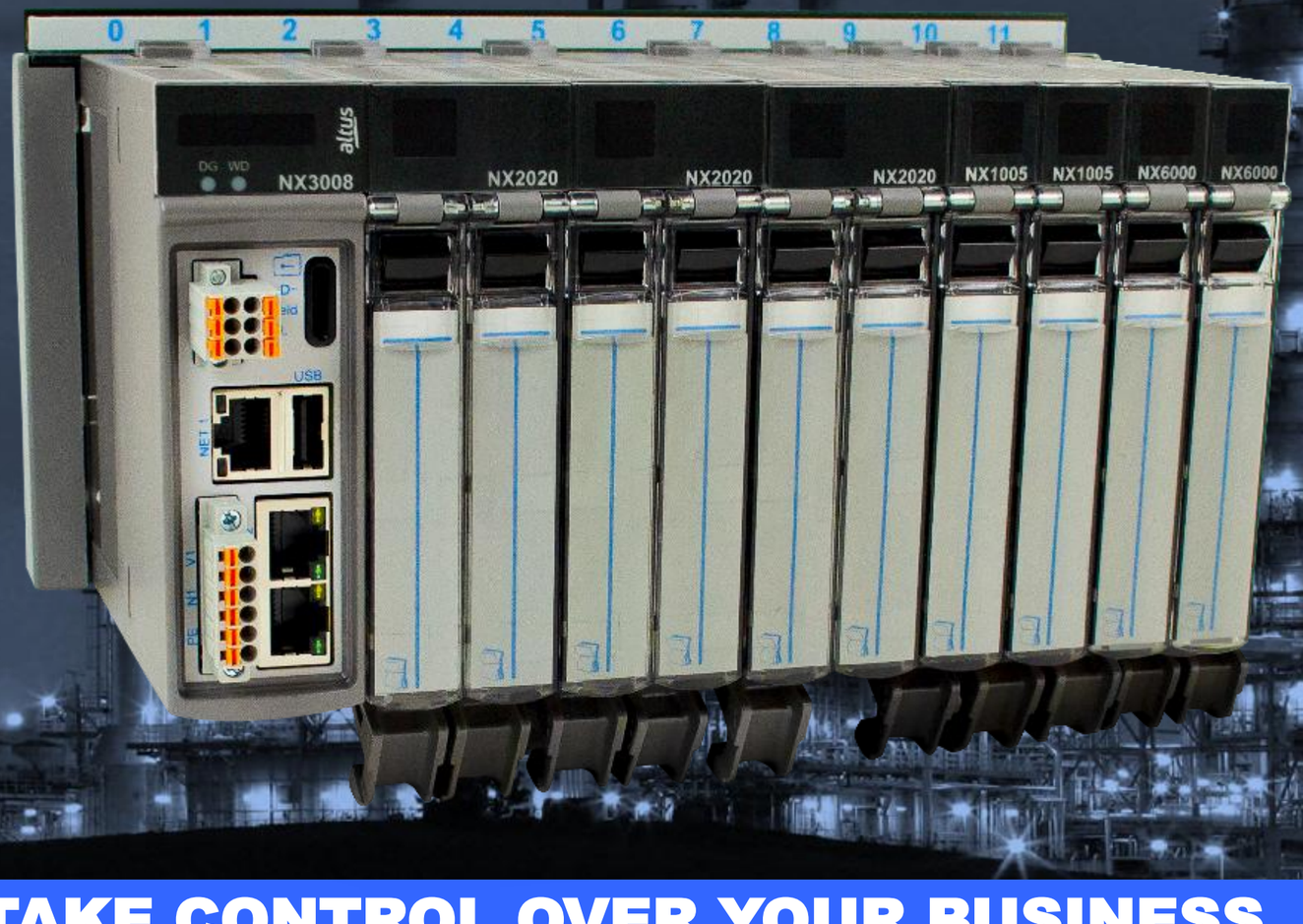
NEXTO



TAKE CONTROL OVER YOUR BUSINESS

ADVANCED AUTOMATION SYSTEM

NEXTO SERIES

- Integration with most traditional SCADA systems
- Used for control systems in small, medium and high-end applications

ADVANCED AUTOMATION SYSTEM

NEXTO SERIES

STATE-OF-THE-ART PROGRAMMABLE CONTROLLER

- Wide variety of CPUs and I/O modules
- Redundancy of CPUs, power suppliers and communication modules
- Power supply, monitoring, control and field networks



MARKETS

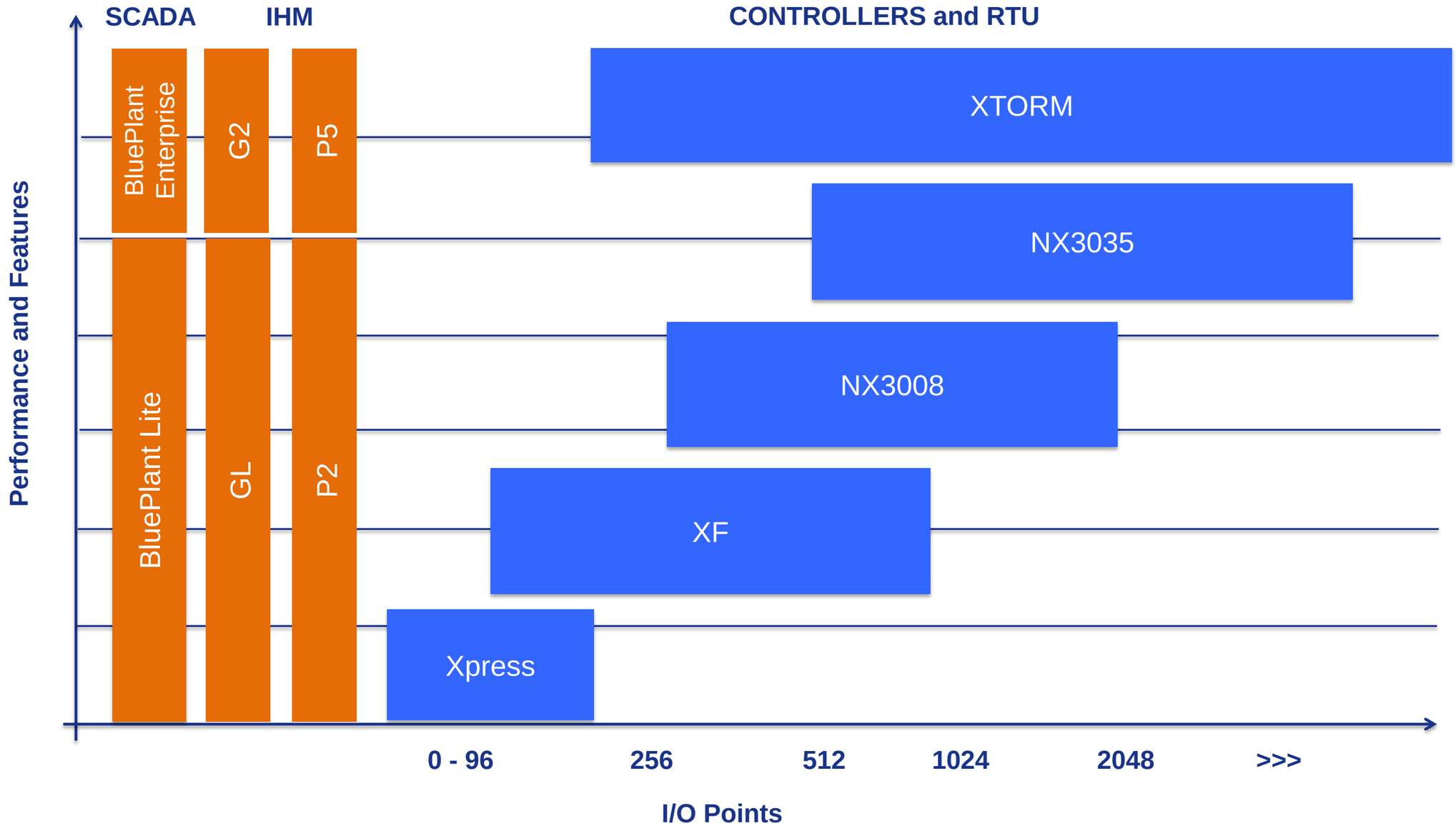
FLEXIBLE AND POWERFUL, NEXTO PLC IS SUITABLE FOR SEVERAL DIFFERENT MARKETS, SUCH AS

OIL & GAS | MACHINERY | AGROINDUSTRY | POWER | WATER & WASTEWATER

FOOD & BEVERAGE | TRANSPORTATION | BUILDING AUTOMATION | DISTRIBUTED PROCESS

PORTFOLIO

NEXTO SERIES



HIGHLIGHTS

NEXTO SERIES



INDUSTRY 4.0
OPC UA / MQTT
VPN / FTP
Docker
Cyber Security

PERFORMANCE
ARM 64-bits 1GHz
6x Ethernets
1000 PID loops in <2ms

FLEXIBLE
PROFINET
ETHERNET/IP
MODBUS
CANOpen
USB for Wifi and 3G/4G

SMART
Webserver
8MB Retentive
64MB Program Memory

MASTERTOOL
User friendly software, online changes and off-line simulation. Based on
CODESYS

SCALABLE
The Nexto Family covers small to large applications

DIAGNOSTICS

NEXTO SERIES

- Built-in compact graphical LCD displays in each module
- Allows direct and easy access to critical information:
  - System state (RUN, STOP, …), redundancy state (ACT, SBY, …), serial activities, forcing of variables, active diagnostics and more



NEXTO SERIES

ONE TOUCH DIAG – OTD

- Clear and accurate diagnostics accessible directly from the module, in real time



ELECTRONIC TAG ON DISPLAY - ETD

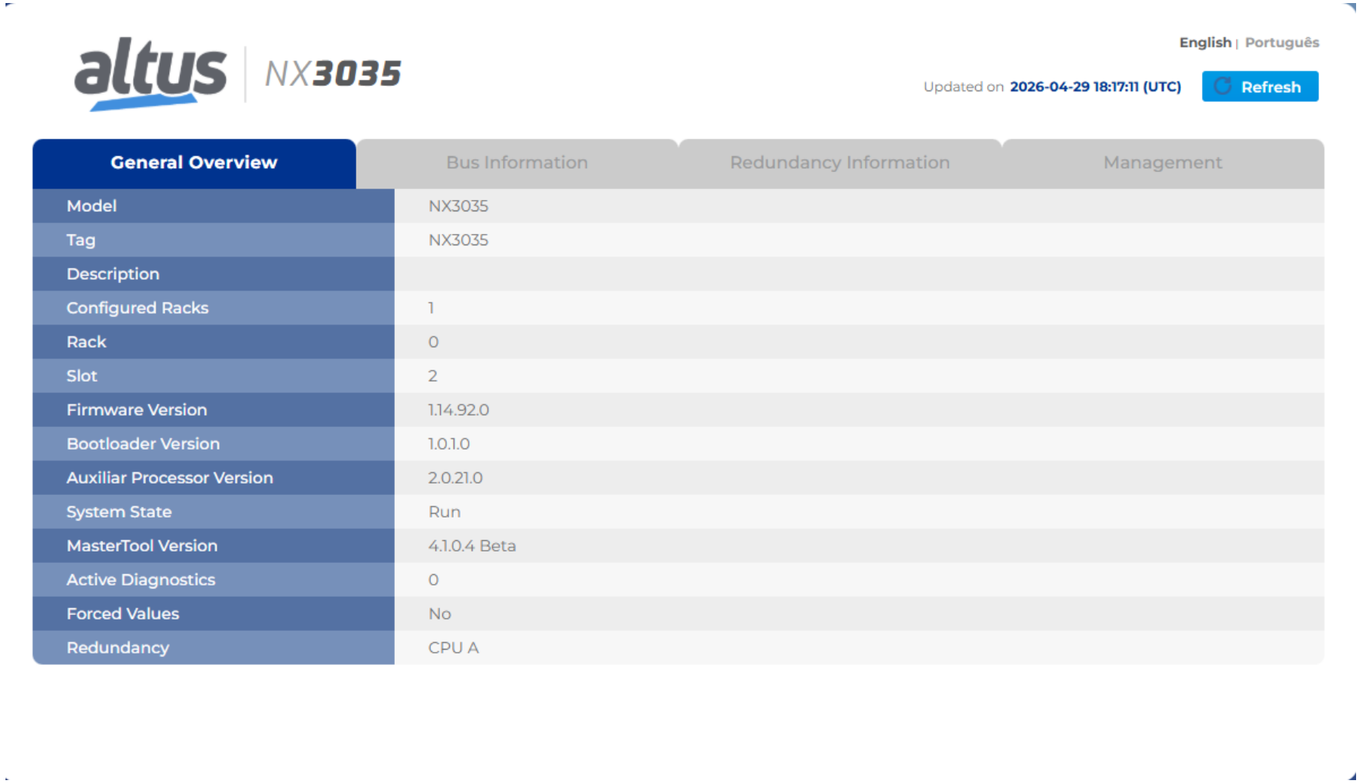
- Tags and description of all I/O points accessible directly from the PLC, in real time



