

Safety detection solutions

Safety interlock switches

by actuator, with solenoid, turret head

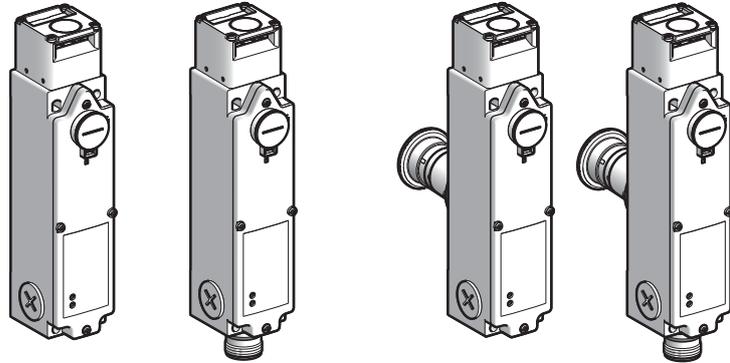
Metal, type XCS LF

Plastic, type XCS LE

Metal, type XCS LF

Safety interlock switches operating by actuator

With emergency release mushroom head pushbutton

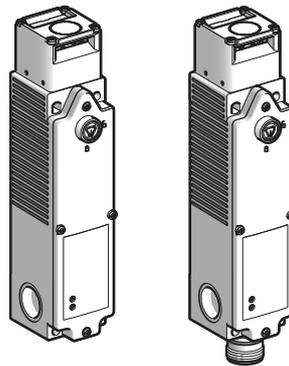


Pages 32939/4 and 32939/5

Pages 32939/6 and 32939/7

Plastic, type XCS LE

Safety interlock switches operating by actuator



Pages 32939/8 and 32939/9

Environment characteristics

Guard switch type		XCS LF (metal)	XCS LE (plastic)
Conformity to standards	Products	EN/IEC 60947-5-1, EN/ISO 13849-1, EN/IEC 62061, UL 508, CSA C22-2 no. 14	
	Machine assemblies	EN/IEC 60204-1, EN/ISO 14119, PrEN/ISO 12100	
Product certifications		UL (1), CSA, TÜV (pending)	
Maximum safety level (2)		PL=e, category 4 conforming to EN/ISO 13849-1 and SIL CL3 conforming to EN/IEC 62061	
Reliability data B _{10d}		5,500,000 (value given for a service life of 20 years but may be limited by contact and mechanical wear)	
Protective treatment		Standard version: "TC"	
Ambient air temperature	For operation	- 25 ... + 60 °C	
	For storage	- 40 ... + 70 °C	
Vibration resistance		5 gn (10...500 Hz) conforming to EN/IEC 60068-2-6	
Shock resistance		10 gn (duration 11 ms) conforming to EN/IEC 60068-2-27	
Electric shock protection		Class I conforming to EN/IEC 60536	Class II conforming to EN/IEC 60536
Degree of protection		IP 66 and IP 67 (IP 66 for XCS LF●●●●4●● and for XCS LF●●●●6●●) conforming to EN/IEC 60529 and EN/IEC 60947-5-1 (3)	
Connection		3 cable entries tapped M20 x 1.5 for ISO cable gland. Clamping capacity 7 to 13 mm or entries tapped for 1/2" NPT (USAS B2-1) conduit or 1 M23 connector output, 15 + 1 PE or 18 + 1 PE 24 V ~ versions.	
Material		Zamak case	Polyamide case
Actuators (all types): steel XC60, surface treated			

(1) The safety function on this device has not been tested by the UL.

(2) Using an appropriate and correctly connected control system.

(3) Live parts of these 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.

Contact block characteristics

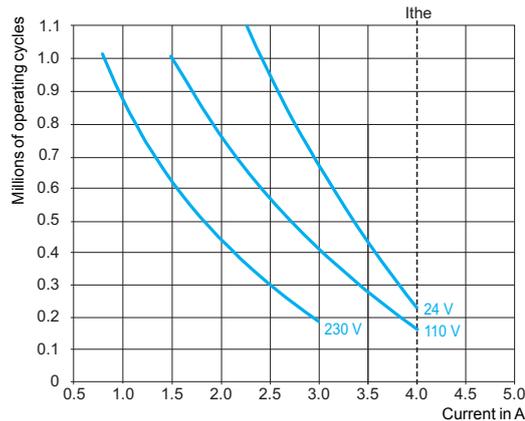
Rated operational characteristics	AC-15 ~, C300: $U_e = 240\text{ V}$, $I_e = 0.75\text{ A}$ DC-13 ~, R300: $U_e = 250\text{ V}$, $I_e = 0.1\text{ A}$ conforming to EN/IEC 60947-5-1
Conventional thermal current in enclosure	$I_{the} = 4\text{ A}$ (sum of the thermal currents = < 15 A)
Rated insulation voltage	$U_i = 250\text{ V}$ degree of pollution 3 conforming to EN/IEC 60947-1 $U_i = 300\text{ V}$ conforming to UL 508, CSA C22-2 no. 14
Rated impulse withstand voltage	$U_{imp} = 4\text{ kV}$ conforming to EN/IEC 60947-1
Positive operation	Contacts with positive opening operation conforming to EN/IEC 60947-5-1
Minimum switching current	10 mA at 20 V
Minimum switching voltage	17 V
Short-circuit protection	4 A cartridge fuse gG (gl) or 6 A fast-blow fuse fuse
Connection	Clamping capacity to spring terminals: 2 x 0.5 mm ² stripped flexible cables, 13 mm long 1 x 1.5 mm ² flexible or rigid cable

Additional characteristics

Actuation speed	Maximum: 0.5 m/s, minimum: 0.01 m/s
Resistance to forcible withdrawal of actuator	XCS LF: F max = 3000 N XCS LE: F max = 1400 N
Shock resistance	XCS LE: 1.2 J max. or 4.9 J depending on installation (see page 32920/9) XCS LF: 6.4 J max. or 9.6 J (see page 32920/9)
Mechanical durability	XCS LF and XCS LE: > 1 million operating cycles Emergency release mushroom head pushbutton on XCS LF: 30,000 operating cycles
Maximum operating rate	For maximum durability: 600 operating cycles per hour
Minimum force for extraction of actuator (not locked)	≥ 20 N

Electrical durability
conforming to EN/IEC 60947-5-1
Appendix C
Utilization categories AC-15 and DC-13
Maximum operating rate:
3600 operating cycles/hour
Load factor: 0.5

