

0	1	2	3	4	5	6	7	8	9
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Documentation for solution

FirstTc3_w_TwinSAFE

SafetyController

Date	8/13/2013
Editor	Administrator
Plot	8/13/2013

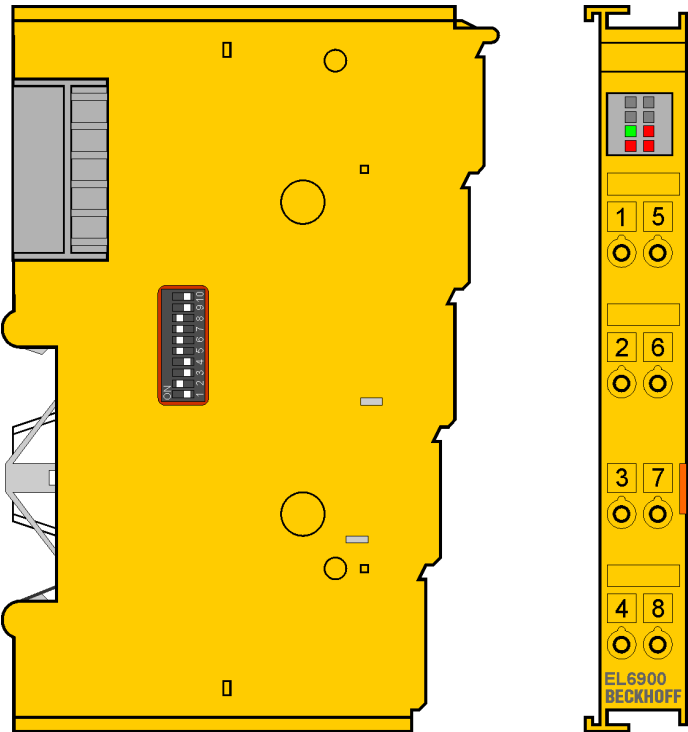
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Target System



Platform: EL6900

Parameters

Serial Number: 00457485
Version number: 1
Type: EL6900, TwinSAFE PLC
Product/Revision: EL6900-0000-0016
Auto Inc Addr: FFFD
EtherCAT Addr: 1004
Previous Port: Term 5 (EL6900)-B

Safety Project

Project CRC: 0x9350

FSOE address: 3

Switch setting:

On	1	2	3	4	5	6	7	8	9	10
Off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

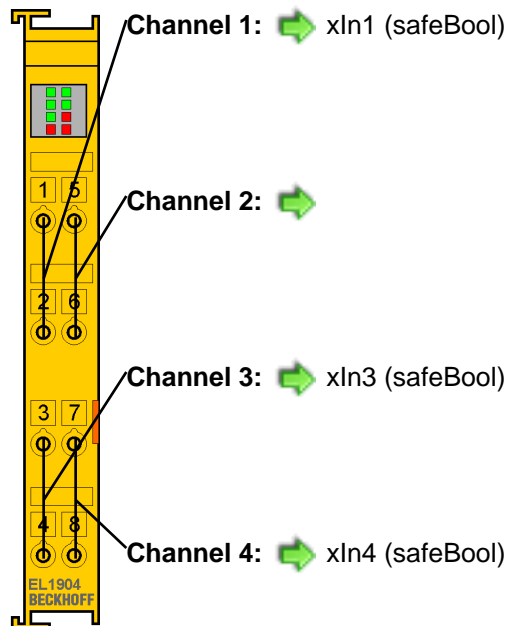
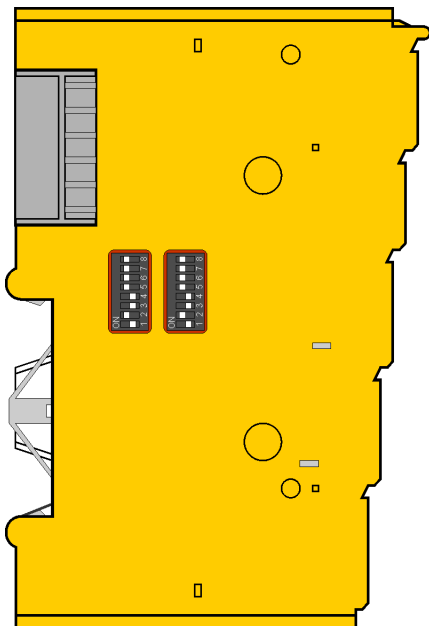
0	1	2	3	4	5	6	7	8	9
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Terminal Overview

