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ENGINEERED FOR EXTREMES

Uninterrupted Powerful Control
for High-end Operations.

NX-ERA PREMIUM PLC | NEXUS OF INDUSTRIAL AUTOMATION

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NX-ERA PLC SERIES | NEXUS OF INDUSTRIAL AUTOMATION

PLC PORTFOLIO

NX-ERA XPRESS
Compact PLC with world-class features for agile, mid-range automation.
DI, DO, AI, AO, HSC, PTO | Ethernet, USB, RS-485 | CAN I/O | Codesys

Applications
- Boiler
- Batching
- AHU

NX-ERA JET
Modular and scalable PLC for mid-scale applications with strong connectivity.
Modular I/O | High Industrial Ethernet | Remote & Local I/O | Codesys

Applications
- Water Treatment
- Continuous Furnace
- Line Automation

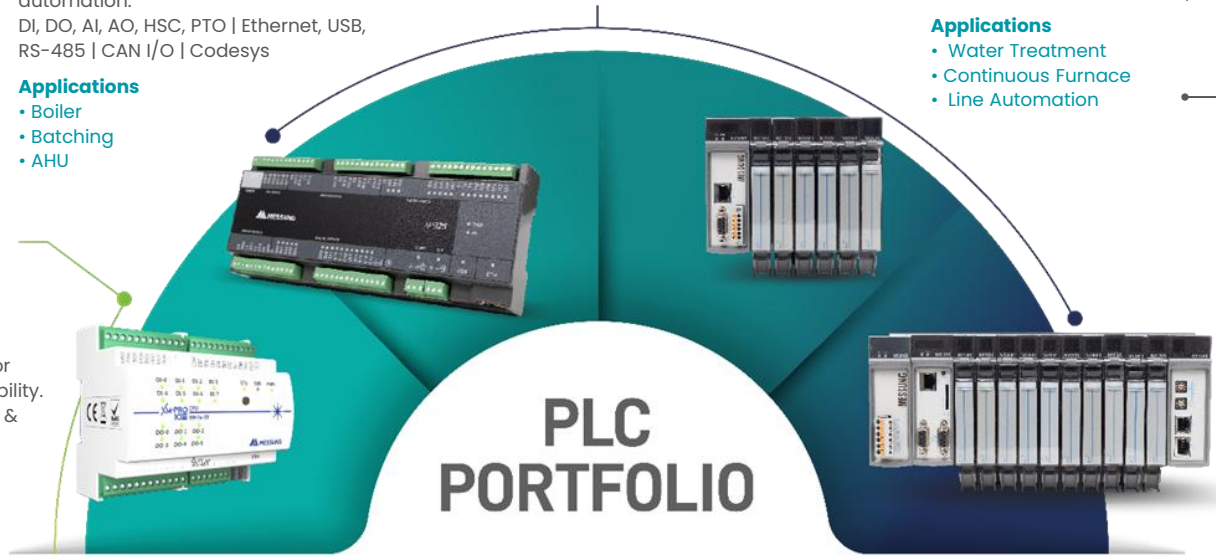
NX-ERA CPU
- 3003
- 3004
- 3005
- 3008
- 3010
- 3020
- 3030

navo mesh — A Make in India Initiative

XM-PRO 10 PLC with IoT | A CLASS OF ITS OWN

XMPRO-10
Compact and affordable PLC for essential control with IoT capability.
DI, DO, AI, AO, HSC, PTO | RS-485 & Ethernet | MQTT | XMPS-2000 Programming Software

Applications
- Drilling & Tapping
- Hydraulic Presses
- Leak Testing



I/Os → 80 128 256 512 1024 2048

NX-ERA PREMIUM
Reliable, uninterrupted PLC for mission-critical, high-end operations.
Redundancy | Hot-Swapping of I/O | Modular & Scalable | Codesys

Applications
- Data Center Chiller Plant
- Singeing Plant Textile
- Rope Dyeing Denim