AC supply
50/60 Hz ~
~ inductive circuit



DC supply ~

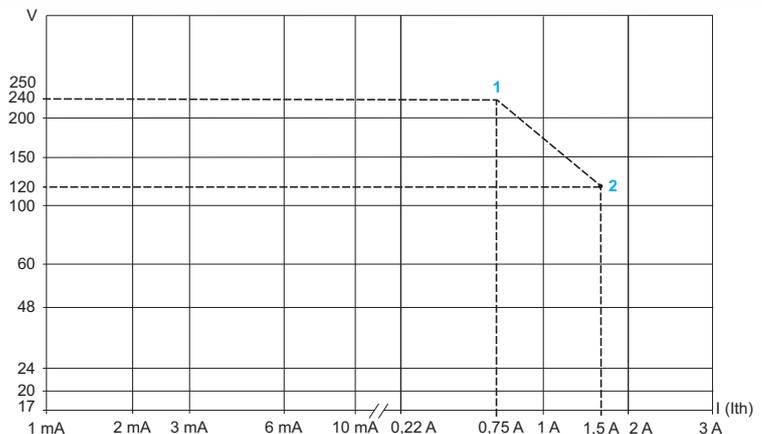
Power broken for 1 million operating cycles

Voltage	V	24	48	120
~	W	16	28	38

Switching capacity
conforming to EN/IEC 60947-5-1
Appendix C
Utilization categories AC-15 and DC-13

Switching capacity 1:
C300 240 V 0.75 A
R300 250 V 0.1 A

Switching capacity 2:
C300 120 V 1.5 A
R300 125 V 0.22 A



Safety detection solutions

Safety interlock switches

by actuator, with solenoid, turret head (1)

With 3 cable entries

Metal, type XCS LF

Type of switch

Locking on de-energization and unlocking on energization of solenoid (2)



LED indication	Orange LED: "guard open" indication Green LED: "guard closed and locked" indication				
Power supply for the solenoid and the LEDs	24 V \square or \sim (50/60 Hz on \sim)				
Type of contact on solenoid	1 NC + 1 NO break before make	2 NC simultaneous	1 NC + 2 NO break before make	2 NC + 1 NO break before make	3 NC simultaneous

References of switches without actuator (⊖ NC contact with positive opening operation) with 3 cable entries tapped ISO M20 x 1.5

2-pole contact 1 NC + 1 NO break before make, slow break (3)		XCS LF2525312 ⊖	-	-	-
2-pole contact 2 NC simultaneous, slow break (3)		XCS LF2725312 ⊖	XCS LF2727312 ⊖	-	-
3-pole contact 1 NC + 2 NO break before make, slow break (3)		-	-	XCS LF3535312 ⊖	-
3-pole contact 2 NC + 1 NO break before make, slow break (3)		-	-	-	XCS LF3737312 ⊖
3-pole contact 3 NC simultaneous, slow break (3)		-	-	-	XCS LF3838312 ⊖
Weight (kg)		1.100	1.100	1.100	1.100

Solenoid and LED characteristics

Load factor	100%
Rated operational voltage (4)	24 V \square or \sim or 120 V \sim or 230 V \sim
Voltage limits	Conforming to EN/IEC 60947-1 - 15%, + 10% of the rated operational voltage (including ripple on \square)
Consumption	< 5.4 W at 20°C and max. voltage

References of complete switches with solenoid supply voltage of 120 V or 230 V

To order a switch with a solenoid voltage of 110/120 V \sim , replace the 6th number in the selected reference with 3.

Example: XCS LF3535312 becomes **XCS LF3535332**.

To order a switch with a solenoid voltage of 220/240 V \sim , replace the 6th number in the selected reference with 4.

Example: XCS LF3535312 becomes **XCS LF3535342**.

References of switches with locking on energization and unlocking on de-energization

To order a guard switch with locking on energization and unlocking on de-energization of the solenoid, replace the 5th number in the selected reference with 5.

Example: XCS LF3535312 becomes **XCS LF3535512**.

References of complete switches with 3 cable entries tapped for 1/2" NPT conduit

To order a switch with 3 1/2" NPT cable entries, replace the last number in the reference with 3.

Example: XCS LF3535312 becomes **XCS LF3535313**.

References of actuators and separate parts

See page 32939/10.

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

(2) A key operated lock (2 keys included with switch) enables forced opening of the interlocking mechanism, by authorized personnel, allowing withdrawal of the actuator and subsequent opening of the NC safety contacts.

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

(4) Common power supply for the solenoid and the LEDs.

Other versions: consult your Customer Care Centre.

Safety detection solutions

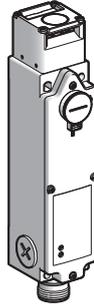
Safety interlock switches

by actuator, with solenoid, turret head (1)

Connector output

Metal, type XCS LF

Type of switch | Locking on de-energization and unlocking on energization of solenoid (2)



LED indication | Orange LED: "guard open" indication
Green LED: "guard closed and locked" signalling

Power supply for the solenoid and the LEDs | 24 V $\overline{\text{---}}$ or \sim (50/60 Hz on \sim)

Type of contact on solenoid	1 NC + 1 NO break before make	2 NC	1 NC + 2 NO break before make	2 NC + 1 NO break before make	3 NC simultaneous

References of switches without actuator (⊖ NC contact with positive opening operation), 16-pin (4 contacts) or 19-pin (6 contacts) M23 connector output

2-pole contact 1 NC + 1 NO break before make, slow break (3)		XCS LF252531M2 ▲	-	-	-	-
2-pole contact 2 NC simultaneous, slow break (3)		XCS LF272531M2 ▲	XCS LF272731M2 ▲	-	-	-
3-pole contact 1 NC + 2 NO break before make, slow break (3)		-	-	XCS LF353531M3 ▲	-	-
3-pole contact 2 NC + 1 NO break before make, slow break (3)		-	-	-	XCS LF373731M3 ▲	-
3-pole contact 3 NC simultaneous, slow break (3)		-	-	-	-	XCS LF383831M3 ▲
Weight (kg)		1.100	1.100	1.100	1.100	1.100

Solenoid and LED characteristics

Load factor		100%
Rated operational voltage (4)		24 V $\overline{\text{---}}$ or \sim
Voltage limits	Conforming to EN/IEC 60947-1	- 15%, + 10% of the rated operational voltage (including ripple on $\overline{\text{---}}$)
Consumption		< 5.4 W at 20°C and max. voltage

References of switches with locking on energization and unlocking on de-energization

To order a guard switch with locking on energization and unlocking on de-energization of the solenoid, replace the 5th number in the selected reference with 5. Example: XCS LF272731M2 or XCS LF353531M3 becomes XCS LF272751M2 or XCS LF353551M3.