TwinSafeGroup1	4
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Device 1 (EtherCAT) - Term 3 (EL1904)

Type: 4 digital inputs (EtherCAT)



EtherCAT Parameter

Type: EL1904, 4 Ch. Safety Input 24V
, TwinSAFE

Product/Revision: EL1904-0000-0016

Auto Inc Addr: FFFF

EtherCAT Addr: 1002

Identification Value: 0

Previous Port: Term 3 (EL1904)-B

Safe Parameter

FS Operating Mode: digital

Sensor Test Channel 1 active: TRUE

Sensor Test Channel 2 active: TRUE

Sensor Test Channel 3 active: TRUE

Sensor Test Channel 4 active: TRUE

Logic of Ch1 and Ch2: single logic channel 1/2

Logic of Ch3 and Ch4: single logic channel 3/4

FSOE address: 1

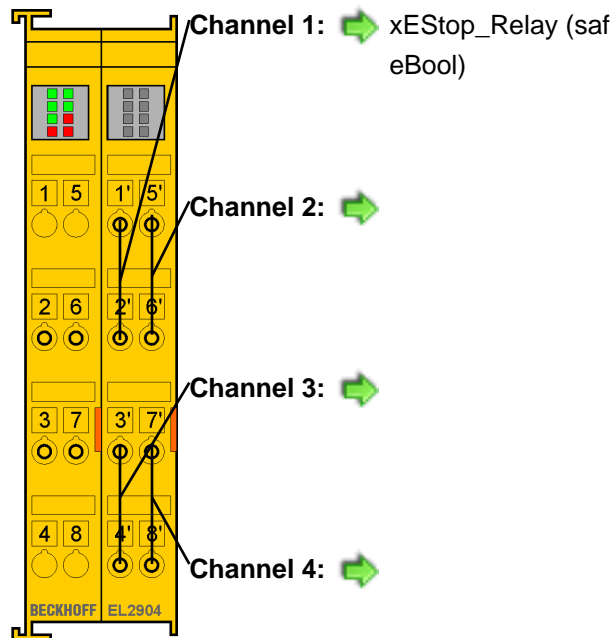
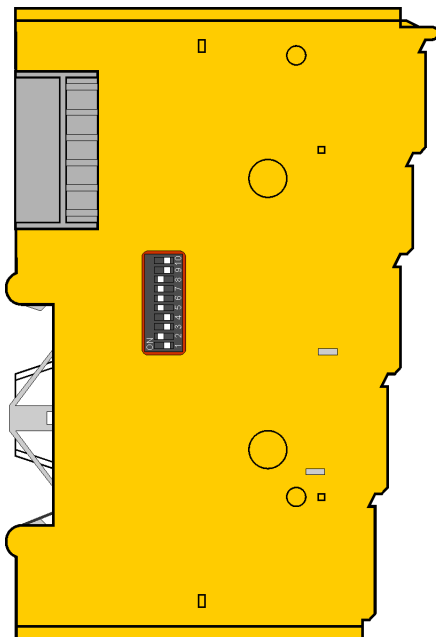
Switch setting:

	9	10	11	12	13	14	15	16
On								
Off								

	1	2	3	4	5	6	7	8
On								
Off								

Device 1 (EtherCAT) - Term 4 (EL2904)

Type: 4 digital outputs (EtherCAT)



EtherCAT Parameter

Type:	EL2904, 4 Ch. Safety Output 24 V, 0.5A, TwinSAFE
Product/Revision:	EL2904-0000-0016
Auto Inc Addr:	FFFE
EtherCAT Addr:	1003
Identification Value:	0
Previous Port:	Term 4 (EL2904)-B

Safe Parameter

Standard outputs active:	FALSE
Current measurement active:	TRUE
Testing of outputs active:	TRUE
Error acknowledge active:	TRUE

FSOE address: 2

Switch setting:

On	1	2	3	4	5	6	7	8	9	10
Off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Device 1 (EtherCAT) - Term 4 (EL2904)

Type: 4 digital outputs (EtherCAT)

Channel	Connection Name
Channel 1	xEStop_Relay (safeBool)
Channel 2	-
Channel 3	-
Channel 4	-

0	1	2	3	4	5	6	7	8	9
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ErrorAcknowledgement

Type: 1 digital input (Standard)

Standard Parameter

Name: GVL_IO.g_xTS_ErrAck
Type: BOOL
Path: PLC->PLC_ForTwinSAFEinTc3->PLC_ForTwinSA
FEinTc3 Instance->PlcTask Outputs->GVL_I
O.g_xTS_ErrAck