DIAGNOSTICS

NEXTO SERIES

- All diagnostics available in user application and remote web access
- Web page with password protection :
  - UCP firmware update
  - Bus Information
  - Redundancy Information (NX3035)
  - Configuring OpenVPN, Firewall, FTP server and USB devices
  - Changing the clock and IP address
  - Network analysis and logs



INNOVATIVE FEATURES

NEXTO SERIES

DUAL HARDWARE WIDTH

- High flexibility delivering several different sets of I/Os
- Compact and robust
- No tools are required for installation or maintenance
- Spring-type connector

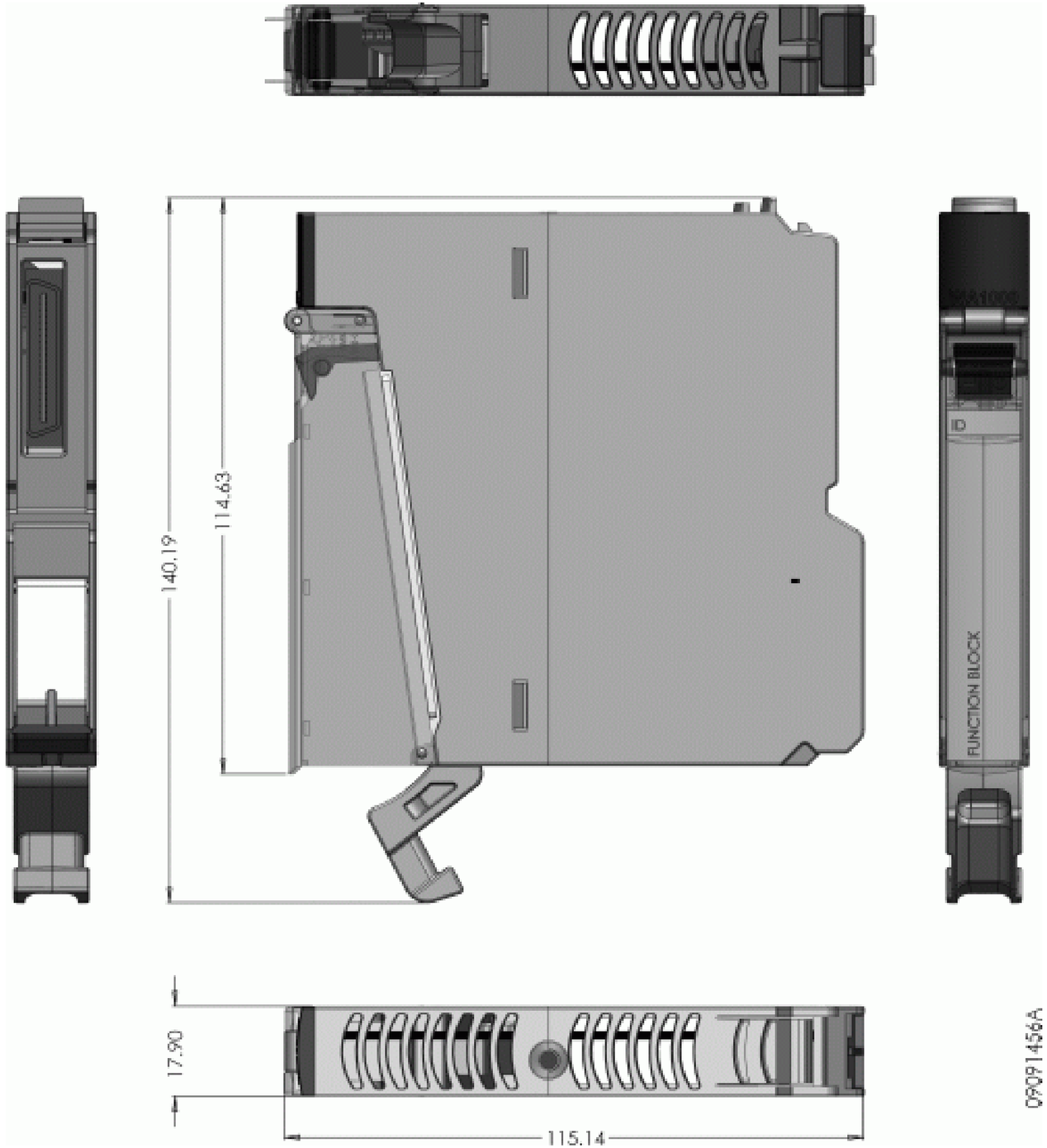




INNOVATIVE FEATURES

NEXTO SERIES

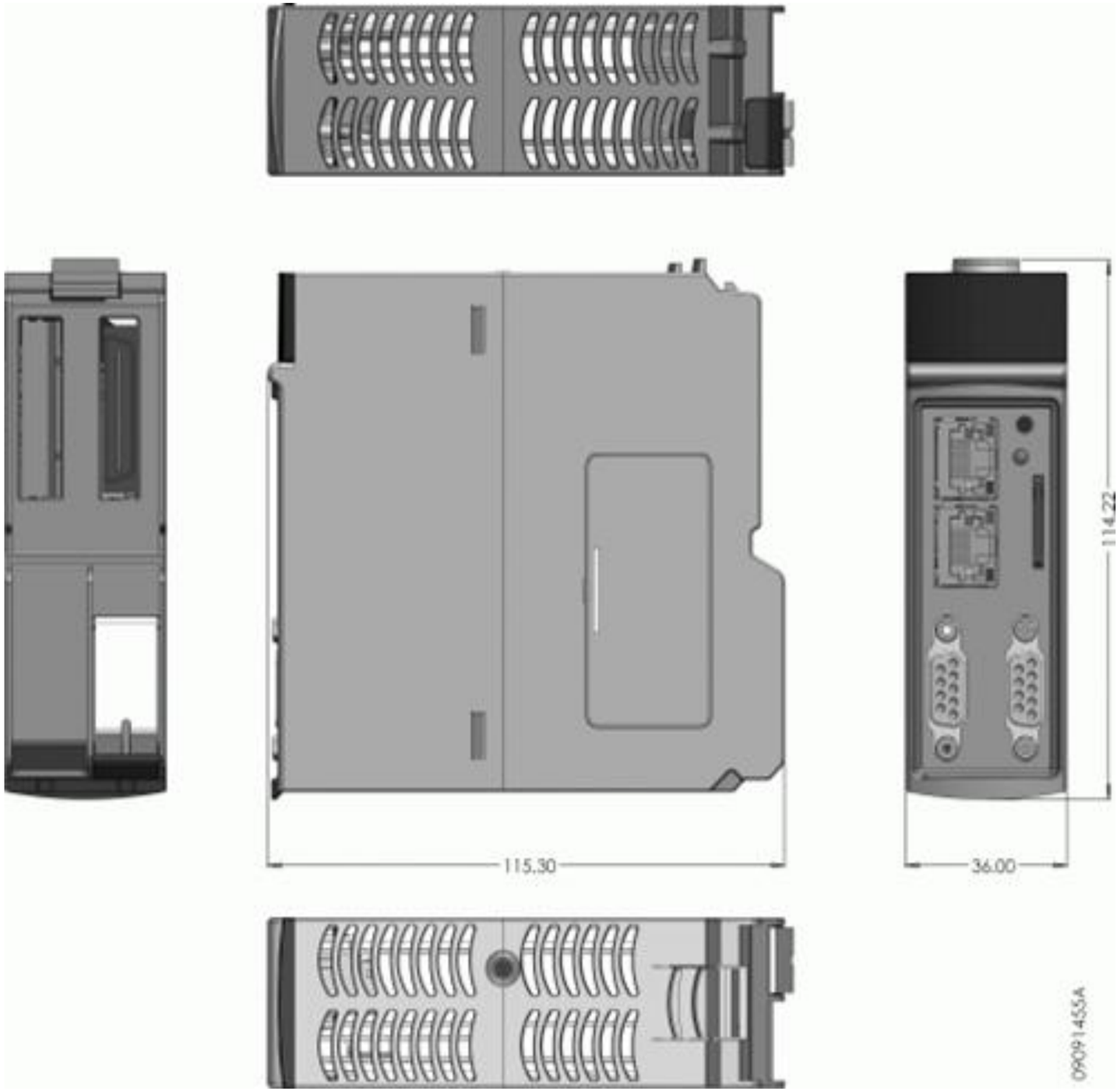
DIMENSIONS – 18 MM MODULE



INNOVATIVE FEATURES

NEXTO SERIES

DIMENSIONS – 36 MM MODULE

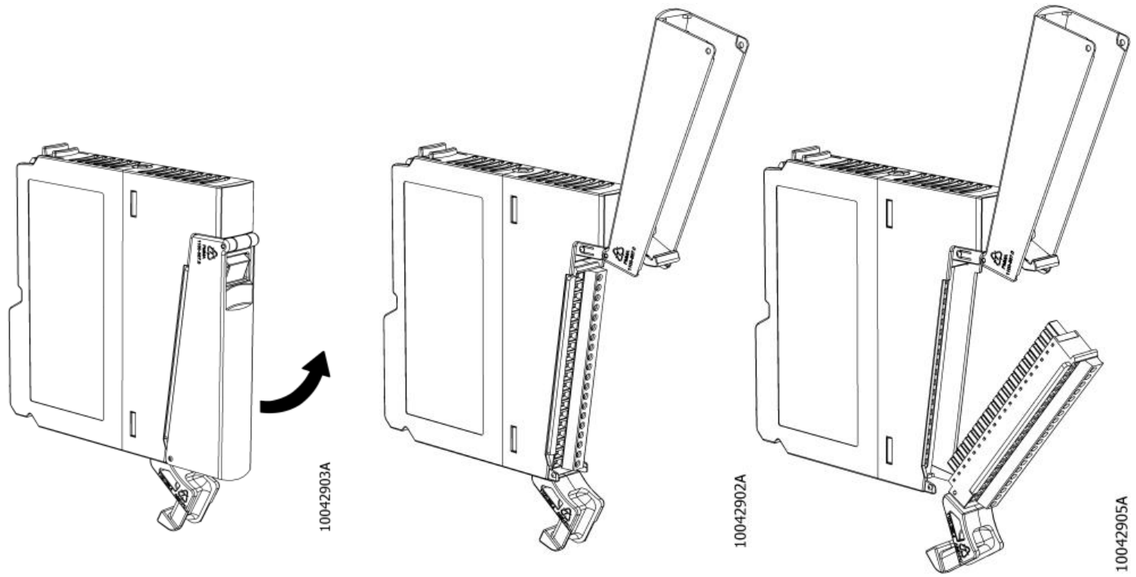


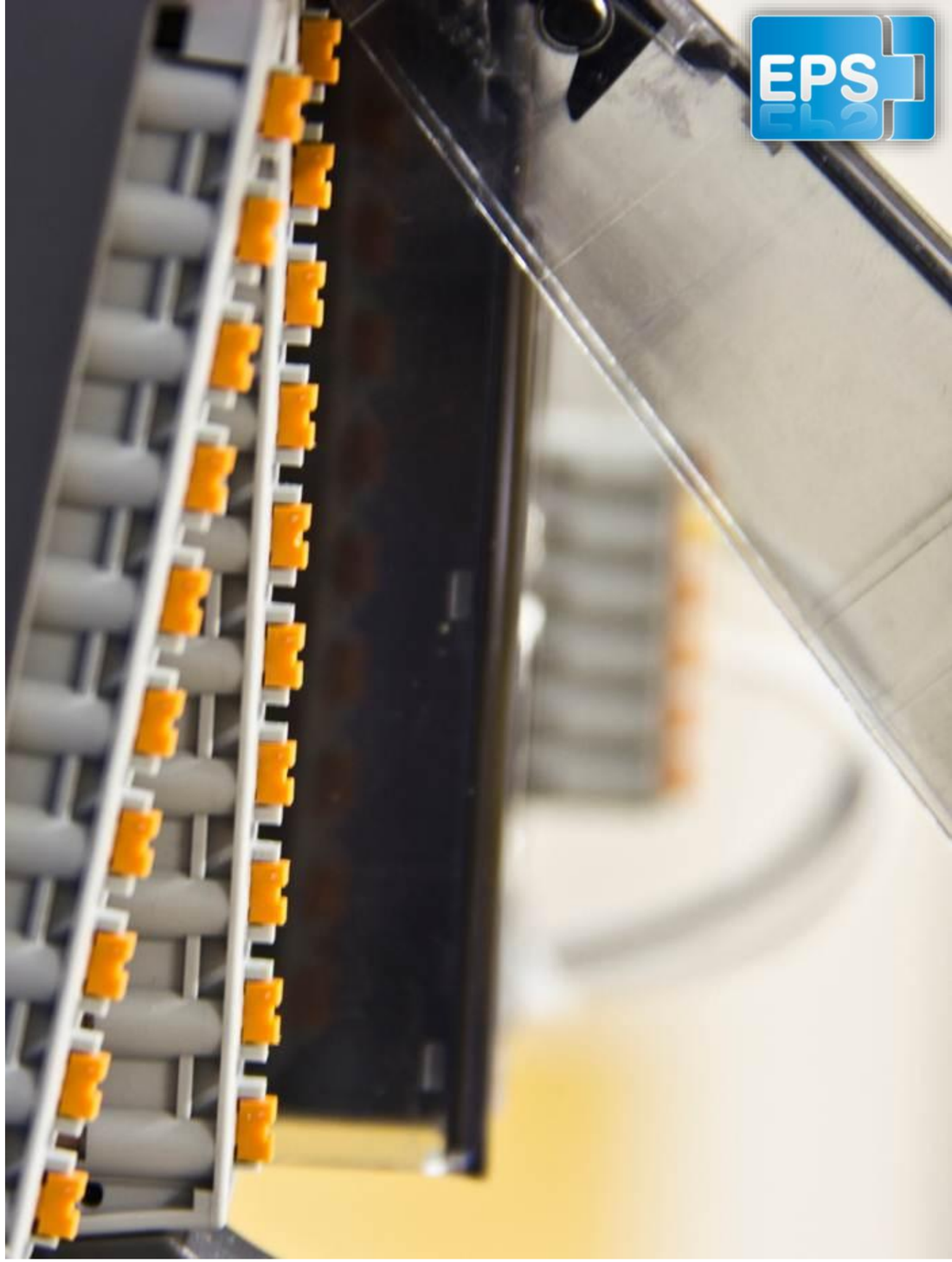
INNOVATIVE FEATURES

NEXTO SERIES

EASY PLUG SYSTEM - EPS

- Practical insertion & extraction mechanism for I/O terminal blocks using a lever on the front of the modules





INNOVATIVE FEATURES

NEXTO SERIES

BATTERY FREE OPERATION

- No battery
- Eco-friendly
- Data retention of 20 years
- RTC time backup (up to 15 days)

ON-BOARD FULL DOCUMENTATION

- Project files can be easily stored and accessed during engineering, commissioning and maintenance tasks

IP PROTECTION AND LOGIN PASSWORD

- Password management to protect access to the project or controller