OPC UA | EtherNet/IP | CANopen | Modbus | MQTT | EtherCAT | CAN J1939 | IEC 60870-5-101 | PROFINET | Industry 4.0

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Highlighting Features and Applications

NX-ERA SERIES

Advanced Automation System

- Aggregates DCS' typical elements
- Integration with most traditional SCADA systems
- Used for control systems in small, medium and high-end applications

State-of-the-Art Programmable Controller

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

NX-ERA Premium PLC is suitable for Applications like:

- Oil & Gas
- Machinery
- Agroindustry
- PowerWater & Waste-water
- Food & Beverages
- Building Automation
- Transportation
- Distributed Process

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Highlighting Features and Applications

- High processing capacity
- Hot standby mode **Redundancy**
- **Hot swapping**
- 22 racks with remotes and I/O units
- Network redundancy Industrial switches
  interconnected in a ring architecture
- Tunnel`s electrical, ventilation And safety system

- **Digital transformation** and adaptation
- Connectivity, security and high productivity of **Industry 4.0.**
- Collecting data, activating and adjusting field instruments
- Important increase in the **quality of The manufactured product** and Greater safety control
- Control of different systems: Ante-transshipment Systems, Pressure Control Product recipes Preparation, production line and filling safety, as well as the line cleaning system (PIG)

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Applications

Sugar Factory

- Technologies that assist in the optimization of their processes.
- High processing speed – 6ns for basic instruction.
- Large data storage Capability.
- Web Server support.
- NX5001 remote PROFIBUS Module, HMI for local control.

Plastic Injection Machine

- Supports accurate temperature control.
- Accurate modeling tool operation.
- With high processing speed.
- Increase in production with accuracy.

Water Treatment Plant

- Reduce Physical losses, operational and input costs.
- Improve the quality of the water.
- Optimize Power consumption.

Energy Efficiency Application

- Reduce Physical losses, operational and input costs.
- Improve the quality of the water.
- Optimize Power consumption.

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Highlighting Features

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

PERFORMANCE
ARM 64-bits 1GHz
3x Ethemets
1000 PID loops in <2ms

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

SMART
Web Server / 1MB Retentive
32MB Program / Memory

MASTERTOOL
USER Friendly software, online changes and offline simulation Based on CODESYS

SCALABLE
The NX-ERA Family covers small to large applications

RoHS

Highlight Features

- **CE**- European directives
- **UL**- NRAQ category (UL61010-1 and UL61010-2-201)
- **DNV-GL**- Type Approval Category for Marine applications
- **EAC**- TR004/TR020 Russian directives

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Unique Feature

- Innovative design features and superior finishing, using materials such as : aluminium plastics LCD
- LCD in CPU allows direct and easy access to critical information
- System state, Redundancy state, Serial activities, Forcing of variables.

product design award 2012

Electronic tag on display

- Built-in compact graphical LCD display in each module.
- Tags and description of all I/O points accessible directly from the PLC, in real time

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Smart Functions

Easy Plug System – EPS
Practical insertion & extraction mechanism for I/O terminal blocks using a lever on the front of the modules

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

On-Board Full Documentation
Password management to protect access to the project or controller

IP Protection And Login Password
Low consumption and no moving parts (cooling fans)

