0	1	2	3	4	5	6	7	8	9

Documentation for solution

FirstTc3_w_TwinSAFE

SafetyController

Date	5/16/2013
Editor	KurtW
Plot	5/16/2013

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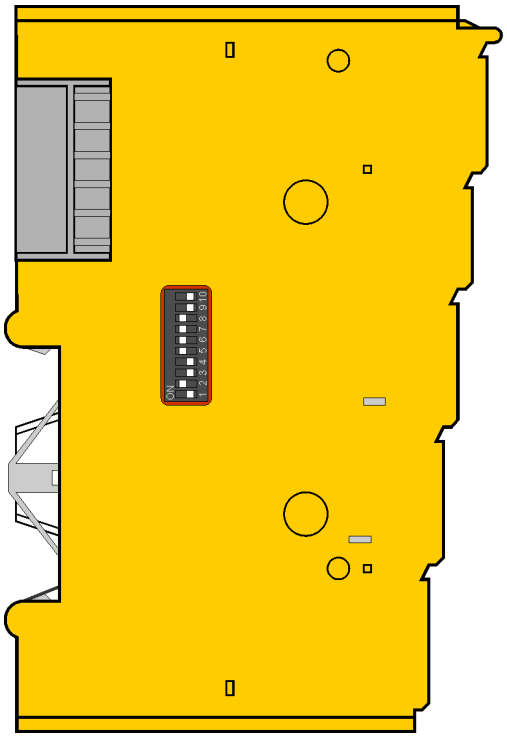
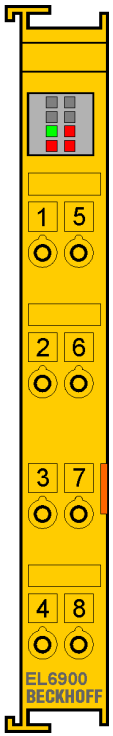
Target System





Platform: EL6900

Parameters

Serial Number: 00172477
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: 0xAB18

FSoE address: 3

Switch setting:

Terminal Overview

TwinSafeGroup1 **4**
- Device 1 (EtherCAT) - Term 3 (EL1904) 5
- Device 1 (EtherCAT) - Term 4 (EL2904) 7
- ErrorAcknowledgement 9
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- xEStop_Complete 11
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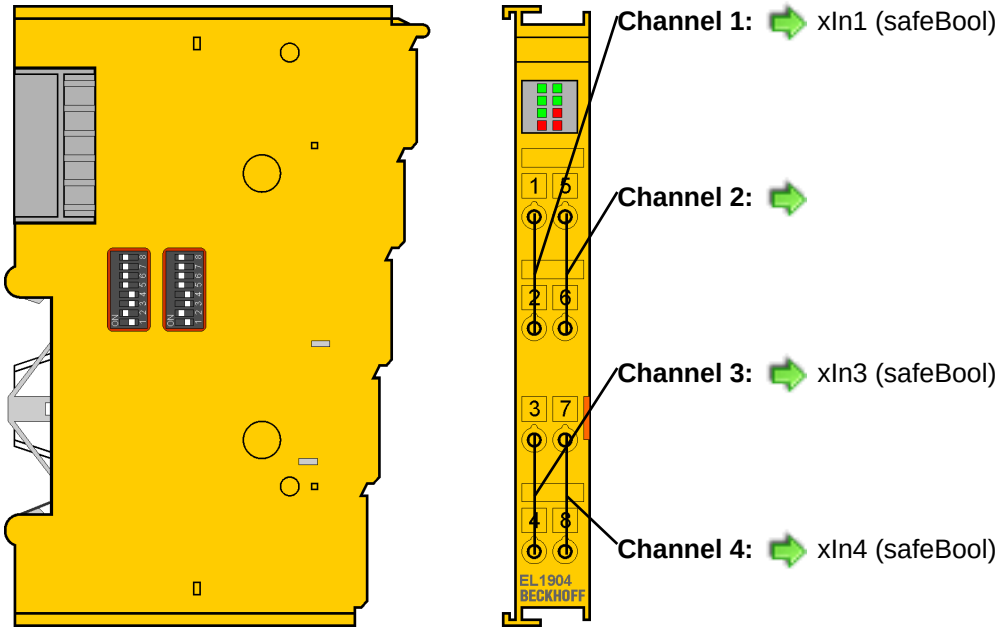
TwinSafeGroup1

