Flexi Soft Designer

SICK

Application name: SICK Flexi Soft main module FX3-CPU1

Device CRC Tool: 0xFB6FBD3D - Device CRC Device: 0xFB6FBD3D

Configuration date and time: 8/8/2021 6:06:00 PM

Content

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	LCase1/2.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	Safety switch / Single channel	Remote Safety switch.XTIO[1].I8			
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: 4.01:57:43, power cycle: 185 - Current: 1, Historical: 42

Time stamp	Local time	Power-up cycles	Source	Code	Description
4.01:40:28	8/10/2021 9:54:25 PM	185	Main module	0x000F000B [01 07 03 FFFF]	Communication at EFI 1 to device address 7 interrupted: Timeout at reception of cyclic data.
1.17:02:40		120	Extension module 1	0x4704 [01 00 0F 00]	Extension module 1: cross-circuit at output Q1, 2, 3, 4
1.02:36:44		104	Extension module 1	0x4704 [01 00 0B 00]	Extension module 1: cross-circuit at output Q1, 2, 4
22:55:03		96	Extension module 1	0x4502 [01 55 04 00]	Internal error: Cross-checking for inputs
22:55:01		96	Extension module 1	0x4502 [01 55 04 00]	Internal error: Cross-checking for inputs
22:54:37		96	Extension module 1	0x4502 [01 AA 08 00]	Internal error: Cross-checking for inputs
20:14:48		80	Extension module 1	0xC30A [01 00 0F 00]	Internal error in the Flexi Soft system.
20:14:48		80	Main module	0x0029C006 [00 02 00 00]	Internal error in the Flexi Soft system: Probably an extension module is malfunctioning.
17:51:38		60	Main module	0x002D4006 [00 00 00 00]	The Flexi Soft system performed a restart due to a power supply dip at the main module.
14:45:52		56	Extension module 1	0xC30A [01 00 0F 00]	Internal error in the Flexi Soft system.
14:45:52		56	Main module	0x0029C006 [00 02 00 00]	Internal error in the Flexi Soft system: Probably an extension module is malfunctioning.
14:36:23		46	Main module	0x00404006 [00 00 00 00]	Force mode terminated.
14:34:12		46	Main module	0x003F4006 [00 00 00 00]	Force mode started.
14:33:44		46	Main module	0x00404006 [00 00 00 00]	Force mode terminated.
14:32:27		46	Main module	0x003F4006 [00 00 00 00]	Force mode started.
11:54:28		42	Main module	0x00404006 [00 00 00 00]	Force mode terminated.
11:52:52		42	Main module	0x003F4006 [00 00 00 00]	Force mode started.
11:05:07		40	Main module	0x00404006 [00 00 00 00]	Force mode terminated.
11:03:17		40	Main module	0x003F4006 [00 00 00 00]	Force mode started.
10:00:13		39	Main module	0x00404006 [00 00 00 00]	Force mode terminated.

Time stamp Description	Local time	Power-up cycles	Source	Code
09:57:58		39	Main module	0x003F4006
	Force mode started.			[00 00 00 00]
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	S300 [H]
Device name	S300 LR
Type code	S30B-3011GB
Serial number	19250478
	15391838
Software version	02.11
Operational status	Online

4. Configuration

4.1. Installed software components

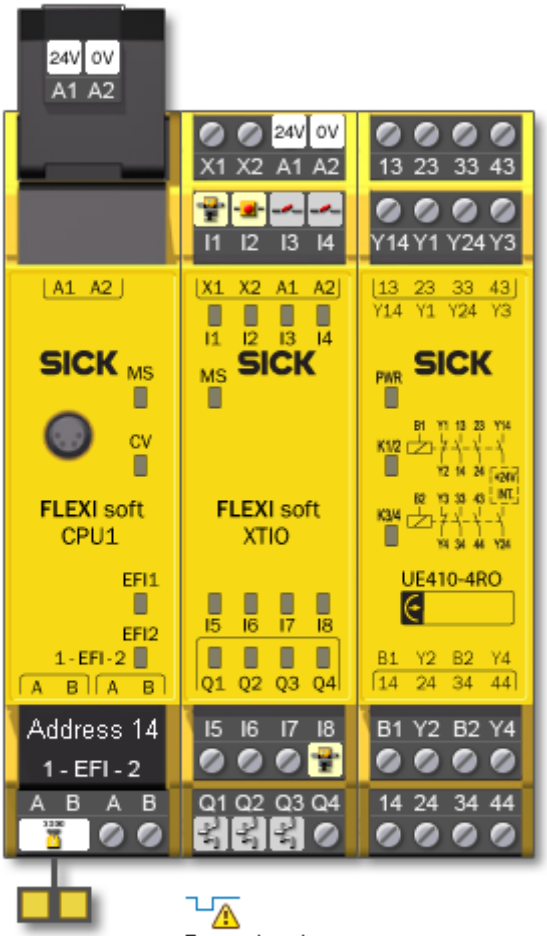
Basic components (station)	1.9.2.187
Software component for GCC1 Network Modules	1.9.1.279
Software component for GS3S gateway	1.8.0.1
Software component for UE410-2RO3 relay module	1.9.2.187
Software component for UE410-4RO3 relay module	1.9.2.187
Software components for Flexi-Soft FX3-ANA0 expansion 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	Machine Operator
Application name	SICK Flexi Soft main module FX3-CPU1
Application description	
Configuration CRC	0xFB6FBD3D
Device CRC	0xFB6FBD3D
Configuration state	Verified
Device state	Verified
Configuration date	8/8/2021 6:06 PM

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	6.33% / 6.25%	0
FX3-MPL000001	1435 0415	-	-	1.9.2.187	-	-
S30B-3011GB	-	-	-	-	-	EFI1.1