References of actuators and separate parts

See page 32939/10.

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

(2) A key operated lock (two keys included with switch) enables forced opening of the interlocking mechanism, by authorized personnel, allowing withdrawal of the actuator and subsequent opening of the NC safety contacts.

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

(4) Common power supply for the solenoid and the LEDs.

Note : Due to existing cable connections and to ensure your personal safety, safety screws have been used in front of the product to prevent unauthorized access.

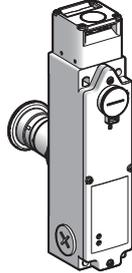
Other versions: consult your Customer Care Centre.

▲ : Available 4th quarter 2011.

Safety detection solutions

Safety interlock switches
by actuator, with solenoid, turret head (1)
With 3 cable entries
Metal, type XCS LF

Type of switch Locking on de-energization and unlocking on energization of solenoid (2) or in emergency by mushroom head pushbutton (3)



LED indication	Orange LED: "guard open" indication Green LED: "guard closed and locked" indication	
Power supply for the solenoid and the LEDs	24 V $\overline{\text{---}}$ or \sim (50/60 Hz on \sim)	
Type of contact on solenoid	1 NC + 2 NO break before make 	2 NC + 1 NO break before make

References of switches without actuator (⊖ NC contact with positive opening operation) with trigger action mushroom head pushbutton, diameter 40 mm, "turn to release" reset, with 3 entries tapped ISO M20 x 1.5

3-pole contact 1 NC + 2 NO break before make, slow break (4) 	XCS LF3535412 ⊖ ▲	—
3-pole contact 2 NC + 1 NO break before make, slow break (4) 	—	XCS LF3737412 ⊖ ▲
Weight (kg)	1.220	1.220

Solenoid and LED characteristics

Load factor	100%
Rated operational voltage (5)	24 V $\overline{\text{---}}$ or \sim or 120 V \sim or 230 V \sim
Voltage limits	Conforming to EN/IEC 60947-1 - 15%, + 10% of the rated operational voltage (including ripple on $\overline{\text{---}}$)
Consumption	< 5.4 W at 20°C and max. voltage

References of switches with trigger action mushroom head pushbutton, diameter 40 mm, key no. 455 reset

To order a switch with trigger action mushroom head pushbutton, key no. 455 release, diameter 40 mm at the rear of the product, replace the 5th number in the selected reference with 6.
Example: XCS LF3535412 becomes **XCS LF3535612**.

References of complete switches with solenoid supply voltage of 120 V or 230 V

To order a switch with a solenoid voltage of 110/120 V \sim , replace the 6th number in the selected reference with 3.
To order a switch with a solenoid voltage of 220/240 V \sim , replace the 6th number in the selected reference with 4.

References of complete switches with 3 cable entries tapped for 1/2" NPT conduit

To order a switch with 3 1/2" NPT cable entries, replace the last number in the reference with 3.
Example: XCS LF3737412 becomes **XCS LF3737413**.

References of actuators and separate parts

See page 32939/10.

- (1) Head adjustable in 90° steps throughout 360°. Blanking plug for operating head slot included with switch.
- (2) A key operated lock (2 keys included with switch) enables forced opening of the interlocking mechanism, by authorized personnel, allowing withdrawal of the actuator and subsequent opening of the NC safety contacts.
- (3) Trigger action, diameter 40 mm, "turn to release" or "key no. 455" reset type.
- (4) Schematic diagrams shown represent the contact states whilst the actuator is inserted in the head of the switch.
- (5) Common power supply for the solenoid and the LEDs.

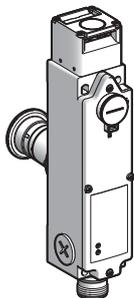
Other versions: consult your Customer Care Centre.

▲ : Available 4th quarter 2011.

Safety detection solutions

Safety interlock switches
by actuator, with solenoid, turret head (1)
Connector output
Metal, type XCS LF

Type of switch	Locking on de-energization and unlocking on energization of solenoid (2) or in emergency by mushroom head pushbutton (3)
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LED indication	Orange LED: "guard open" indication Green LED: "guard closed and locked" indication	
Power supply for the solenoid and the LEDs	24 V $\overline{\text{---}}$ or \sim (50/60 Hz on \sim)	
Type of contact on solenoid	1 NC + 2 NO break before make	2 NC + 1 NO break before make

References of switches without actuator (⊖ NC contact with positive opening operation) with trigger action mushroom head pushbutton, diameter 40 mm, "turn to release" reset, 19-pin M23 connector output (6 contacts)

3-pole contact 1 NC + 2 NO break before make, slow break (4)		XCS LF353541M3 ▲	-
3-pole contact 2 NC + 1 NO break before make, slow break (4)		-	XCS LF353541M3 ⊖ ▲
Weight (kg)	1.220	1.220	

Solenoid and LED characteristics

Load factor	100%
Rated operational voltage (5)	24 V $\overline{\text{---}}$ or \sim
Voltage limits	Conforming to EN/IEC 60947-1 - 15%, + 10% of the rated operational voltage (including ripple on $\overline{\text{---}}$)
Consumption	< 5.4 W at 20°C and max. voltage

References of switches with trigger action mushroom head pushbutton, diameter 40 mm, key no. 455 reset

To order a switch with trigger action mushroom head pushbutton, unlocked by key no. 455, diameter 40 mm at the rear of the product, replace the 5th number in the selected reference with 6.
Example: XCS LF353541M3 becomes XCS LF353561M3

References of actuators and separate parts

See page 32939/10.

- (1) Head adjustable in 90° steps throughout 360°. Blanking plug for operating head slot included with switch.
- (2) A key-operated lock (two keys included with switch) enables forced opening of the interlocking mechanism, by authorized personnel, allowing withdrawal of the actuator and subsequent opening of the NC safety contacts.
- (3) Trigger action, diameter 40 mm, "turn to release" or "key no. 455" reset type.
- (4) Schematic diagrams shown represent the contact states whilst the actuator is inserted in the head of the switch.
- (5) Common power supply for the solenoid and the LEDs.

