Welcome

Tecnología de seguridad SafetyBridge Technology

SBT

Antonio Gordillo IMA Enero 2021

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Webinars

Agenda

- Definición
- Inline
- Axioline F
- SAFECON
- Aplicaciones

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Webinar IMA Enero 2021

Tecnología de seguridad SafetyBridge Technology SBT

Fecha	**5 Enero 2021**
Hora	9:00
Hora	
Duración	1 hora
Costo	gratuito

Logre mayor conocimiento en está tecnología para realizar aplicaciones de seguridad distribuida sin tener que prescindir de un control de seguridad

Durante la presentación se explicará el concepto SafetyBridge Technology SBT de Phoenix Contact presente en nuestras líneas Inline y Axioline que puede ser utilizado en arquitecturas donde el tipo de red no es un factor determinante así como realizar la aplicación sin la obligatoriedad de un PLC de seguridad. Este tipo de tecnología permite que en un módulo de E/S de seguridad, se aloje un control adecuado de seguridad, certificado que puede ser programado por la herramienta de software SAFECON y cumplir los requisitos de aplicación de acuerdo a TUV. Con esta tecnología se puede realizar arquitecturas inalámbricas las cuales si permiten por norma el poder utilizar este tipo de módulos de acuerdo a funcionalidad de seguridad probada y en especificación.

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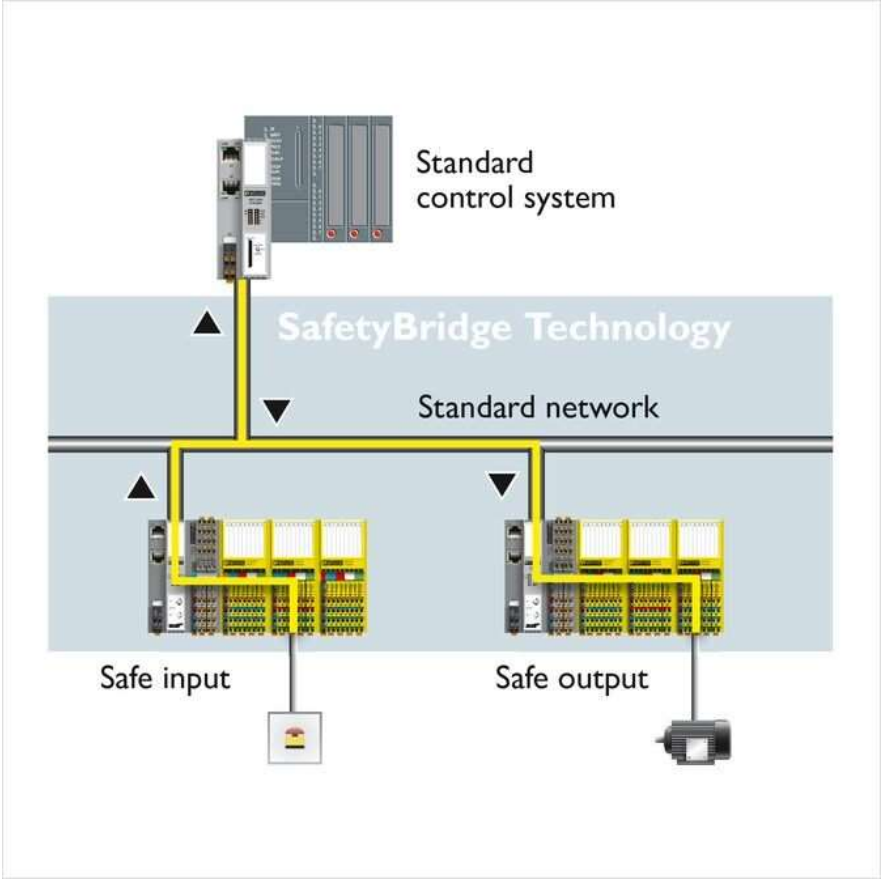
SafetyBridge Technology

Definition

SafetyBridge Technology means that input and output modules exchange safety-related signals with each other. Since the modules process the safety functions themselves, they use the standard controller and network only for transport purposes.

Without a safety controller or safe fieldbus system, this is a cost-effective solution for functional safety in standard applications.

The safe I/O modules with SafetyBridge Technology meet all safety requirements up to SIL 3 or PL e.



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SafetyBridge Technology

- **Safe with your plc**
  - realize a network safety solution without a safe plc
- **Flexible usage**
  - use your preferred networks
- **Easily configured**
  - create safety functions per drag & drop with Safeconf

DeviceNet™ EtherNet/IP™ INTERBUS Modbus PROFIBUS® PROFINET® sercos the automation bus

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Definition

SafetyBridge Technology

Do you want to integrate functional safety, independent of the network, without additional safety controllers? Then choose safe I/Os with SafetyBridge Technology.

The highlight is distributing the yellow, safe I/Os as required in your system. The modules work centrally or peripherally using a standard control system.

