NEXTOXPRESS



YOUR GATEWAY TO INDUSTRY 4.0

ENABLE YOUR BUSINESS
TO THE IoT UNIVERSE

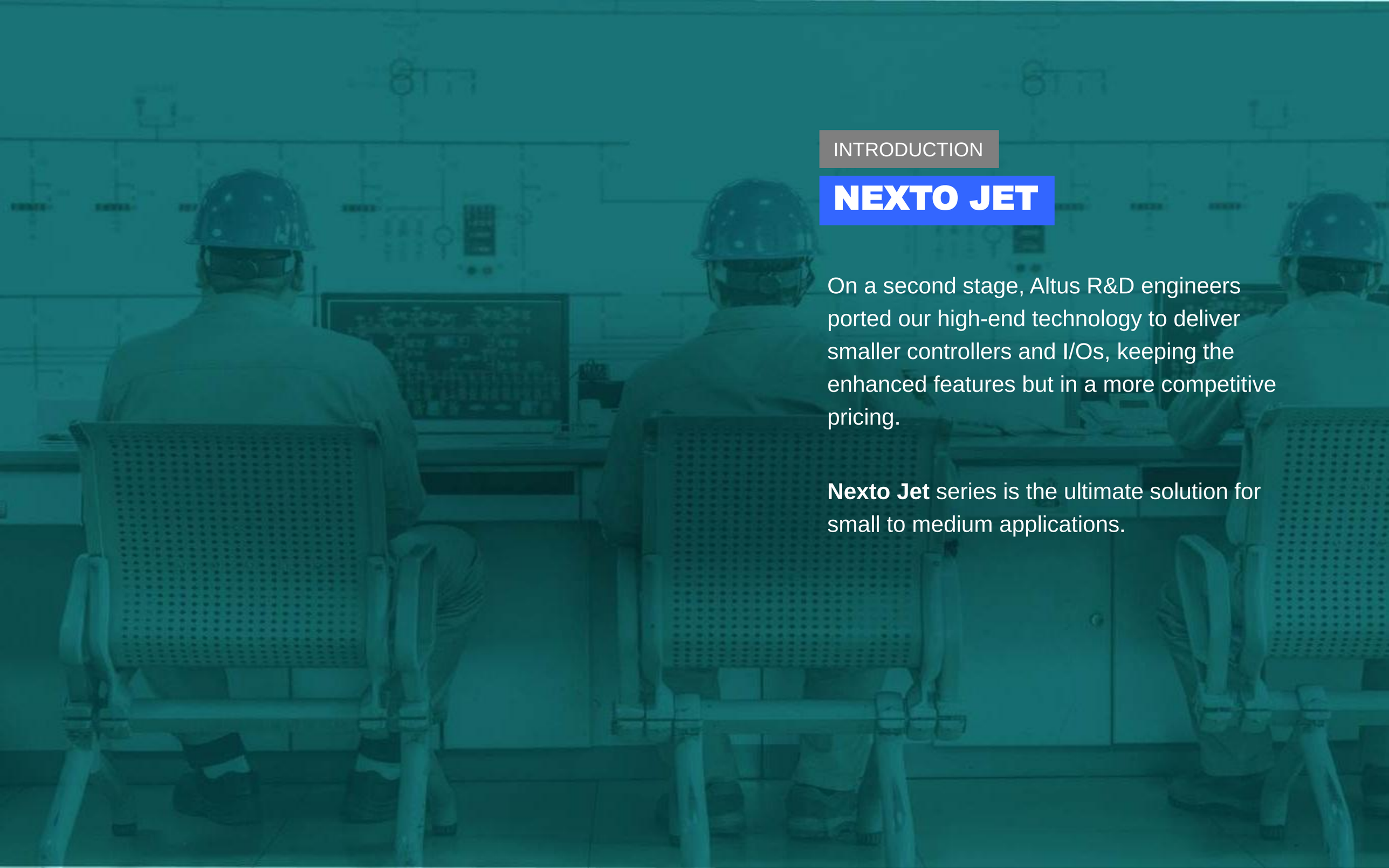
altus

INTRODUCTION

NEXTO SERIES

Altus has a long history in controllers in the high-end medium and large applications. These controllers, known as the **Nexto Series**, feature:

- Hot-swapping
- Conformal coating
- Superior diagnostics
- Enhanced I/O modules
- Redundancy of communication, modules and field buses



INTRODUCTION

NEXTO JET

On a second stage, Altus R&D engineers ported our high-end technology to deliver smaller controllers and I/Os, keeping the enhanced features but in a more competitive pricing.

