

Flexi Soft Designer

SICK

Application name: SICK Flexi Soft main module FX3-CPU1

Device CRC Tool: 0x3F55A961 - Device CRC Device: 0x3F55A961

Configuration date and time: 2/8/2021 10:12:00 AM

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1. Bill of material




























QTY	Title	Tag name	Part number	Internal item number	Description
1	CPU1	CPU1[0]	1043784		SICK Flexi Soft main module FX3-CPU1
1	MPL0	System plug	1043700		Flexi Soft system plug
1	S300 / Safety laser scanner, type 3	S300.CPU1[0].EFI1.1			Sampling laser scanner for access protection on machines, for mobile applications as well as for vertical access protection
1	XTIO	XTIO[1]	1044125		SICK Flexi Soft expansion module FX3-XTIO
1	Safety switch / Single channel	Safety switch.XTIO[1].I1			
1	E-Stop, ES21 / Single channel	EX-Stop.XTIO[1].I2			
1	Single channel NO / Single channel	LCas1/2.XTIO[1].I3			

QTY	Title	Tag name	Part number	Internal item number	Description
1	Single channel NO / Single channel	LCase2/2.XTIO[1].I4			
1	PNP output / Single channel	ON DRV1.XTIO [1].Q1			
1	PNP output / Single channel	ON DRV2.XTIO [1].Q2			
1	PNP output / Single channel	SAFETY STOP ON.XTIO[1].Q3			
1	UE410-4RO3	UE410-4RO3	6026143		SICK relay output expansion UE410-4RO3

2. Diagnostics


Current operation time: 1.18:36:38, power cycle: 121 - Current: 1, Historical: 42

Time stamp	Local time	Power-up cycles	Source	Code
Description				
 1.18:34:07	2/8/2021 10:23:42 AM	121	Main module	0x000F000B
	Communication at EFI 1 to device address 7 interrupted: Timeout at reception of cyclic data.			[01 07 03 FFFF]
 1.17:02:40		120	Extension module 1	0x4704
	Extension module 1: cross-circuit at output Q1, 2, 3, 4			[01 00 0F 00]
 1.02:36:44		104	Extension module 1	0x4704
	Extension module 1: cross-circuit at output Q1, 2, 4			[01 00 0B 00]
 22:55:03		96	Extension module 1	0x4502
	Internal error: Cross-checking for inputs			[01 55 04 00]
 22:55:01		96	Extension module 1	0x4502
	Internal error: Cross-checking for inputs			[01 55 04 00]
 22:54:37		96	Extension module 1	0x4502
	Internal error: Cross-checking for inputs			[01 AA 08 00]
 20:14:48		80	Extension module 1	0xC30A
	Internal error in the Flexi Soft system.			[01 00 0F 00]
 20:14:48		80	Main module	0x0029C006
	Internal error in the Flexi Soft system: Probably an extension module is malfunctioning.			[00 02 00 00]
 17:51:38		60	Main module	0x002D4006
	The Flexi Soft system performed a restart due to a power supply dip at the main module.			[00 00 00 00]
 14:45:52		56	Extension module 1	0xC30A
	Internal error in the Flexi Soft system.			[01 00 0F 00]
 14:45:52		56	Main module	0x0029C006
	Internal error in the Flexi Soft system: Probably an extension module is malfunctioning.			[00 02 00 00]
 14:36:23		46	Main module	0x00404006
	Force mode terminated.			[00 00 00 00]
 14:34:12		46	Main module	0x003F4006
	Force mode started.			[00 00 00 00]
 14:33:44		46	Main module	0x00404006
	Force mode terminated.			[00 00 00 00]
 14:32:27		46	Main module	0x003F4006
	Force mode started.			[00 00 00 00]
 11:54:28		42	Main module	0x00404006
	Force mode terminated.			[00 00 00 00]
 11:52:52		42	Main module	0x003F4006
	Force mode started.			[00 00 00 00]
 11:05:07		40	Main module	0x00404006
	Force mode terminated.			[00 00 00 00]
 11:03:17		40	Main module	0x003F4006
	Force mode started.			[00 00 00 00]
 10:00:13		39	Main module	0x00404006
	Force mode terminated.			[00 00 00 00]
 09:57:58		39	Main module	0x003F4006
	Force mode started.			[00 00 00 00]


Time stamp Description	Local time	Power-up cycles	Source	Code
 08:14:05		37	Main module	0x000F4013
	Configuration in the system plug is incompatible for at least one extension module.			[01 FFFF 00 00]
 08:13:59		37	Main module	0x0019400A
	Unexpected EFI device with address 7 found at EFI 1. Either remove this device or adapt the configuration of the Flexi Soft system.			[01 07 00 00]
 08:13:53		37	Main module	0x000E4006
	Configuration in the system plug is invalid.			[00 00 00 01]
 08:13:11		36	Main module	0x001B4005
	Internal error in the Flexi Soft system.			[58E6 526D 5BF8 DB91]
 07:17:20		28	Main module	0x0009400A
	Communication at EFI1 interrupted. Communication driver has switched off. After solving the fault a restart of the Flexi Soft system is necessary.			[01 422 00 00]
 06:51:21		28	Main module	0x000F4013
	Configuration in the system plug is incompatible for at least one extension module.			[01 FFFF 00 00]
 06:51:15		28	Main module	0x0019400A
	Unexpected EFI device with address 7 found at EFI 1. Either remove this device or adapt the configuration of the Flexi Soft system.			[01 07 00 00]
 06:51:09		28	Main module	0x000E4006
	Configuration in the system plug is invalid.			[00 00 00 01]
 06:50:56		27	Main module	0x001B4005
	Internal error in the Flexi Soft system.			[5DB5 A17E 5EAB 2882]
 06:47:07		27	Main module	0x001B4005
	Internal error in the Flexi Soft system.			[5DB5 A17E 5EAB 2882]
 05:11:53		20	Extension module 1	0x4704
	Extension module 1: cross-circuit at output Q1, 2, 3, 4			[01 00 0F 00]
 04:50:54		18	Main module	0x0019400A
	Unexpected EFI device with address 7 found at EFI 1. Either remove this device or adapt the configuration of the Flexi Soft system.			[01 07 00 00]
 02:15:25		11	Main module	0x0019400A
	Unexpected EFI device with address 7 found at EFI 1. Either remove this device or adapt the configuration of the Flexi Soft system.			[01 07 00 00]
 02:13:12		10	Main module	0x00404006
	Force mode terminated.			[00 00 00 00]
 02:11:32		10	Main module	0x003F4006
	Force mode started.			[00 00 00 00]
 02:01:45		10	Main module	0x000F4013
	Configuration in the system plug is incompatible for at least one extension module.			[01 FFFF 00 00]
 02:01:33		10	Main module	0x000E4006
	Configuration in the system plug is invalid.			[00 00 00 01]
 02:01:00		9	Main module	0x000F4013
	Configuration in the system plug is incompatible for at least one extension module.			[01 FFFF 00 00]
 02:00:48		9	Main module	0x000E4006
	Configuration in the system plug is invalid.			[00 00 00 01]
 01:57:38		8	Main module	0x000F4013
	Configuration in the system plug is incompatible for at least one extension module.			[01 FFFF 00 00]
 01:57:26		8	Main module	0x000E4006
	Configuration in the system plug is invalid.			[00 00 00 01]
 01:55:17		7	Extension module 1	0x4601
	Extension module 1: Cross circuit at input I1			[01 00 01 00]