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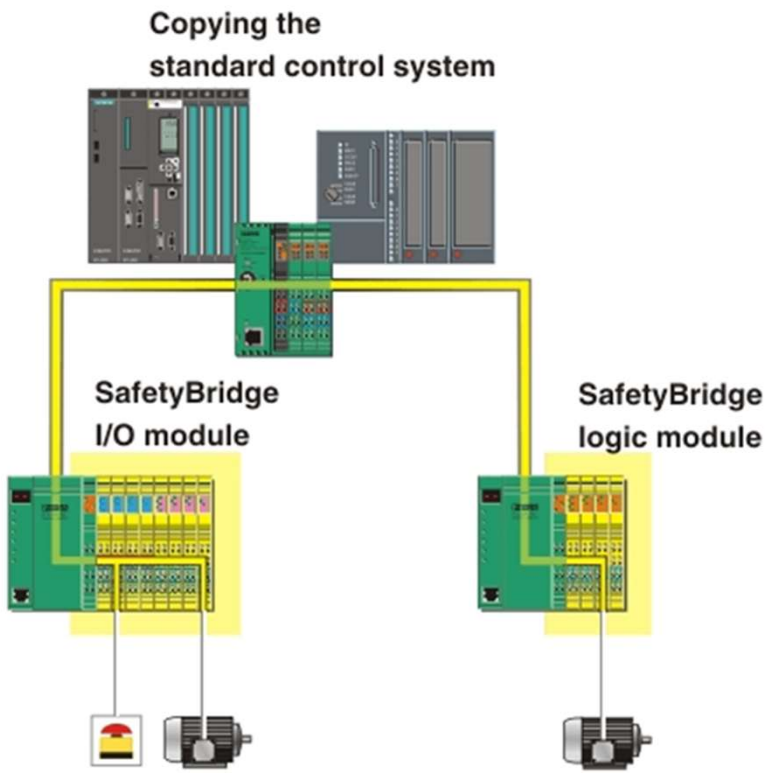
SafetyBridge Technology

Inline

The standard PLC and network are only used for transportation of data

The logic module generates and monitors the safety protocol and proceses the safety logic



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SafetyBridge Technology

Inline

IB IL 24 LPSDO 8 V3-PAC
2701625

	SBT V1	SBT V2	SBT V3
Memory [Byte]	5000	20000	64000
Satellite	3 In	5 In/Out	16 In/Out
Max. Inputs	24	40	256
Networks	IB, PB & PN	All	All
Cross com.	-	-	Yes
Onlinemode	-	-	Yes

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SafetyBridge

Inline

	SBT V3
	LPSDO 8 V3
	PSDI 8
	PSDO 8
	PSDO 4/4
	PSDOR 4
	PSDI 16

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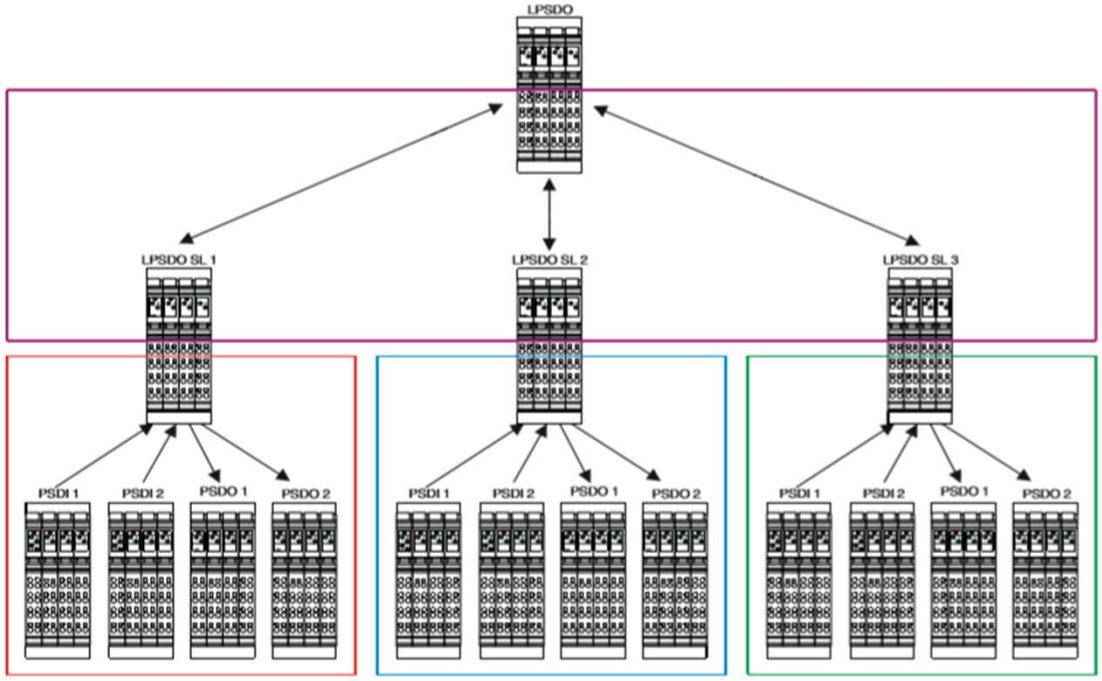
Hierarchical Topology

Tree structure

Island	Master	Slave			
Island 1	LPSDO	LPSDO SL 1	LPSDO SL 2	LPSDO SL 3	
Island 2	LPSDO SL 1	PSDI 1	PSDI 2	PSDO 1	PSDO 2
Island 3	LPSDO SL 2	PSDI 1	PSDI 2	PSDO 1	PSDO 2
Island 4	LPSDO SL 3	PSDI 1	PSDI 2	PSDO 1	PSDO 2