HIGH RELIABILITY

- Low consumption and no moving parts (cooling fans)

NEXTO SERIES

MULTIPLE BLOCK STORAGE

- High memory capacity for applications
- Many variable types:
  - %I, %Q, %M, symbolic variable, persistent variable, retain variable
- User memory for project files:
  - .PDF, .DOC, .JPG, others
- System and user events registry memory (log)
- miniSD memory card (up to 8GB)

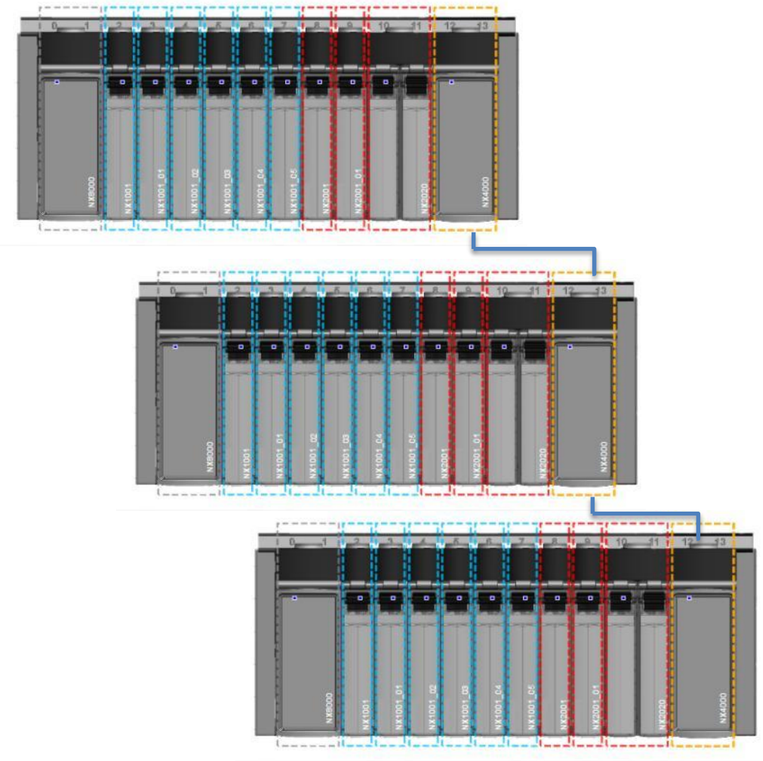


INNOVATIVE FEATURES

NEXTO SERIES

MAIN FEATURES – I/O SYSTEM

- Hot-swapping of any module
- Up to 320 I/Os in one rack
- Supports bus interruptions triggered by digital inputs events
- Expansion of up to 24 remote racks using bus coupler modules and power supply modules
- Optional redundancy if using two bus coupler modules
- Special functions: counters, period measurement and pulse capture



HIGH-SPEED BACKPLANE

NEXTO SERIES

FEATURES

- Based on deterministic Ethernet technology (100 Mbps)
- Up to 25 racks (1 local + 24 remote racks)
- 100 m of distance between racks (cable) or longer using fiber optic converters

PERFORMANCE

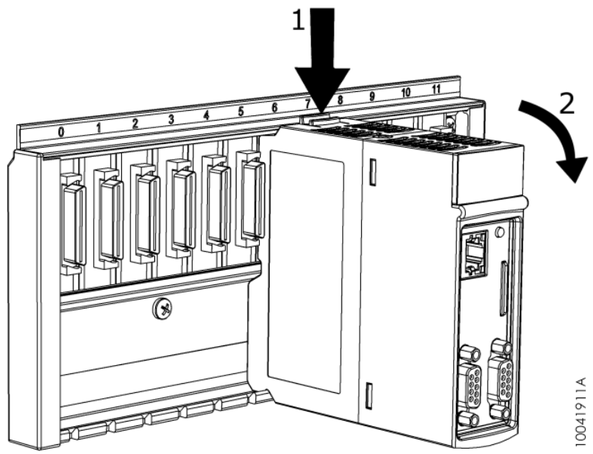
- High performance with low latencies for interruptions
- High I/O update rate (2,048 I/Os @ 10 ms)

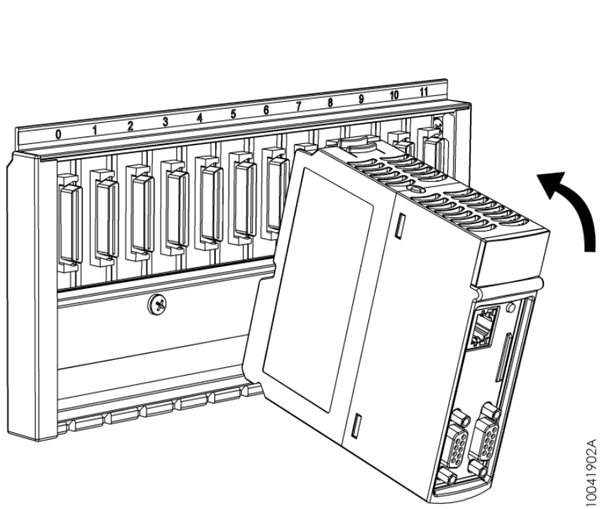
HOT-SWAPPING

NEXTO SERIES

FULL HOT-SWAP SUPPORT

- Easy insertion and extraction system without stopping the application (no need for screws or tools)