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0	1	2	3	4	5	6	7	8	9
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xEDM_Error

Type: 1 digital output (Standard)

Standard Parameter

Name: GVL_IO.g_xTS_EDM_Error
Type: BOOL
Path: PLC->PLC_ForTwinSAFEinTc3->PLC_ForTwinSA
FEinTc3 Instance->PlcTask Inputs->GVL_IO
.g_xTS_EDM_Error

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0	1	2	3	4	5	6	7	8	9
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xEStop_Reset

Type: 1 digital input (Standard)

Standard Parameter

Name: GVL_IO.g_xTS_EStop_Reset
Type: BOOL
Path: PLC->PLC_ForTwinSAFEinTc3->PLC_ForTwinSA
FEinTc3 Instance->PlcTask Outputs->GVL_I
O.g_xTS_EStop_Reset

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Plot	8/13/2013



0	1	2	3	4	5	6	7	8	9
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xESop_TOF_Complete

Type: 1 digital output (Standard)

Standard Parameter

Name: GVL_IO.g_xTS_EStop_OFF_Delay_Complete
Type: BOOL
Path: PLC->PLC_ForTwinSAFEinTc3->PLC_ForTwinSA
FEinTc3 Instance->PlcTask Inputs->GVL_IO
.g_xTS_EStop_OFF_Delay_Complete

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0	1	2	3	4	5	6	7	8	9
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xESop_TON_Complete

Type: 1 digital output (Standard)

Standard Parameter

Name: GVL_IO.g_xTS_EStop_ON_Delay_Complete
Type: BOOL
Path: PLC->PLC_ForTwinSAFEinTc3->PLC_ForTwinSA
FEinTc3 Instance->PlcTask Inputs->GVL_IO
.g_xTS_EStop_ON_Delay_Complete

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0	1	2	3	4	5	6	7	8	9
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xEStopFB_Error

Type: 1 digital output (Standard)

Standard Parameter

Name: GVL_IO.g_xTS_EStop_Error

Type: `BOOL`

Path: PLC->PLC_ForTwinSAFEInTc3->PLC_ForTwinSAFEInTc3 Instance->PlcTask Inputs->GVL_IO.g_xTS_EStop_Error

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xEStopFB_Error

0	1	2	3	4	5	6	7	8	9
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xSafety_Group1_Com_Error

Type: 1 digital output (Standard)

Standard Parameter

Name:	GVL_IO.g_xTS_SafetyGroup1_COMerror
Type:	BOOL
Path:	PLC->PLC_ForTwinSAFEinTc3->PLC_ForTwinSAFEinTc3 Instance->PlcTask Inputs->GVL_IO.g_xTS_SafetyGroup1_COMerror

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xSafety_Group1_Com_Error

0	1	2	3	4	5	6	7	8	9
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xSafety_Group1_FB_Error

Type: 1 digital output (Standard)

Standard Parameter

Name:	GVL_IO.g_xTS_SafetyGroup1_FBerror
Type:	BOOL
Path:	PLC->PLC_ForTwinSAFEinTc3->PLC_ForTwinSAFEinTc3 Instance->PlcTask Inputs->GVL_IO.g_xTS_SafetyGroup1_FBerror