4.3.1.1. CRC values

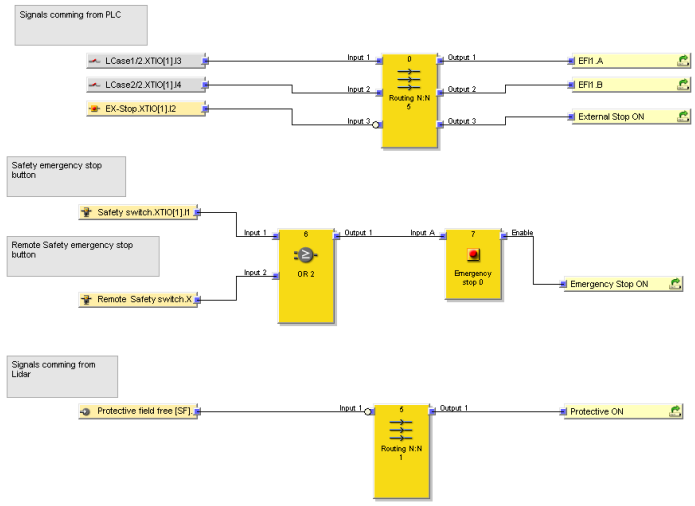
	Project CRC value	Device CRC value
Configuration CRC	0xFB6FBD3D	0xFB6FBD3D

4.3.2. CPU logic

	Used
Function blocks	16
Execution time (ms)	4

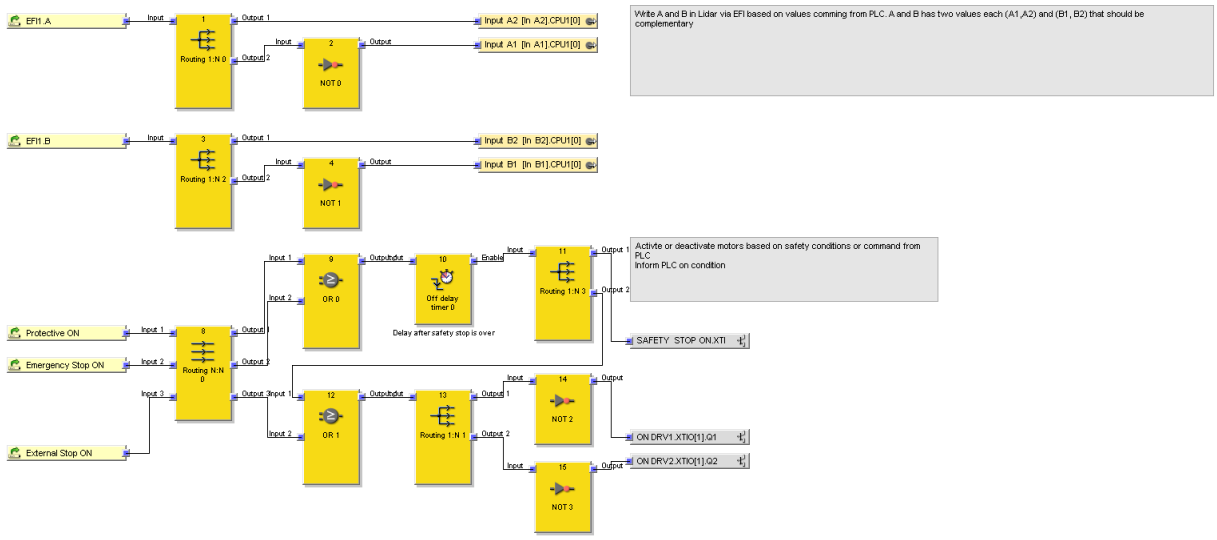
4.3.2.1. 0-Inputs

No	Name	Input	Output	Settings
0	Routing N:N	I.0 LCase1/2.XTIO[1].I3	O.0 Routing 1:N 0 -> I.0 -> Input	Input 1: Not Inverted
		I.1 LCase2/2.XTIO[1].I4	O.1 Routing 1:N 2 -> I.0 -> Input	Input 2: Not Inverted
		I.2 EX-Stop.XTIO[1].I2	O.2 Routing N:N 0 -> I.2 -> Input 3	Input 3: Inverted
5	Routing N:N	I.0 Protective field free [SF].CPU1[0].EFI1.1	O.0 Routing N:N 0 -> I.0 -> Input 1	Input 1: Inverted
6	OR	I.0 Safety switch.XTIO [1].I1	O.0 Emergency stop 0 -> I. 0 -> Input A	Input 1: Not Inverted
		I.1 Remote Safety switch.XTIO[1].I8		Input 2: Not Inverted
7	Emergency stop	I.0 OR 2 -> O.0 -> Output 1	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