3. Summary

3.1. Module 0

	Device class:	Type code:	Serial number:	Software version	Hardware version:	Version/ Step:	Operational status:
	CPU1	FX3-CPU130002	1427 0089	V 3.01.0	4.00	1.9.2.187 V 3.xx	Online

3.2. Module 1

	Device class:	Type code:	Serial number:	Software version	Hardware version:	Version/ Step:	Operational status:
	XTIO	FX3-XTIO84002	1632 1341	V 3.10.0	1.11	1.9.2.187 V 3.xx	Online

3.3. EFI 1.1 S300 [H]



Device
Device name
Type code
Serial number

Software version
Operational status

S300 [H]
S300 LR
S30B-3011GB
19250478
15391838
02.11
Online

4. Configuration

4.1. Installed software components

Basic components (station)	1.9.2.187
Software component for GCC1 Network Modules	1.9.1.279
Software component for GS3S gateway	1.8.0.1
Software component for UE410-2RO3 relay module	1.9.2.187
Software component for UE410-4RO3 relay module	1.9.2.187
Software components for Flexi-Soft FX3-ANA0 expansion module	1.9.2.187
Software component for GCAN gateway	1.9.2.187
Software component for GDEV gateway	1.9.2.187
Software component for GENT gateway	1.9.2.187
Software component for GETC gateway	1.9.2.187
Software component for GMOD gateway	1.9.2.187
Software component for GPNT gateway	1.9.2.187
Software component for GPRO gateway	1.9.2.187
Software component for Drive Monitor FX3-MOC0 module	1.9.2.187
Software component for Drive Monitor FX3-MOC1 module	1.9.2.187
Software components for MOC3SA Motion Control module	1.9.2.187

Software component for ReLy OSSD4 relay module	1.9.2.187
Software component for STIO expansion module	1.9.2.187
Software component for UE10 relay module	1.9.2.187
Software component for UE12 relay module	1.9.2.187
Software component for XTDI extension module	1.9.2.187
Software components for FX3-XTDS expansion module	1.9.2.187
Software component for XTIO extension module	1.9.2.187
Software component for CPU0 and CPU1 main modules	1.9.2.187

4.2. General information

User group	Authorized client
Application name	SICK Flexi Soft main module FX3-CPU1
Application description	
Configuration CRC	0x3F55A961
Device CRC	0x3F55A961
Configuration state	Verified
Device state	Verified
Configuration date	2/8/2021 10:12 AM

0

1



Test pulses for the following output pins have been switched off: Q1, Q2, Q3.

Module	Type code	Step	Address
CPU1	FX3-CPU130002	V 3.xx	0
XTIO	FX3-XTIO84002	V 3.xx	1
UE410-4RO3	UE410-4RO3	-	

4.3. CPU

4.3.1. CPU1 - General information

Type code	Serial number	Software version	Hardware version	Version/Step	Memory usage (UI/Logic)	Address
FX3-CPU130002	1427 0089	V 3.01.0	4.00	1.9.2.187 V 3.xx	6.14% / 6.01%	0
FX3-MPL000001	1435 0415	-	-	1.9.2.187	-	-
S30B-3011GB	-	-	-	-	-	EF11.1

4.3.1.1. CRC values

	Project CRC value	Device CRC value
Configuration CRC	0x3F55A961	0x3F55A961

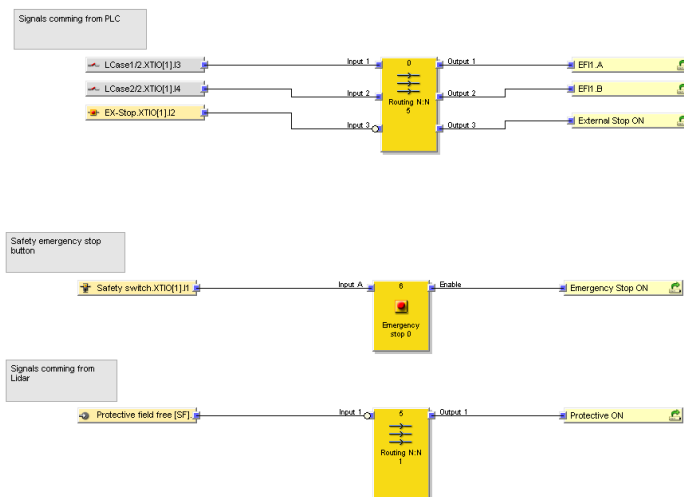
4.3.2. CPU logic

	Used
Function blocks	15
Execution time (ms)	4

4.3.2.1. 0-Inputs

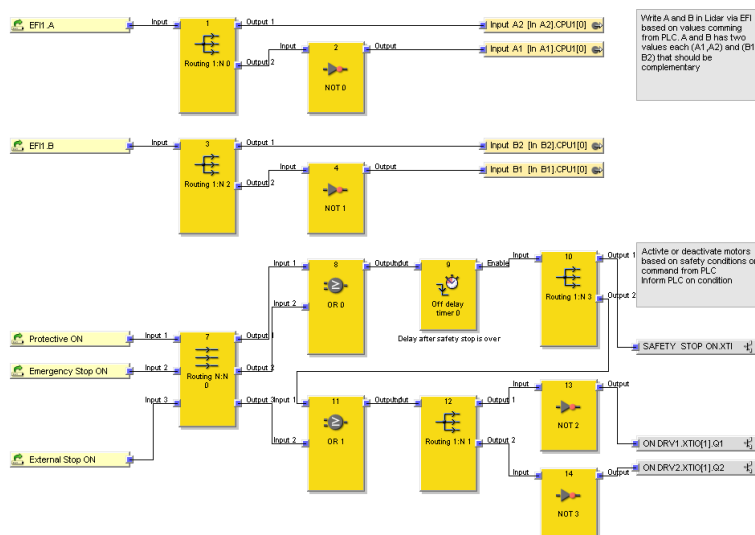
No	Name	Input	Output	Settings
0	Routing N:N	I.0 LCase1/2.XTIO[1].I3 I.1 LCase2/2.XTIO[1].I4 I.2 EX-Stop.XTIO[1].I2	O.0 Routing 1:N 0 -> I.0 -> Input O.1 Routing 1:N 2 -> I.0 -> Input O.2 Routing N:N 0 -> I.2 -> Input 3	Input 1: Not Inverted Input 2: Not Inverted Input 3: Inverted
5	Routing N:N	I.0 Protective field free [SF].CPU1[0].EF11.1	O.0 Routing N:N 0 -> I.0 -> Input 1	Input 1: Inverted
6	Emergency stop	I.0 Safety switch.XTIO[1].I1	O.0 Routing N:N 0 -> I.1 -> Input 2	Inputs: Single channel