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xSafety_Group1_FB_Error

Function Blocks

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TwinSafeGroup1

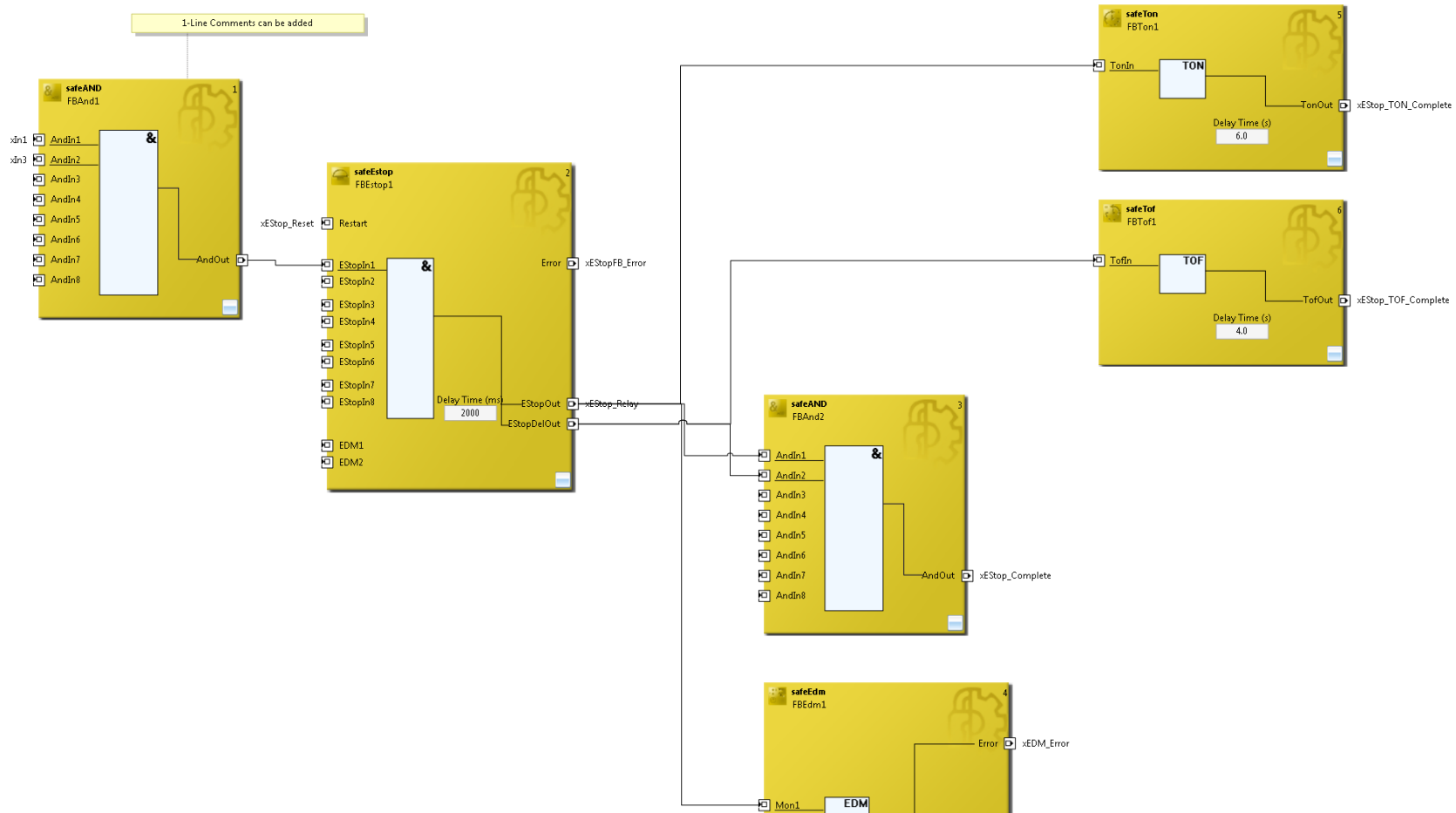
Network1



Map State: True
Map Diag: True

TwinSafeGroup1

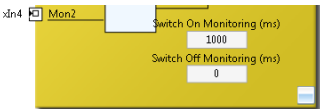
Network1



Map State: True
Map Diag: True

0	1	2	3	4	5	6	7	8	9
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TwinSafeGroup1