Nexto Jet series is the ultimate solution for small to medium applications.

INTRODUCTION

NEXTO XPRESS

Finally, Altus presents the final gap in its portfolio: the compact controller with embedded I/O.

This product is based on our knowledge and experience, but delivered in a compact form factor, in order to fit stand-alone and low I/O applications.

We proudly present our new technology platform: **Nexto Xpress**.

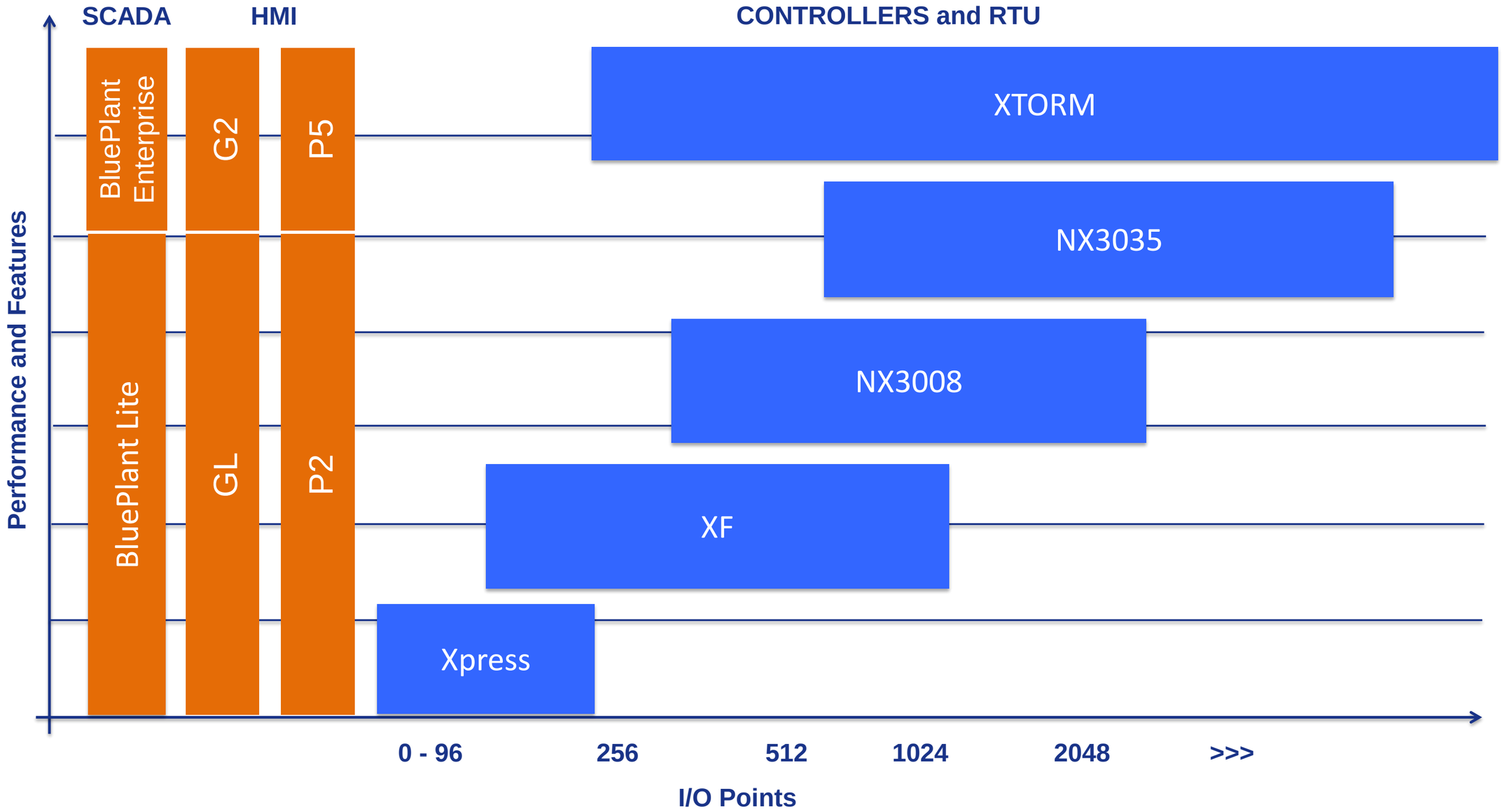
MARKETS

SOLUTIONS TO THE DEMANDS OF EVERY MARKET