Discrepancy time: 30 ms
Mode: Emergency stop



4.3.2.2. Outputs

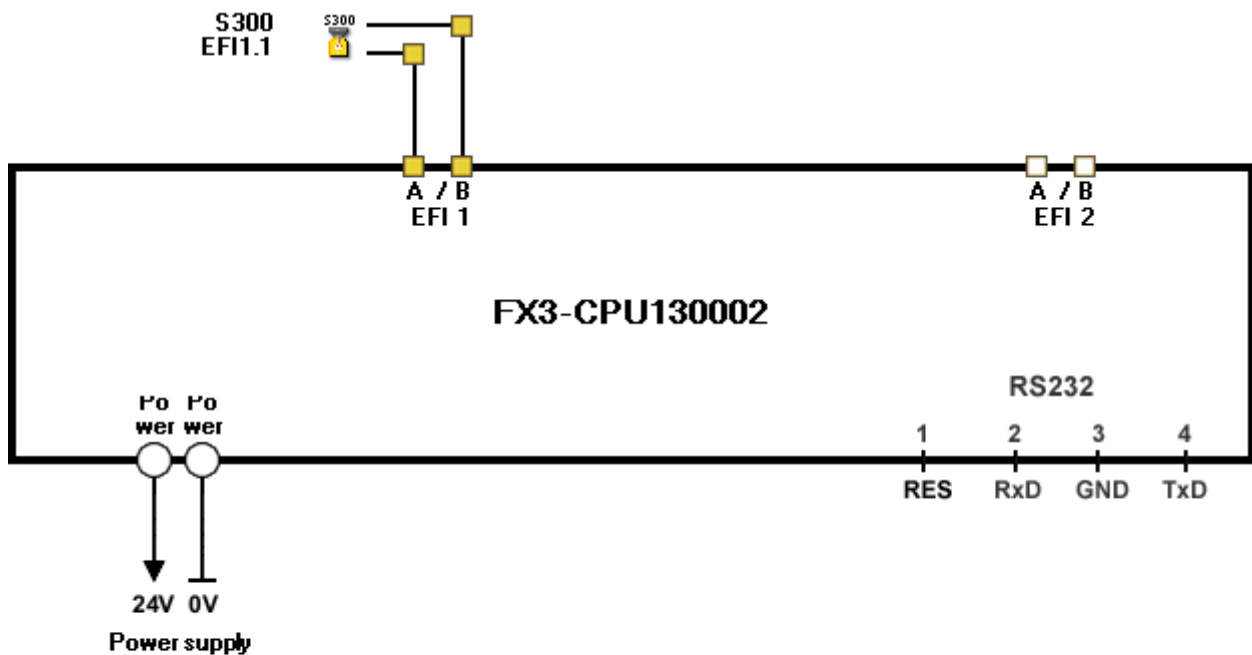
No	Name	Input	Output	Settings
1	Routing 1:N	I.0 Routing N:N 5 -> O.0 -> Output 1	O.0 Input A2 [In A2].CPU1 [0].EFI1.1	
2	NOT	I.0 Routing 1:N 0 -> O.1 -> Output 2	O.1 NOT 0 -> I.0 -> Input [0].EFI1.1	
3	Routing 1:N	I.0 Routing N:N 5 -> O.1 -> Output 2	O.0 Input B2 [In B2].CPU1 [0].EFI1.1	
4	NOT	I.0 Routing 1:N 2 -> O.1 -> Output 2	O.1 NOT 1 -> I.0 -> Input [0].EFI1.1	
7	Routing N:N	I.0 Routing N:N 1 -> O.0 -> Output 1 I.1 Emergency stop 0 -> O.0 -> Enable I.2 Routing N:N 5 -> O.2 -> Output 3	O.0 OR 0 -> I.0 -> Input 1 O.1 OR 0 -> I.1 -> Input 2 O.2 OR 1 -> I.1 -> Input 2	Input 1: Not Inverted Input 2: Not Inverted Input 3: Not Inverted
8	OR	I.0 Routing N:N 0 -> O.0 -> Output 1 I.1 Routing N:N 0 -> O.1 -> Output 2	O.0 Off delay timer 0 -> I.0 -> Input -> Input	Input 1: Not Inverted Input 2: Not Inverted
9	Off delay timer	I.0 OR 0 -> O.0 -> Output 1	O.0 Routing 1:N 3 -> I.0 -> Input	Delay time: 2000 ms
10	Routing 1:N	I.0 Off delay timer 0 -> Enable	O.0 SAFETY STOP ON.XTIO[1].Q3	
11	OR	I.0 Routing 1:N 3 -> O.1 -> Output 2 I.1 Routing N:N 0 -> O.2 -> Output 3	O.1 OR 1 -> I.0 -> Input O.0 Routing 1:N 1 -> I.0 -> Input	Input 1: Not Inverted Input 2: Not Inverted
12	Routing 1:N	I.0 OR 1 -> O.0 -> Output 1	O.0 NOT 2 -> I.0 -> Input O.1 NOT 3 -> I.0 -> Input	
13	NOT	I.0 Routing 1:N 1 -> O.0 -> Output 1	O.0 ON DRV1.XTIO[1].Q1	
14	NOT	I.0 Routing 1:N 1 -> O.1 -> Output 2	O.0 ON DRV2.XTIO[1].Q2	



4.3.3. CPU1 - IO

Tag name				System integrity test based on type key	System integrity test based on serial number	System integrity test based on configuration date
24V	A1	CPU1[0] Power supply		-	-	-
0V	A2					
S300	EFI1.1	S300.CPU1[0].EFI1.1		-	-	-

4.3.3.1. Wiring diagram



4.4. I/O module





4.4.1. XTIO[1]

4.4.1.1. General information







Type code	Serial number	Software version	Hardware version	Version/Step	Address
FX3-XTIO84002	1632 1341	V 3.10.0	1.11	1.9.2.187 V 3.xx	1