Note : Due to existing cable connections and to ensure your personal safety, safety screws have been used in front of the product to prevent unauthorized access.

Other versions: consult your Customer Care Centre.

▲ : Available 4th quarter 2011.

Safety detection solutions

Safety interlock switches

by actuator, with solenoid, turret head (1)

With 3 cable entries, double insulated

Plastic, type XCS LE

Type of switch

Locking on de-energization and unlocking on energization of solenoid (2)



LED indication

Orange LED: "guard open" indication
Green LED: "guard closed and locked" indication

Power supply for the solenoid and the LEDs

24 V $\overline{\text{---}}$ or \sim (50/60 Hz on \sim)

Type of contact on solenoid

1 NO + 1 NC break before make	2 NC simultaneous	1 NC + 2 NO break before make	2 NC + 1 NO break before make	3 NC simultaneous

References of switches without actuator (⊖ NC contact with positive opening operation) with 3 cable entries tapped ISO M20 x 1.5

2-pole contact 1 NC + 1 NO break before make, slow break (3)		XCS LE2525312 ⊖	-	-	-	-
2-pole contact 2 NC simultaneous, slow break (3)		-	XCS LE2727312 ⊖	-	-	-
3-pole contact 1 NC + 2 NO break before make, slow break (3)		-	-	XCS LE3535312 ⊖	-	-
3-pole contact 2 NC + 1 NO break before make, slow break (3)		-	-	-	XCS LE3737312 ⊖	-
3-pole contact 3 NC simultaneous, slow break (3)		-	-	-	-	XCS LE3838312 ⊖
Weight (kg)		0.530	0.530	0.530	0.530	0.530

Solenoid and LED characteristics

Load factor	100%
Rated operational voltage (4)	24 V $\overline{\text{---}}$ or \sim or 120 V \sim or 230 V \sim
Voltage limits	Conforming to EN/IEC 60947-1 - 15%, + 10% of the rated operational voltage (including ripple on $\overline{\text{---}}$)
Consumption	< 5.4 W at 20°C and max. voltage

References of complete switches with solenoid supply voltage of 120 V or 230 V

To order a switch with a solenoid voltage of 110/120 V \sim , replace the 6th number in the selected reference with 3.
Example: XCS LE2525312 becomes XCS LE2525332.
To order a switch with a solenoid voltage of 220/240 V \sim , replace the 6th number in the selected reference with 4.
Example: XCS LE2525312 becomes XCS LE2525342.

References of switches with locking on energization and unlocking on de-energization

To order a guard switch with locking on energization and unlocking on de-energization of the solenoid, replace the 5th number in the selected reference with 5.
Example: XCS LE2525312 becomes XCS LE2525512

References of complete switches with three cable entries tapped for 1/2" NPT conduit

To order a switch with 1/2" NPT cable entries, replace the last number in the reference with 3.
Example: XCS LE2727312 becomes XCS LE2727313.

References of actuators and separate parts

See page 32939/10.

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

(2) A special tool included with the guard switch enables forced opening of the interlocking mechanism, by authorized personnel, allowing withdrawal of the actuator and subsequent opening of the NC safety contacts.

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

(4) Common power supply for the solenoid and the LEDs.

Other versions: consult your Customer Care Centre.

Safety detection solutions

Safety interlock switches
by actuator, with solenoid, turret head (1)
Connector output, double insulated
Plastic, type XCS LE

Type of switch | Locking on de-energization and unlocking on energization of solenoid (2)



LED indication	Orange LED: "guard open" indication Green LED: "guard closed and locked" indication				
Power supply for the solenoid and the LEDs	24 V $\overline{\text{---}}$ or \sim (50/60 Hz on \sim)				
Type of contact on solenoid	1 NO + 1 NC break before make	2 NC simultaneous	1 NC + 2 NO break before make	2 NC + 1 NO break before make	3 NC simultaneous

References of switches without actuator (⊖ NC contact with positive opening operation), 16-pin (4 contacts) or 19-pin (6 contacts) M23 connector output

2-pole contact 1 NC + 1 NO break before make, slow break (3)		XCS LE252531M2 ▲	-	-	-	-
2-pole contact 2 NC simultaneous, slow break (3)		-	XCS LE272731M2 ▲	-	-	-
3-pole contact 1 NC + 2 NO break before make, slow break (3)		-	-	XCS LE353531M3 ▲	-	-
3-pole contact 2 NC + 1 NO break before make, slow break (3)		-	-	-	XCS LE373731M3 ▲	-
3-pole contact 3 NC simultaneous, slow break (3)		-	-	-	-	XCS LE383831M3 ▲
Weight (kg)		0.530	0.530	0.530	0.530	0.530

Solenoid and LED characteristics

Load factor	100%
Rated operational voltage (4)	24 V $\overline{\text{---}}$ or \sim
Voltage limits	Conforming to EN/IEC 60947-1 - 15%, + 10% of the rated operational voltage (including ripple on $\overline{\text{---}}$)
Consumption	< 5.4 W at 20°C and max. voltage

References of switches with locking on energization and unlocking on de-energization

To order a guard switch with locking on energization and unlocking on de-energization of the solenoid, replace the 5th number in the selected reference with 5.
Example: XCS LE252531M2 becomes XCS LE252551M2 and XCS LE353531M3 becomes XCS LE353551M3.

References of actuators and separate parts

See page 32939/10.

- (1) Head adjustable in 90° steps throughout 360°. Blanking plug for operating head slot included with switch.
- (2) A special tool included with the guard switch enables forced opening of the interlocking mechanism, by authorized personnel, allowing withdrawal of the actuator and subsequent opening of the NC safety contacts.
- (3) Schematic diagrams shown represent the contact states whilst the actuator is inserted in the head of the switch.
- (4) Common power supply for the solenoid and the LEDs.

Note : Due to existing cable connections and to ensure your personal safety, safety screws have been used in front of the product to prevent unauthorized access.

Other versions: consult your Customer Care Centre.

▲ : Available 4th quarter 2011.