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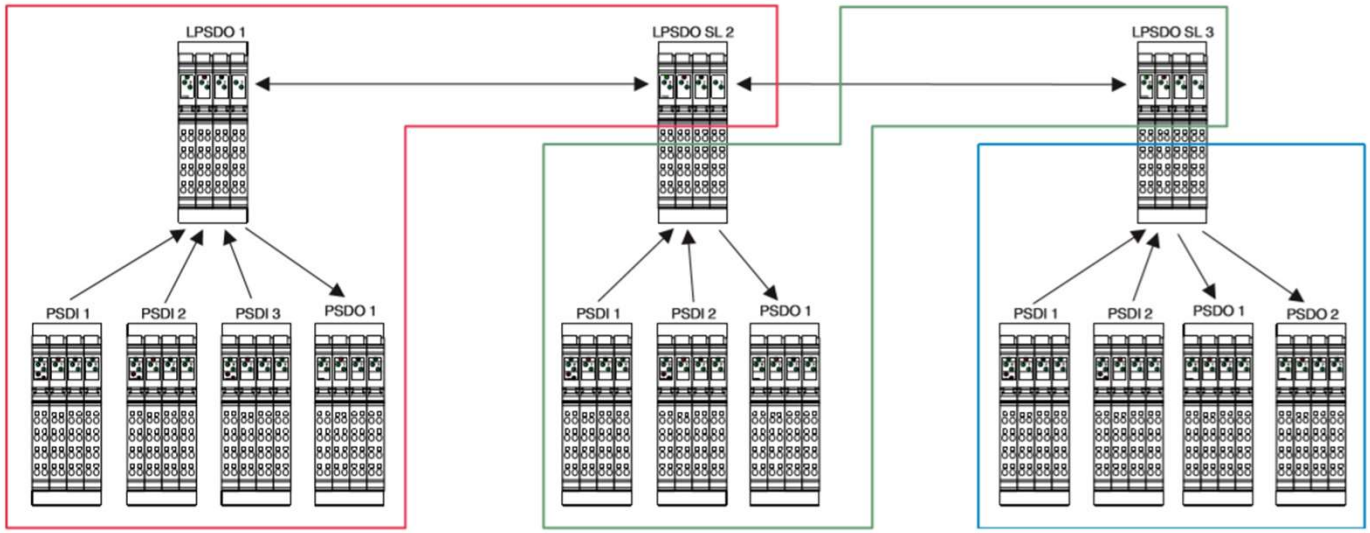
Flat Topology

Line structure

Island	Master	Slave				
Island 1	LPSDO 1	LPSDO SL 2	PSDI 1	PSDI 2	PSDI 3	PSDO 1
Island 2	LPSDO SL 2	LPSDO SL 3	PSDI 1	PSDI 2	PSDO 1	
Island 3	LPSDO SL 3	PSDI 1	PSDI 2	PSDO 1	PSDO 2	



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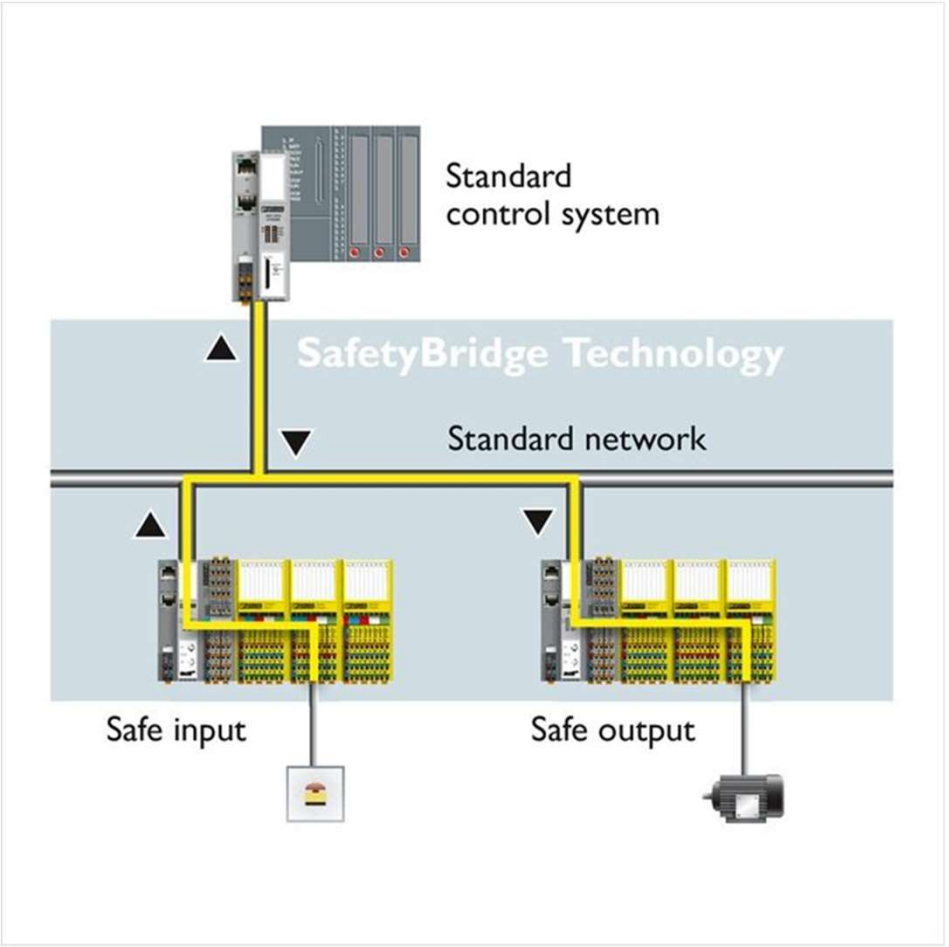
SafetyBridge Technology

Axioline F

Axioline F module with integrated safety logic and safe digital outputs

AXL F LPSDO8/3 1F



- Up to SIL 3 according to IEC 61508
- Up to SILCL 3 according to EN 62061
- Up to Cat. 4/PL e according to EN ISO 13849-1

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Axioline F

Modules SafetyBridge Technology

AXL F LPSDO8/3 1F

AXL F SSDI8/4 1F

AXL F SSDO8/3 1F

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Axioline F

Functionality of AXL LPSDO8/3 1F

Functionality	AXL F LPSDO8/3 1F
Supported satellites  	– AXL F SSDI8/4 1F – AXL F SSDO8/3 1F – AXL F LPSDO8/3 1F – IB IL 24 PSDI 16-PAC – IB IL 24 PSDI 8-PAC[1] – IB IL 24 PSDO 8-PAC[1] – IB IL 24 PSDO 4/4-PAC[1] – IB IL 24 PSDOR 4-PAC[1] – IB IL 24 LPSDO 8 V3-PAC The AXL F LPSDO8/3 1F logic module from the Axioline F series can operate satellites from the Inline series. A logic module from the Inline series **cannot** operate satellites from the Axioline F series.