OEM MACHINES | FOOD & BEVERAGE | TEXTILE

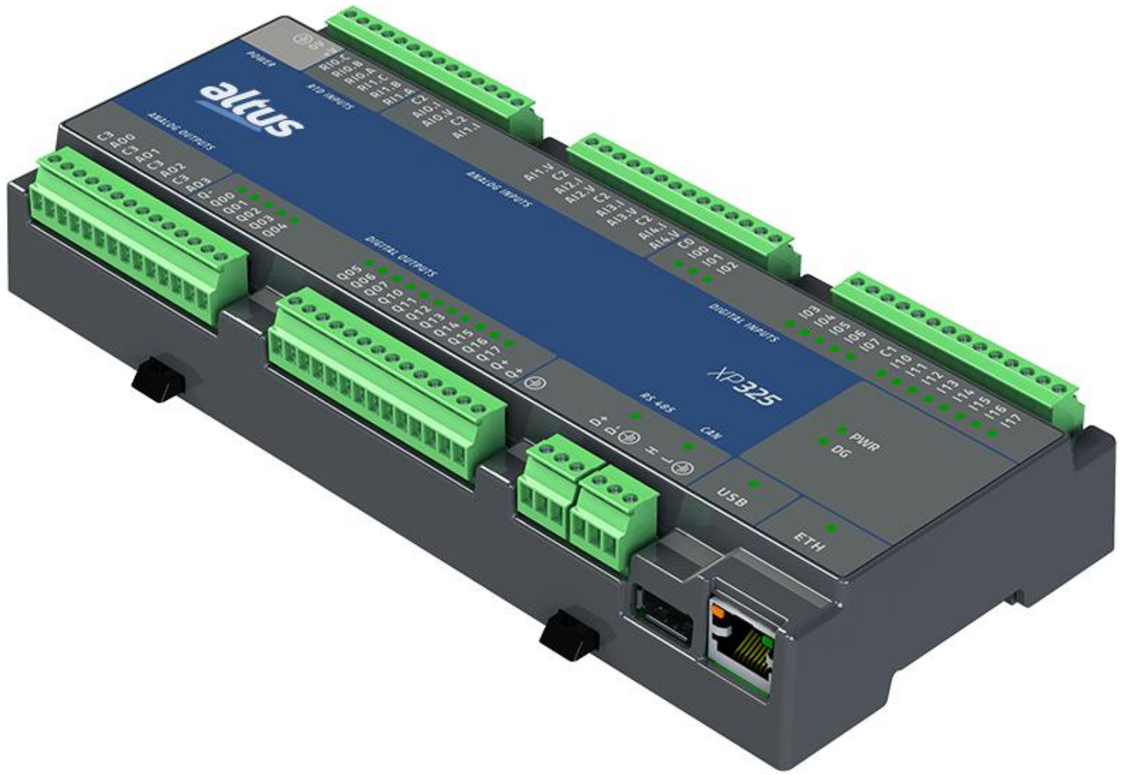
BUILDING | WATER & WASTEWATER | TRANSPORTATION

NEXTO SERIES – TYPICAL APPLICATIONS



KEY POINTS

PRODUCT HIGHLIGHTS



INDUSTRY 4.0

Multiprotocol Ethernet

VPN, Firewall & FTP

USB (WiFi & 4G support)

MOTION

PLCopen Motion Control (Part 1) function blocks support for multi-axis synchronization

OPEN

MQTT

OPC DA/UA

MODBUS TCP

MODBUS RTU

CANOpen

SMART ENGINEERING

Free, easy-to-use software, online changes and offline simulation (IEC 61131-3)