Map State: True
Map Diag: True

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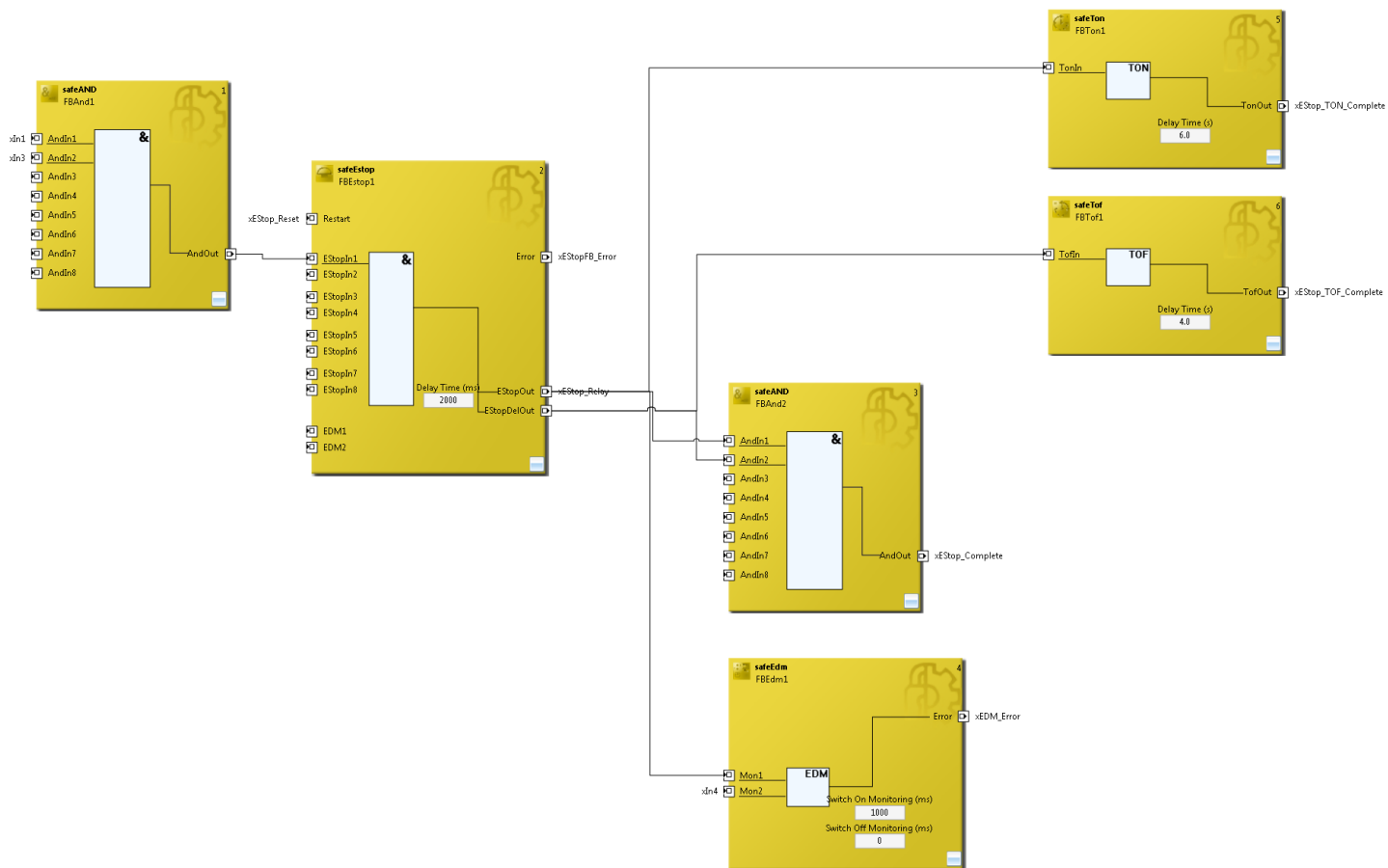


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TSGroup: TwinSafeGroup1 (2)