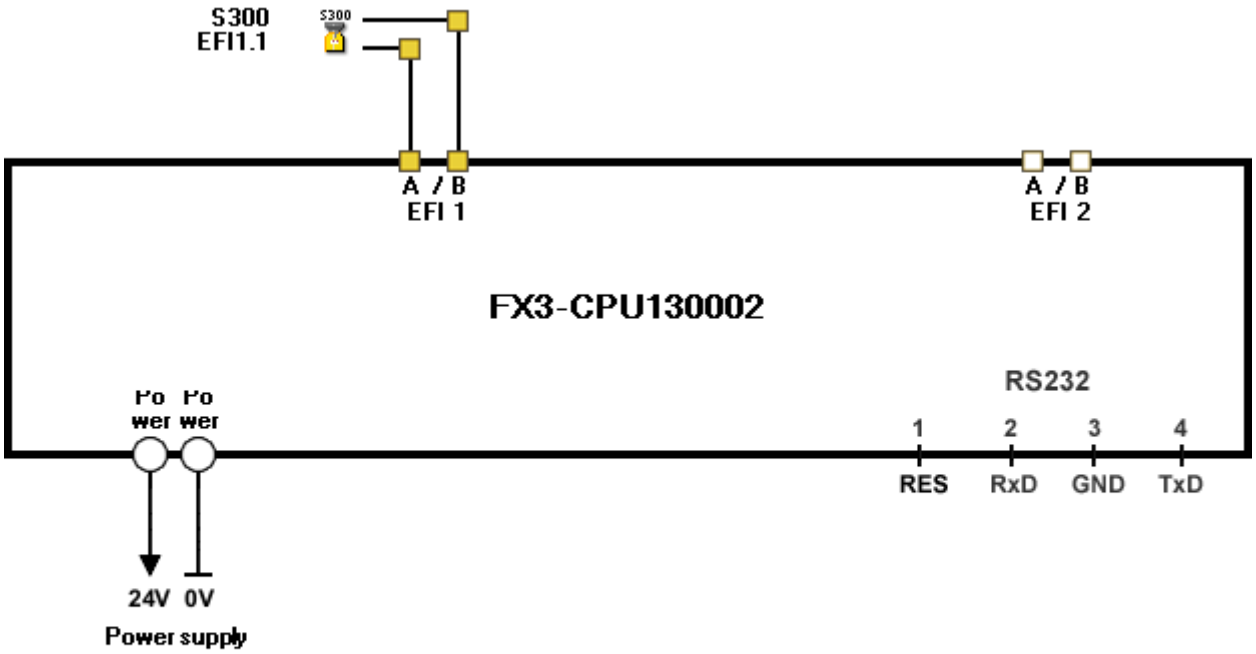
No	Name	Input	Output	Settings
1	Routing 1:N	I.0 Routing N:N 5 -> O.0 -> Output 1	O.0 Input A2 [In A2].CPU1 [0].EFI1.1 O.1 NOT 0 -> I.0 -> Input	
2	NOT	I.0 Routing 1:N 0 -> O.1 -> Output 2	O.0 Input A1 [In A1].CPU1 [0].EFI1.1	
3	Routing 1:N	I.0 Routing N:N 5 -> O.1 -> Output 2	O.0 Input B2 [In B2].CPU1 [0].EFI1.1 O.1 NOT 1 -> I.0 -> Input	
4	NOT	I.0 Routing 1:N 2 -> O.1 -> Output 2	O.0 Input B1 [In B1].CPU1 [0].EFI1.1	
8	Routing N:N	I.0 Routing N:N 1 -> O.0 -> Output 1	O.0 OR 0 -> I.0 -> Input 1	Input 1: Not Inverted
		I.1 Emergency stop 0 -> O. 0 -> Enable	O.1 OR 0 -> I.1 -> Input 2	Input 2: Not Inverted
		I.2 Routing N:N 5 -> O.2 -> Output 3	O.2 OR 1 -> I.1 -> Input 2	Input 3: Not Inverted
9	OR	I.0 Routing N:N 0 -> O.0 -> Output 1	O.0 Off delay timer 0 -> I.0 -> Input	Input 1: Not Inverted
		I.1 Routing N:N 0 -> O.1 -> Output 2		Input 2: Not Inverted
10	Off delay timer	I.0 OR 0 -> O.0 -> Output 1	O.0 Routing 1:N 3 -> I.0 -> Input	Delay time: 2000 ms
11	Routing 1:N	I.0 Off delay timer 0 -> O.0 -> Enable	O.0 SAFETY STOP ON.XTIO[1].Q3 O.1 OR 1 -> I.0 -> Input 1	
12	OR	I.0 Routing 1:N 3 -> O.1 -> Output 2	O.0 Routing 1:N 1 -> I.0 -> Input	Input 1: Not Inverted
		I.1 Routing N:N 0 -> O.2 -> Output 3		Input 2: Not Inverted
13	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	
14	NOT	I.0 Routing 1:N 1 -> O.0 -> Output 1	O.0 ON DRV1.XTIO[1].Q1	
15	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 0V	A1 A2	CPU1[0] Power supply	-	-	-
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		Safety switch (Single channel)	✔	✔	8	-	-	-	-
3	24V	I2		E-Stop, ES21 (Single channel) / EX-Stop	-	-	0	-	-	-	-
4	24V	I3		Single channel NO (Single channel) / LCase1/2	-	-	0	-	-	-	-
5	24V	I4		Single channel NO (Single channel) / LCase2/2	-	-	0	-	-	-	-
6	24V	I8		Safety switch (Single channel) / Remote Safety switch	✔	✔	8	-	-	-	-