Safety detection solutions

Safety interlock switches

by actuator, with solenoid, turret head

Metal, type XCS LF and plastic, type XCS LE

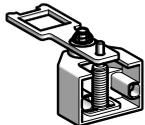
Accessories



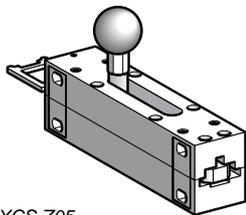
XCS Z01



XCS Z02



XCS Z03



XCS Z05



XCS Z90

Actuator references

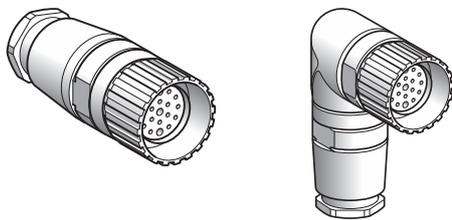
Description	Used for	Unit reference	Weight kg
Straight actuator	XCS LF, XCS LE	XCS Z01	0.020
Actuator with wide fixing	XCS LF, XCS LE	XCS Z02	0.020
Pivoting actuator	XCS LF, XCS LE	XCS Z03	0.095
Latch for sliding doors	XCS LF, XCS LE	XCS Z05	0.600

Separate parts

Description	Used for	Unit reference	Weight kg
Blanking plugs for operating head slot (Sold in lots of 10)	XCS LF, XCS LE	XCS Z30	0.050
Keys for interlock "forced opening" device (Sold in lots of 10)	XCS LF	XCS Z25	0.100
Padlocking device to prevent insertion of actuator, for up to 3 padlocks (padlocks not included)	XCS LF, XCS LE	XCS Z90	0.055
Tool for forced opening of interlocking device (Sold in lots of 10)	XCS LE	XCS Z100	0.050
Cover safety kit consisting of:	XCS LF	XCS Z210	0.020
■ 4 x 5-lobe torque screws			
■ 1 magnetic screwdriver bit	XCS LE	XCS Z211	0.020

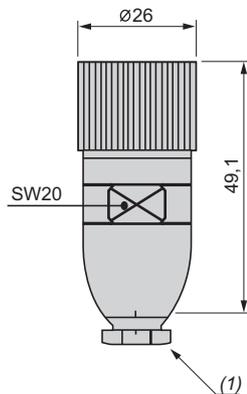
M23 connectors	
Characteristics	
Type of connection	Screw threaded (metal clamping ring)
Degree of protection	IP 65 (with clamping ring correctly tightened)
Ambient air temperature	- 25...+ 110°C
Connection	To solder terminals. Maximum conductor c.s.a.: 1 mm ² Cable gland: no. 13 metal (Pg 13.5) Clamping capacity: 9 to 12 mm
LED signalling	–
Nominal voltage	60 V ~, 75 V –
Nominal current	7.5 A
Insulation resistance	> 10 ¹² Ω
Contact resistance	≤ 5 mΩ

References						
Type of connector	Number of contacts	Cable connection	Type	Reference	Weight kg	
Female, M23	16	To solder terminals	Straight	XZ CC23FDM160S	0.080	
			Elbowed	XZ CC23FCM160S	0.150	
	19	To solder terminals	Straight	XZ CC23FDM190S	0.080	
			Elbowed	XZ CC23FCM190S	0.150	

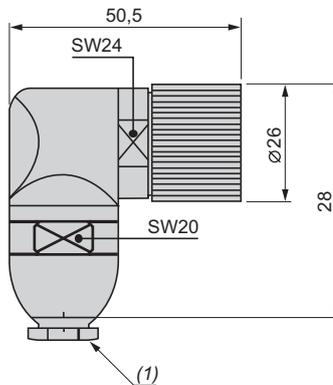


Dimensions

XZ CC23FDM160S and XZ CC23FDM190S



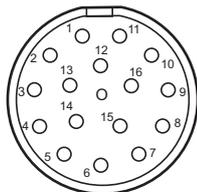
XZ CC23FCM160S and XZ CC23FCM190S



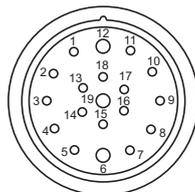
(1) No. 13 metal cable gland

Connections

XZ CC23F•M160S



XZ CC23F•M190S



References (continued),
characteristics,
dimensions,
connections

Safety detection solutions

Safety interlock switches

by actuator, with solenoid, turret head
Metal, type XCS LF and plastic, type XCS LE
Cabling accessories

Connector adaptors

Characteristics

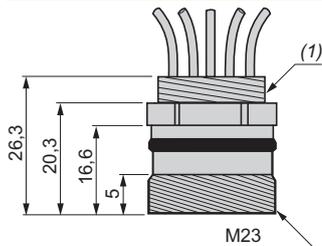
Type of connection	Screw threaded
Degree of protection	IP 67
Ambient air temperature	- 25...+ 80°C
Connection	Via 100 mm long wires
Conductor c.s.a.	XZC E03M2316M : 16 x 0.28 mm ² XZC E03M2319M : 19 x 0.28 mm ²
LED signalling	–
Max. voltage	36 V ~ ∞
Nominal current	4 A
Insulation resistance	> 10 ⁹ Ω
Contact resistance	≤ 5 m Ω

References

Adaptor type	Number of contacts	Size of tapped hole	Number of wires	Reference	Weight kg
M23, male	5	M20 x 1.5	16	XZC E03M2316M	0.100
Metal body			19	XZC E03M2319M	0.100

Dimensions

XZ CE20M231●M

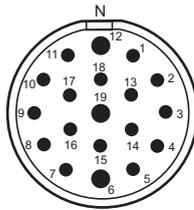
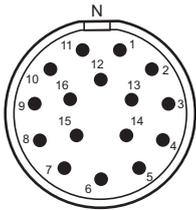


