



Gateway or multi-protocol  
substation hub



# AXON EXCHANGE

## Gateway de Comunicaciones

This is a solution whose main function is to serve as a gateway or substation concentrator, allowing conversion between multiple remote control protocols and facilitating the integration and automation of electrical substations. It concentrates and processes data in real time from connections through serial and ethernet channels, to later report them to SCADA systems or control centers. It is a highly interoperable system with IEDs of different types and brands, it also enables configurations in redundant mode and has a module to support PRP (Parallel Redundancy Protocol)..

In addition, it has access management mechanisms and implements various cybersecurity themes. It has support for a logic module that allows the user to perform special data type conversions and behavior management through functions and scripts. It has a tool for remote visualization of the signal states that allows the user to manage the connections and their states. Its flexible and modular architecture enables a scalable evolution of the solutions.

## Benefits

- Quick and intuitive setup.
- Unlimited support.
- Extended warranty.
- Open and interoperable system based on standards.
- Cybersecurity.
- Scalability and flexibility.
- Adaptability.
- Complementary module PRP.
- Hardware Independence.
- Support logic and functions for data processing.
- Remote status display tool.
- Template management for quick configuration.

## Generalities

- Remote data management and visualization.
- Configuration in redundant mode.
- Creation of security profiles.
- User Authentication.
- SOE fault log.
- Scripts in C#, own logics and logics based on the IEC 61131-3 standard through the integration by OPC UA and DA with Codesys.
- Synchronization of projects in redundant configuration.
- Event and command logs.
- Management of signal templates.
- Tools for customization.

## Architecture

Based on a client/server architecture that supports deployment in environments ranging from single station to multi-user distributed systems.

## Communication protocols

- IEC 61850
- ICCP / TASE.2
- DNP3 LAN / WAN
- DNP3 Serial
- IEC 60870-5-104
- IEC 60870-5-104 (Perfil Endesa)
- IEC 60870-5-101 Serial / Over TCP
- OPC DA
- Modbus
- Fast Message (SEL)
- DLMS

## SOE Fault Log

Offers the functionality of managing reports, providing detailed reports to users through plain text files on a regular basis. Allowing to keep a detailed record of system variables over time.

## Creation of user configuration

Axon Exchange provides tools for user management and administration, assigning security levels and permissions according to security policies.

## Redundancy

Axon Exchange supports HOTSTAND BY redundancy. Allowing two instances to run simultaneously, but only the primary instance reporting information, while the secondary instance is ready to take over in case of connection loss.

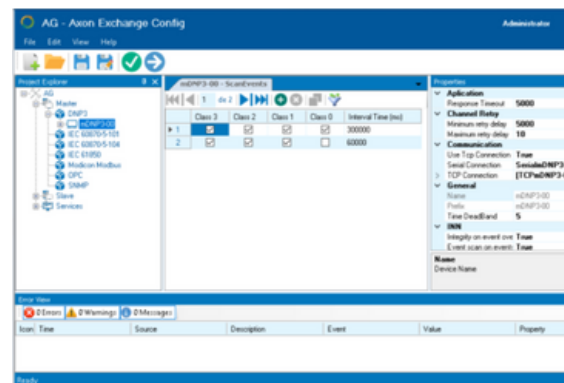
Also, it supports HOT - HOT redundancy keeping both the main and secondary instance active, receiving information from the connected devices. In this way, in the event of a failure in the primary instance, the secondary can take its place without service interruption.



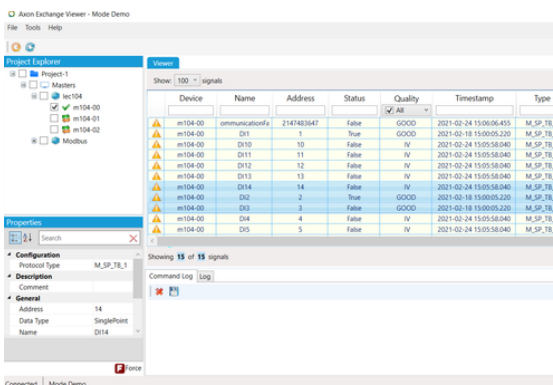
# Characteristics

## 01. Axon Exchange Config

Allows the configuration of projects by assigning names, descriptions and addresses of the input signals and commands of the automation project to be transmitted to the different master and slave devices. Through this module it is possible to configure: Connection parameters, input/output signals with their respective addresses and logic.



## 02. Axon Exchange Viewer



Axon Exchange Viewer allows the user to manage, in real time, the status of the connections of the running project, thus helping to better diagnose it, facilitate the analysis of the information acquired, provide immediate access in real time to all system variables through of a view by tables that present the information in detail.

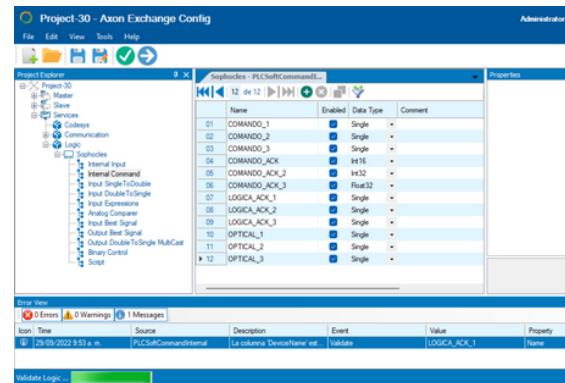
- Information on value, quality and time stamp.
- Observation and forcing of the values for each variable.
- Filters to search for signals.