Network1

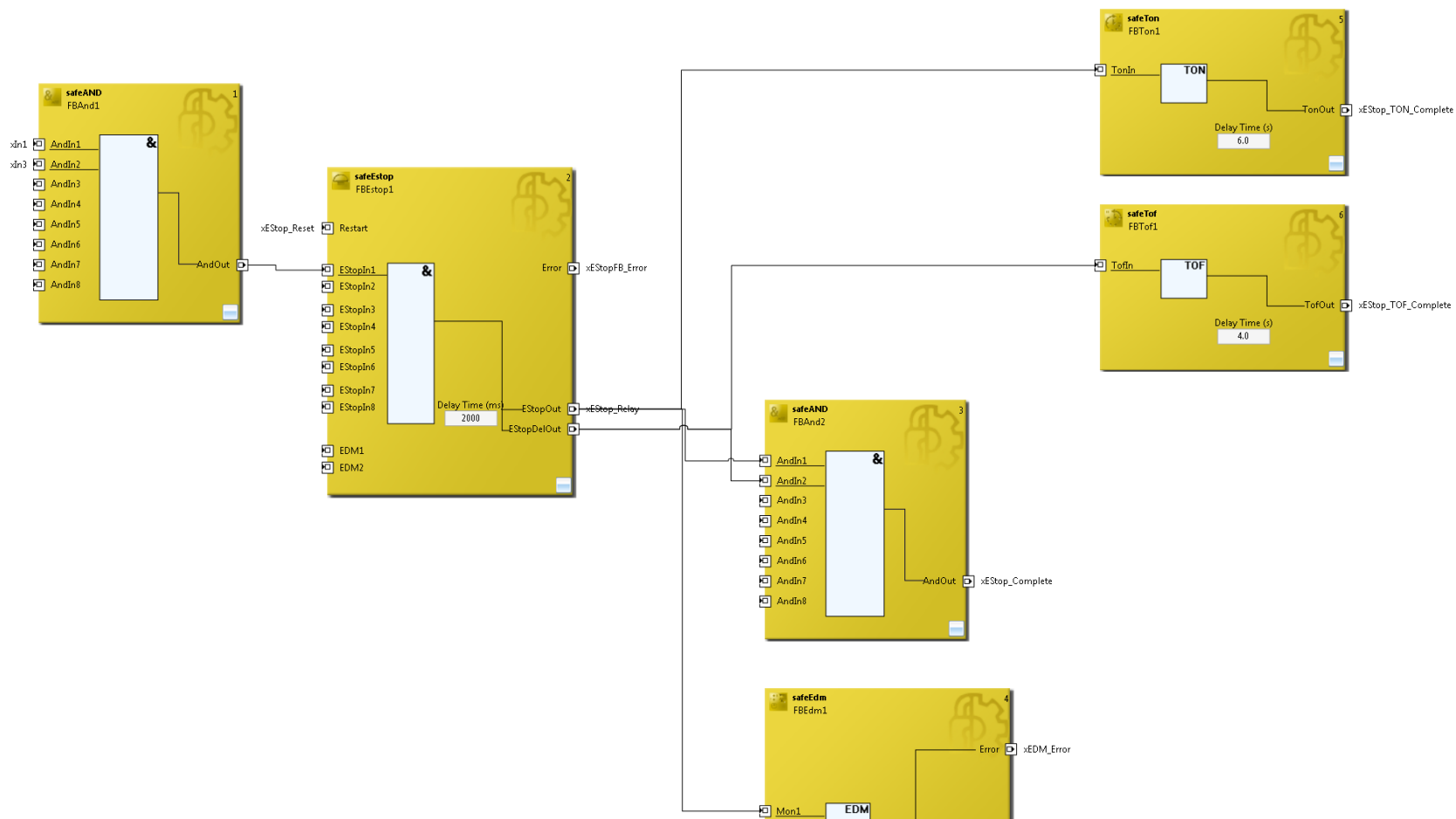
Network1



Map State: True
Map Diag: True

Network1

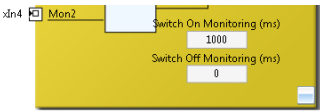
Network1



Map State: True
Map Diag: True

0	1	2	3	4	5	6	7	8	9
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Network1