Device 1 (EtherCAT) - Term 3 (EL1904)

Type: 4 digital inputs (EtherCAT)



EtherCAT Parameter

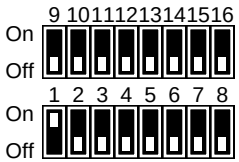
Type:	EL1904, 4 Ch. Safety Input 24V , TwinSAFE
Product/Revision:	EL1904-0000-0016
Auto Inc Addr:	FFFF
EtherCAT Addr:	1002
Identification Value:	0
Previous Port:	Term 3 (EL1904)-B

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:



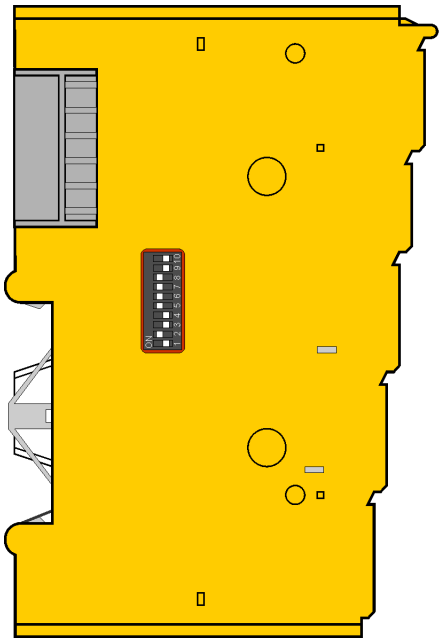
Device 1 (EtherCAT) - Term 3 (EL1904)

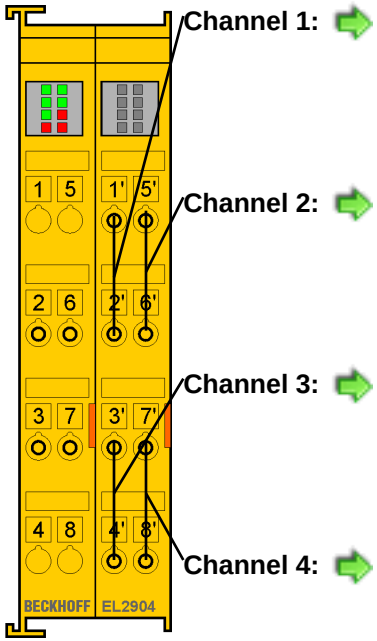
Type: 4 digital inputs (EtherCAT)

Channel	Connection Name
Channel 1	xIn1 (safeBool)
Channel 2	-
Channel 3	xIn3 (safeBool)
Channel 4	xIn4 (safeBool)

Device 1 (EtherCAT) - Term 4 (EL2904)

Type: 4 digital outputs (EtherCAT)





EtherCAT Parameter

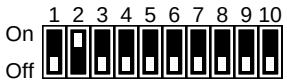
Type:	EL2904, 4 Ch. Safety Output 24 V, 0.5A, TwinSAFE
Product/Revision:	EL2904-0000-0016
Auto Inc Addr:	FFFE
EtherCAT Addr:	1003
Identification Value:	0
Previous Port:	Term 4 (EL2904)-B

Safe Parameter

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

FSoE address: 2

Switch setting:



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	-

ErrorAcknowledgement

Type: 1 digital input (Standard)

Standard Parameter

Name: GVL_IO.g_xTS_ErrAck

Type: BOOL

Path: PLC->PLC_ForTwinSAFEinTc3->PLC_ForTwinSAFEinTc3 Instance->PlcTask Outputs->GVL_IO.g_xTS_ErrAck

xEDM_Error

Type: 1 digital output (Standard)

Standard Parameter

Name: GVL_IO.g_xTS_EDM_Error

Type: BOOL

Path: PLC->PLC_ForTwinSAFEinTc3->PLC_ForTwinSAFEinTc3 Instance->PlcTask Inputs->GVL_IO.g_xTS_EDM_Error

xEStop_Complete

Type: 1 digital output (Standard)