## 03. Logics

Contains typical predefined functions for signal manipulation allowing the user to quickly and easily create new data from conversions or expressions such as:

- Double to simple
- Simple to double
- Analog comparators
- Best signal (for inputs and outputs)
- Commands
- MultiCast
- Logical functions
- Scripts



## 04. SCL Explore

It allows analysis of the SCL information without uploading it to the Axon Exchange, with the possibility of exporting the information in CSV, XLS and TXT formats, as well as selecting required signals to take them to a specific category of a created IED.

Open Save		
Signals Reports		
Name	Data Type	MMS
AXONBAYApplication/LLN0.LEDRs.ctiModel	Enum	AXONBAYApplication/LLN0\$CF\$
AXONBAYApplication/LLN0.LEDRs.Oper.Check	Check	AXONBAYApplication/LLN0\$CO\$
AXONBAYApplication/LLN0.LEDRs.Oper.ctiNum	INT8U	AXONBAYApplication/LLN0\$CO\$
AXONBAYApplication/LLN0.LEDRs.Oper.ctiVal	BOOLEAN	AXONBAYApplication/LLN0\$CO\$
AXONBAYApplication/LLN0.LEDRs.Oper.origin.orCat	Enum	AXONBAYApplication/LLN0\$CO\$
AXONBAYApplication/LLN0.LEDRs.Oper.origin.orIdent	Octet64	AXONBAYApplication/LLN0\$CO\$
AXONBAYApplication/LLN0.LEDRs.Oper.T	Timestamp	AXONBAYApplication/LLN0\$CO\$
AXONBAYApplication/LLN0.LEDRs.Oper.Test	BOOLEAN	AXONBAYApplication/LLN0\$CO\$
AXONBAYApplication/LLN0.LEDRs.stVal	BOOLEAN	AXONBAYApplication/LLN0\$ST\$
AXONBAYApplication/LLN0.LEDRs.q	Quality	AXONBAYApplication/LLN0\$ST\$
AXONBAYApplication/LLN0.LEDRs.t	Timestamp	AXONBAYApplication/LLN0\$ST\$
AXONBAYApplication/LLN0.Beh.stVal	Enum	AXONBAYApplication/LLN0\$ST\$
AXONBAYApplication/LLN0.Beh.q	Quality	AXONBAYApplication/LLN0\$ST\$
AXONBAYApplication/LLN0.Beh.t	Timestamp	AXONBAYApplication/LLN0\$ST\$
AXONBAYApplication/LLN0.Health.stVal	Enum	AXONBAYApplication/LLN0\$ST\$
AXONBAYApplication/LLN0.Health.q	Quality	AXONBAYApplication/LLN0\$ST\$
AXONBAYApplication/LLN0.Health.t	Timestamp	AXONBAYApplication/LLN0\$ST\$

SCL Explorer								
Open Save								
Signals Reports								
Rptid	DataSet	Data Change	Integrity	Integrity Period	GI	Quality	Data Update	
AXONBAYApplication/LLN0.undf	AXONBAYApplic	✓	✓	50000	✓	✓	✓	✓
AXONBAYApplication/LLN0.LRapp	AXONBAYApplic	✓	✓	0	✓	✓	✓	✓
AXONBAYApplication/LLN0.LRapp	AXONBAYApplic	✓	✓	0	✓	✓	✓	✓
AXONBAYApplication/LLN0.rcbC	AXONBAYApplic	✓	✓	0	✓	✓	✓	✓
AXONBAYApplication/LLN0.rcbP	AXONBAYApplic	✓	✓	0	✓	✓	✓	✓
AXONBAYApplication/LLN0.rcbP	AXONBAYApplic	✓	✓	0	✓	✓	✓	✓
AXONBAYApplication/LLN0.rcbP	AXONBAYApplic	✓	✓	0	✓	✓	✓	✓
AXONBAYApplication/LLN0.rcbP	AXONBAYApplic	✓	✓	0	✓	✓	✓	✓
AXONBAYApplication/LLN0.rcbP	AXONBAYApplic	✓	✓	0	✓	✓	✓	✓



# TECHNICAL SPECIFICATIONS

## Software Axon Exchange

### > Licensing

The Axon Exchange license allows full access to all design features of the Axon Exchange.

The user's licensing process can be through hardware or software and depends on:

- **Number of tags:** From 500 to 100.000 tags.
- **Protocols**
  - IEC 61850 (Client - Server)
  - IEC 60870-5-104 (Master - Slave)
  - DNP3 (Master - Slave)
  - ICCP / TASE.2 (Server)
  - Modbus (Master - Slave)
  - IEC 60870-5-101 (Master - Slave)
  - IEC 60870-5-104 Perfil Endesa (Slave)
  - OPC DA (Client - Server)
  - SNMP (Client)
  - DLMS (Client)

### > Installation requirements

- **Operating System:** Windows 10 and Windows Server 2012 and later
- **Hard Disk:** 30 GB of free storage
- **Processor:** Intel - AMD
- **RAM:** Minimum 1 GB free. Recommended 3 GB or more free
- **Framework:** Microsoft .NET 4.8
- **Visual C:** Visual C++ 2013, Visual C++ 2019

## **Bonus Advantage**

### Axon Group

- 1** Immediately and unlimited support
- 2** Updates of version free
- 3** Customized service
- 4** Easy and fast configuration
- 5** Reduction of cost for implementation
- 6** Delivery time: one week



### **Contact us**

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