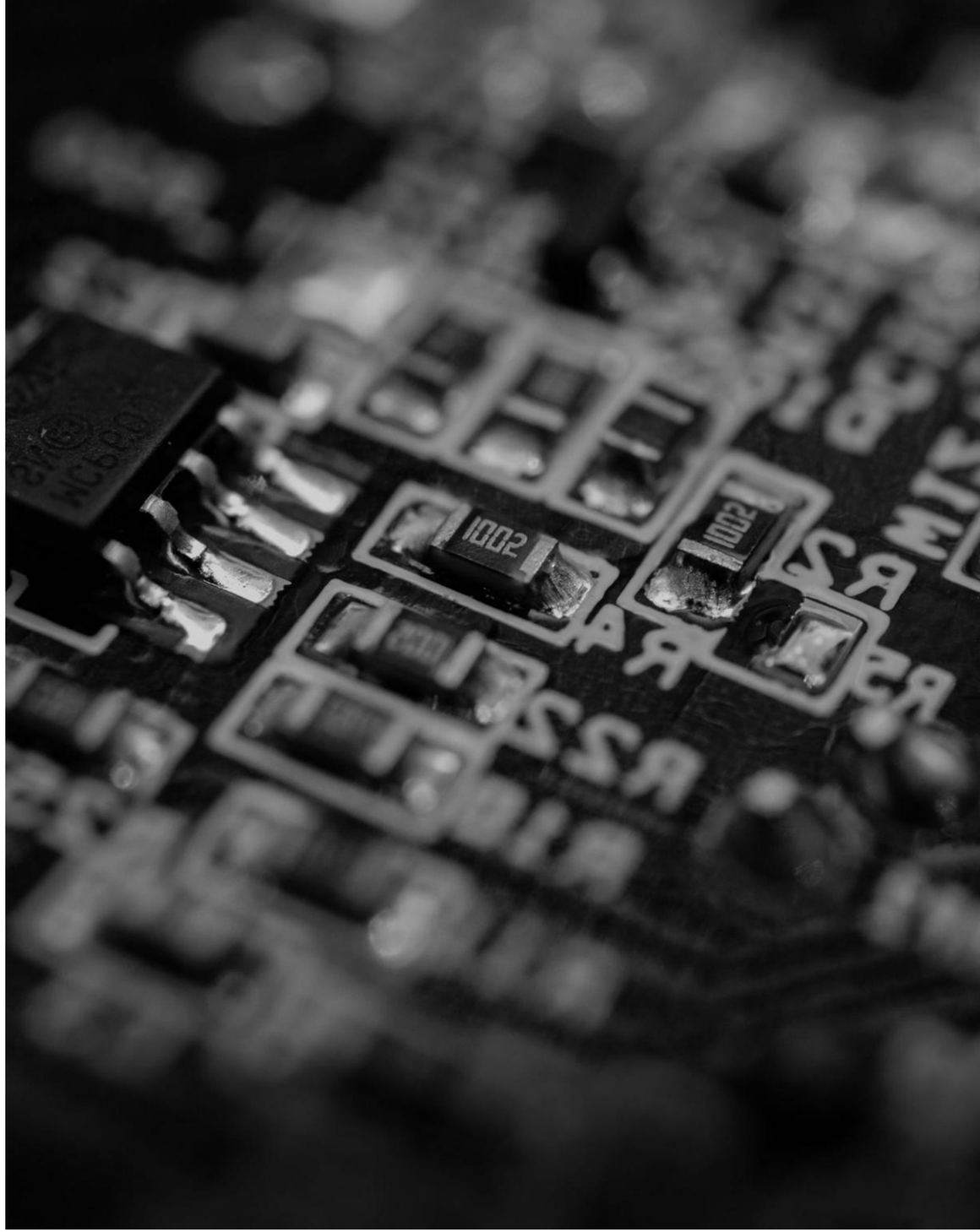


CONFORMAL COATING

NEXTO SERIES

PROTECTION AGAINST HAZARDOUS SUBSTANCES IN INDUSTRIAL ENVIRONMENTS

- Many industrial environments have hazardous substances on the air for printed circuit boards such as chemical components, air and moisture.
- In the conformal coating process a thin layer of nonconductive material is applied to protect against corrosion, extreme temperatures, sea air, humidity, among others.



CERTIFICATIONS

NEXTO SERIES

ROHS DIRECTIVE - RESTRICTION OF CERTAIN HAZARDOUS SUBSTANCES

- Nexto Series was developed according to European eco-design requirements

IT IS AN EUROPEAN DIRECTIVE WHICH PROHIBITS THAT CERTAIN HAZARDOUS SUBSTANCES ARE USED IN MANUFACTURING PROCESSES

- Cadmium (Cd)
- Mercury (Hg)
- Hexavalent Chromium (Cr6+)
- Polybrominated Biphenyls (PBBs)
- Polybrominated Diphenyl Ethers (PBDEs)
- Lead (Pb)



NEXTO SERIES

HIGH QUALITY

- The high quality of Nexto controllers is accredited by renowned world-class technological institutes
  - **CE and UKCA** – European directives
  - **UL** – NRAQ category (UL61010-1 and UL61010-2-201)
  - **DNV-GL** – Type Approval Category for Marine applications
  - **EAC** – TR004/TR020 Russian directives

NEXTO SERIES



NEXTO SERIES

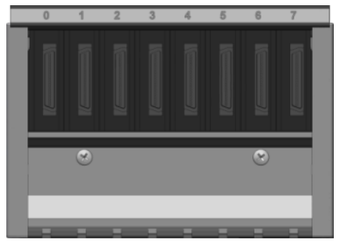


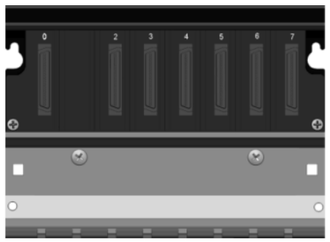
NEXTO SERIES



NX9020 - 2-slot backplane rack (for stand-alone CPUs)

*applications with NX3008 CPU



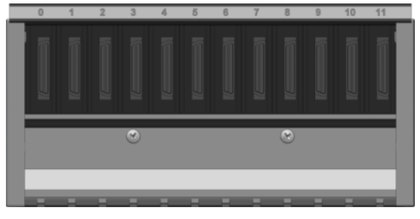


8-slot backplane racks:

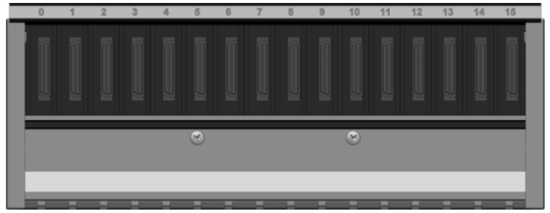
NX9000 – with hot-swapping

NX9010 – without hot-swapping

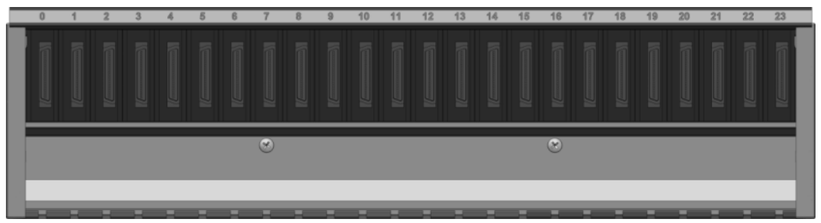
NEXTO SERIES



NX9001 – 12-slot hot-swap backplane rack

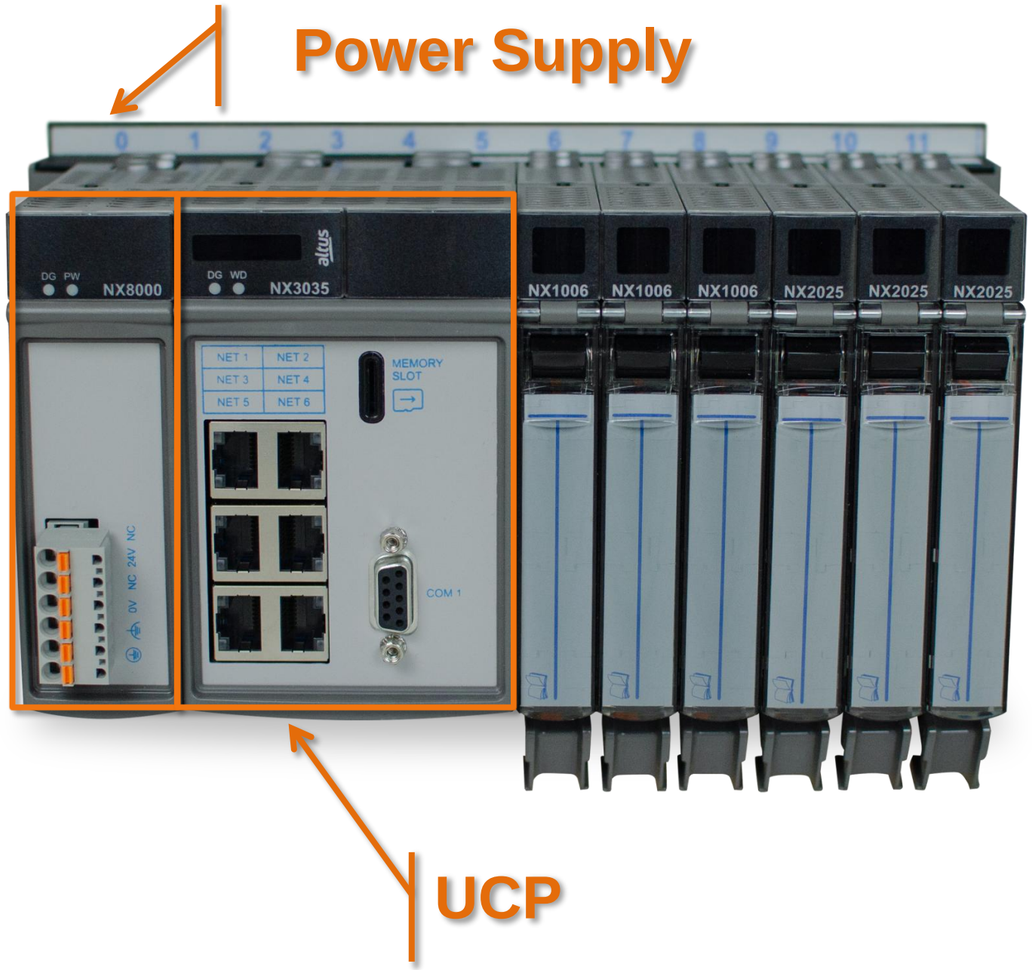


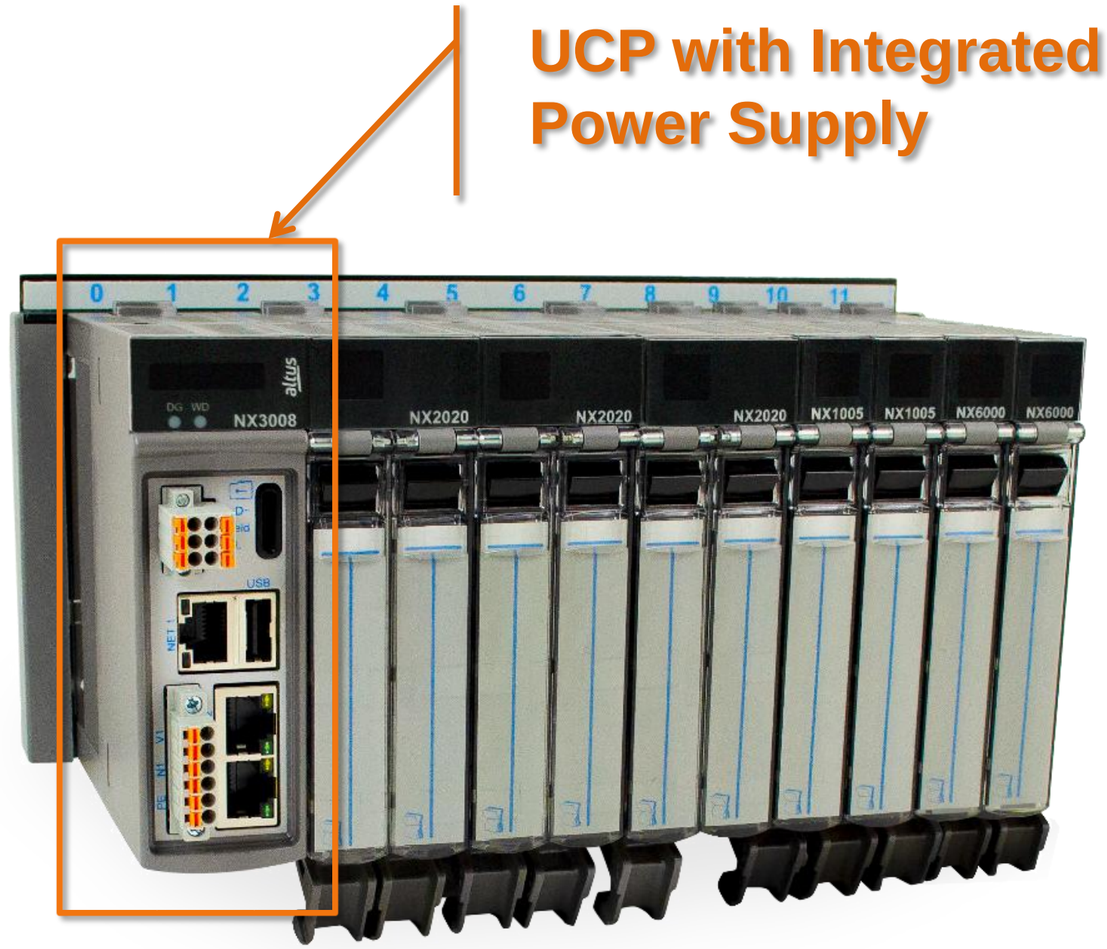
NX9002 – 16-slot hot-swap backplane rack



