

Safety control unit for category 3 and 4

Technopolymer

MATERIAL

Polyamide-based (PA) technopolymer, grey colour.

STANDARD EXECUTIONS

Safety control unit for category 3 and 4.

- **CN-SFT.115:** standard dimensions.

- **CN-SFT.46:** reduced dimensions.

Contact blocks in the standard execution:

- **NO-NC:** 1 NO contact + 1 NC contact.

- **NC-NC:** 2 NC contacts.

FEATURES AND APPLICATIONS

CN-SFT can be used in conjunction with the following Elesa products: ESC-SFT, CFSW, CFSQ, M.2000-SWM.

The CN-SFT safety control unit is able to control the status of two contacts (safety Reed magnetic sensors, emergency buttons, mechanical safety switches, safety interlocks for mobile guards): the output is activated by pressing and releasing the START button (reset) only if the NO contact is open and the NC contact is closed (NO-NC version) or only if the two NC contacts are closed (NC-NC version).

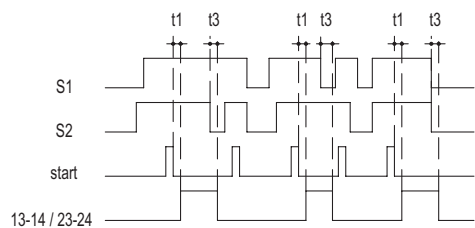
The switching of even just one input contact results in a safe situation, placing the safe outputs in an open state and preventing them from closing again, even after a new switching of the contact and pressing the START (reset) button.



Technical data	
Container material	PA
Dimensions	CN-SFT.115: 114.5x99x22.5 mm CN-SFT.46: 97x72x46 mm
Weight	160 g
Operational environmental conditions	Temperature: -5 ... +55°C
	Relative humidity: 4% ... 100%
	Pressure: 86 ... 106 kPa
Storage environmental conditions	Temperature: -25 ... +70°C
	Relative humidity: 5% ... 95%
	Pressure: 86 ... 106 kPa
Degree of protection (IEC 60529)	IP20
Pollution degree	2
Withstand voltage at pulse (Uimp)	4 kV
Insulation nominal voltage (Ui)	250 V
Overvoltage category	III
Mounting	standard 35mm DIN rail
Connection type	Screw terminals
Supply voltage	24 -15%/+10% (AC 50 ÷ 60 Hz) V AC/DC
Internal fuse on power supply	750 mA PTC
Absorption current	24 Vdc: min 25 mA , max 100 mA;
	24 Vac: min 110 mA, max 220 mA
Output switching voltage	240 Vac (max) (outputs SAFE)
Switching current AC-1/V electrical	3 A (safety outputs)
Minimum switching current at 10 V	10 mA
Switching power	720 VA (max)
External fuse on output	4 A gG (in accordance with IEC EN 60269-1)
Safety output terminals	13-14 , 23-24
Auxiliary output terminals	41-42 NO, 41-54 NC

Category of use / Electrical screw (safety outputs)	AC-15: 1.4 A / 240 V (inductive load, cosφ = 0.3)/10 ⁵ cycles				
	DC-13: 1A/ 24V / 10 ⁵ cycles				
Auxiliary output parameters	max: 0.5A at 24Vdc				
Output response time - manual start (t1)	150 ms				
Output response time - automatic start (t2)	30 ms				
Response time in OFF state (t3)	20 ms				
Maximum input sensor resistance	200 ohm				
Safety cat. (EN ISO 13849-1)	Cat. 4 (1 sensor)		Cat. 3 (more than 1 sensor)		
PL (EN ISO 13849-1)	e	e	d	d	e
nop (number of operations/year)	65000 No. cycles/year	19200 No. cycles/year	65000 No. cycles/year	31500 No. cycles/year	19200 No. cycles/year
	30 years	100 years	30 years	56 years	100 years
MTT-Fd	9,54x10 ⁻⁸	2,47x10 ⁻⁸	2,65x10 ⁻⁷	1,03x10 ⁻⁷	4,29x10 ⁻⁸
PFHd	20 years (for MTTFd = 100 years)				
TM	0				
Stop category (EN ISO 13850)	EN 60068-2-6, EN 60947-5-3				
Resistance to vibrations	10 ⁷ No. of cycles				
Mechanical life-span	EN 61000-6-2, EN 61000-6-3				
EMC conformity	IEC 61326-3-1, EN 60947-5-3				
Conformity to standards	EN 60204-1, IEC 60664-1				
	EN ISO 13849-1, EN 13849-2				
	EN ISO 14119, EN ISO 13850				
Approval	TUV IT 0948 24 MAC 429 B		CN-SFT.115-1NC+1NO CN-SFT.115-1NC+1NO		
	TUV IT 0948 24 MAC 428 B		CN-SFT.115-2NC CN-SFT.115-2NC		

Timing diagram for manual start



Timing diagram for automatic start
(Y1-Y2-X1 bridged)