4.4.1.2. Inputs



	Mode	Title/tag name	ON-OFF	OFF-ON	Filter time [ms]	Dis. [ms]	Test period [ms]	Test gap [ms]	Max. off-on delay [ms]
2	24V	I1	✓	✓	8	-	-	-	-
3	24V	I2	-	-	0	-	-	-	-

			Mode		Title/tag name	ON-OFF	OFF-ON	Filter time [ms]	Dis. [ms]	Test period [ms]	Test gap [ms]	Max. off-on delay [ms]
4	24V		I3		Single channel NO (Single channel) / LCase1/2	-	-	0	-	-	-	-
5	24V		I4		Single channel NO (Single channel) / LCase2/2	-	-	0	-	-	-	-

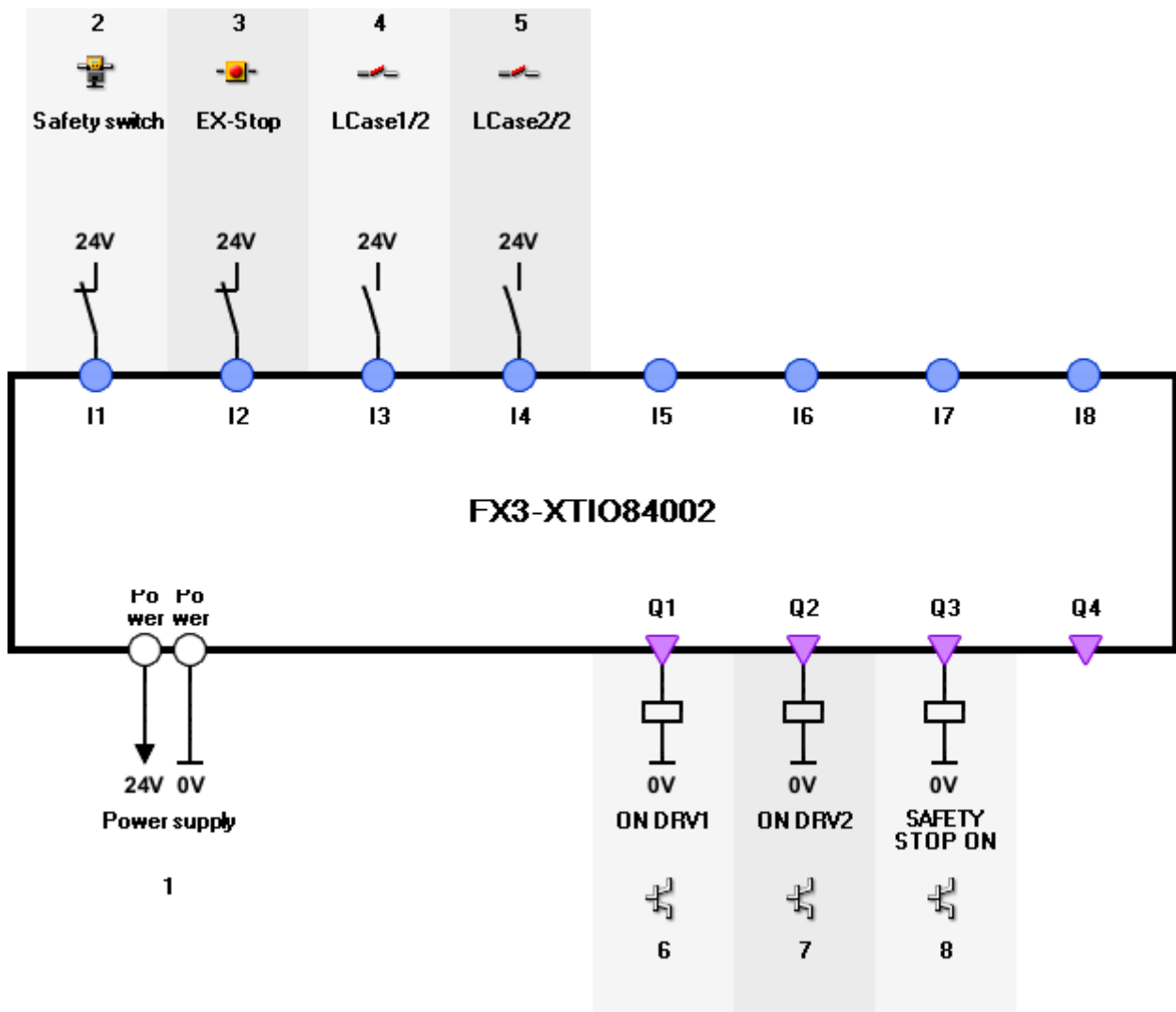
4.4.1.3. Outputs

		Mode		Title/tag name	Test pulse	Increase d capacitve loads
6		Q1		PNP output (Single channel) / ON DRV1	Without	Disabled
7		Q2		PNP output (Single channel) / ON DRV2	Without	Disabled
8		Q3		PNP output (Single channel) / SAFETY STOP ON	Without	Disabled

4.4.1.4. Power supply

				Title/tag name
1	24V		A1	XTIO[1] Power supply
	0V		A2	

4.4.1.5. Wiring diagram



5. Configuration draft S300 [H] from 2/8/2021, 10:23

S300 [H] Laser scanner



5.1. Version information

Version number CDS
Software version DLL
Created with CDS

3.7.2.122
3.7.2.122
3.7.2

5.2. General information

Type code	S30B-3011GB
Device name	S300 LR
Serial number	19250478
Serial number (Scanner)	19250478
Serial number (System plug)	15391838
Software version (CPU A)	02.11
Software version (CPU B)	02.11
Sensor head	Long Range (3.0 m)
I/O module	

Safety Configuration ID (SCID)	0x9C90
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Status	checked
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5.3. System parameters

Name of the user	AAP
Application name	None
Rotation of the 7segment display	Rotated by 180°

5.4. Resolution/scanning range

Application variant	Mobile
Resolution protective field	70 mm (leg detection)
Basic response time	80 ms
Maximum protective field range	300 cm
Angular resolution	0.5 °

5.5. Incremental encoder

Signal velocities	Inactive
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5.6. Inputs

Control inputs (Permanently)

Input source	CPU1
Input delay	10 ms
Sampling for the static control inputs	Complementary
A	Active
B	Active
C	Inactive
D	Inactive
E	Inactive

5.7. OSSDs

Object in the protective field switches OSSDs	Local
External device monitoring	Inactive

5.8. Restart

Restart internal OSSDs	Delay by 2 s
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5.9. Universal I/O