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Axioline F

Independence of Network

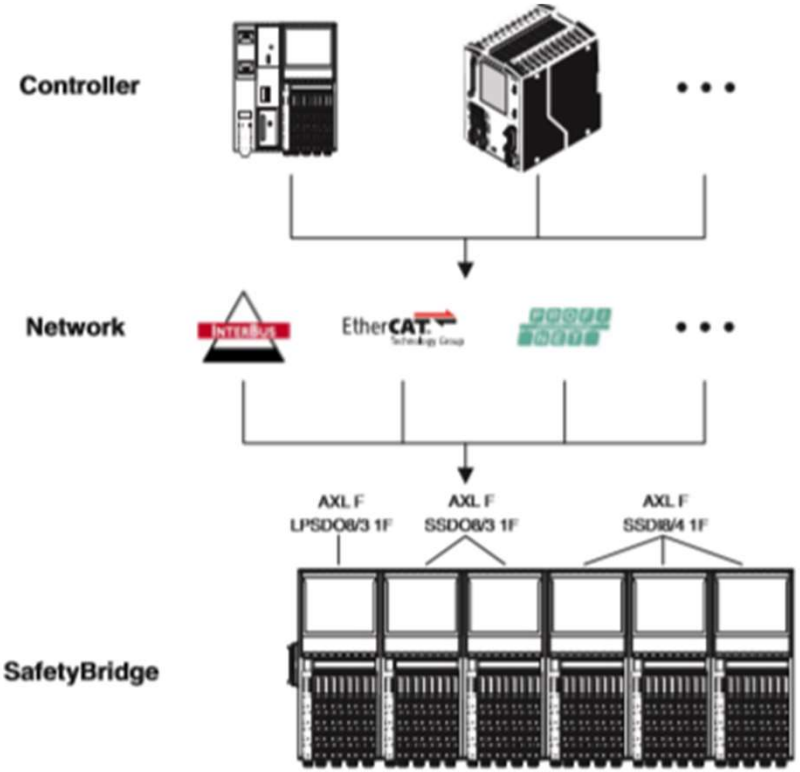
The SafetyBridge system does not place any special requirements on the standard controller. However, it must be able to perform the following tasks:

Network:

- Deterministic network

Controller:

- Fast enough that it can meet time expectations for the response time
- Sufficient memory to store the configuration and parameter data record
- Data consistency is ensured over 24 words



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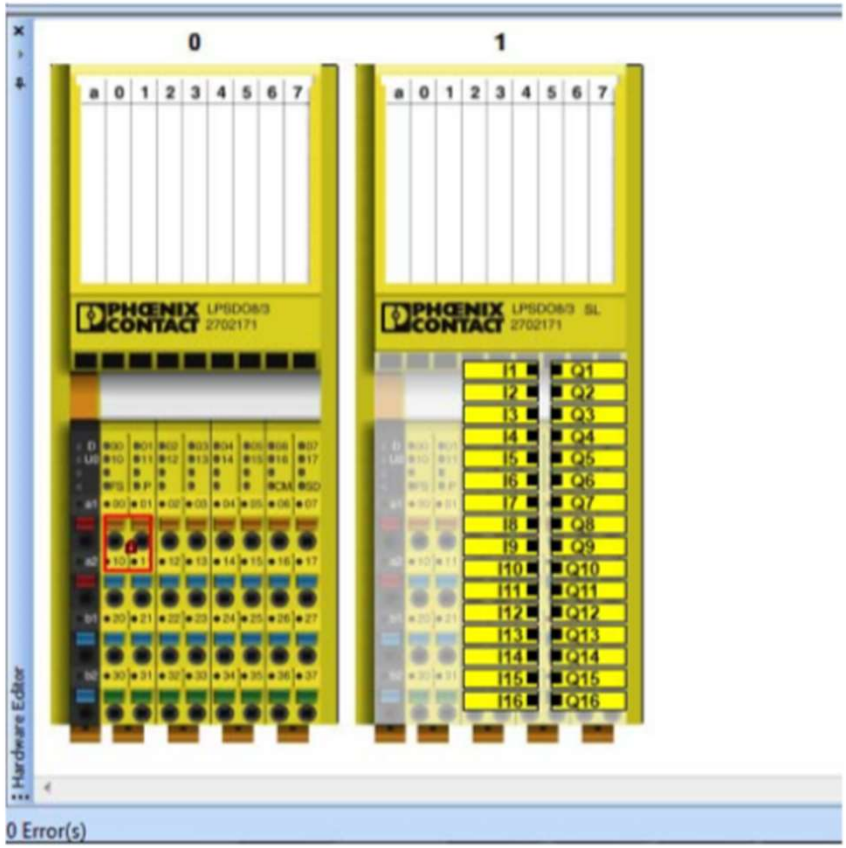
Axioline F