NX9003 – 24-slot hot swap backplane rack

NEXTO SERIES





NEXTO SERIES

MAIN FEATURES – CPUs

- 1 GHz ARM 64-bit (Dual-core and Single-core) or PowerPC 32-bit processor
- Up to 2 serial interfaces (RS-232 and RS-485/RS-422)
- Up to 6 Ethernet interfaces 10/100/1000 Mbps
- Up to 2 Ethernet SFP 1000/100/10 Mbps Interfaces for redundancy synchronization (NX3035)
- CAN interface (NX3008)
- Various communication protocols
- On-board HTTP server for diagnostics
- Web page development for user applications (NX3008)
- SNTP: RTC clock synchronization
- SOE: event logging of binary inputs with time stamping (NX3030)
- SNMP: Ethernet network management
- Redundancy in half-clusters (NX3030 and NX3035)
- Memory card (NX3008, NX3030 and NX3035)



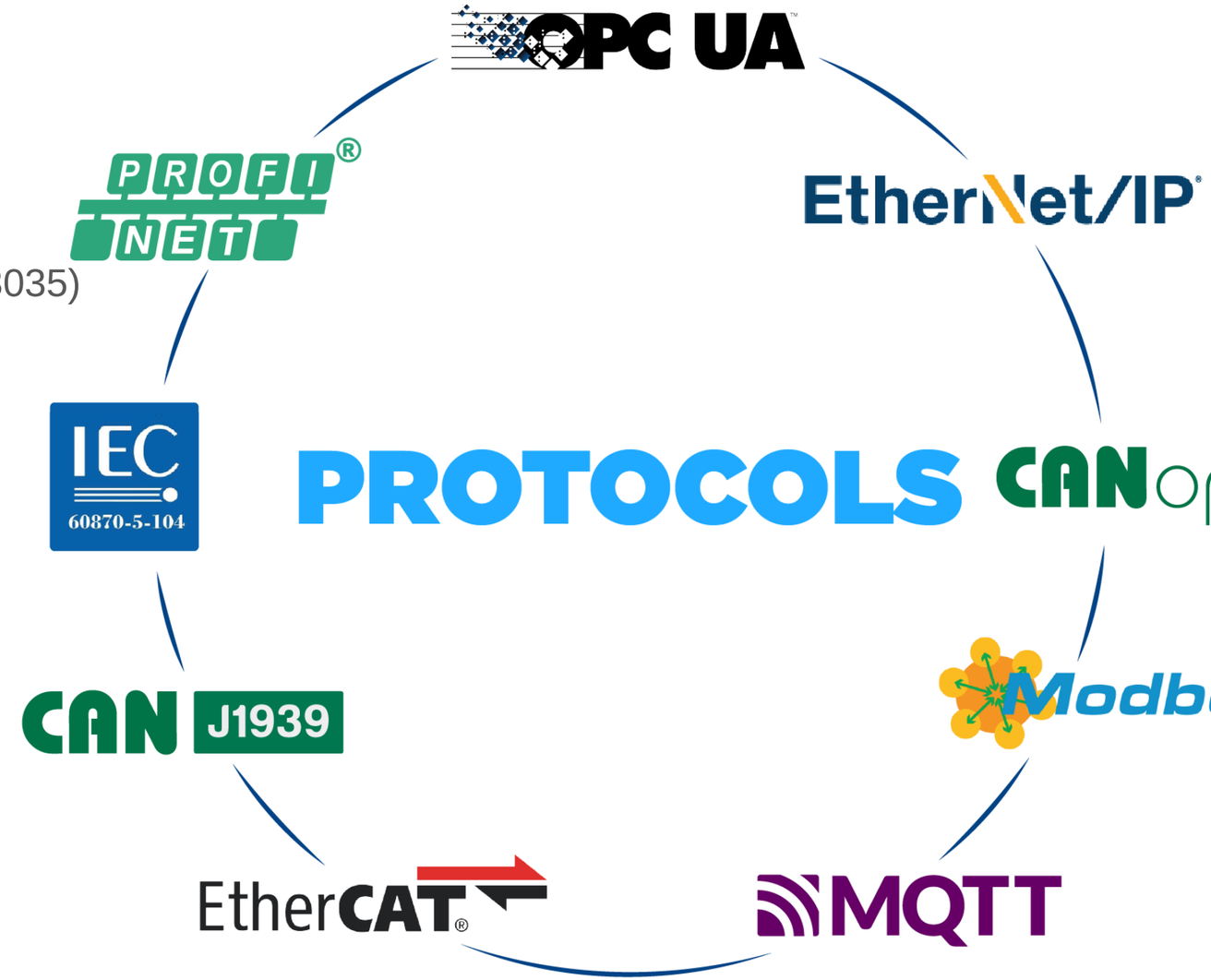


NEXTO SERIES

COMMUNICATION PROTOCOLS

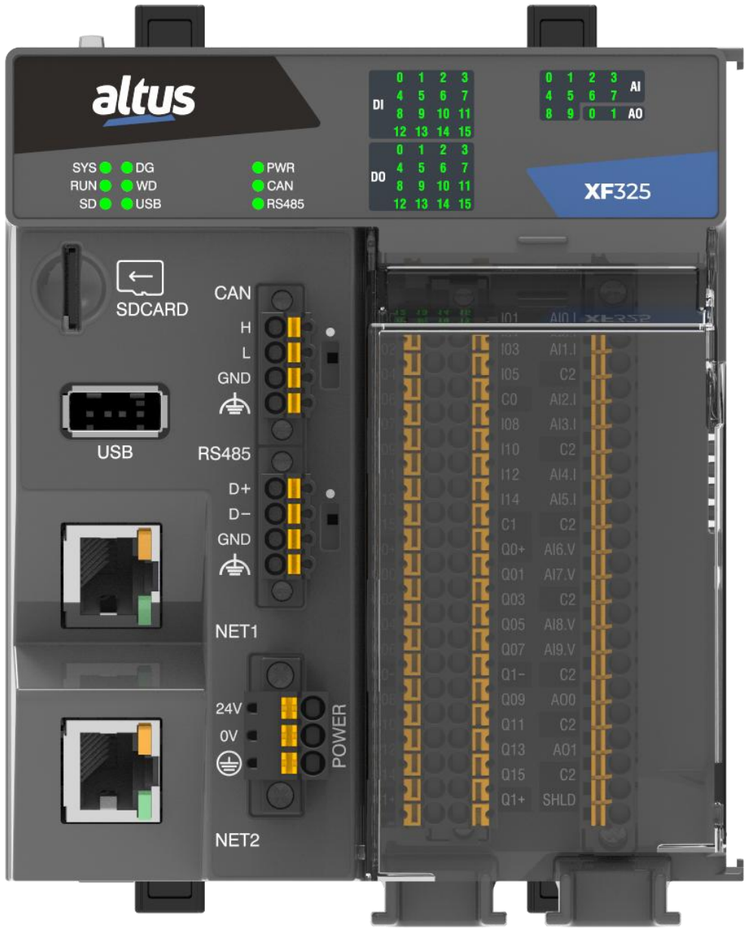
- PROFINET Controller *
- PROFIBUS (additional module) (NX3008 and NX3035)
- CANOpen Manager (NX3008 and XF)
- CAN J-1939 (NX3008 and XF)
- MODBUS RTU (master/slave)
- MODBUS TCP (client/server)
- OPC DA (server)
- OPC UA (server, with encryption)
- EtherCAT (master) *
- EtherNet/IP (scanner/adapter) *
- IEC 60870-5-104 (server) (NX3030 and NX3008)
- MQTT (client)
- SparkPlugB *
- SNTP (client)
- SNMP (client)

* NX3035 in simple mode only



Nexto XF

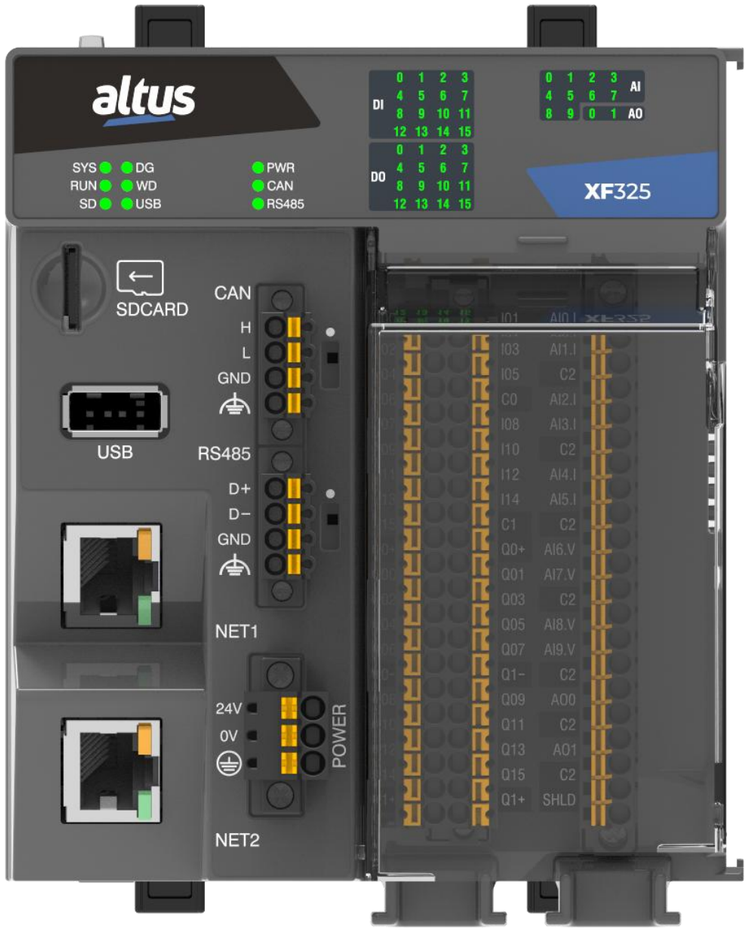
NEXTO SERIES

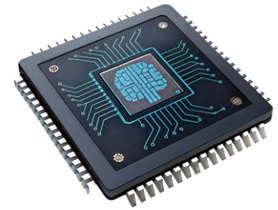


- DIN rail mount
- Compact design
- I/O expansion (up to 10 I/O modules)
- 24 Vdc power supply input
- Embedded I/O (up to 44 I/O points)
- LEDs for inputs/outputs state indication and diagnostics
- Internal webserver for maintenance and diagnostics
- Removable terminal blocks
- User-friendly communication ports location
- Memory card slot (microSD)
- 2x Ethernet ports

Nexto XF

NEXTO SERIES





- 64-bit ARM-based Dual-Core processor (1GHz)
- 512 MB RAM DDR4 and 8 Gb NVM (eMMC)
- 128 Kb retain/persistent memory
- Docker support
- Real-time clock (RTC) (no battery inside)
- CODESYS Webvisu (embedded webserver that allows the creation of supervision and monitoring pages)

NEXTO SERIES

- Cyber Security
  - Through the resources available on the processor, on the Linux kernel application level and by CODESYS
  - Firewall
- VPN tunnel support (P2P)
- FTP for file transfer
- Docker support
  - User Linux space to install containers to develop own applications or use common ones available at Docker Hub.