Standard Parameter

Name: GVL_IO.g_xTS_EStop_Complete

Type: BOOL

Path: PLC->PLC_ForTwinSAFEinTc3->PLC_ForTwinSAFEinTc3 Instance->PlcTask Inputs->GVL_IO.g_xTS_EStop_Complete

xEStop_Reset

Type: 1 digital input (Standard)

Standard Parameter

Name: GVL_IO.g_xTS_EStop_Reset

Type: BOOL

Path: PLC->PLC_ForTwinSAFEinTc3->PLC_ForTwinSAFEinTc3 Instance->PlcTask Outputs->GVL_IO.g_xTS_EStop_Reset

xEStop_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_ForTwinSAFEinTc3 Instance->PlcTask Inputs->GVL_IO.g_xTS_EStop_OFF_Delay_Complete

xEStop_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_ForTwinSAFEinTc3 Instance->PlcTask Inputs->GVL_IO.g_xTS_EStop_ON_Delay_Complete

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

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

xSafety_Group1_FB_Error

Type: 1 digital output (Standard)

Standard Parameter

Name: GVL_IO.g_xTS_SafetyGroup1_FBerror

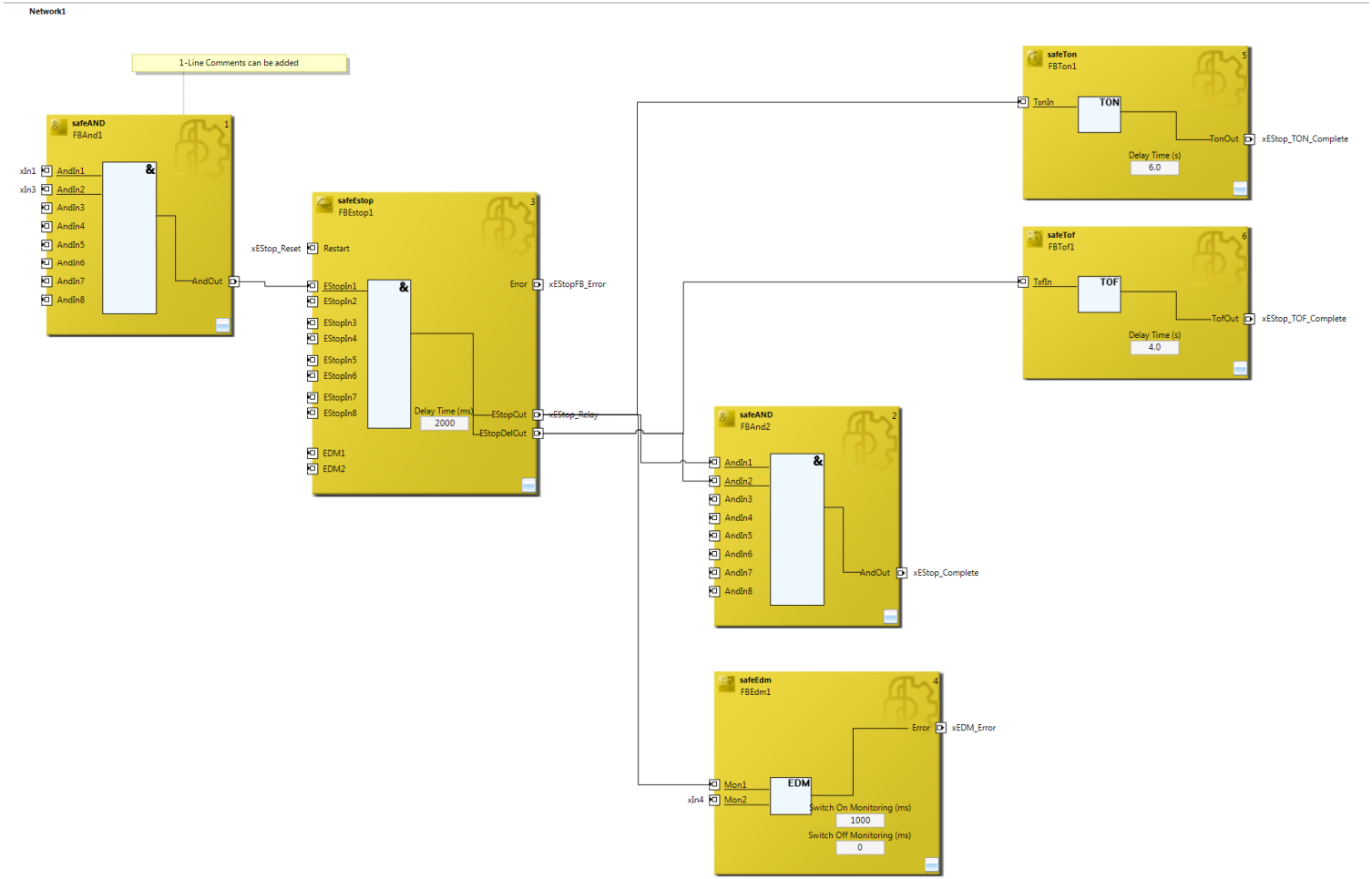
Type: BOOL

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

Function Blocks

TwinSafeGroup1 **19**
Network1 20
FBAnd1 21
FBEstop1 23
FBAnd2 25
FBEdm1 27
FBTon1 29
FBTof1 31