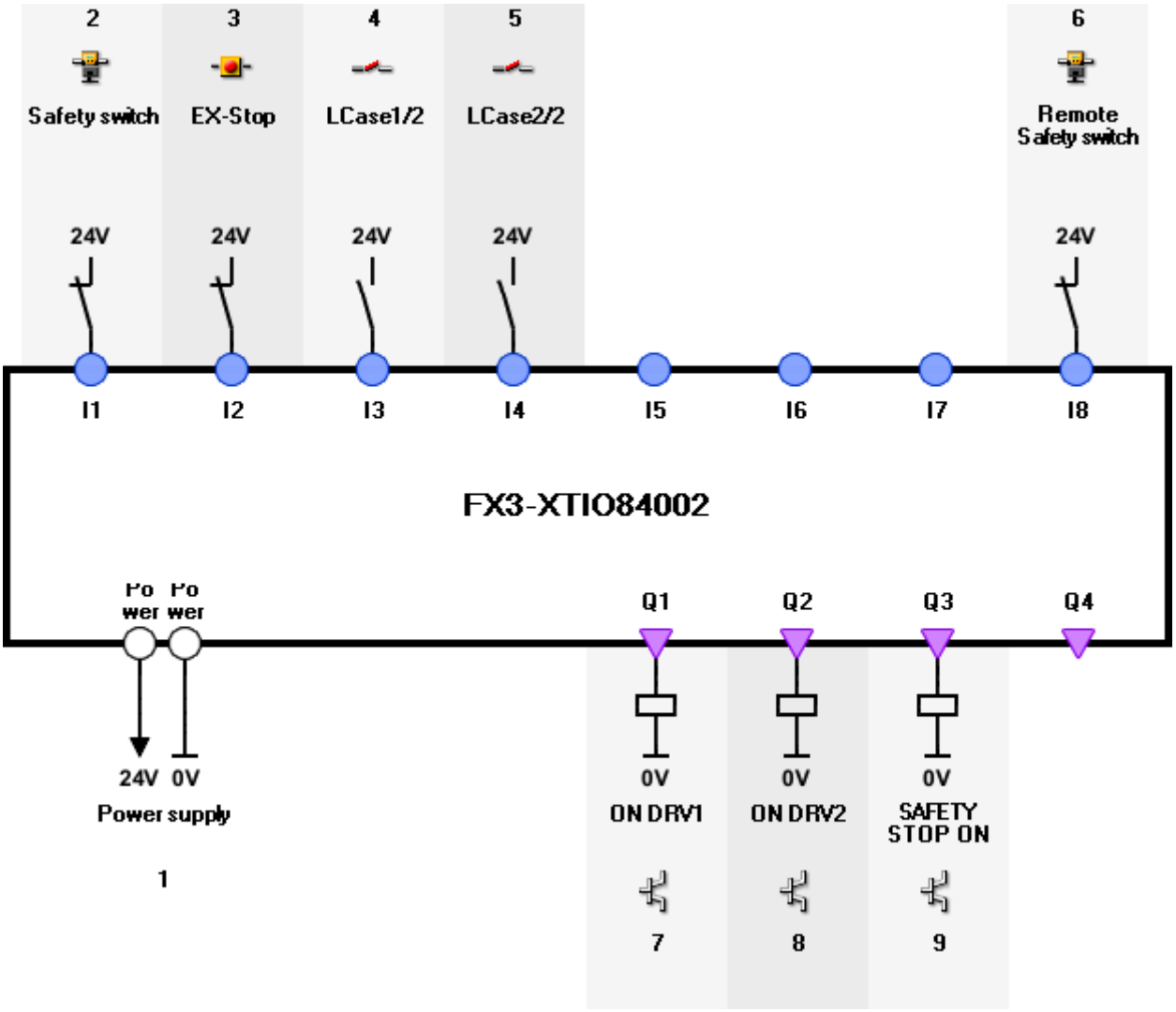
4.4.1.3. Outputs

		Mode	Title/tag name	Test pulse	Increased capacitive loads
7	Q1		PNP output (Single channel) / ON DRV1	Without	Disabled
8	Q2		PNP output (Single channel) / ON DRV2	Without	Disabled
9	Q3		PNP output (Single channel) / SAFETY STOP ON	Without	Disabled

4.4.1.4. Power supply

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

4.4.1.5. Wiring diagram



5. Configuration draft S300 [H] from 8/10/2021, 22:10

S300 [H] Laser scanner

5.1. Version information

Version number CDS	3.7.2.122
Software version DLL	3.7.2.122
Created with CDS	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)	00.00
Software version (CPU B)	00.00
Sensor head	Long Range (3.0 m)
I/O module	
Safety Configuration ID (SCID)	0xE1F3
Status	in testing