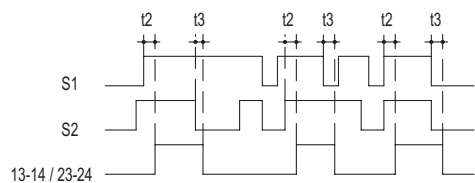
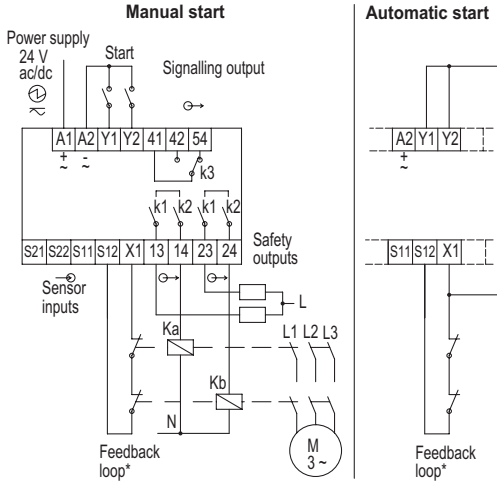


Table of LEDs			
Function	LED	Colour	Status
Power supply	PWR	Green	on
Outputs 13-14 and 23-24: OPEN	CH1 - CH2	Green - Green	off - off
Output 41-42: OPEN			
Output 41-54: CLOSED	CH1 - CH2	Green - Green	on - on
Outputs 13-14 and 23-24: CLOSED			
Output 41-42: CLOSED			
Output 41-54: OPEN			

UL CERTIFICATION REQUIREMENTS				
Power supply (input)				
Input terminals	Voltage	Max. current		
A1-A2	24Vac/dc	220mA / 70mA		
Auxiliary outputs (safety)				
Output terminals	Type of contacts	General or resistive use	Pilot Duty	
13-14 / 23-24	NO	3A/240Vac Res	14A/240Vac	1A/24Vdc
Signalling outputs (signals)				
Output terminals	Type of contacts		Nominal values	
41-42	NO		0.5A/24Vdc	
41-54	NC			
Environmental values		Notes on installation		
Max. temperature surrounding air: 55°C		Use only with copper (CU) conductor at 60°C minimum		
Pollution degree: 2				
Environmental designation		Terminal tightening torque: 5-7 LbIn (0.56-0.79 Nm)		
Open type equipment				
Approved by UL		E542642		

MODEL CN-SFT.115-2NC AND MODEL CN-SFT.46-2NC

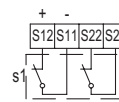
NOTE: the contact that is normally closed when the guard is closed is considered the NC input.



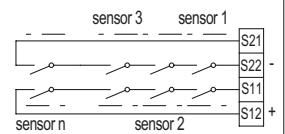
* If control via the feedback loop of the NC auxiliary contacts of the relays is not necessary, short-circuit clamps S12 and X1.

1) Machine safety:

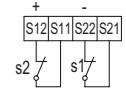
One sensor (S1) with NC+NC contacts (cat.4 EN ISO 13849-1)



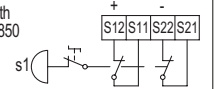
More than one sensor (up to 30) (cat.3 EN ISO 13849-1)



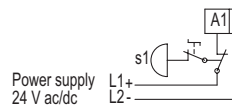
2) Interlocking sensors of mobile guards with NC+NC contacts EN ISO 14119; cat. 4 EN ISO 13849-1; EN 60204-1 §9.3)



3) Controlling an emergency stop command (S1) with 1 NO+NO contact in accordance with EN ISO 13850 (stop cat. 0, EN ISO 13859; EN 60204-1 §9.2.3.4; cat.4 EN ISO 13849-1)



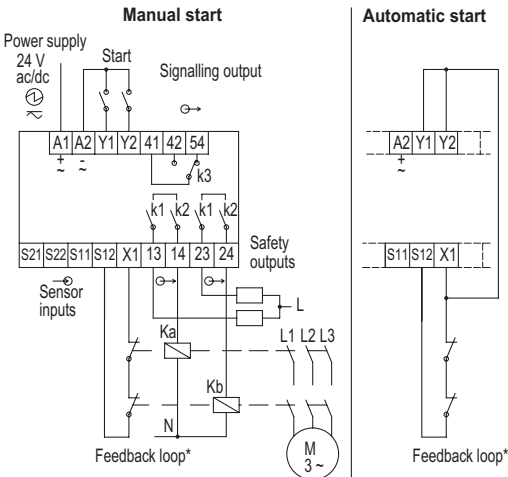
4) Controlling an emergency stop command (S1) with 1 NC contact in accordance with EN ISO 13850:2015 (stop cat. 0, EN ISO 13850:2015; EN 60204-1 §9.2.3.4; cat. 4 EN ISO 13849-1 if 1 or no sensor is connected to the control unit*; cat 3 EN ISO 13849-1 if more than one sensor is connected to the control unit)



*Bridges on inputs if not used for a sensor with 2 NO contacts

MODEL CN-SFT.115-1NC+1NO AND MODEL CN-SFT.46-1NC+1NO

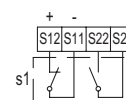
NOTE: the contact that is normally closed when the guard is closed is considered the NC input. The contact that is normally open when the door is closed is considered the NO input.