Cross communication

Figure A-2 SAFECONF hardware toolbox



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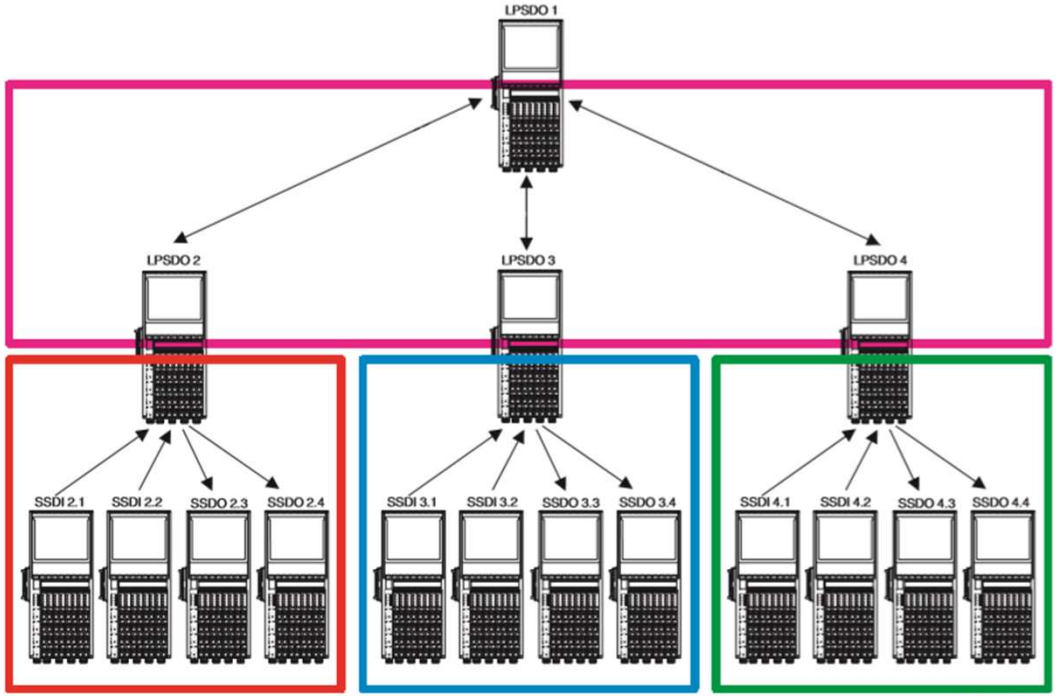
Tree structure Axioline F SBT

Hierarchical Topology

Island	Master	Slave			
Island 1	LPSDO 1	LPSDO 2	LPSDO 3	LPSDO 4	-
Island 2	LPSDO 2	SSDI 2.1	SSDI 2.2	SSDO 2.3	SSDO 2.4
Island 3	LPSDO 3	SSDI 3.1	SSDI 3.2	SSDO 3.3	SSDO 3.4
Island 4	LPSDO 4	SSDI 4.1	SSDI 4.2	SSDO 4.3	SSDO 4.4



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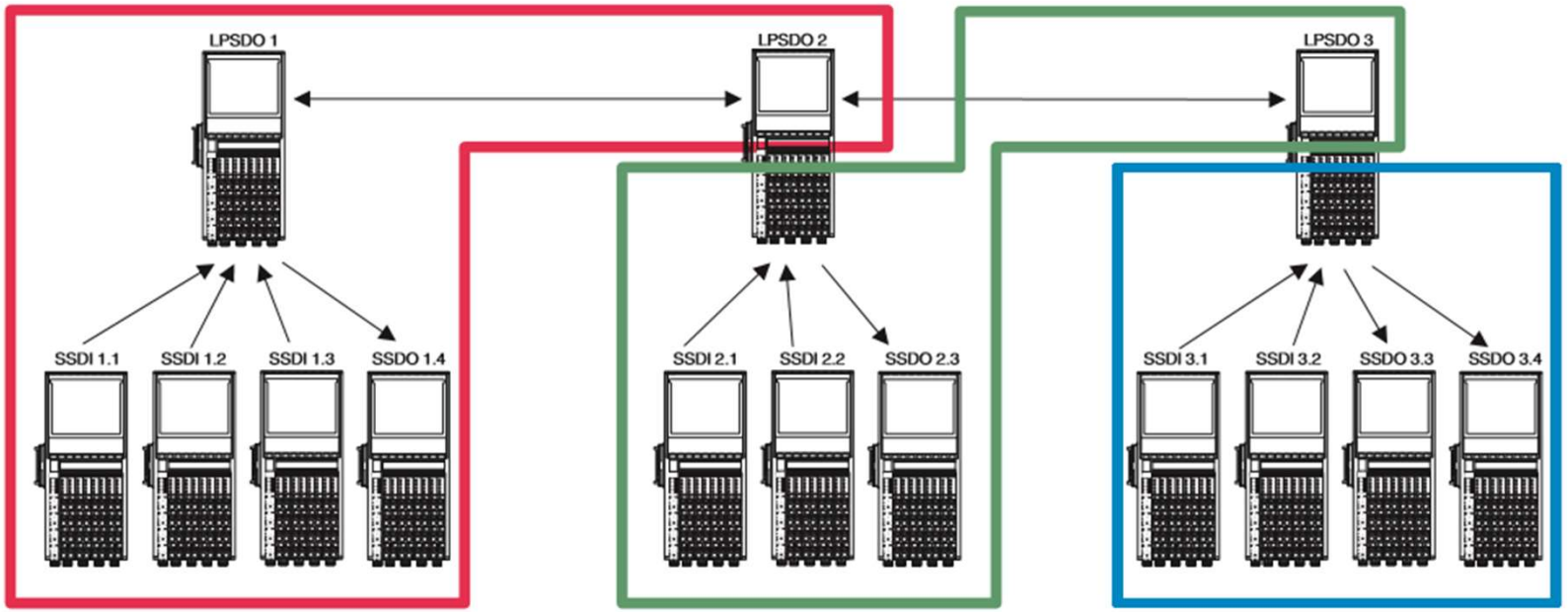
Line Structure Axioline F SBT

Flat Topology

Island	Master	Slave				
Island 1	LPSDO 1	LPSDO 2	SSDI 1.1	SSDI 1.2	SSDI 1.3	SSDO 1.4
Island 2	LPSDO 2	LPSDO 3	SSDI 2.1	SSDI 2.2	SSDO 2.3	-
Island 3	LPSDO 3	SSDI 3.1	SSDI 3.2	SSDO 3.3	SSDO 3.4	-



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Software for SBT and other Safety products

SAFECON

Configuration software for SafetyBridge technology
and PSR-TRISAFE modules

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E-Learning

SAFECON

SAFECONF

The main functions at a glance

In this tutorial, you will learn the basics of the SAFECONF software: the user interface, basic operation, and the help system.