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

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

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

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

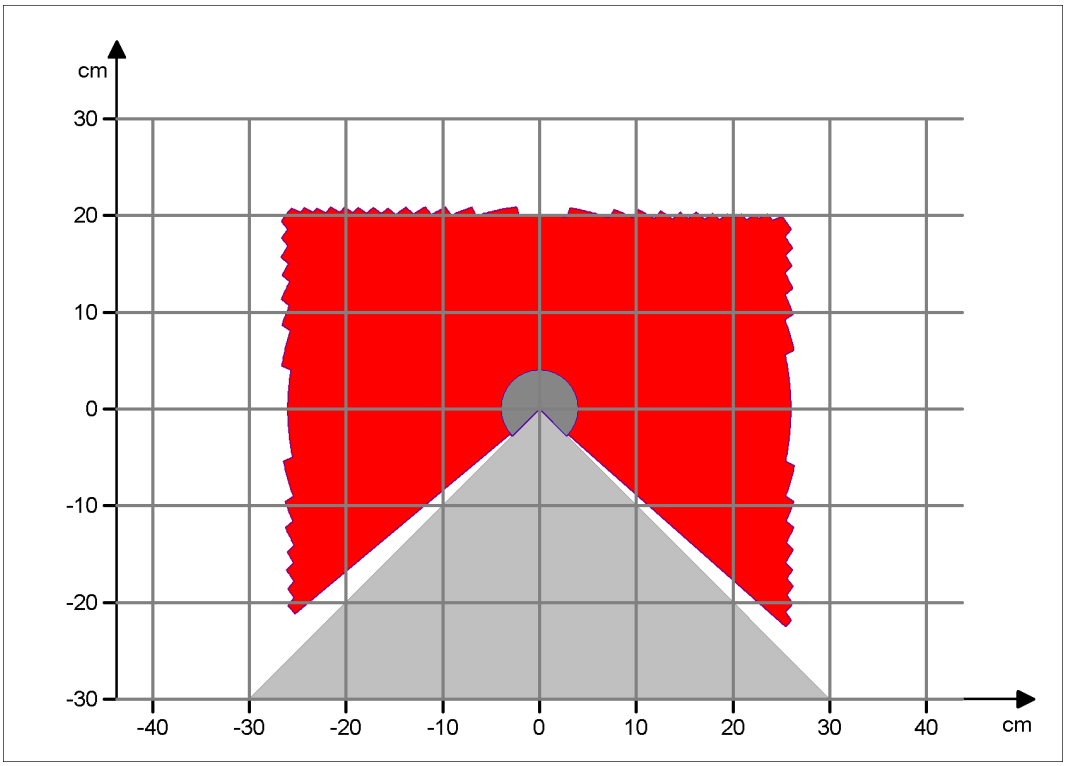
Following case	Any

5.12. Field sets

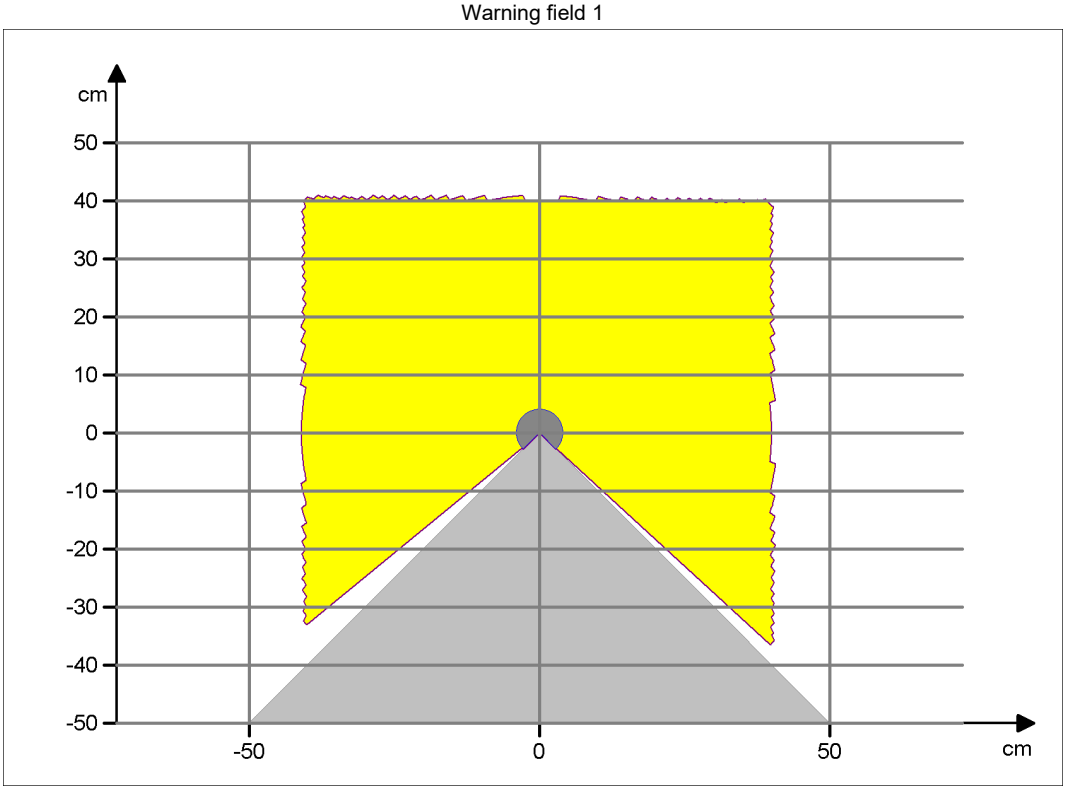
Number of field sets	3

Field set 1 "Short Fields"