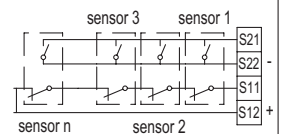
* If control via the feedback loop of the NC auxiliary contacts of the relays is not necessary, short-circuit clamps S12 and X1.

1) Machine safety:

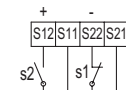
One sensor (S1) with NC+NO contacts (cat.4 EN ISO 13849-1)



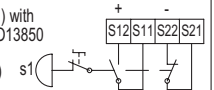
More than one sensor (up to 30) (cat.3 EN ISO 13849-1)



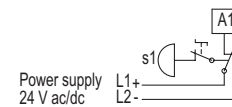
2) Interlocking sensors of mobile guards with NO+NC contacts EN ISO 14119; cat. 4 EN ISO 13849-1; EN 60204-1 §9.3)



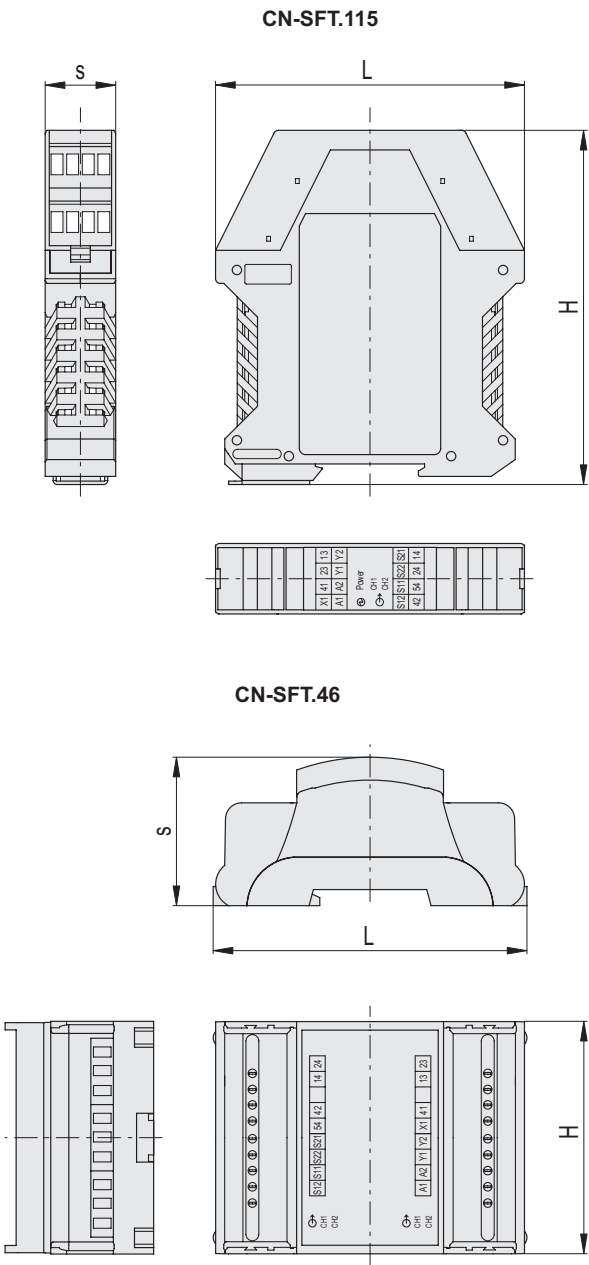
3) Controlling an emergency stop command (S1) with 1 NO+NO contact in accordance with EN ISO 13850 (stop cat. 0, EN ISO 13859; EN 60204-1 §9.2.3.4; cat.4 EN ISO 13849-1)



4) Controlling an emergency stop command (S1) with 1 NC contact in accordance with EN ISO 13850:2015 (stop cat. 0, EN ISO 13850:2015; EN 60204-1 §9.2.3.4; cat. 4 EN ISO 13849-1 if 1 or no sensor is connected to the control unit*; cat 3 EN ISO 13849-1 if more than one sensor is connected to the control unit)



*if not used for a sensor with 2 NO contacts, terminals S12 and S11 are bridged and terminals S21 and S22 must remain open



CN-SFT.115					
Code	Description	L	s	H	⚖
225106	CN-SFT.115-1NC+1NO	99	22.5	114.5	156
225101	CN-SFT.115-2NC	99	22.5	114.5	156

CN-SFT.46					
Code	Description	L	s	H	⚖
225107	CN-SFT.46-1NC+1NO	97	46	72	154
225102	CN-SFT.46-2NC	97	46	72	154