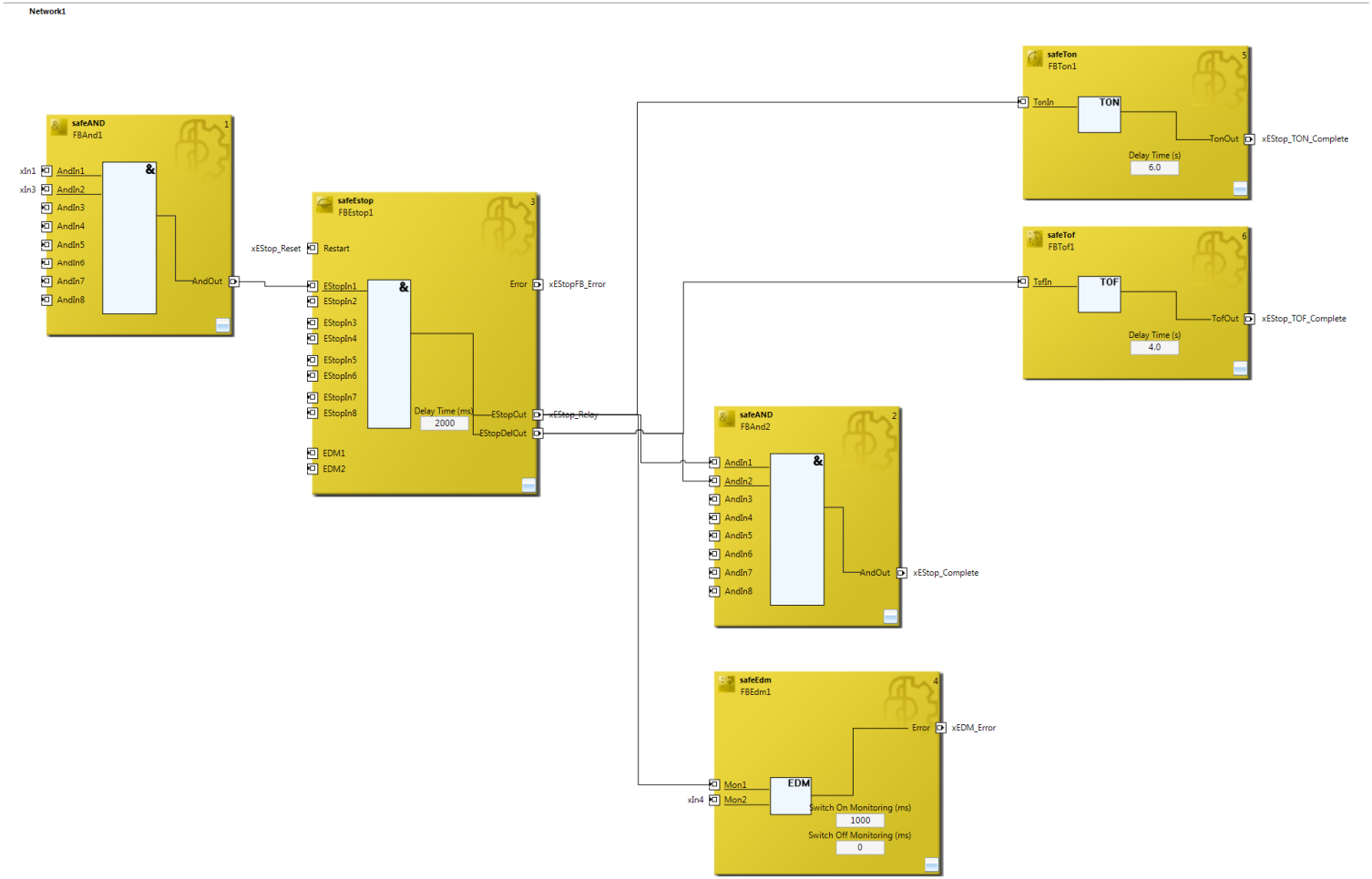
TwinSafeGroup1



Map State: True
Map Diag: True

0	1	2	3	4	5	6	7	8	9

Network1



Map State: True
Map Diag: True