	Uni I/O 1 (Pin5)	Uni I/O 2 (Pin6)	Uni I/O 3 (Pin13)	Uni I/O 4 (Pin14)	Uni I/O 5 (Pin15)
Inputs					
External device monitoring	-	X			
Reset	X	-			
Outputs					
Contamination warning			X	-	-
Contamination error			X	-	-
Reset required			-	-	-
Error			-	-	-
Protective field			-	-	X
Warning field 1			-	X	-
Warning field 2			-	X	-

5.10. Configuration of the measured data output

Baud rate	500 kBaud
Silent Time	5000ms
Send mode	Continuous data output
Trigger event	Inactive
Measured data output	Distance
I/O data output	Current monitoring case
Message structure	1 message (I/O + measured data)

Measuring range(s)	Beginning [°]	End [°]	Type
Measuring range 1	-45	225	Every value

5.11. Cases

Number of monitoring cases	4
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5.11.1. Monitoring case 1

Monitoring case name	Short Case
Park mode	Inactive
Allocated field set	Short Fields
Multiple sampling	4

Activation of the inputs

Control input A	Low level
Control input B	Low level
Velocity range	Inactive

Switching sequence

Following case Any

5.11.2. Monitoring case 2

Monitoring case name Long Case
Park mode Inactive
Allocated field set Long Fields
Multiple sampling 4

Activation of the inputs

Control input A Low level
Control input B High level
Velocity range Inactive

Switching sequence

Following case Any

5.11.3. Monitoring case 3

Monitoring case name No detection
Park mode Inactive
Allocated field set No detection
Multiple sampling 2

Activation of the inputs

Control input A High level
Control input B High level
Velocity range Inactive

Switching sequence

Following case Any

5.11.4. Monitoring case 4

Monitoring case name Park mode
Park mode Active

Activation of the inputs

Control input A High level
Control input B Low level
Velocity range Inactive

Switching sequence

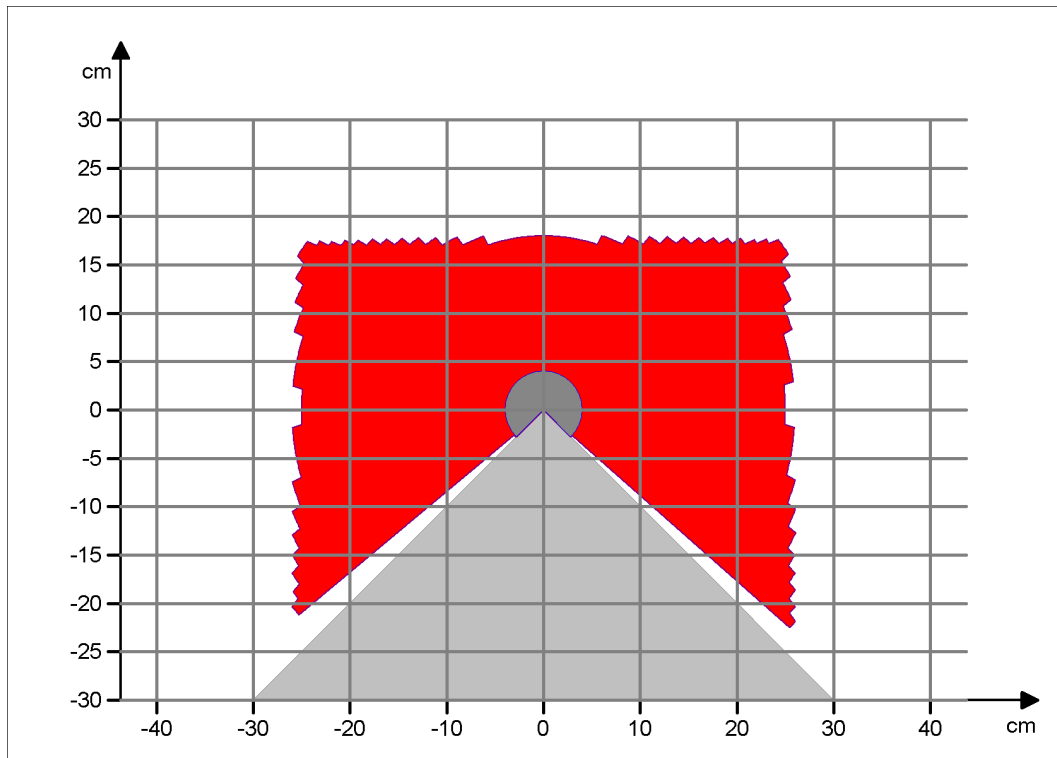
Following case Any

5.12. Field sets

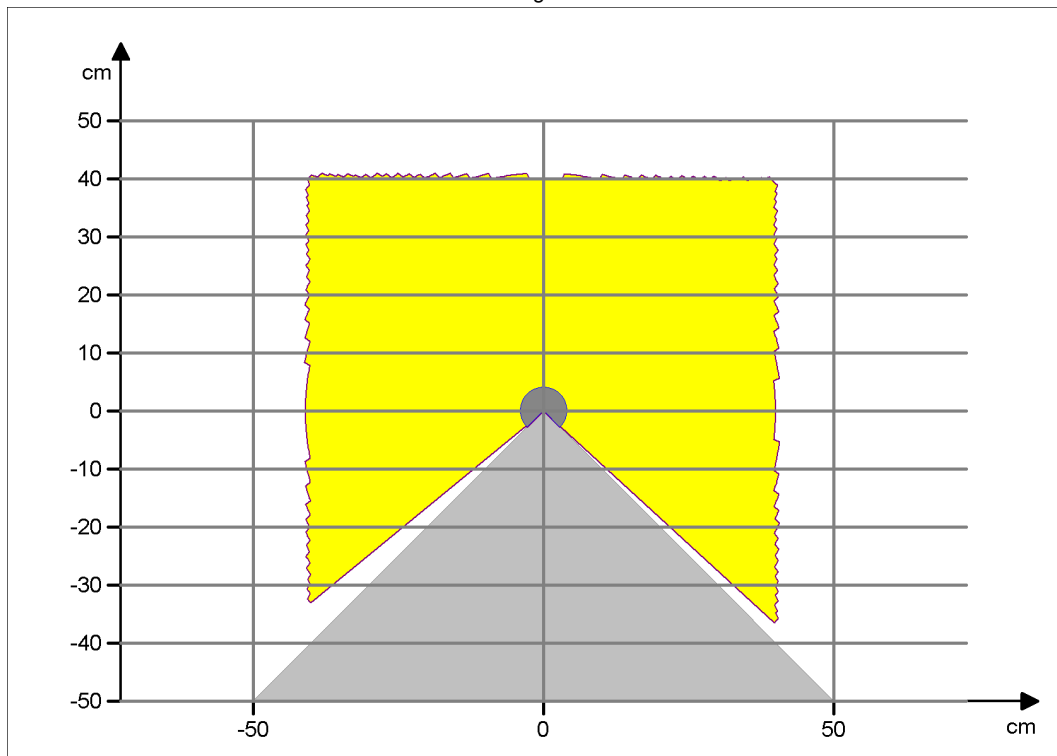
Number of field sets 3

Field set 1 "Short Fields"