NX3008 UCP

NEXTO SERIES

- 1 GHz 64-bit ARM processor;
- 3 Ethernet interfaces, one of which is Gigabit and two of which can be configured to operate as PROFINET IO Controller, with support for closing the ring, both with MRP (Media Redundancy Protocol) acting as the ring manager (MRM - Media Redundancy Manager) in PROFINET networks, and with RSTP (Rapid Spanning Tree Protocol) in other protocols
- 1 isolated RS-485 serial interface
- 1 isolated CAN interface
- 1 microSD memory card for storage and mass memory
- 1 USB interface for storage, mass memory, USB-Serial converter, wireless and 4G modem
- Integrated power supply
- On-board HTTP server for diagnostics
- Web page development for user application (Webvisu)
- Extended operating temperature of -20 to 60ºC



TECHINAL FEATURES

NX3008

- Cybersecurity:
  - Through the resources available in the processor, at the application level of the Linux kernel and with resources provided by CODESYS
  - Firewall
- VPN tunnel support (P2P)
- FTP for file transfer
- “Embedded Linux" functionality, allowing the user to develop applications with direct access to CODESYS libraries, Docker, Python, among others.



NX3030 UCP

NEXTO SERIES

SOLUTION FOR CRITICAL AND HIGH AVAILABILITY APPLICATIONS

- CPU without integrated power supply
- 2 Ethernet ports
- 2 Serial ports
- MiniSD memory card slot
- Support to up to 128 I/O modules
- Expansion of up to 24 expansion racks (each one with capacity for up to 20 I/O modules)
- Architecture based on multiple racks with optional redundancy
- Protocols and services: IEC 60870-5-104 Server, EtherNet/IP, EtherCAT Master, MODBUS RTU, MODBUS TCP, MODBUS RTU/TCP, SNTP, SNMP, MQTT, OPC DA and OPC UA



NX3030 UCP

NEXTO SERIES

SOLUTION FOR CRITICAL AND HIGH AVAILABILITY APPLICATIONS

- Redundant UCPs are located in different racks (half clusters)
- In case of failure on the active UCP, the standby UCP switches over automatically (with an up-to-date data context)
- Easy to set up – no special programming is needed
- Automatic program synchronization and transfer between half-clusters
- Support to online changes and I/O expansion without stopping the process
- Critical processes are not affected by simple failure events
- Designed to deliver:
  - Increased productivity
  - Minimized process down times
  - Low maintenance and repair times (MTTR)



NX3035 UCP

NEXTO SERIES

CARACTERÍSTICAS – CPUs

- UCP without integrated power supply
- Six Ethernet 1000/100/10 Mbps Interfaces
- Two Ethernet SFP 1000/100/10 Mbps Interfaces for redundancy synchronization
- One RS-485 Interface (ModBus-RTU, Master/Slave)
- One MiniSD card interface
- Expansion of up to 24 expansion racks (each one with capacity for up to 20 I/O modules)
- Supports up to 6 PROFIBUS networks, and up to six NX5001 modules can be installed in the same rack
- Supports up to 6 additional Ethernet TCP/IP interface modules(NX5000)
- Protocols and services: PROFINET Controller, EtherNet/IP, EtherCAT Master, MODBUS RTU, MODBUS TCP, MODBUS RTU/TCP, SNTP, SNMP, MQTT, OPC DA and OPC UA



NX3035 UCP

NEXTO SERIES

SOLUTION FOR CRITICAL AND HIGH AVAILABILITY APPLICATIONS

- Redundant CPUs are located in different racks (half clusters)
- In case of failure on the active CPU, the standby CPU switches over automatically (with an up-to-date data context)
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- Automatic program synchronization and transfer between half-clusters
- Support to online changes and I/O expansion without stopping the process
- Critical processes are not affected by simple failure events
- Designed to deliver:
  - Increased productivity
  - Minimized process down times
  - Low maintenance and repair times (MTTR)



NEXTO SERIES

- Cyber Security
  - Through the resources available on the processor, on the Linux kernel application level and by CODESYS
  - Firewall
  - VPN tunnel support (P2P)
  - DoS Protection
- FTP for file transfer
- Support for multiple independent Ethernet networks
- Compatible with MRP and RSTP
- Large memory capacity for complex applications



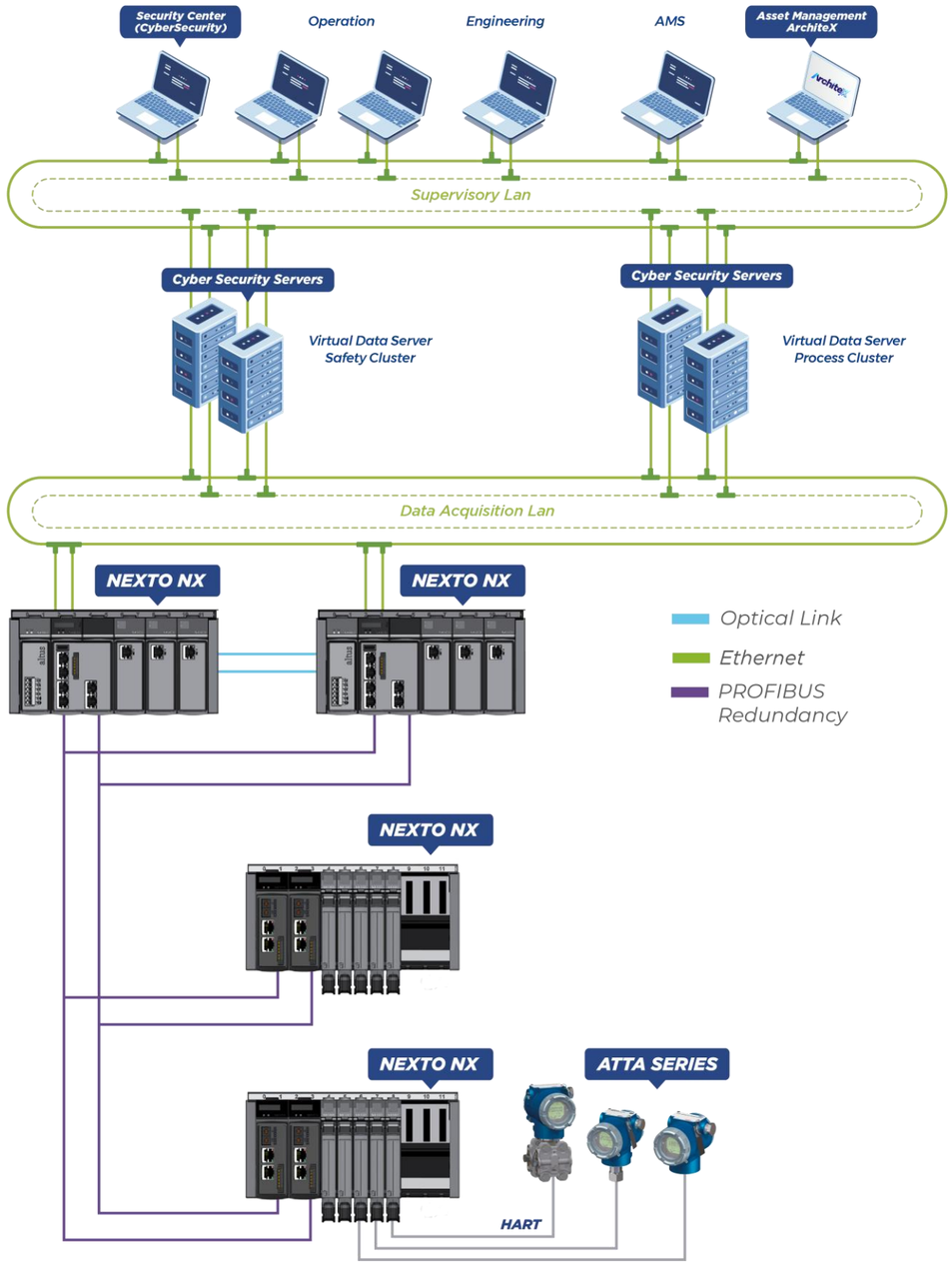






REDUNDANT ARCHITECTURE

NEXTO SERIES

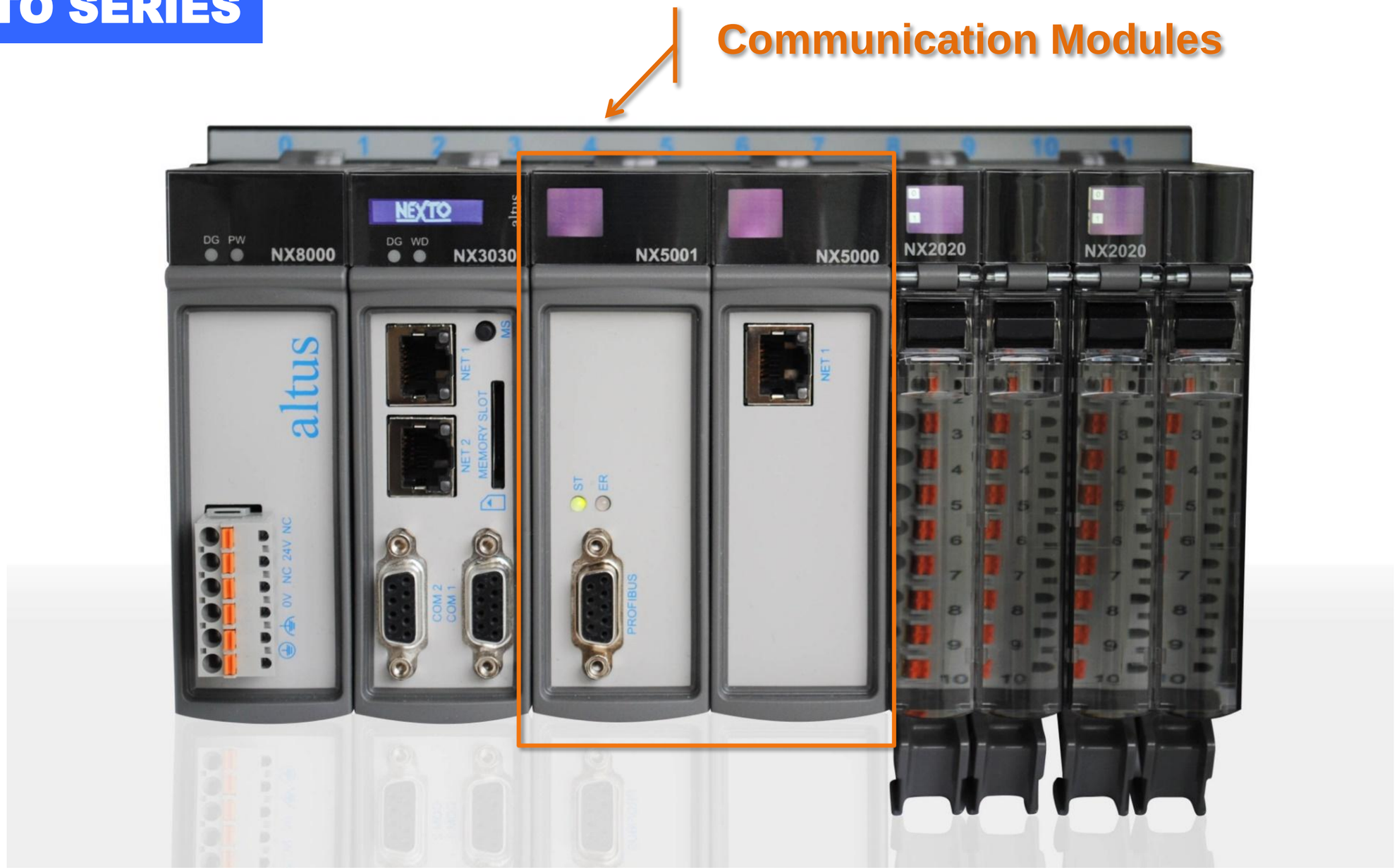


NEXTO SERIES

	NX3008	NX3030	NX3035
Program Memory	32 MB	8 MB	64 MB
Source-Code Memory	256 MB	120 MB	256 MB
Master PROFIBUS-DP Fieldbus	4	4	6
Ethernet Interfaces	3	8	6
Redundancy (Fieldbus/Ethernet)	Yes	Yes	Yes
Sequence of Events (SOE)	-	Yes	-
Memory Card Support	Yes	Yes	Yes
Supported Rack Expansions	Yes	24	24
Maximum Number of I/O Modules (on the local bus)	128	128	128
Embedded Digital Inputs	-	-	-
Embedded Digital Outputs	-	-	-