▸ Start tutorial

Easy configuration and testing of safety logic

In this tutorial, you will find out how to create a new project with the SAFECONF software and then how to configure and test your safety logic.

▸ Start tutorial

Simulate hardware in order to test safety functions

In this tutorial, you will find out how to use simulation mode within the SAFECONF software to test the safety functions of your project without connected hardware and how to simulate an error.

▸ Start tutorial

Testing safety logic and loading it on the switching device

In this tutorial, you will find out how to use the SAFECONF software to check a previously created safety project and transfer it to a safety device via USB cable.

▸ Start tutorial

Forcing outputs for easy machine setup

In this tutorial, you will find out how to use startup mode within the SAFECONF software to force the outputs of a safety device in order to start up your system or machine safely and easily.

▸ Start tutorial

Entering and printing information about the project

In this tutorial, you will find out how to use the SAFECONF software to create and print standard-compliant documentation for your safety project.

▸ Start tutorial

Easy configuration of safety logic with SAFECONF

You will interactively learn about the advantages and possibilities of the SAFECONF configuration software. After working through this learning module, you will be able to independently configure and test safety functions and simulate your own project.

▸ Start learning module

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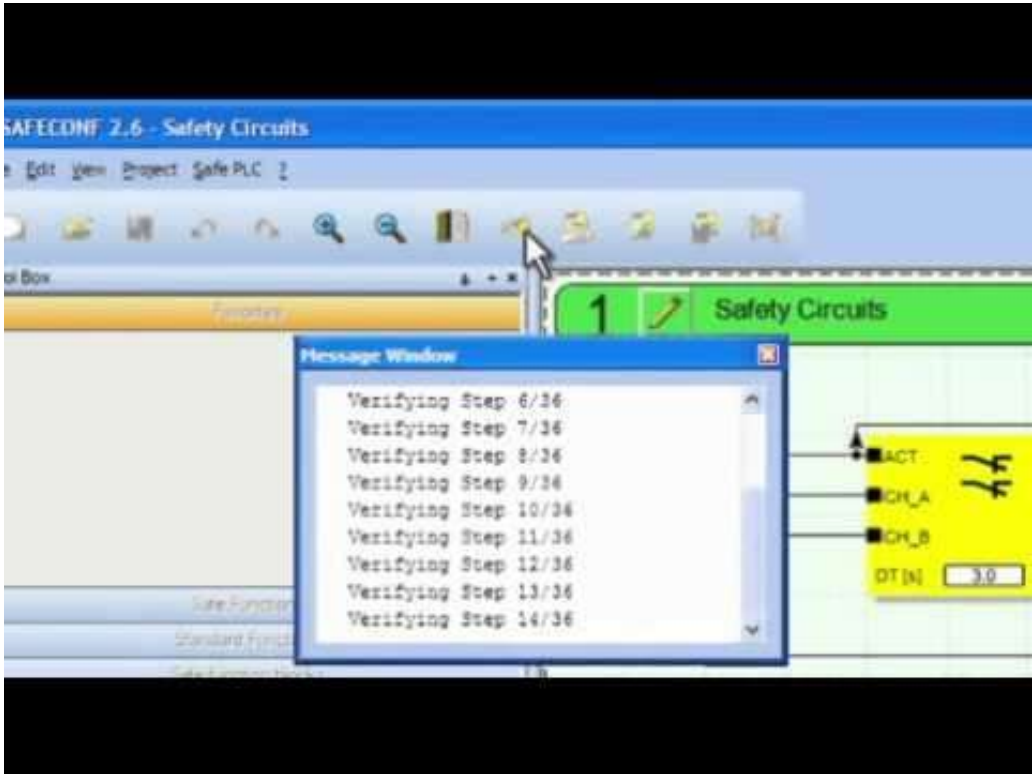

How to use Safety Controller by SAFECON (Trisafe, SBT (Inline or Axioline F)