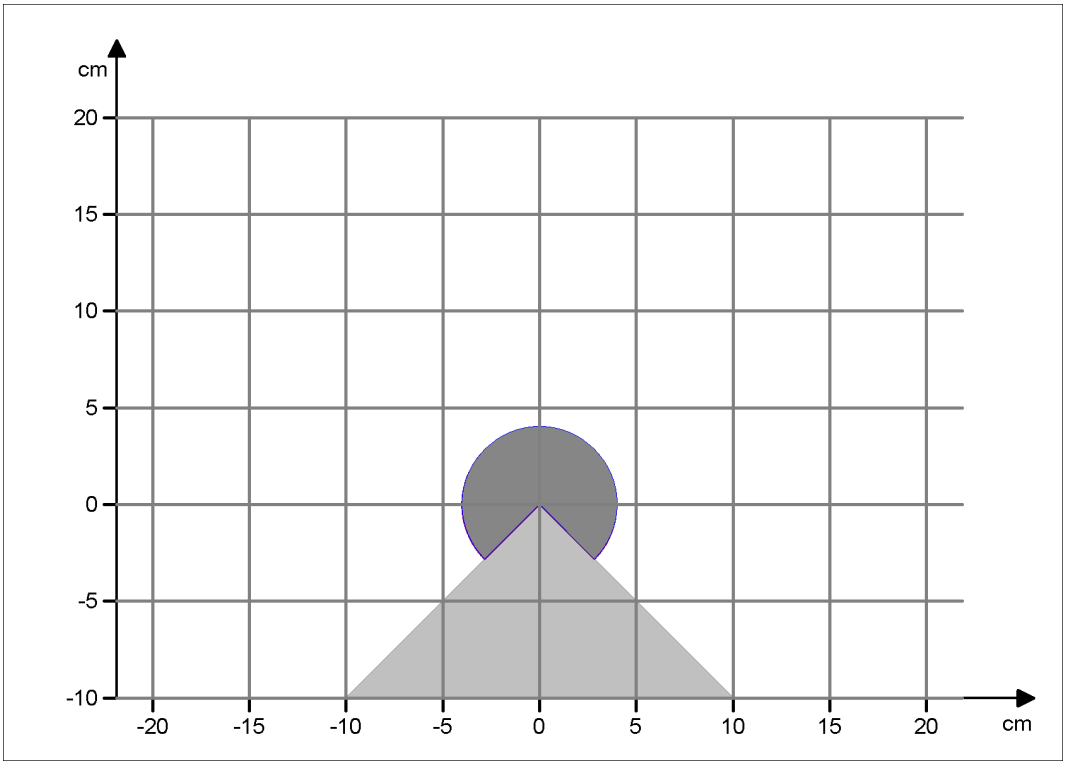
Protective field



Warning field 1

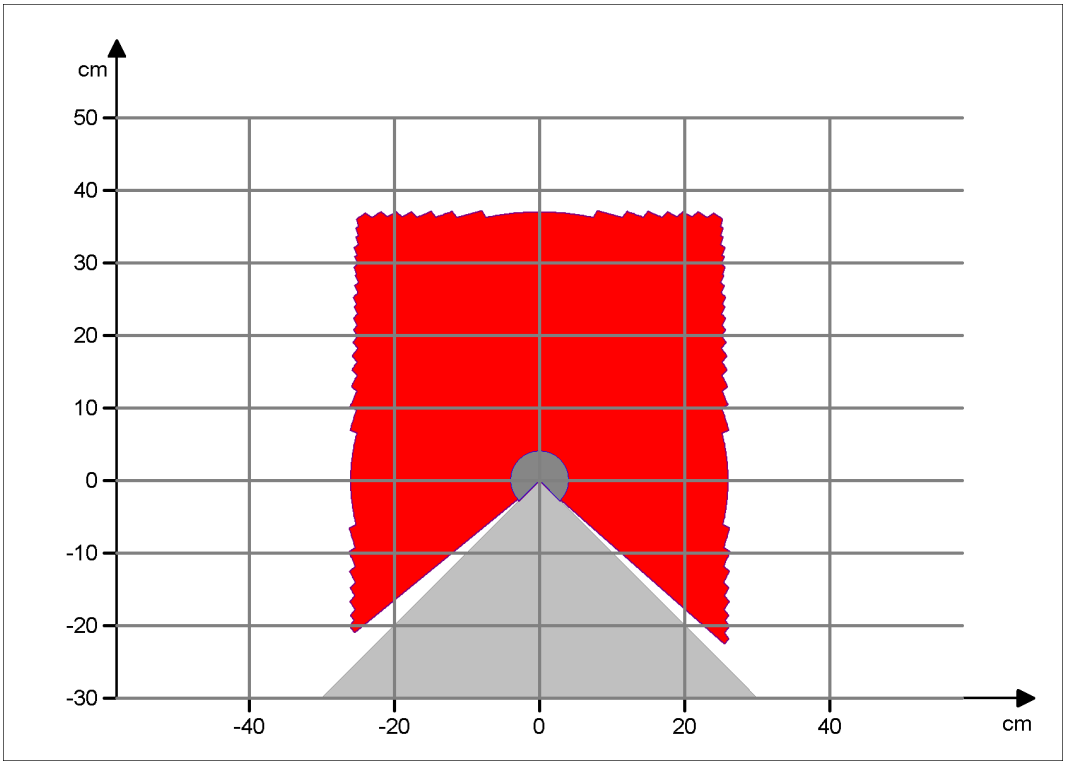


Warning field 2

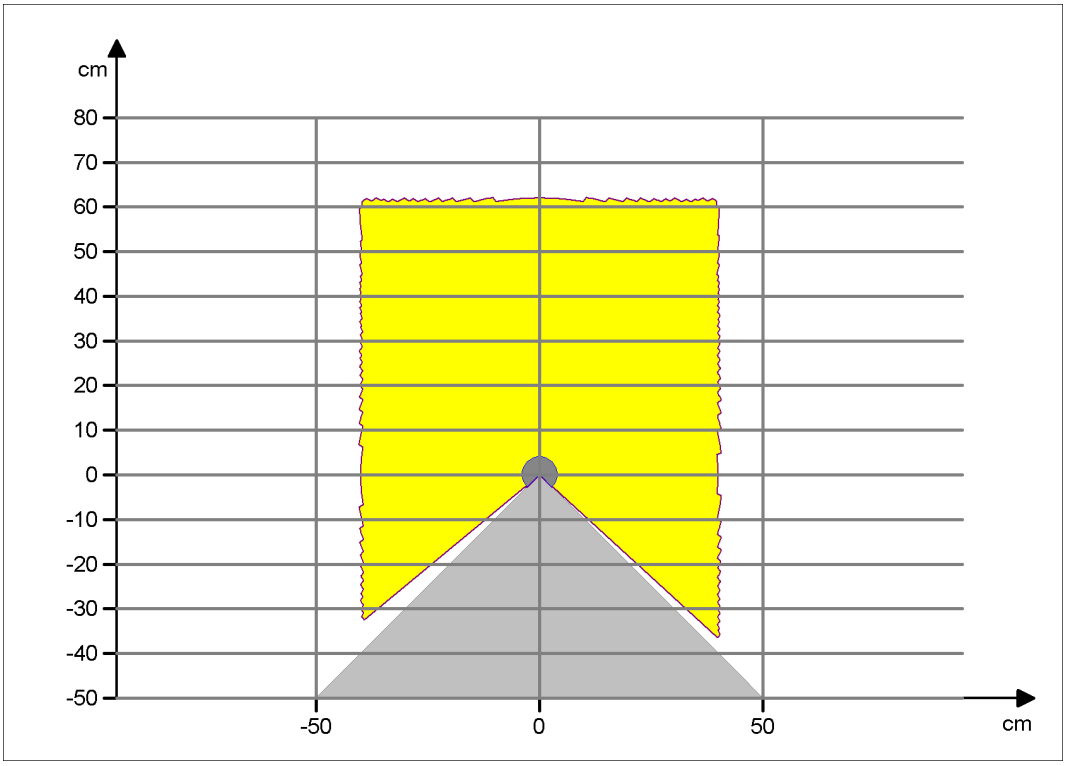


Field set 2 "Long Fields"