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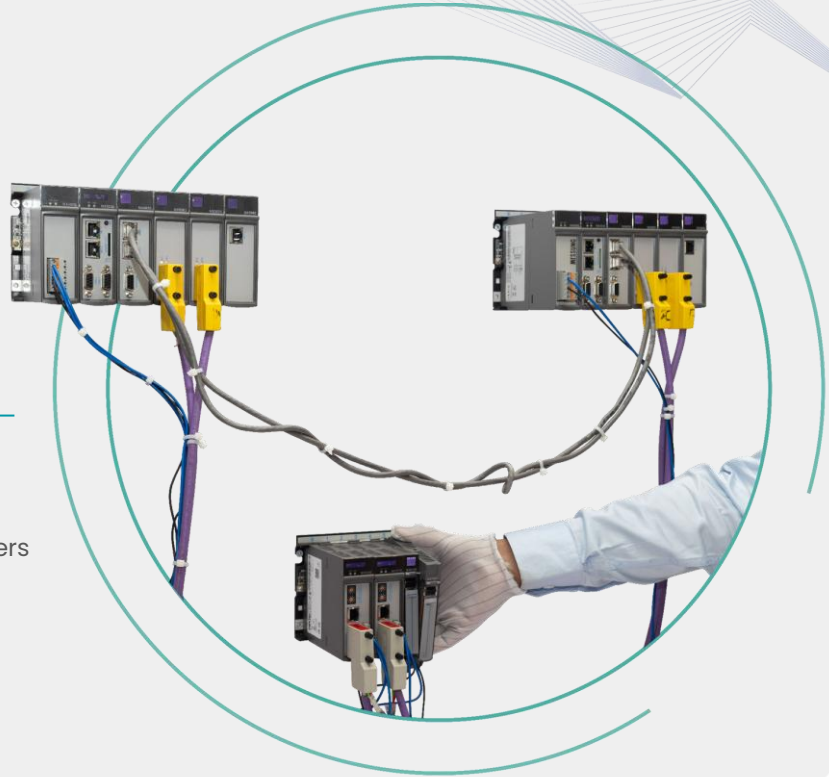
Main Features

Hot-Swapping - Main Features – I/O System
Hot-swapping of any module

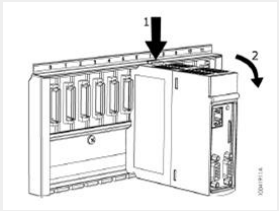
- Up to 320 I/Os in one rack
- Supports bus interruptions triggered by digital inputs events
- Expansion of up to 24 remote racks using bus coupler modules and power supply modules
- Optional redundancy if using two bus coupler modules
- Special functions: counters, period measurement and pulse capture.

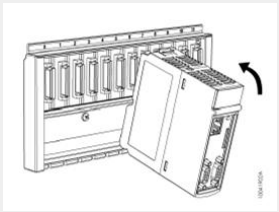
Feature

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



Hot Swapping





Hot-Swapping

Full Hot-Swap Support

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

Conformal Coating

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.

Main CPUs

Main Features – CPUs

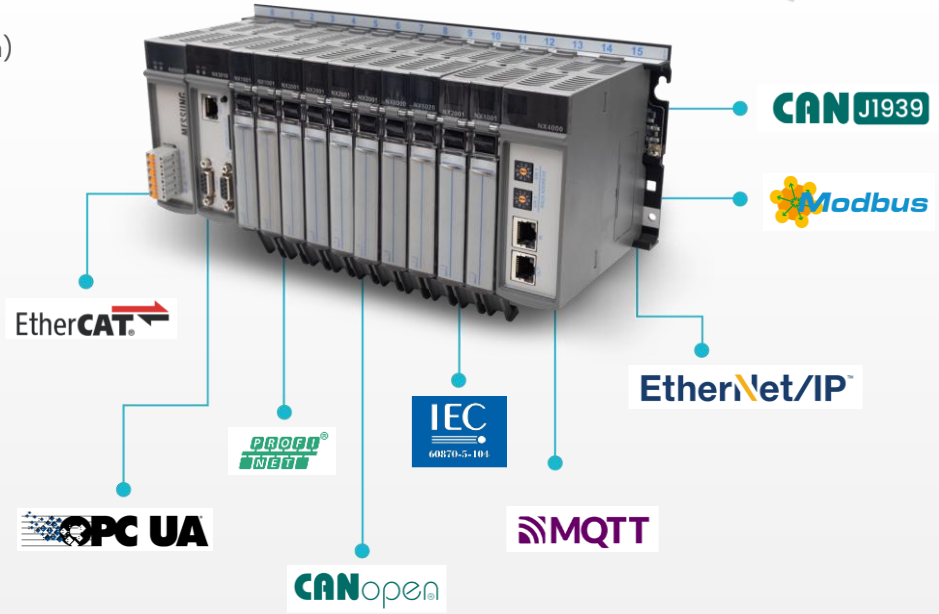
- 1GHz ARM 64 –bit or PowerPC 32-bit processor
- Up to 2 serial interfaces (RS-232 and RS-485/RS-422)
- Up to 3 Ethernet interfaces 10/100/1000 Mbps
- CAN interfaces (NX3008)
- Various communication protocols
- On-board HTTP server For diagnostics