(1) M20 x 1.5

Connections

XZ CE 20M2316M

XZ CE20M2319M



Safety detection solutions

Safety interlock switches

by actuator, with solenoid, turret head

Metal, type XCS LF

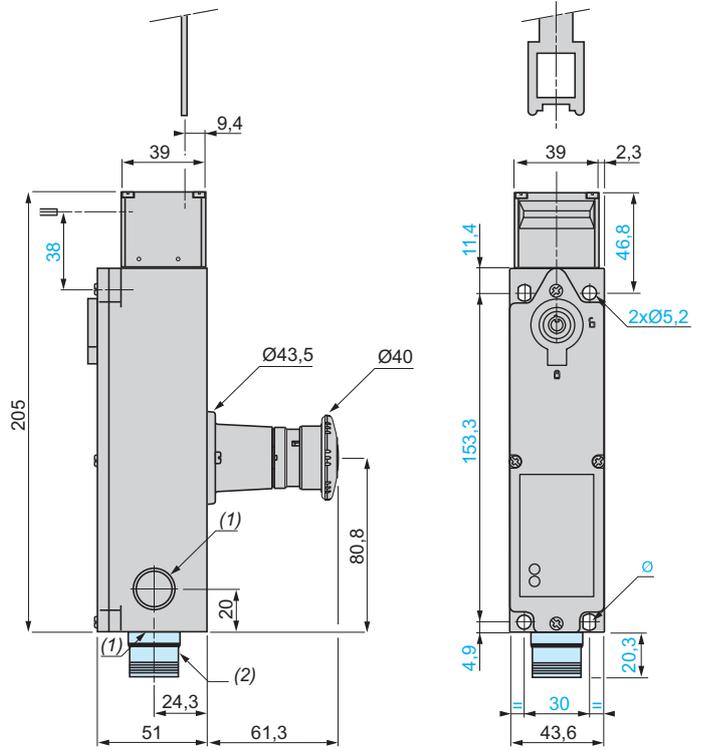
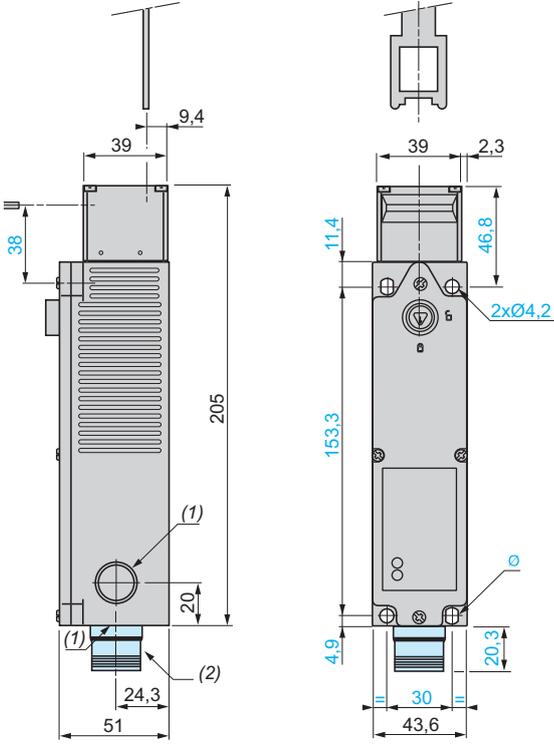
Plastic, type XCS LE

Dimensions

Metal safety interlock switches

XCS LF●●●●●●

XCS LF●●●●●●, with emergency release mushroom head pushbutton

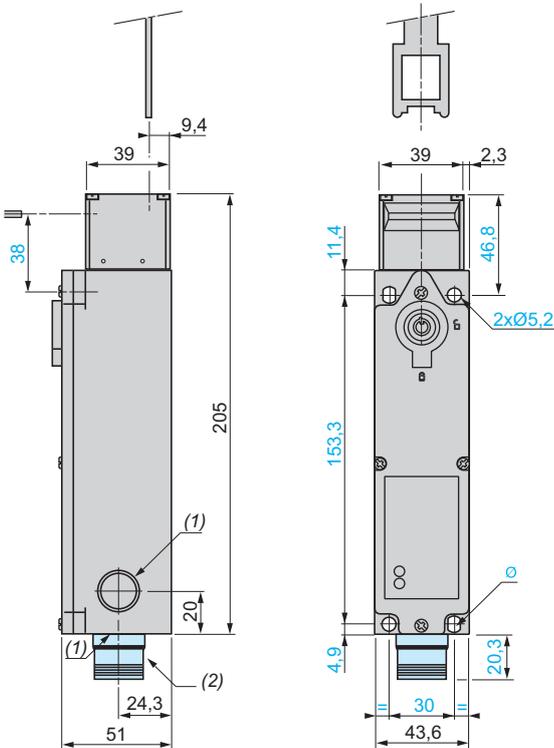


Ø: 2 elongated holes Ø 7 x 5.2

Ø: 2 elongated holes Ø 7 x 5.2

Plastic safety interlock switches

XCS LE●●●●●●

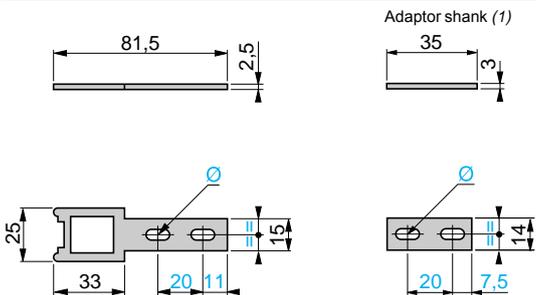


Ø: 2 elongated holes Ø 6.2 x 4.2

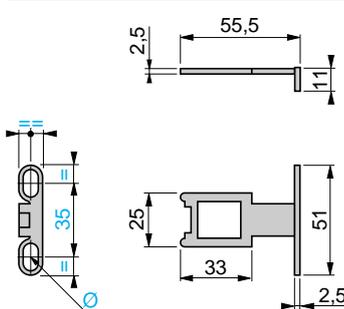
- (1) 3 tapped entries for cable gland.
- (2) Version with M23 connector.

Dimensions (continued)

XCS Z01



XCS Z02

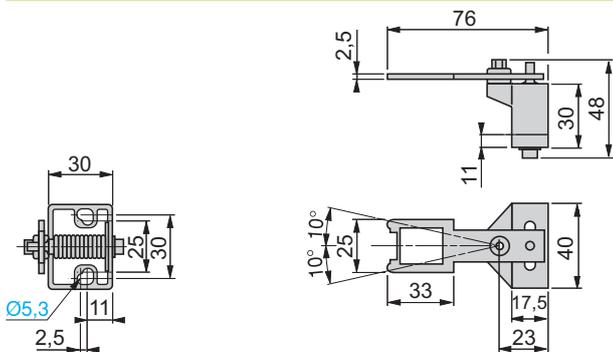


(1) Adaptor (included with actuator XCS Z01) for replacing, without drilling an additional fixing hole, a guard switch XCK J or XCS L with actuator ZCK Y07 with a guard switch XCS LF with actuator XCS Z01.