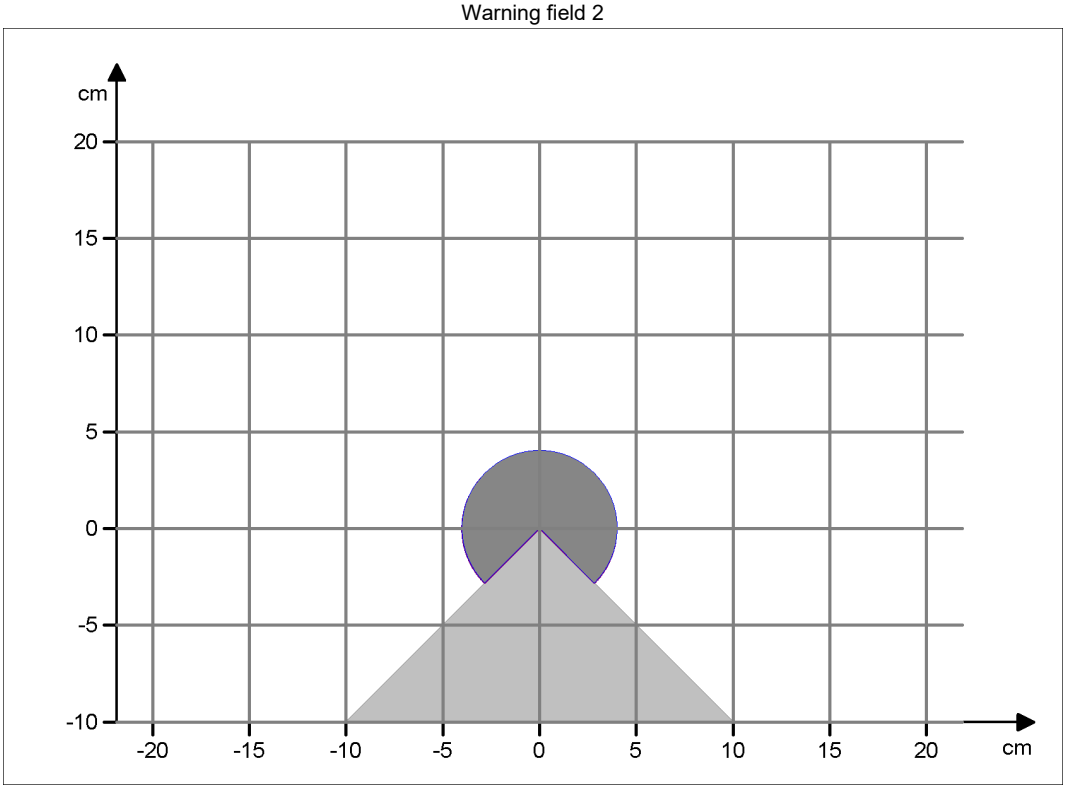
Protective field



Warning field 1



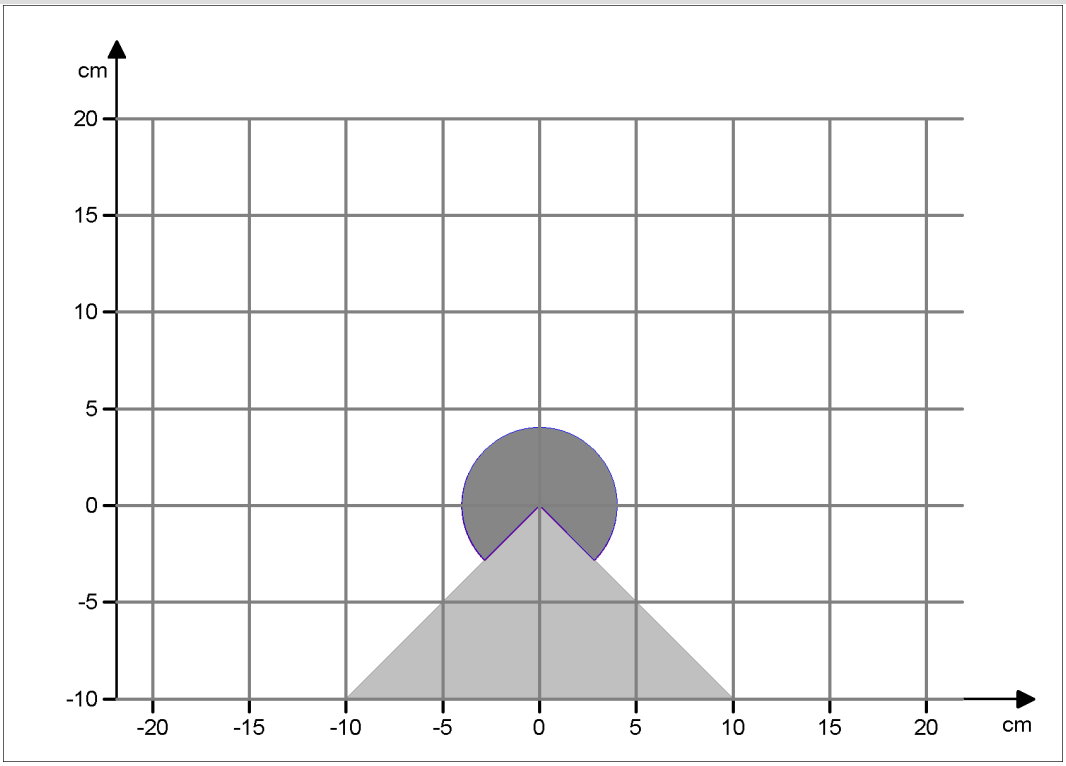
Warning field 2



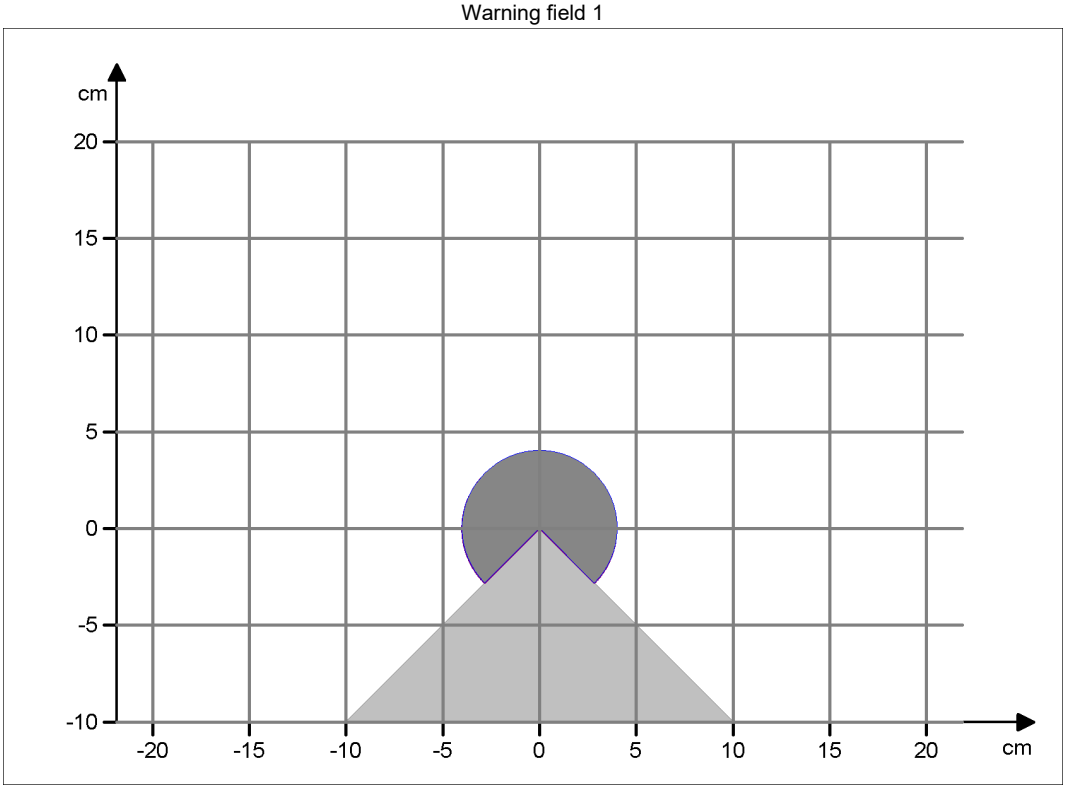
Field set 3 "No detection"