NEXTO SERIES

Communication Modules



NEXTO SERIES

- PROFIBUS DP Master (Redundancy)
- 10/100 Mbps Ethernet Interface (Redundancy)



NEXTO SERIES

NX5100 – MODBUS TCP HEAD

NX5101 – MODBUS TCP HEAD (NO HOT-SWAP)

- Compatible with any MODBUS TCP client equipment
- Integrated power supply
- Support for up to 22 I/O modules
- Configuration using the same MasterTool IEC XE configurator used to configure the Nexto Series CPUs



NEXTO SERIES

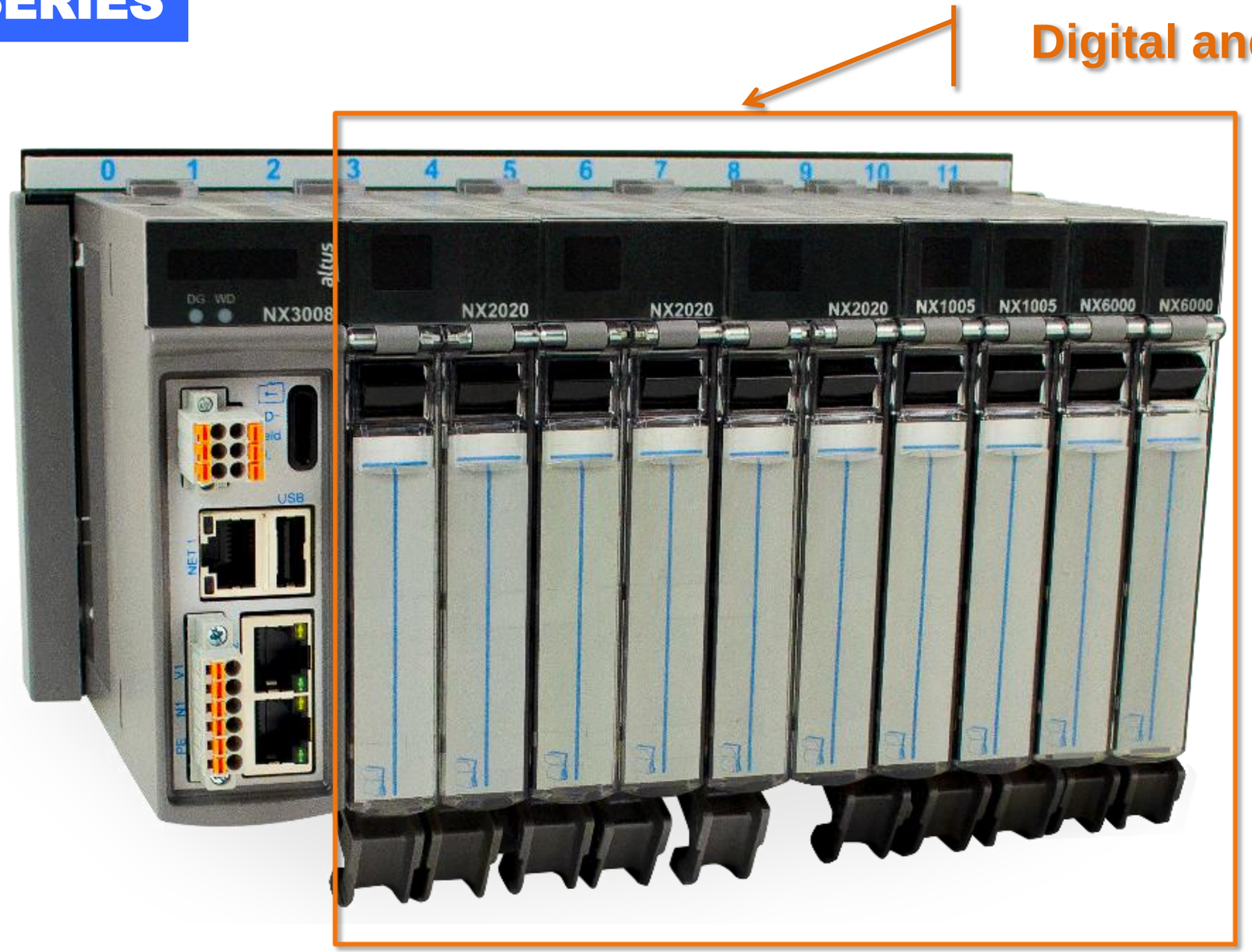
NX5110 – PROFIBUS-DP HEAD

NX5210 – PROFIBUS-DP REDUNDANT HEAD

- Compatible with any PROFIBUS-DP master (EN 50170)
- Integrated power supply
- Up to 22 I/O modules support
- Auto-parameterization and configuration of I/O modules via PROFIBUS-DP master (class 1)



NEXTO SERIES



NEXTO SERIES



NX1001

- 16 Digital Inputs 24 Vdc Module
- opto-isolated Input (sink/source)

NX1005

- Mix of 8 Digital Inputs and 8 Digital Outputs Transistor Module
- Mixed features of NX1001 and NX2001

SPECIAL FEATURES

- **COUNTERS**
  - Input for signal of 20 kHz and 2 kHz
- **PERIOD MEASUREMENT**
  - Input for signal of 200 us to 1 second
- **PULSE CATCH**
  - Detection of pulses shorter than the application cycle

NEXTO SERIES

NX1006

- 08 monitored digital inputs 24 Vdc
- Self-test for detecting damaged inputs
- Monitored inputs:
  - Open-circuit detection
  - Short-circuit detection
- Galvanic isolation between outputs and internal logic
- Input surge protection
- Short-circuit protection at 0 and 24 Vdc



NEXTO SERIES



NX2001

- 16 Transistor Digital Output Module
- Grouped outputs in 2 isolated groups between them and logic

NX2020

- 16 Relay Digital Outputs Module
- Grouped outputs in 2 groups

NEXTO SERIES

NX2025

- 08 monitored digital outputs 24 Vdc
- Drive device redundancy, ensuring the safe state of the outputs in case of failure
- Possibility to use two outputs in parallel to drive the same field device, increasing availability, with integrated diodes
- Self-test for detecting damaged outputs
- Galvanic isolation between outputs and internal logic



NEXTO SERIES



NX2025

- Monitored outputs:
  - Open-circuit detection
  - Short-circuit detection
- Surge protection on outputs
- Short-circuit protection at 0 and 24 Vdc

LOAD SPECIFICATIONS

	NX2001	NX2020	NX2025
Output type	Transistor isolated source type	Relay isolated dry contact	Transistor isolated source type
Maximum current per output	1 A @ 30 Vdc	2 A @ 30 Vdc 2 A @ 250 Vac	1,5 A (± 10 %)

NEXTO SERIES



NX6000

- 8 Analog Inputs Voltage/Current Module 16-bit
- Isolated inputs from logic
- 24 Vdc internal protection
- Selectable scales by software (0 to 10 V, -10 V to +10 V, 0 to 20 mA, 4 to 20 mA and -20 to 20 mA)

NX6100

- 4 Analog Voltage/Current Outputs Module 16-bit
- Isolated outputs from logic
- Selectable scales by software (0 to 10 V, -10 V to +10 V, 0 to 20 mA, 4 to 20 mA and -20 to 20 mA)

NEXTO SERIES

NX6010

- 8 Thermocouple Analog Inputs Module
- Isolated inputs from logic
- 24 Vdc internal protection
- Supported thermocouples: J, K, B, E, T, R, S and N
- Individual configuration per input
- 24 bits converter resolution and 16 bits data format in two’s complement



NEXTO SERIES

NX6020

- 8 RTD Analog Inputs Module
- Isolated inputs from logic
- Supported RTD sensors types: Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni200, Ni500, Ni1000 and Cu10
- Supported resistance ranges: 0 Ω to 400 Ω and 0 Ω to 4000 Ω
- Individual configuration per input
- 24 bits converter resolution and 16 bits data format in two’s complement



NEXTO SERIES

NX6014

- 8 Analog Current Input Module with HART support
- Inputs isolated from logic
- Internal protection for 24 Vdc
- Software-selectable scales (0 to 20 mA and 4 to 20 mA)
- Software-selectable filters
- Open-Loop diagnostics
- Diagnostics for values below and above the range

NX6134

- Module with 4 Current Analog Outputs with HART support
- Outputs isolated from logic
- Protection against voltage surges
- Software-selectable scales (0 to 20 mA and 4 to 20 mA)
- Filtros parametrizáveis por software
- Open-Loop diagnostics





NEXTO XPRESS

NEXTO SERIES

- Compact Programmable Controller with embedded I/Os, ideal for machines and small applications
- High density of I/Os (up to 43 points in only one product) and Real Time Clock (RTC)
- Ethernet interface, Serial port, CANopen and USB. Supports MODBUS RTU and TCP client/server, EtherNet/IP Scanner, MQTT, OPC DA and OPC UA protocols

SOFTWARE

MASTERTOOL X



MASTERTOOL X

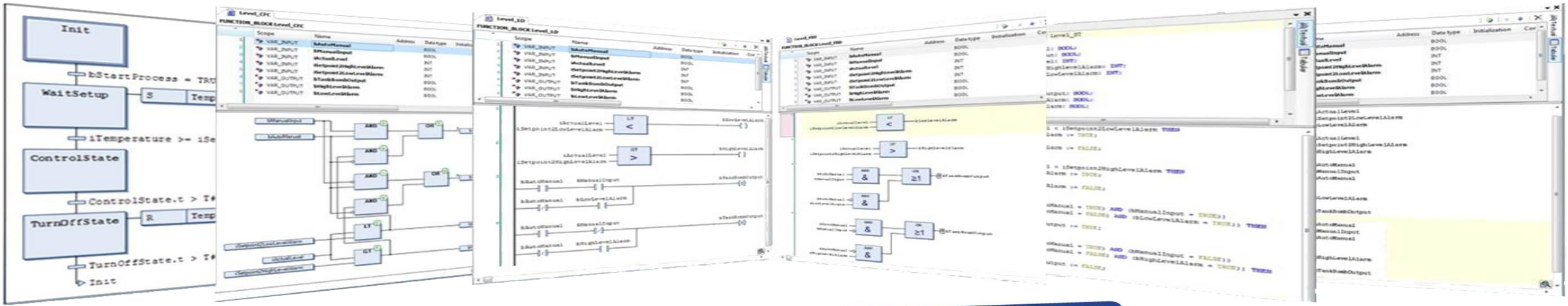
- One easy-to-use software environment for all your automation needs
- Friendly user interface and easy to use
- Single control platform with modern programming environment
- 6 programming languages
- Online programming
- Powered by CODESYS

SOFTWARE

MASTERTOOL X

IEC 61131-3 – PROGRAMMING LANGUAGES

- Structured Text (ST)
- Sequential Function Chart (SFC)
- Function Block Diagram (FBD)
- Ladder Diagram (LD)
- Instruction List (IL)
- Continuous Function Chart (CFC)
- Support for different languages on the same application