- Web page development for user applications (NX3005 and NX3008)
- SNTP : RTC Clock Synchronisation.
- SOE : Event logging of binary inputs with Time Stamping (NX3030)
- SNMP: Ethernet network management
- Redundancy in half-clusters (NX3030)
- Memory card (NX3008, NX3010, NX3020 and NX3030

Communication Protocols

- PROFINET Controller
- PROFIBUS (additional module)
- CANOpen Manager
- CAN J-1939
- 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)
- MQTT(client)
- SNTP (client)
- SNMP (client)



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NX-3008 CPU

Communication Protocols

- 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 I/O 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 60°C

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NX-3008 – Extended Features

Technical Features - NX3008

- Cyber security
  - 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.

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Nx-3010 Main Features

Technical Features - Nx3010

Main Features

- 32K bytes of Inputs %I and 32 Kbytes of Outputs % Q
- Large memory capacity for user application and data.
- 64K bytes of retentive or persistent memory
- 32 bit high-speed processing
- Floating point unit
- 2 serial ports
- 1 front panel Ethernet interface

- Mini SD card interface
- Advanced Diagnostic services.
- System message log
- OPC DA/UA PROFINET, SNMP and Ethernet I/P Protocols.
- Clock synchronism via SNTP.
- Web Server Resources, One touch Diag.
- Real Time Clock (RTC)
- Free of moving parts.

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NX-3020 Technical Features

Main Features

- 64 Kbytes of Inputs % I and 64 Kbytes of Outputs % Q
- Large memory capacity for user application and user data
- 112 K bytes of retentive or persistent memory
- 32 bit high speed processing
- Floating point unit.
- 2 serial port , 2 front panel Ethernet interface.
- MiniSD Card interface.

- Advanced Diagnostic Services.
- System Message Log.
- Event driven data reporting.
- OPC DA/UA, IEC 60870-5-104, PROFINET EtherCAT , SNMP and EtherNet IP Protocols
- Clock Synchronism via SNTP OR via IEC 60870-5-104.
- Web Server Resources, One Touch Diag.
- Real Time Clock (RTC) Free of moving parts

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NX-3020 Technical Features

Main Features

- 64 Kbytes of Inputs % I and 64 Kbytes of Outputs % Q
- Large memory capacity for user application and user data
- 112 K bytes of retentive or persistent memory
- 32 bit high speed processing
- Floating point unit.
- 2 serial port , 2 front panel Ethernet interface.
- MiniSD Card interface.

- Advanced Diagnostic Services.
- System Message Log.
- Event driven data reporting.
- OPC DA/UA, IEC 60870-5-104, PROFINET EtherCAT , SNMP and EtherNet IP Protocols
- Clock Synchronism via SNTP OR via IEC 60870-5-104.
- Web Server Resources, One Touch Diag.
- Real Time Clock (RTC) Free of moving parts