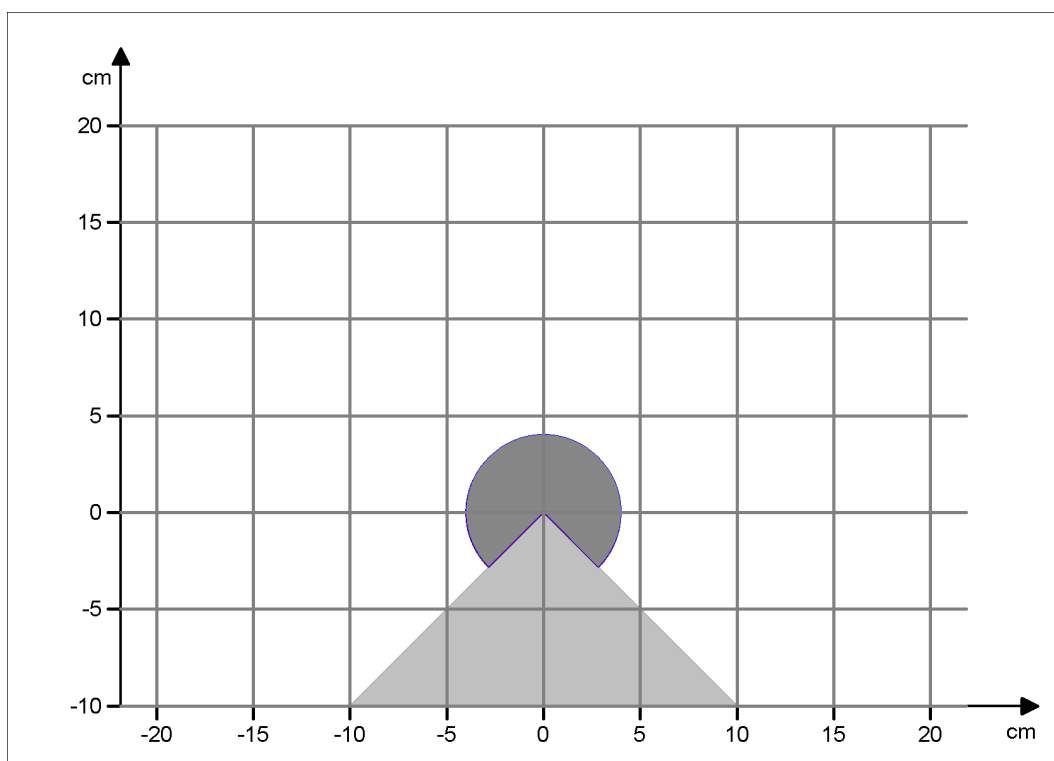
Protective field



Warning field 1

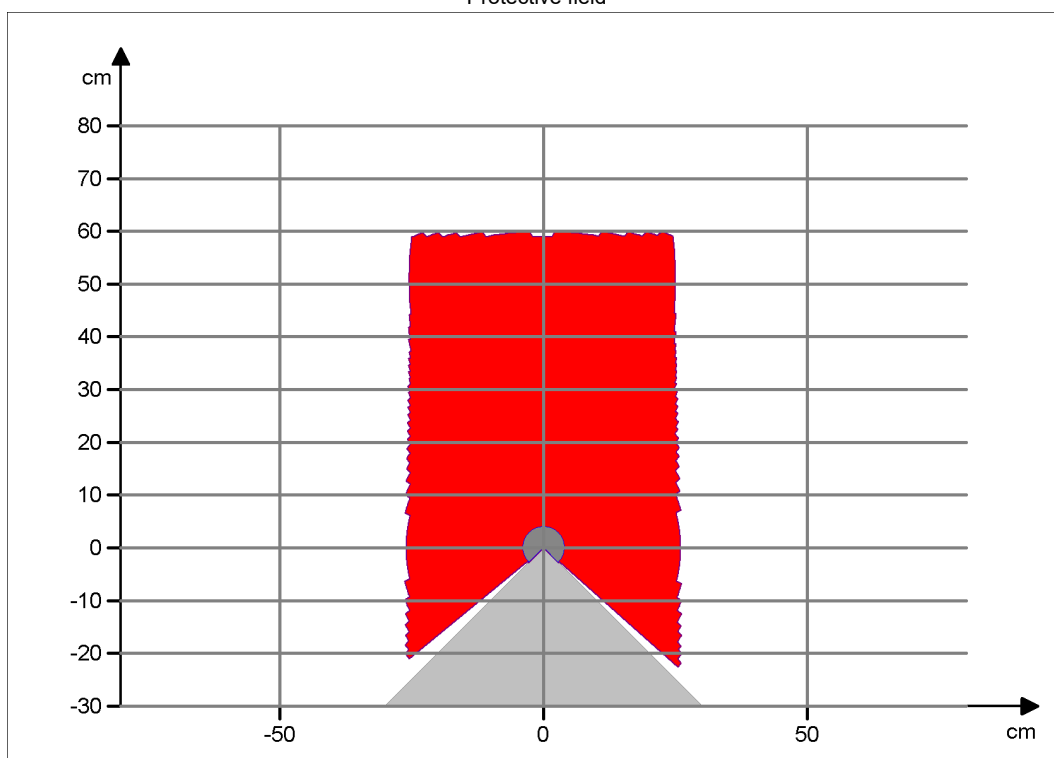


Warning field 2

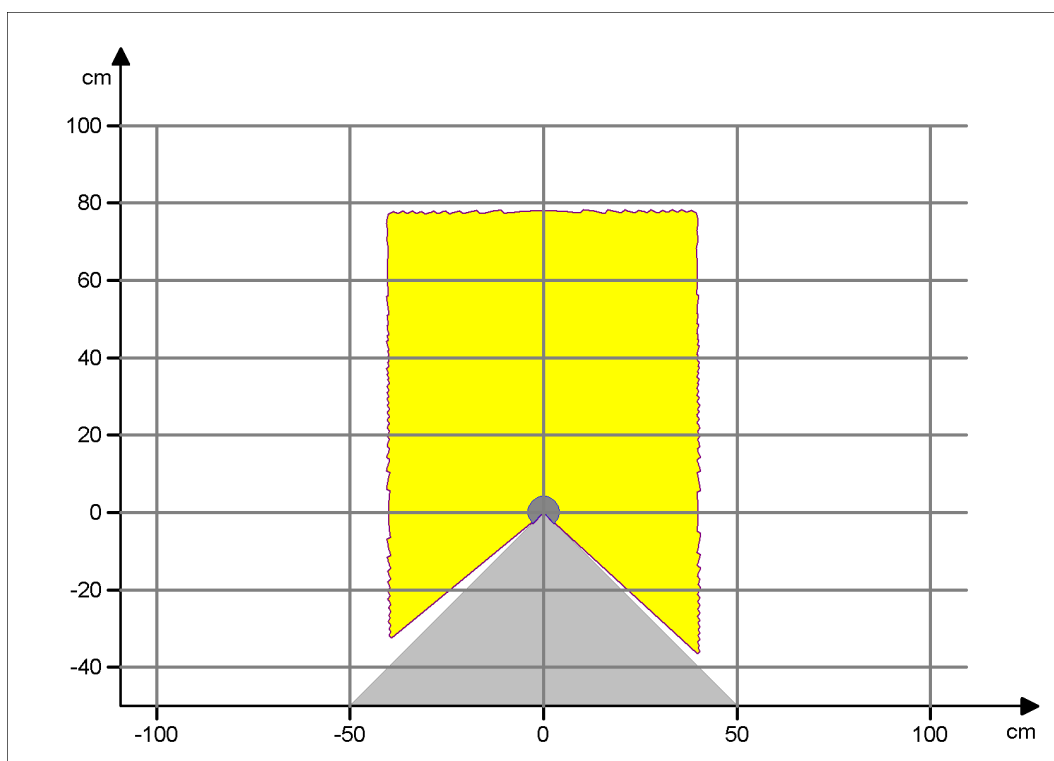


Field set 2 "Long Fields"