Protective field

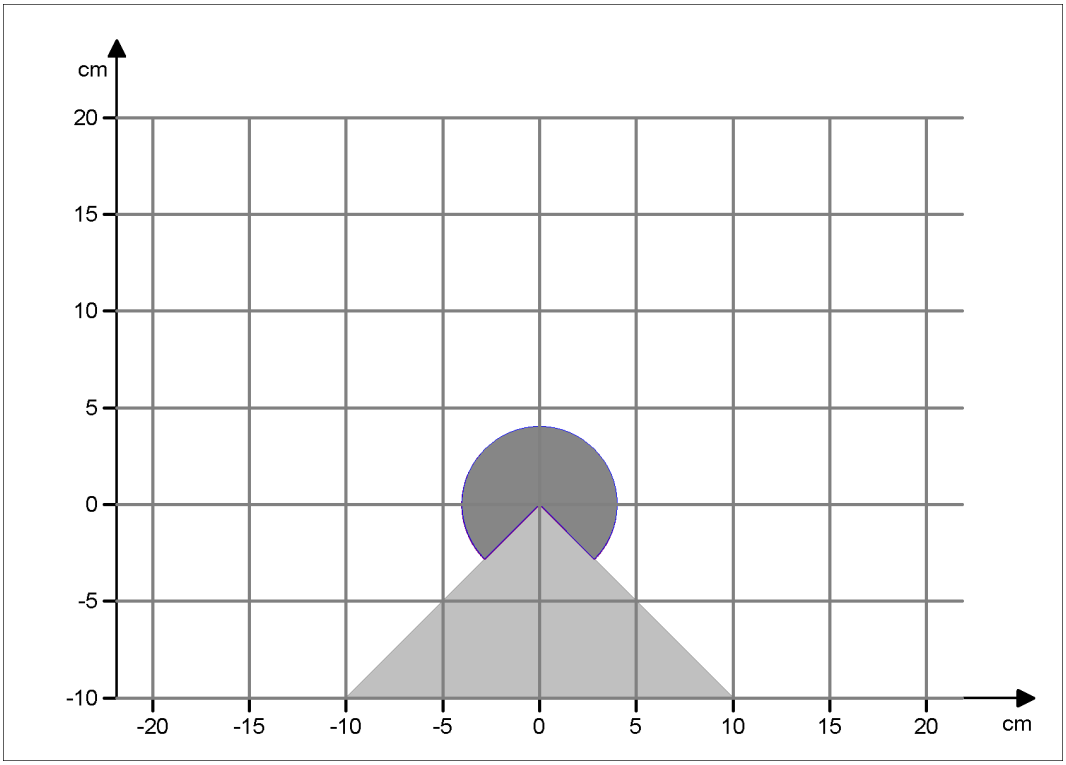
Field set 3 "No detection"



Warning field 1



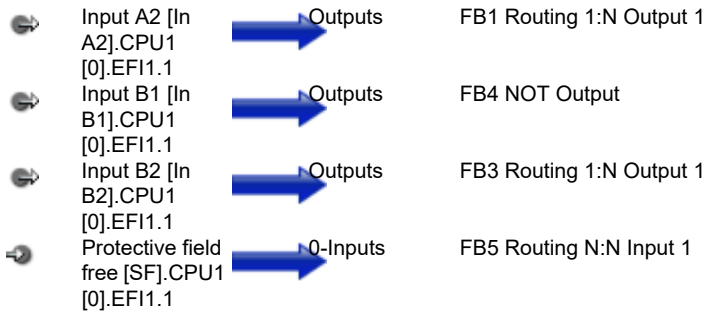
Warning field 2



6. I/O overview

6.1. I/O module

XTIO[1]	Safety switch.XTIO [1].I1	0-Inputs	FB6 OR Input 1
	ON DRV1.XTIO [1].Q1	Outputs	FB14 NOT Output
	EX-Stop.XTIO [1].I2	0-Inputs	FB0 Routing N:N Input 3
	ON DRV2.XTIO [1].Q2	Outputs	FB15 NOT Output
	LCase1/2.XTIO[1].I3	0-Inputs	FB0 Routing N:N Input 1
	SAFETY STOP ON.XTIO [1].Q3	Outputs	FB11 Routing 1:N Output 1
	LCase2/2.XTIO[1].I4	0-Inputs	FB0 Routing N:N Input 2
	Remote Safety switch.XTIO [1].I8	0-Inputs	FB6 OR Input 2
S300 [H] [EFI1.1]	Input A1 [In A1].CPU1 [0].EFI1.1	Outputs	FB2 NOT Output


Input A2 [In A2].CPU1 [0].EFI1.1
Outputs
FB1 Routing 1:N Output 1
Input B1 [In B1].CPU1 [0].EFI1.1
Outputs
FB4 NOT Output
Input B2 [In B2].CPU1 [0].EFI1.1
Outputs
FB3 Routing 1:N Output 1
Protective field free [SF].CPU1 [0].EFI1.1
0-Inputs
FB5 Routing N:N Input 1