NX-ERA PREMIUM PLC | NEXUS OF INDUSTRIAL AUTOMATION

NX-3030 CPU

Main Features

- Redundancy mode for High availability applications.
- 96 Kbytes of Inputs % I and 96 Kbytes of Outputs % Q
- Large memory capacity for user application and user data
- 112 K bytes of retentive or persistent memory
- 32 bit high speed processing
- Floating point unit.
- 2 serial port , 2 front panel Ethernet interface.
- MiniSD Card interface.
- Advanced Diagnostic Services.
- System Message Log.
- Event driven data reporting.
- OPC DA/UA, IEC 60870-5-104, PROFINET EtherCAT , SNMP and EtherNet IP Protocols
- Clock Synchronism via SNTP OR via IEC 60870-5-104.
- Web Server Resources, One Touch Diag.
- Real Time Clock (RTC)
- Free of moving parts

NX-ERA PREMIUM PLC | NEXUS OF INDUSTRIAL AUTOMATION

NX3030 CPU – High Availability

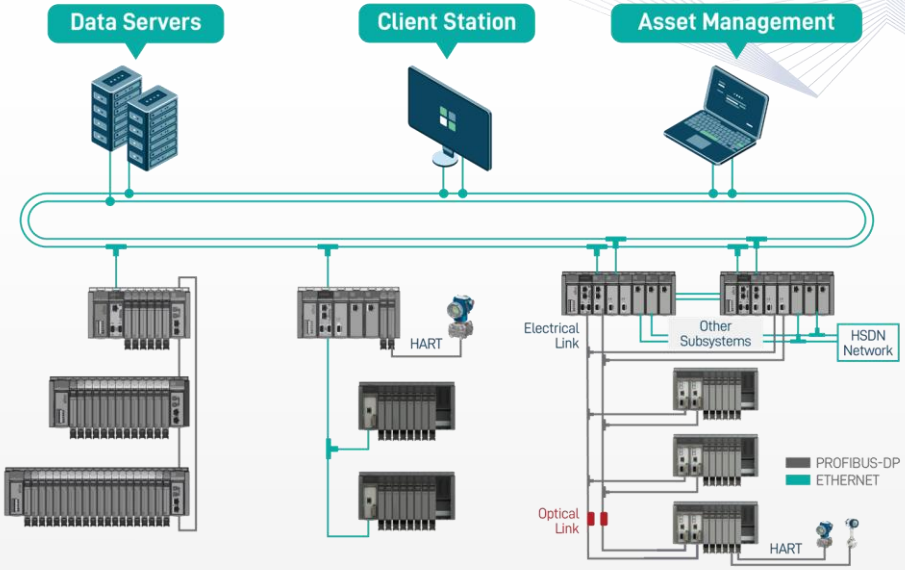
NX3030 CPU

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 a 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)

NX-ERA Architecture

- Dual Communication Redundancy on Network-Profibus DP
- Control network redundancy on Ethernet
- CPU Redundancy



Bus expansion rack
High performance and advanced features for systems with a large number of I/Os

Distributed systems
More reach to your control network, ideal for building Automation, refrigeration and sanitation

High availability
CPU redundancy and hot swap modules, perfect for non-stop applications

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CPUs

	NX3008	NX3010	NX3020	NX3030
Program Memory	32MB	4MB	6 MB	8 MB
Source-Code Memory	256 MB	40 Mb	80 MB	120 MB
Master PROFIBUS-DP	4	1	4	4
Fieldbus Ethernet Interfaces	3	1	4	8
Redundancy (Fieldbus/Ethernet)	Yes	-	Yes	Yes
Sequence of Events (SOE)	-	-	Yes	Yes
Memory Card Support	Yes	Yes	Yes	Yes
Supported Rack Expansions	Yes	8	24	24
Maximum Number of I/O Modules	128	128	128	128
Hot Swap for I/O	Yes	Yes	Yes	Yes
Redundant CPU + PSU + Sync Module	-	-	-	Yes
Instruction Exec Time	2.1 nsec	6 nsec	6 nsec	6 nsec

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THANK YOU!