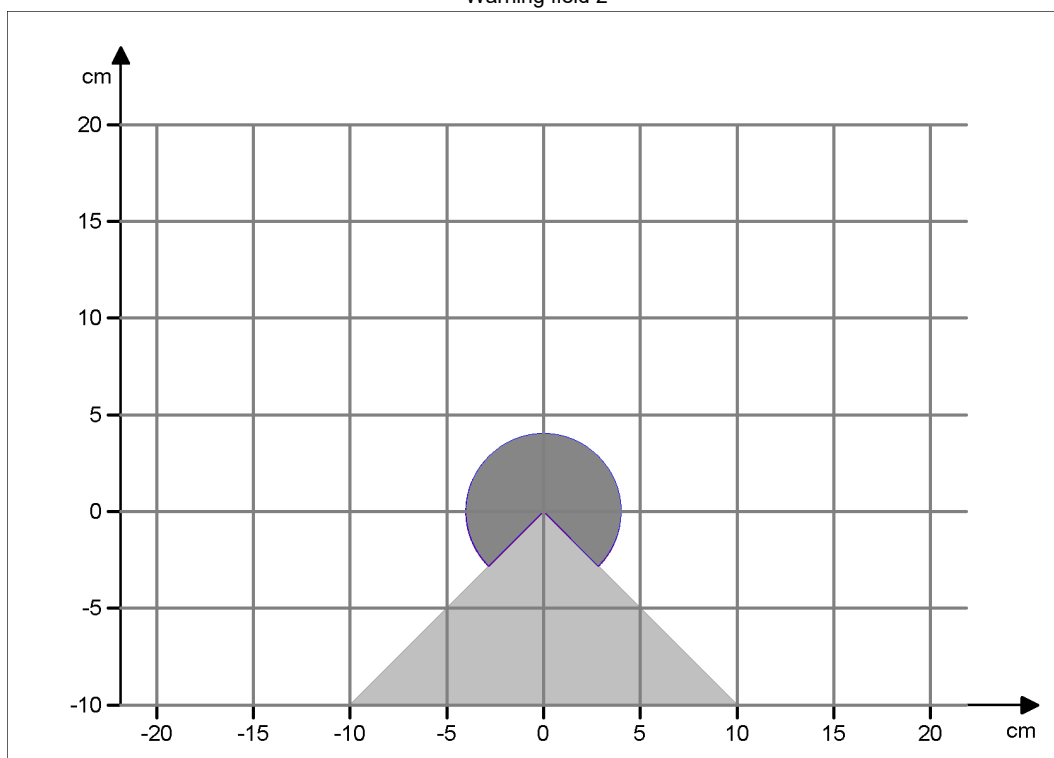
Protective field



Warning field 1



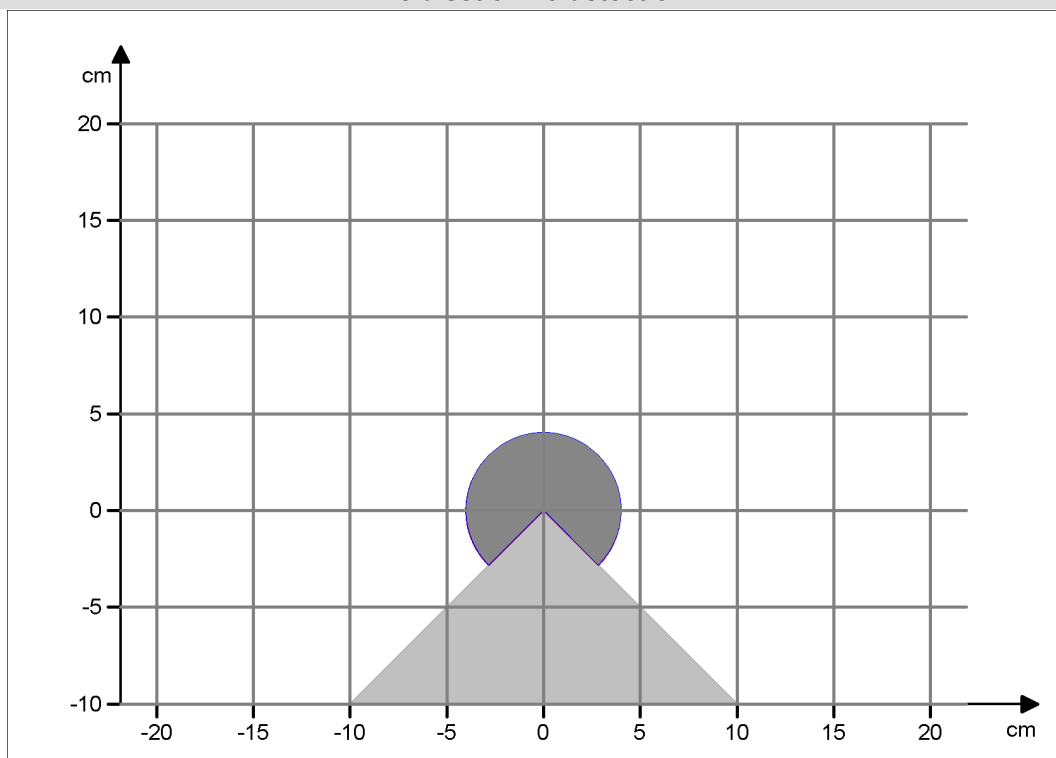
Warning field 2



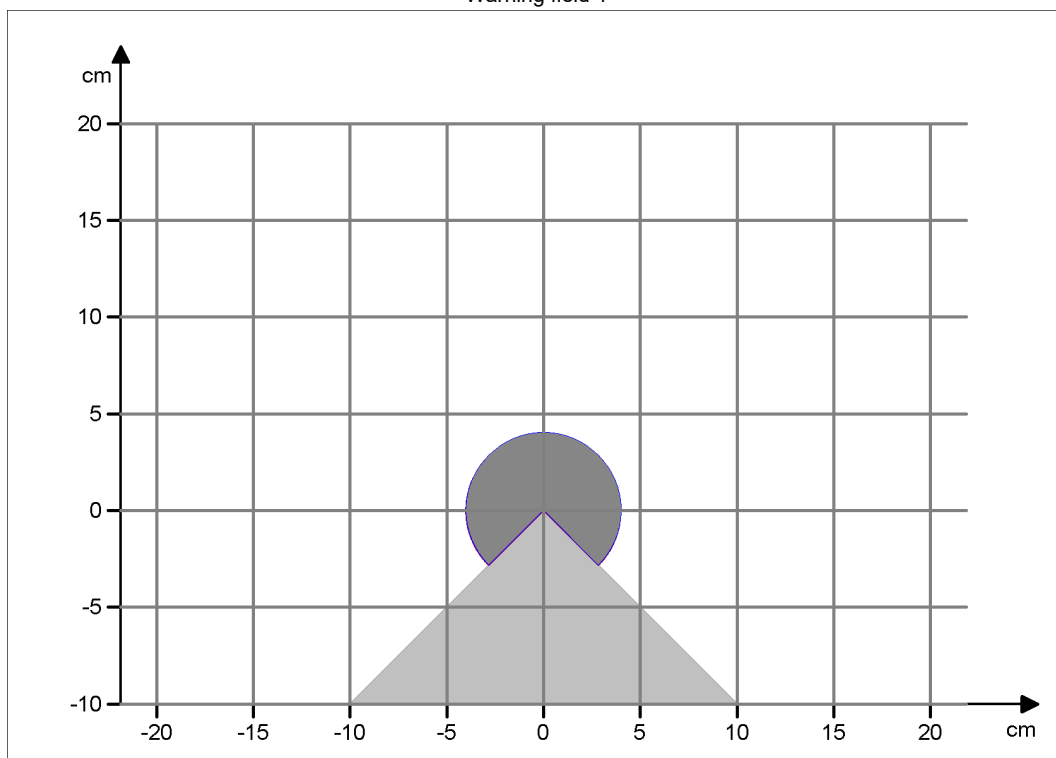
Field set 3 "No detection"

Protective field

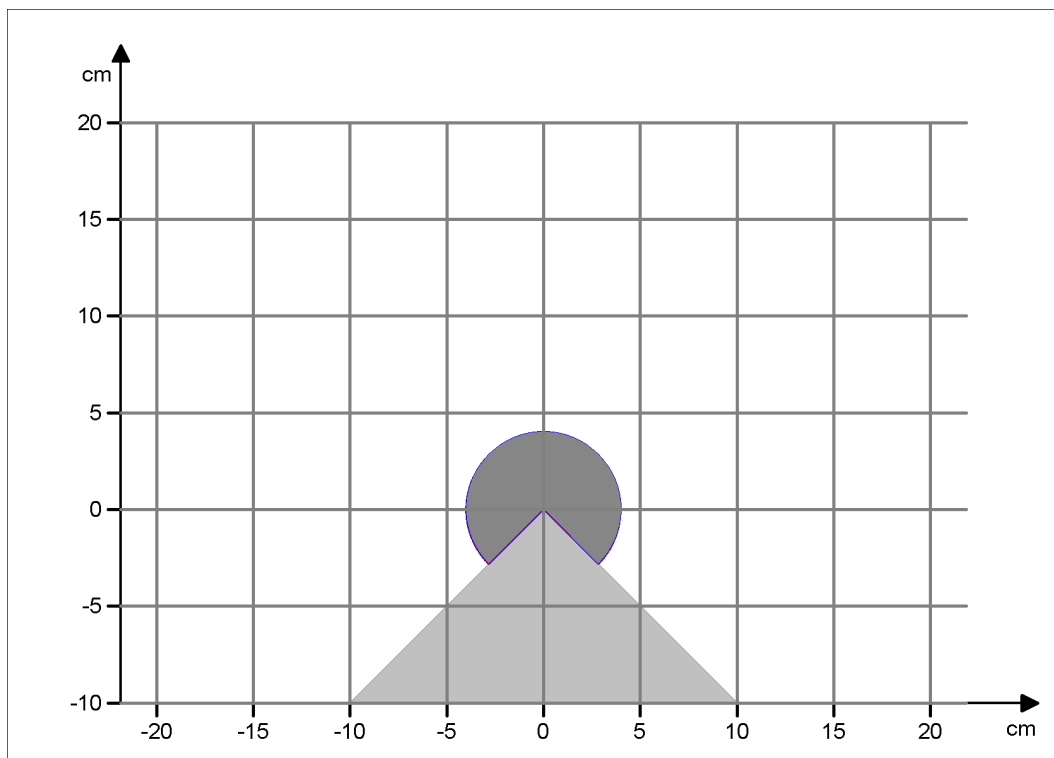
Field set 3 "No detection"



Warning field 1












Warning field 2



6. I/O overview

6.1. I/O module

XTIO[1]		Safety switch.XTIO [1].I1	0-Inputs	FB6 Emergency stop Input A
		ON DRV1.XTIO [1].Q1	Outputs	FB13 NOT Output
		EX-Stop.XTIO [1].I2	0-Inputs	FB0 Routing N:N Input 3
		ON DRV2.XTIO [1].Q2	Outputs	FB14 NOT Output
		LCase1/2.XTI O[1].I3	0-Inputs	FB0 Routing N:N Input 1
		SAFETY STOP ON.XTIO [1].Q3	Outputs	FB10 Routing 1:N Output 1
		LCase2/2.XTI O[1].I4	0-Inputs	FB0 Routing N:N Input 2
S300 [H] [EF11.1]		Input A1 [In A1].CPU1 [0].EF11.1	Outputs	FB2 NOT Output
		Input A2 [In A2].CPU1 [0].EF11.1	Outputs	FB1 Routing 1:N Output 1