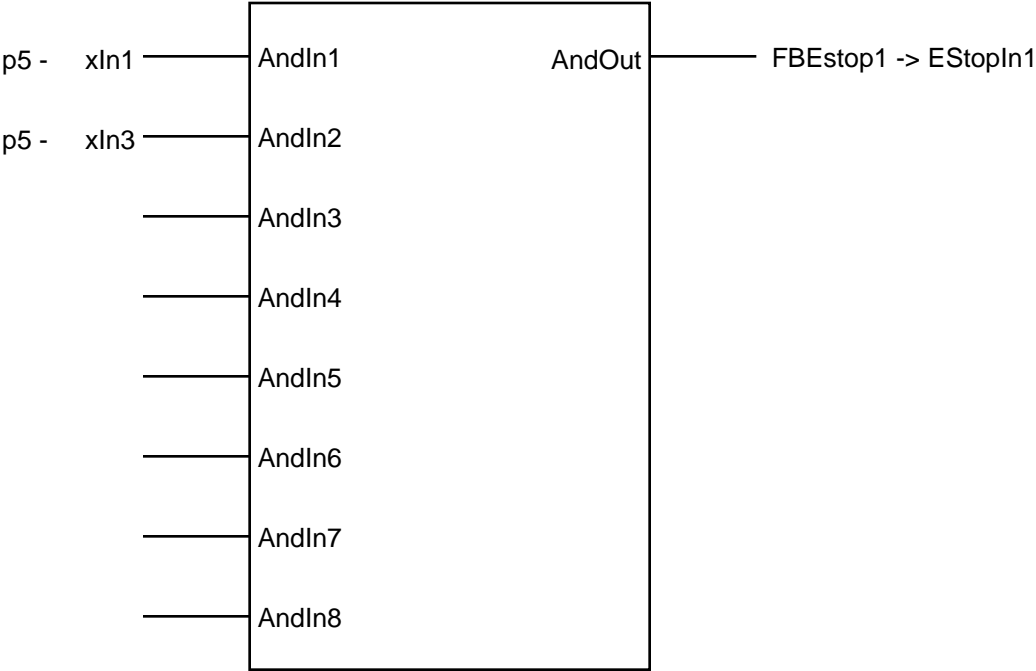


Map State: True
Map Diag: True

0	1	2	3	4	5	6	7	8	9
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FBAnd1

Type: safeAND



Map State: True
Map Diag: True
Order of Execution: 1

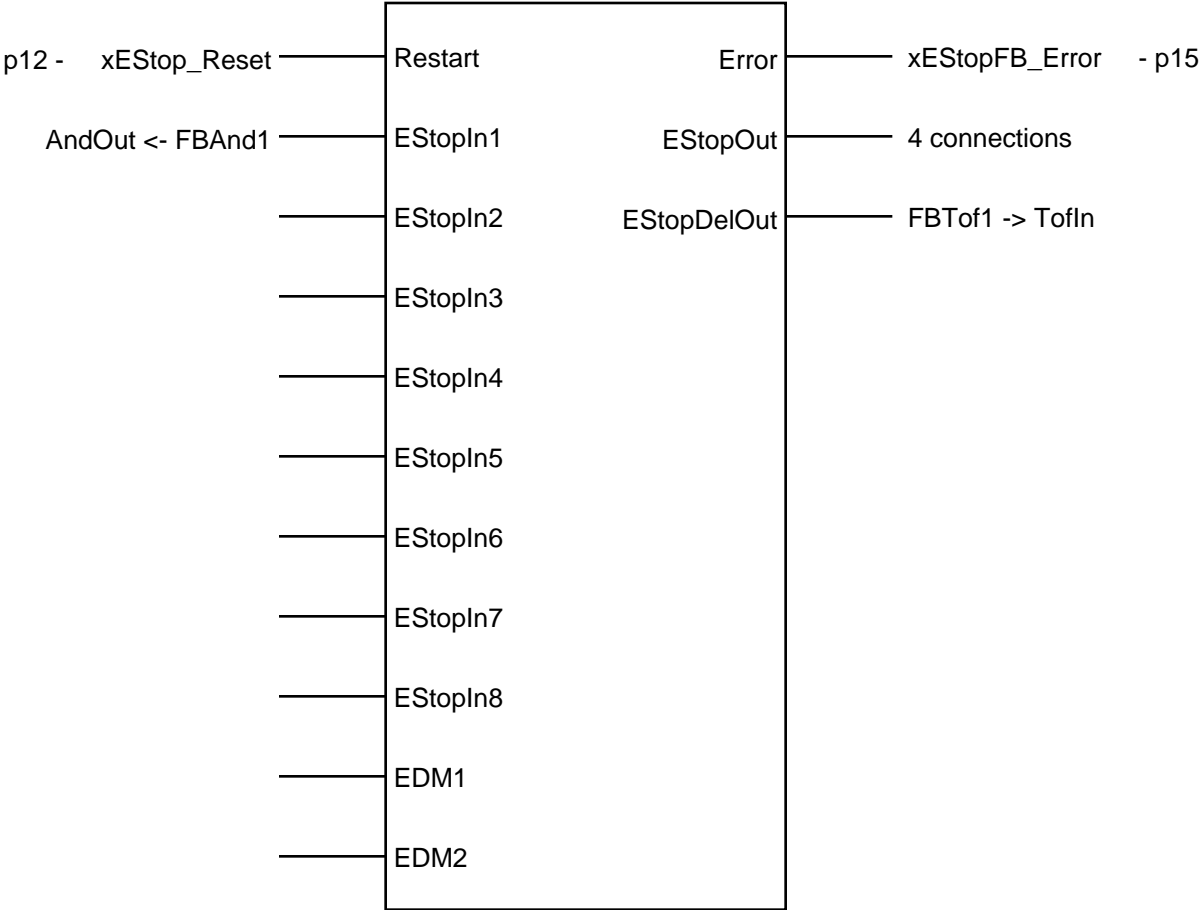
FBAnd1

Type: safeAND

Link	Connection Name
AssignedVariable (Input)	AndIn1 : xIn1
	AndIn2 : xIn3
Function Block	FBAnd1 -> EStopIn1 (FBEstop1)