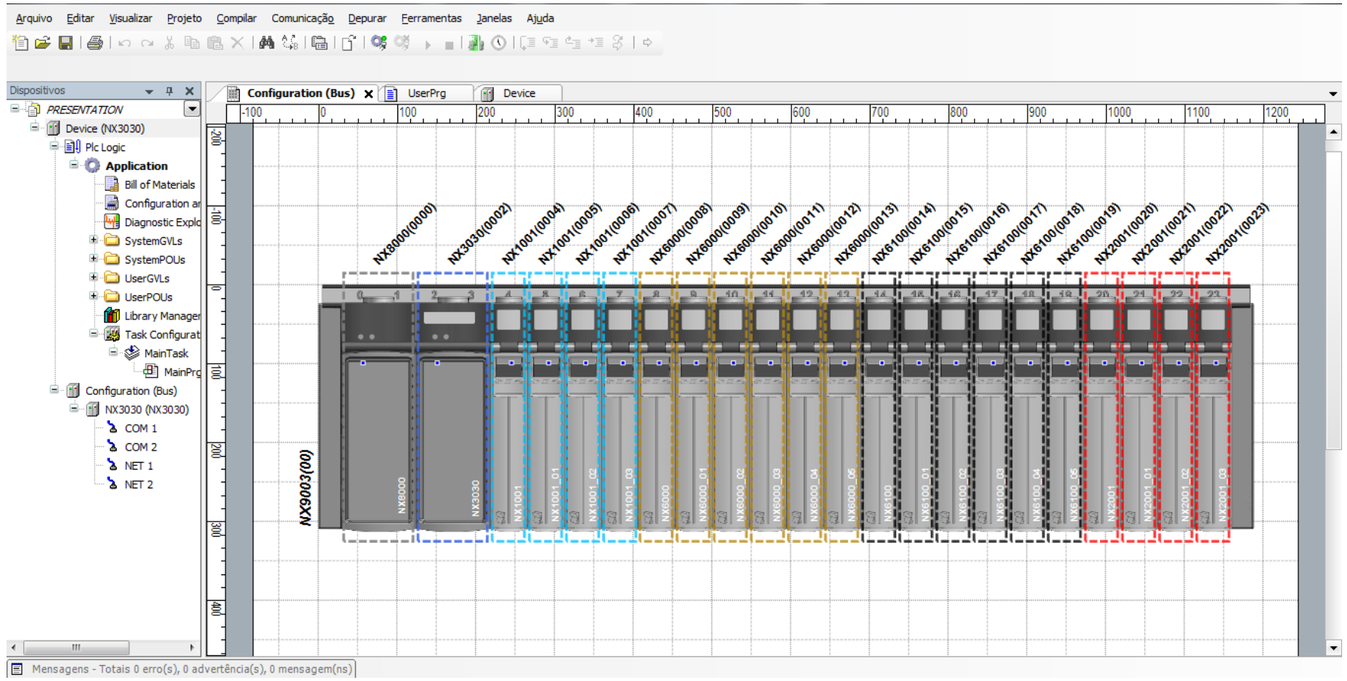


SOFTWARE

MASTERTOOL X

ALLOWS A FAST AND COMPREHENSIVE WAY TO CONFIGURE THE SYSTEM

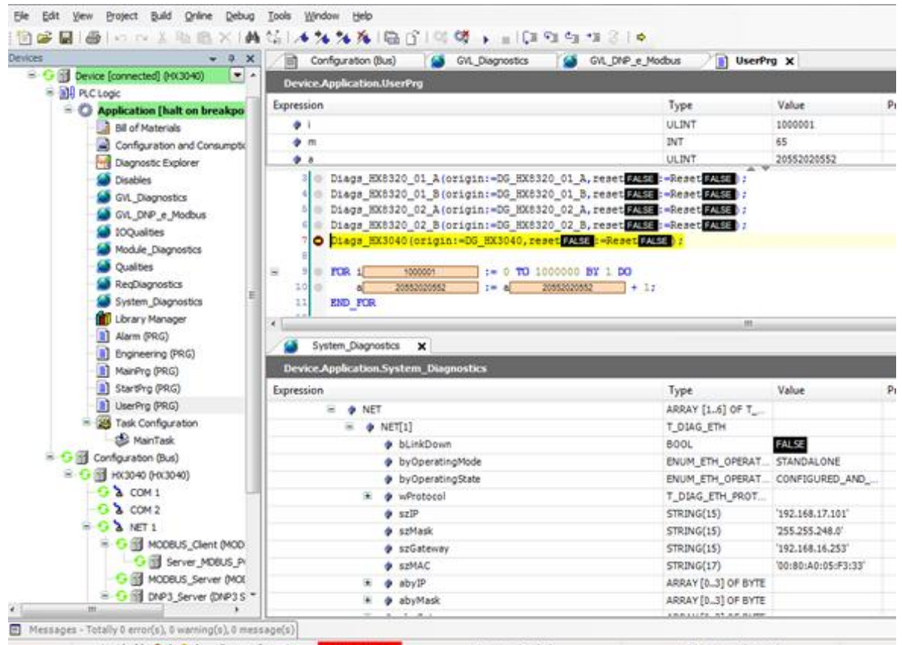
- Advanced edition resources integrating standard communication protocols and fieldbus networks in the same programming tool
- Graphical bus configuration
- Auto-complete features and integrated help files for easy programming

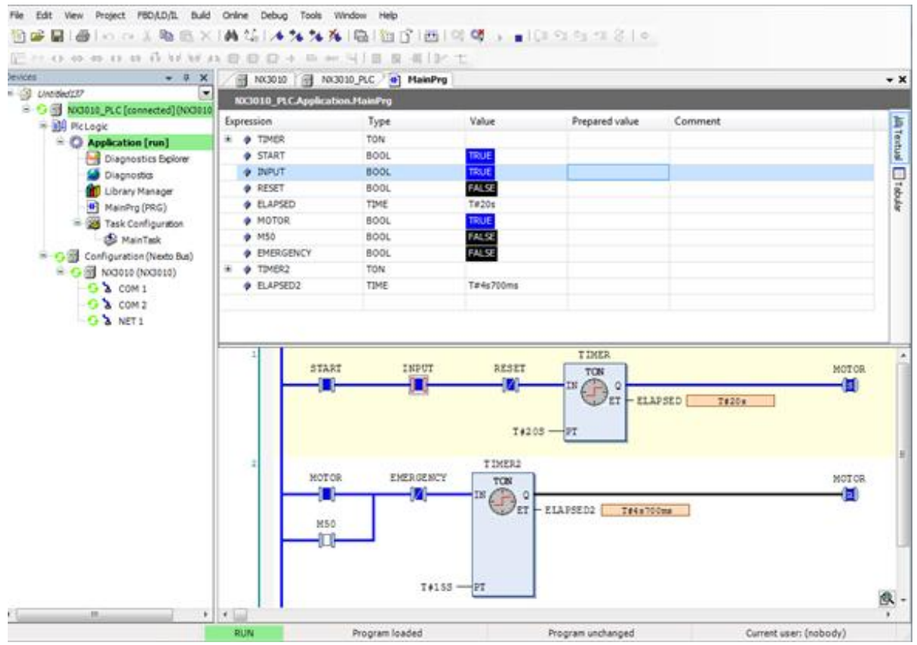


SOFTWARE

MASTERTOOL X

- Offline application simulation
- Online application debbuging
- Monitoring
  - I/O variables
  - Symbolic variables
  - System diagnostics
  - Modules diagnostics
- Use of breakpoint and step by step execution
- Communication with SCADA and HMI simulation using OPC DA

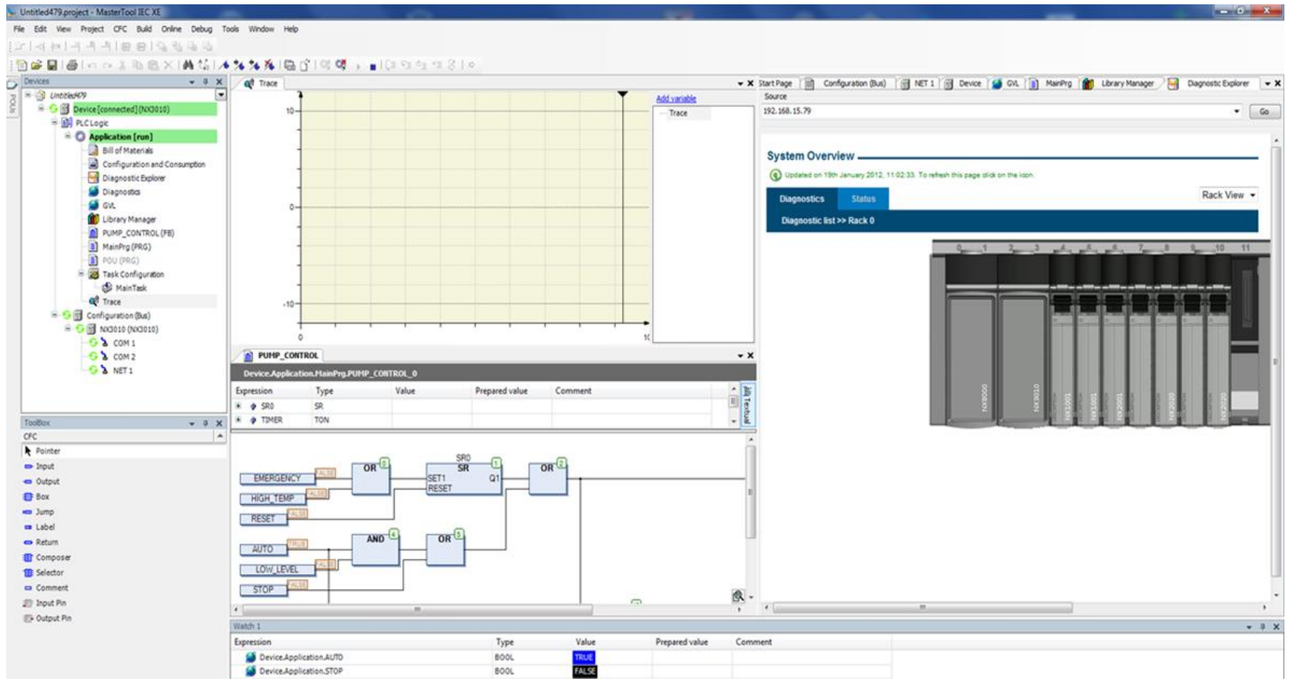




SOFTWARE

MASTERTOOL X

- Object-oriented programming
- Simulation tool
- Print outs of user application documents
  - Bill of materials (BOM)
  - POUs
  - Configuration parameters, tags and description lists
- Docking view (friendly user interface allows to customize Mastertool X environment)



SOFTWARE

MASTERTOOL X

Features	Lite	Adv
Free Version	YES	NO
UCPs	XP XF NX3008	XP XF NX3008 NX3035
Bus Expansion Support	NX3008	YES
Redundancy of Bus Expansion	NO	YES
Additional Ethernet Modules	NX3008	YES
Redundancy of Aditional Ethernet Modules	NO	YES

SOFTWARE

MASTERTOOL X

Features	Lite	Adv
PROFIBUS-DP Fieldbus Interfaces	NX3008	YES
Redundancy of PROFIBUS-DP Fieldbus Interfaces	NO	YES
Half-Clusters Redundancy	NO	YES

USER DOCUMENTATION

NEXTO NX

TECHNICAL FEATURES

- Every Nexto module has a set of documents available in Portuguese and English

USER MANUALS

- Large technical documentation available in Portuguese and English
- More than 1,000 pages, covering:
  - Nexto Series User Manual
  - Mastertool X User Manual
  - IEC 61131-3 Programming Manual
  - Nexto CPUs User Manual
  - PROFIBUS-DP Master User Manual

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