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SAFECONF

Configuration Software

Basics

The most important functions at a glance

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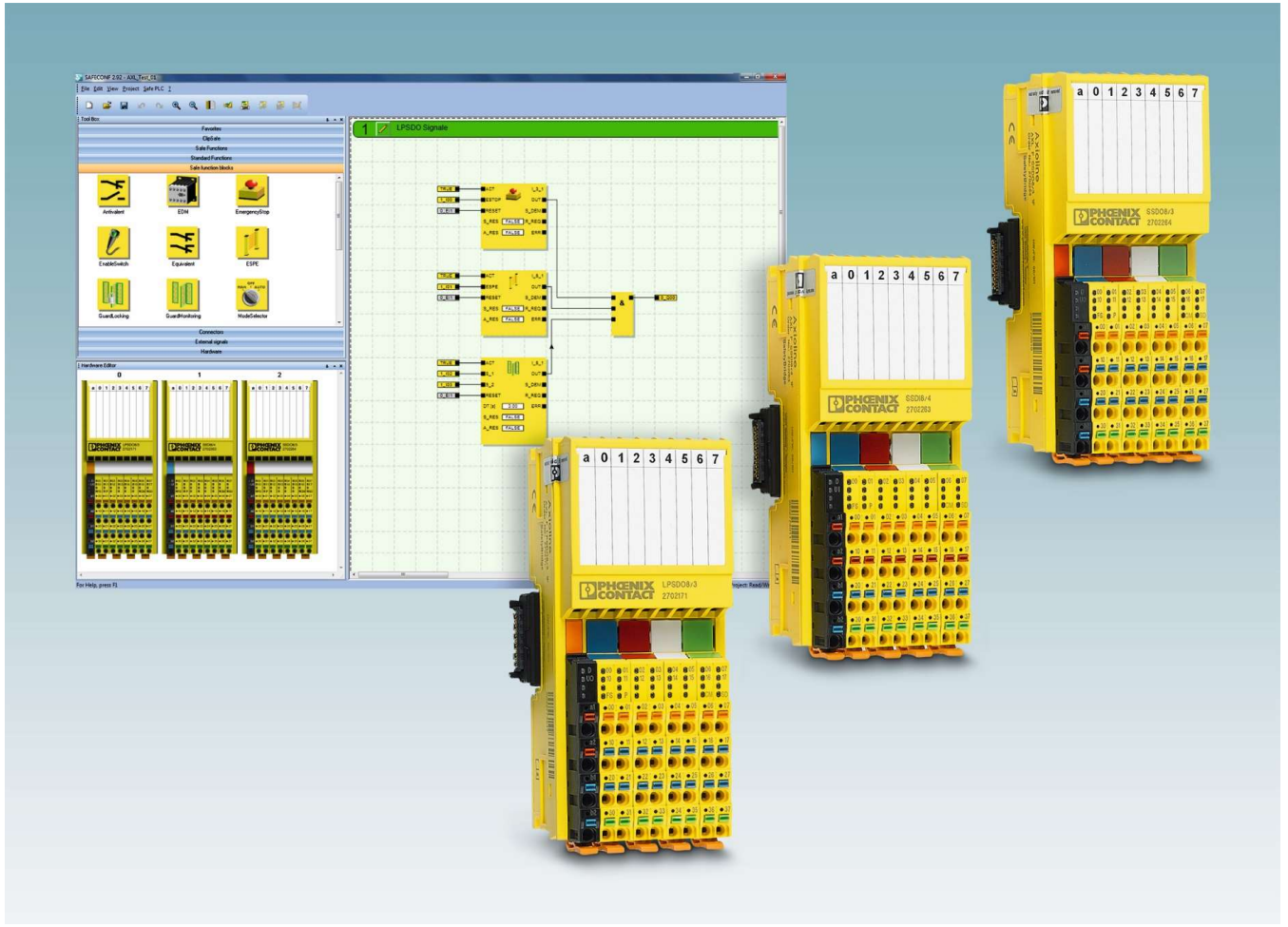
SafetyBridge Technologies

SAFECON



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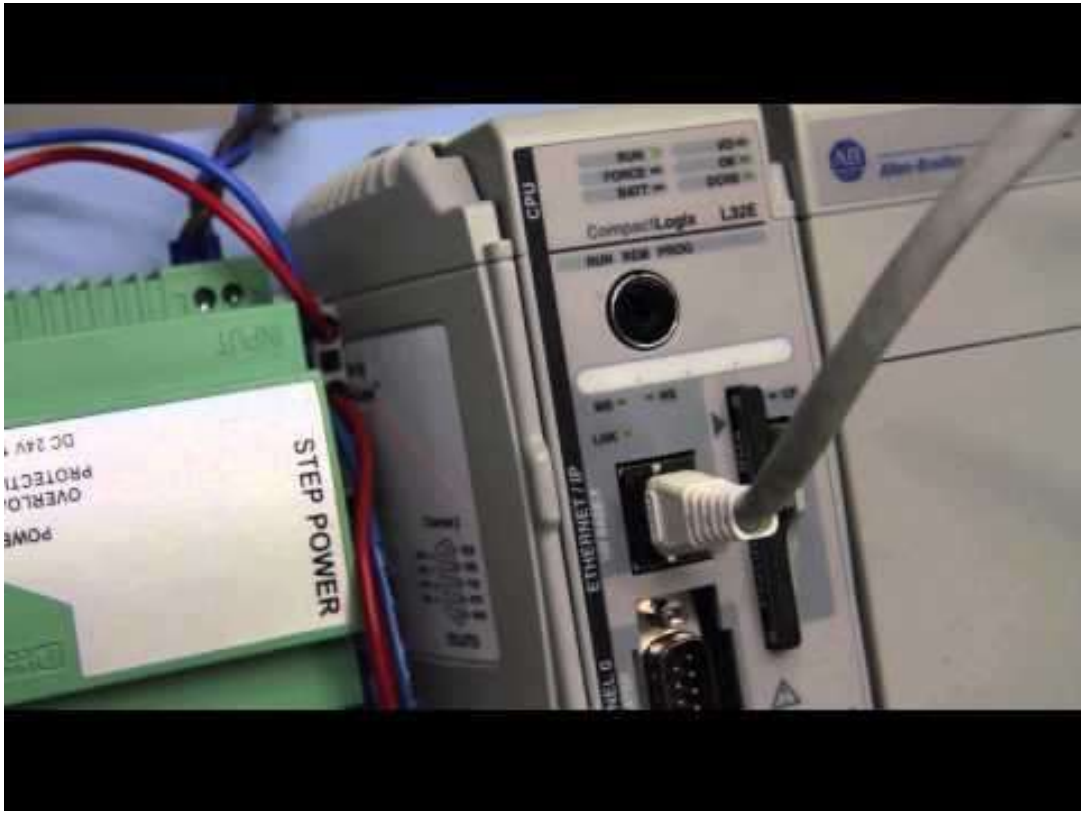

Aplicaciones SafetyBridge Technologies within EtherNet/IP

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SafetyBridge Technologies

Aplicaciones

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Aplicaciones

Bluetooth	FL EPA 2 FL EPA 2 RSMA
SBT	IB IL 24 LPSDO 8 V3-PAC IB IL 24 PSDI 16-PAC

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Aplicaciones Cableadas, Inalámbricas, Bluetooth, WLAN.