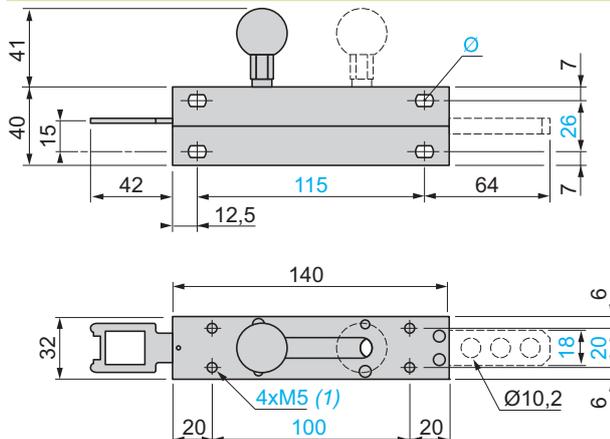
Ø: 2 elongated holes Ø 5.3 x 10

Ø: 2 elongated holes Ø 5.3 x 10

XCS Z03



XCS Z05

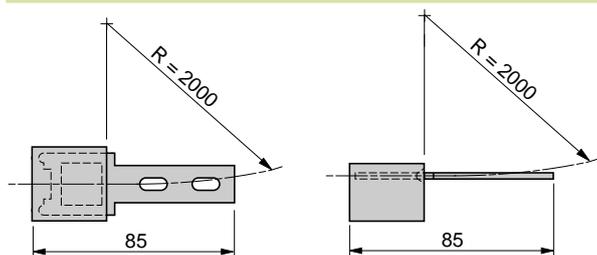


Fixing axis % related to actuator.

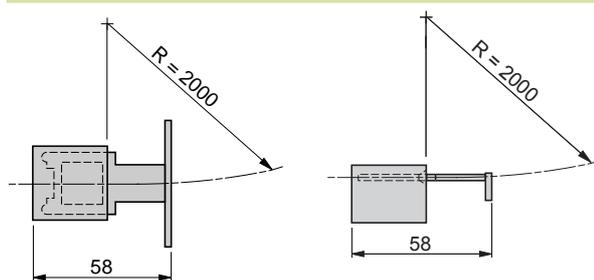
(1) Depth: 10
Ø: 4 elongated holes Ø 5.2 x 8

Actuation radius

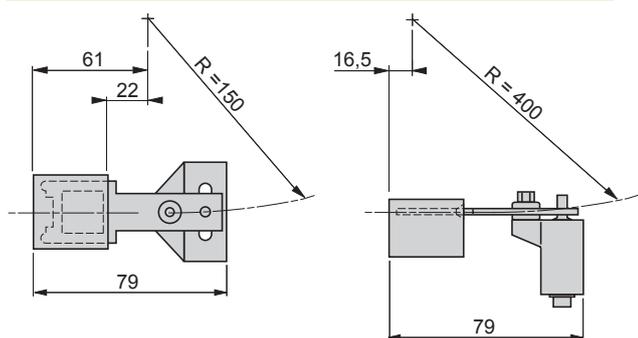
XCS Z01



XCS Z02



XCS Z03



R = minimum radius

Safety interlock switches

by actuator, with solenoid, turret head

Metal, type XCS LF

Plastic, type XCS LE

Operation

Functional diagrams

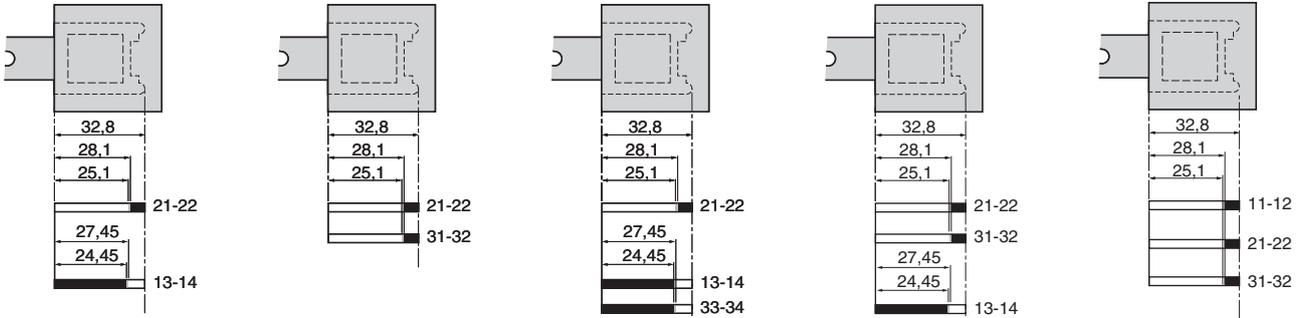
XCS LF/LE25●●●

XCS LF/LE27●●●

XCS LF/LE35●●●

XCS LF/LE37●●●

XCS LF/LE38●●●



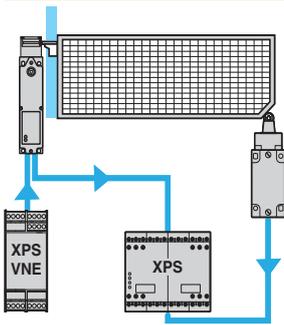
Contact operation

■ Closed □ Open ▒ Unstable

Connections

Wiring to PL=e, category 4 conforming to EN/ISO 13849-1 and SIL CL3 conforming to EN/IEC 62061. Wiring method used in conjunction with Preventa safety module (the safety interlock switch should be used in conjunction with a safety limit switch to achieve electrical/mechanical redundancy).

Method for machines with long rundown time (high inertia)



Interlocking device for actuator fitted on guard and zero speed detection.

Safety detection solutions

Safety interlock switches

by actuator, with solenoid, turret head

Metal, type XCS LF

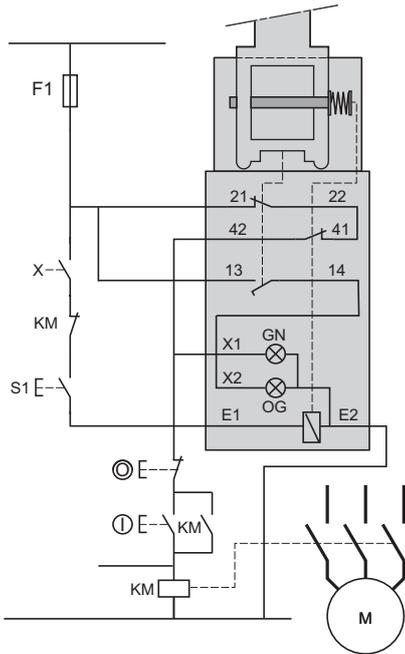
Plastic, type XCS LE

Wiring up to PL=b, category 1 in accordance with EN/ISO 13849-1

Wiring example with protection fuse to prevent shunting of the NC contact, either by cable damage or by tampering.