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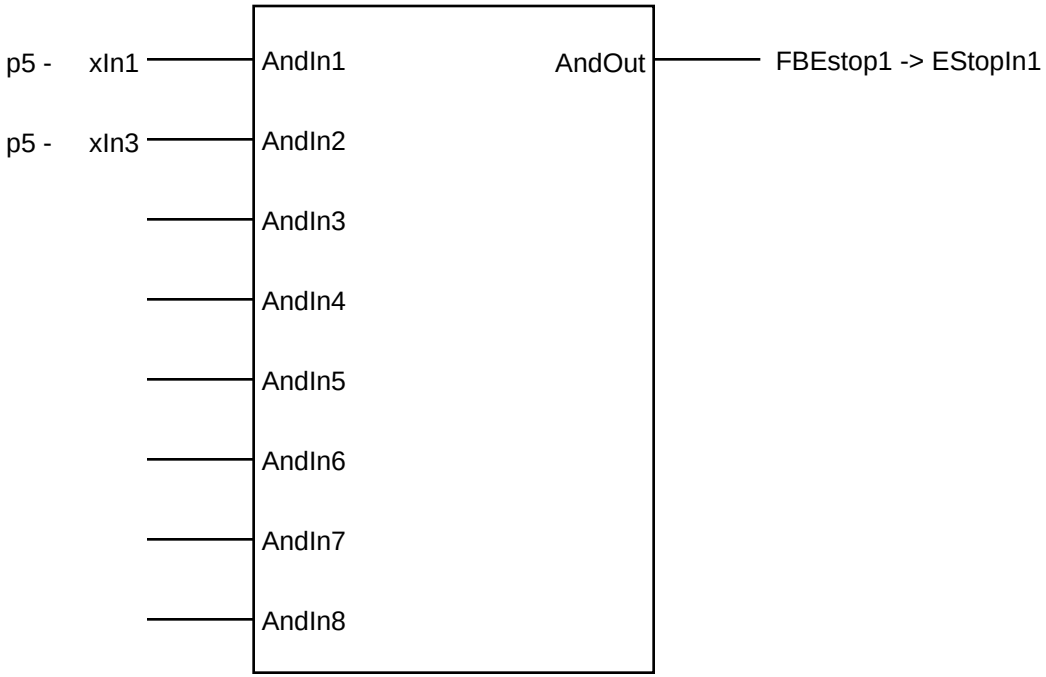
TSGroup: TwinSafeGroup1, Network: Network1 (1)