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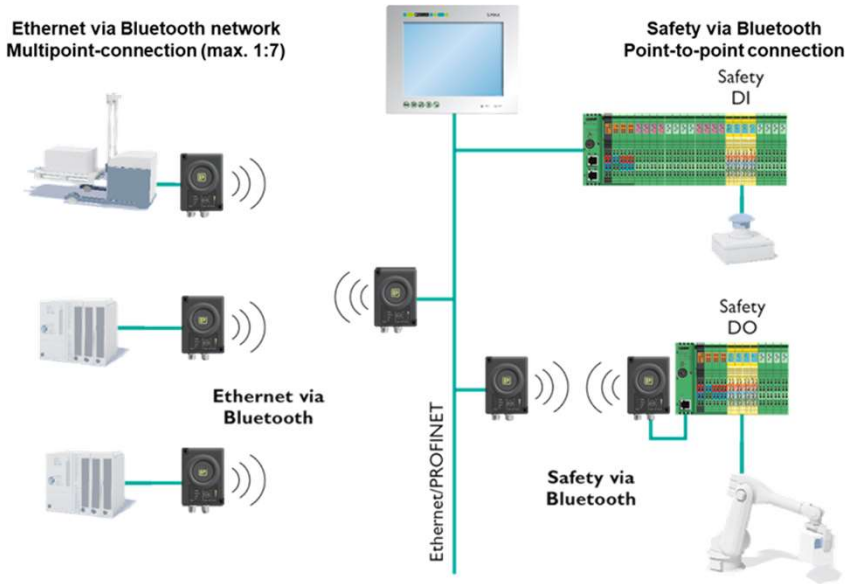

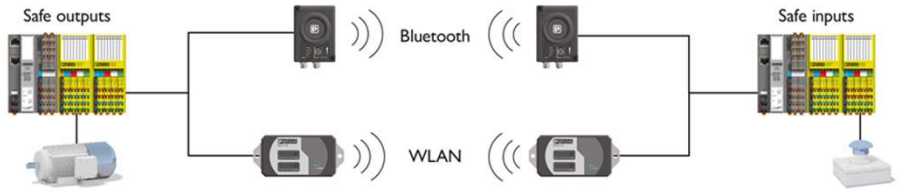

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Aplicaciones

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Aplicaciones

Few operators

Distributed Emergency Stops

Network Safety concept

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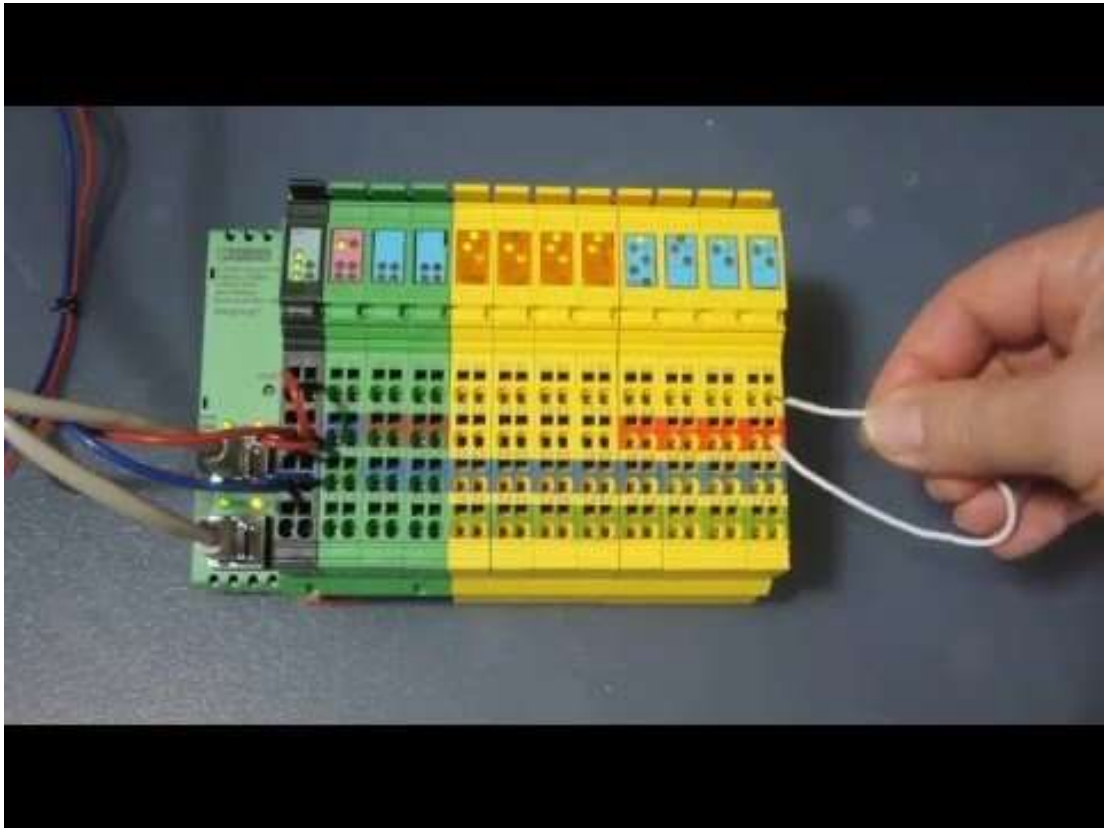

SafetyBridge Technology with Simatic S7-1200

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