FBStop1

Type: safeEstop



Map State: True
Map Diag: True
Order of Execution: 2
Delay Time (ms): 2000

FBStop1

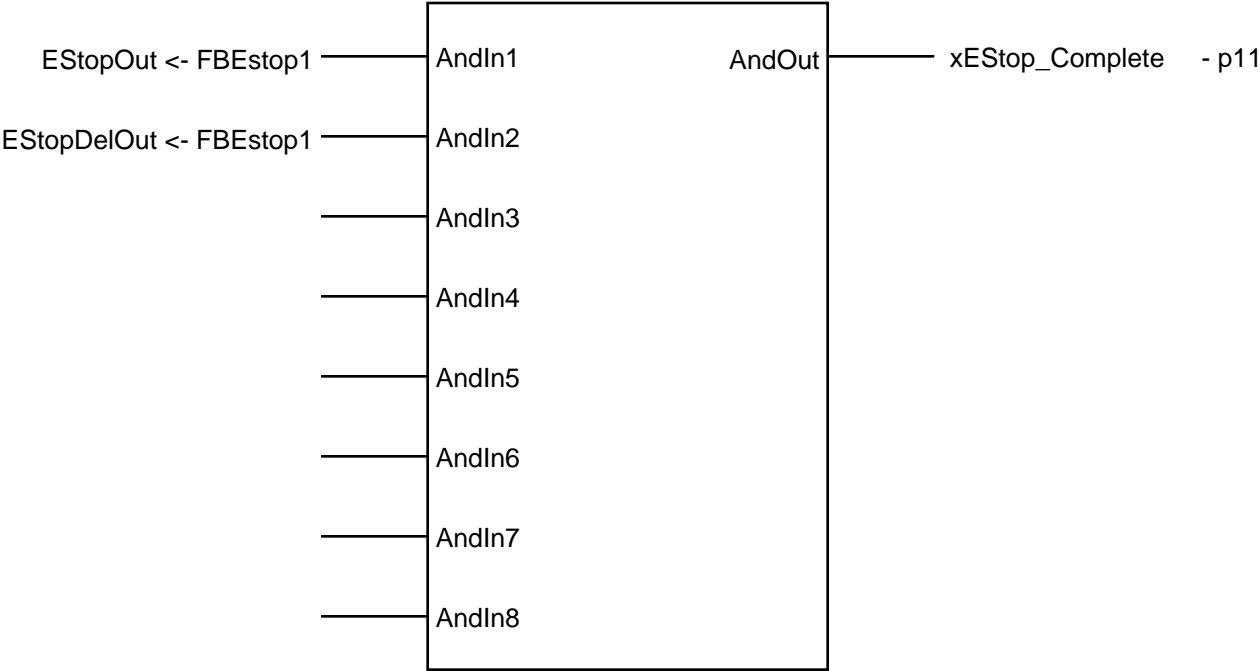
Type: safeEstop

Link	Connection Name
AssignedVariable (Input)	Restart : xEStop_Reset
AssignedVariable (Output)	EStopOut : xEStop_Relay
	Error : xEStopFB_Error
Function Block	FBStop1 -> AndIn1 (FBAnd2)
	FBStop1 -> Mon1 (FBEdm1)
	FBStop1 -> TonIn (FBTon1)
	FBStop1 -> AndIn2 (FBAnd2)
	FBStop1 -> TofIn (FBTof1)
	FBStop1 -> AndOut (FBAnd1)

0	1	2	3	4	5	6	7	8	9
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FBAnd2

Type: safeAND



Map State: True
Map Diag: True
Order of Execution: 3

FBAnd2

Type: safeAND

Link	Connection Name
AssignedVariable (Output)	AndOut : xEStop_Complete
Function Block	FBAnd2 -> EStopOut (FBEstop1)
	FBAnd2 -> EStopDelOut (FBEstop1)

0	1	2	3	4	5	6	7	8	9
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FBEdm1

Type: safeEdm



Map State: True
Map Diag: True
Order of Execution: 4
Switch On Monitoring (ms): 1000
Swithc Off Monitoring (ms): 0

Date	8/13/2013
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0	1	2	3	4	5	6	7	8	9
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FBTon1

Type: safeTon



Map State: True
Map Diag: True
Order of Execution: 5
Delay Time (s): 6.0

Date	8/13/2013
Editor	Administrator
Plot	8/13/2013

0	1	2	3	4	5	6	7	8	9
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FBTof1

Type: safeTof



Map State: True
Map Diag: True
Order of Execution: 6
Delay Time (s): 4.0

Date	8/13/2013
Editor	Administrator
Plot	8/13/2013