FBAnd1

Type: safeAND



Map Diag: True
Map State: True

Order number: 1

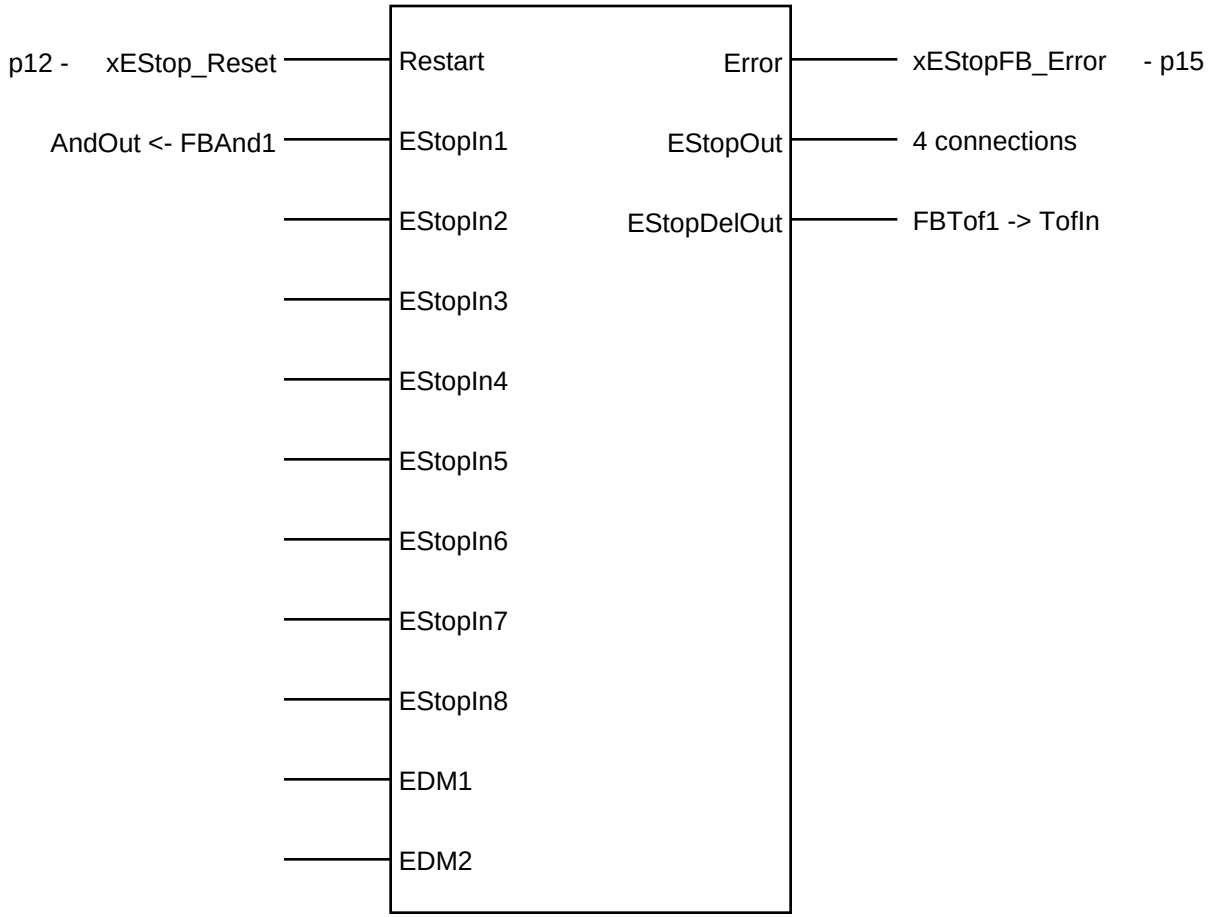
FBAnd1

Type: safeAND

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

FBEstop1

Type: safeEstop



Map Diag: True
Map State: True

Order number: 3

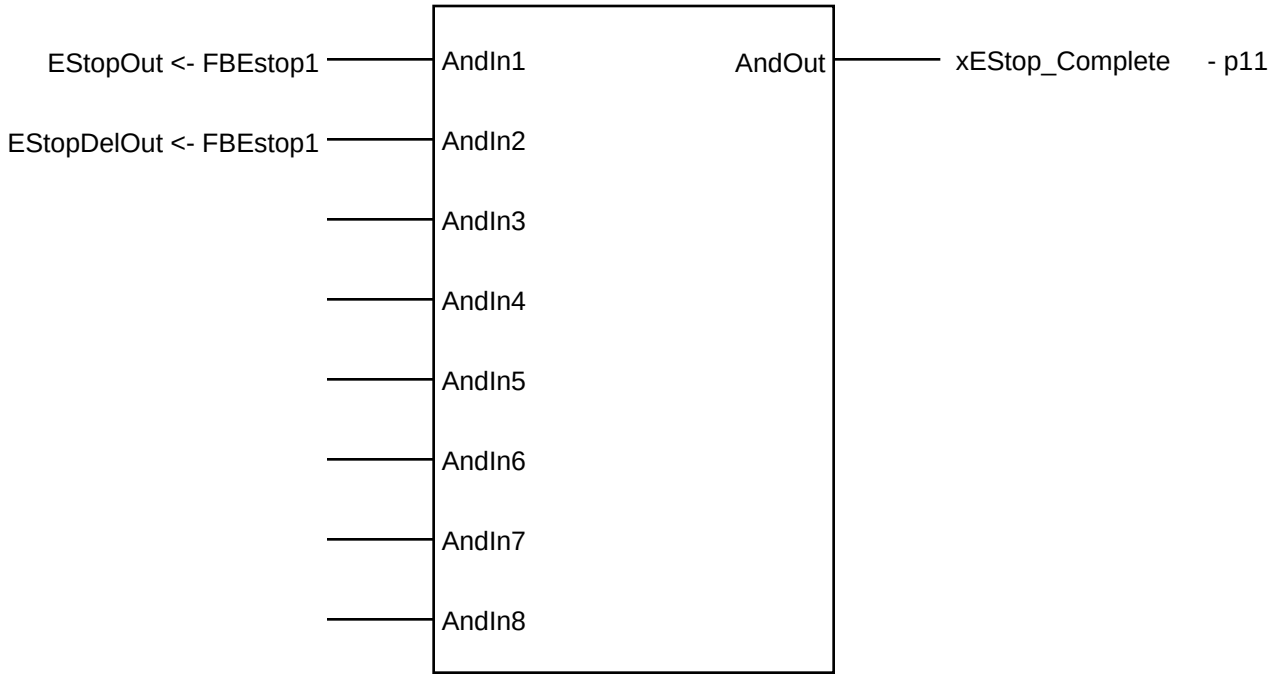
FBEstop1

Type: safeEstop

Link	Connection Name
AssignedVariable (Input)	Restart : xEStop_Reset
AssignedVariable (Output)	Error : xEStopFB_Error
	EStopOut : xEStop_Relay
Function Block	FBEstop1 -> AndIn1 (FBAnd2)
	FBEstop1 -> Mon1 (FBEdm1)
	FBEstop1 -> TonIn (FBTon1)
	FBEstop1 -> AndIn2 (FBAnd2)
	FBEstop1 -> TofIn (FBTof1)
	FBEstop1 -> AndOut (FBAnd1)

FBAnd2

Type: safeAND



Map Diag: True
Map State: True

Order number: 2

FBAnd2

Type: safeAND

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

FBEdm1

Type: safeEdm

Map Diag: True
Map State: True

Order number: 4

FBEdm1

Type: safeEdm

Link	Connection Name
AssignedVariable (Input)	Mon2 : xIn4
AssignedVariable (Output)	Error : xEDM_Error
Function Block	FBEdm1 -> EStopOut (FBEstop1)

FBTon1

Type: safeTon

Map Diag: True
Map State: True

Order number: 5

FBTon1

Type: safeTon

Link	Connection Name
AssignedVariable (Output)	TonOut : xEStop_TON_Complete
Function Block	FBTon1 -> EStopOut (FBEstop1)

FBTof1

Type: safeTof

Map Diag: True
Map State: True

Order number: 6

FBTof1

Type: safeTof

Link	Connection Name
AssignedVariable (Output)	TofOut : xEStop_TOF_Complete
Function Block	FBTof1 -> EStopDelOut (FBEstop1)