1 NC + 1 NO locking on de-energization and 1 NC + 1 NO auxiliary contacts

XCS LF/LE25253●●



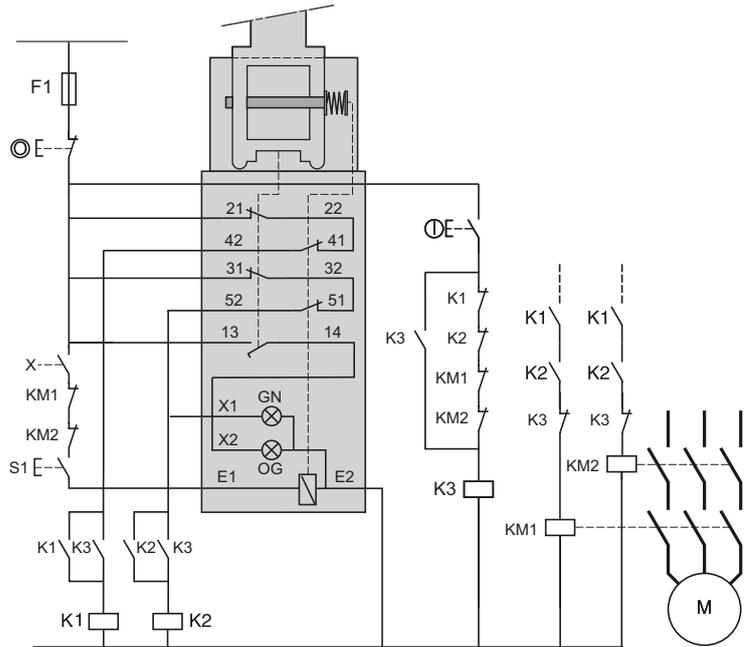
- E1-E2: Solenoid supply
- 13-14: Safety contact, available for redundancy
- 13-X2/E2: LED (orange): actuator withdrawn
- 41-X1/E2: LED (green): actuator inserted and locked
- 22-41 : Safety pre-wiring obligatory
- S1: Manual release button
- X: Unlocking signal

Wiring up to PL=b, category 3 in accordance with EN/ISO 13849-1

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

2 NC + 1 NO locking on de-energization and 2 NC + 1 NO auxiliary contacts

XCS LF/LE37373●●



- E1-E2: Solenoid supply
- 21-22 and 31-32: Safety contacts, available for redundancy
- 13-X2/E2: LED (orange): actuator withdrawn
- 51-X1/E2: LED (green): actuator inserted and locked
- 22-41 and 32-51: Safety pre-wiring obligatory
- S1: Manual release button
- X: Zero speed or unlocking signal

Safety detection solutions

Safety interlock switches

by actuator, with solenoid, turret head

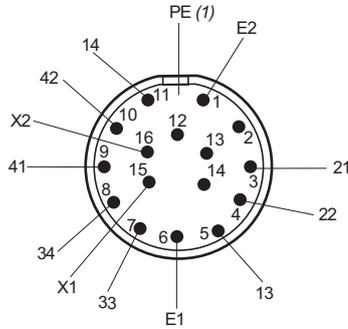
Metal, type XCS LF

Plastic, type XCS LE

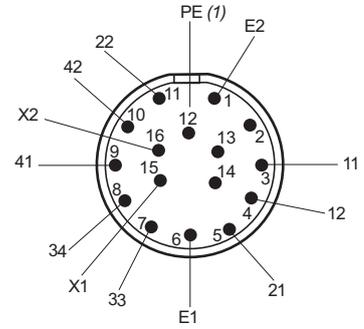
Connection by M23 connectors

16-pin M23 connectors

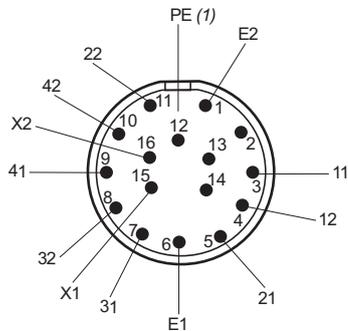
XCS LF/LE2525●●



XCS LF/LE2725●●

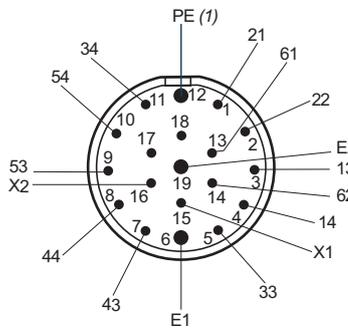


XCS LF/LE2727●●

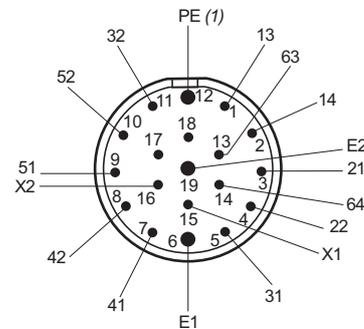


19-pin M23 connectors

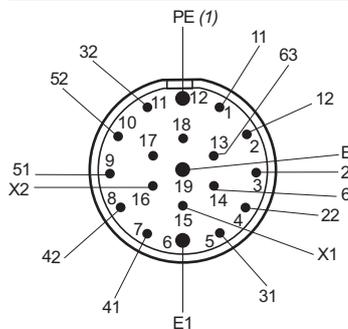
XCS LF/LE3535●●



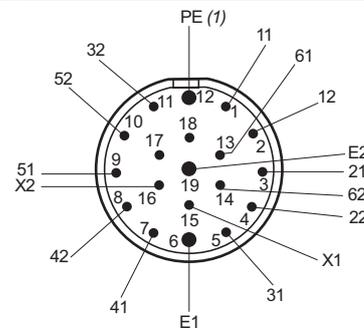
XCS LF/LE3737●●



XCS LF/LE3837●●



XCS LF/LE3838●●



(1) PE connection for XCS LF only.