related parts of the control system in reducing the risk.

For further information, please consult your local Customer support centre.