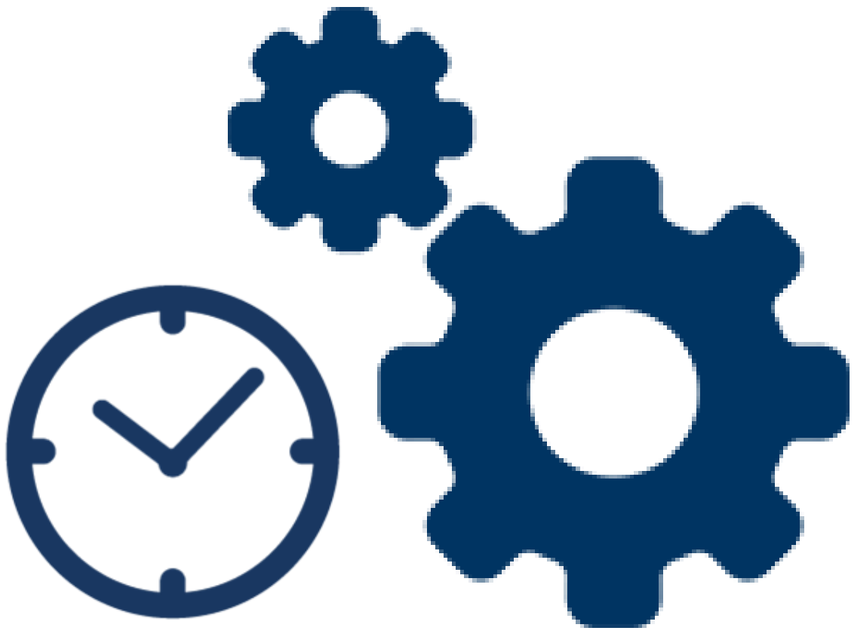
CODESYS

SCALABLE

The Nexto family covers small to large solutions

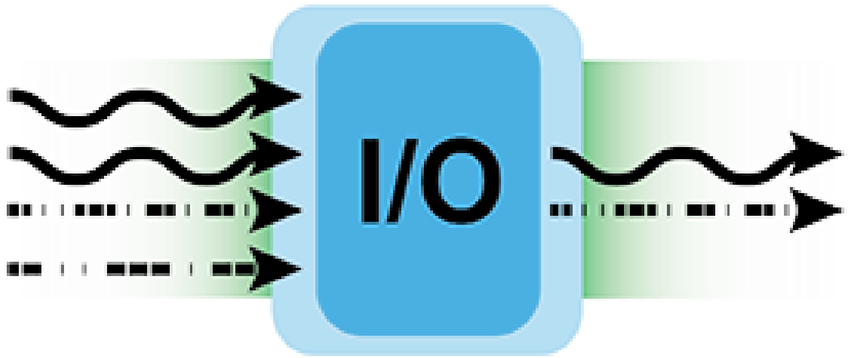
GENERAL FEATURES

PRODUCT HIGHLIGHTS



- DIN rail mount
- Compact design
- 24 Vdc power supply input
- High-speed 32-bit ARM-based processor
- High density of I/O (up to 48 I/O points in a single product)
- Multi-purpose analog inputs (voltage, current and RTD)
- LEDs for inputs/outputs state indication and diagnostics
- Extractable terminal blocks
- Real-time clock (RTC)
- MSSQL_CLIENT functional block support for Microsoft databases access
- PLCopen Motion Control (Part 1) function blocks support

PRODUCT HIGHLIGHTS



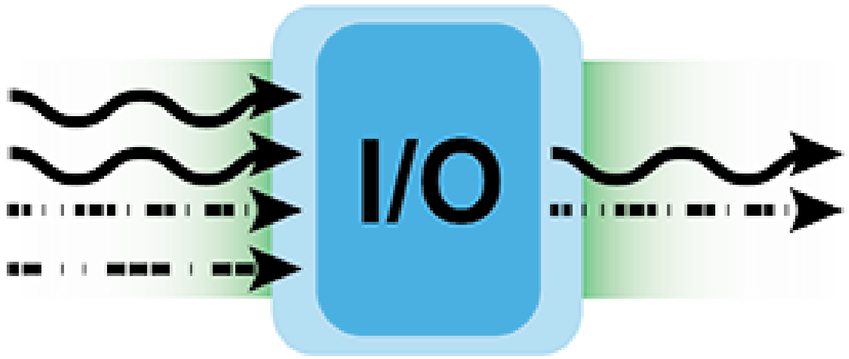
DIGITAL INPUTS

- Two 24 Vdc input groups
- Optoisolated (sink)
- High-speed counters and external interruption (4 fast inputs)

DIGITAL OUTPUTS

- One 24 Vdc transistor output group
- Optoisolated (source)
- PTO/PWM (4 fast outputs)
- 1.5 A per channel
- 12 A (maximum)

PRODUCT HIGHLIGHTS



ANALOG INPUTS

- 12-bit resolution
- Available inputs:
  - Voltage: 0 to 10 V
  - Current: 0 to 20 mA, 4 to 20 mA
  - RTD: Pt100, Pt1000
  - Linear: 400 and 4000 Ω

ANALOG OUTPUTS

- 12-bit resolution
- Available outputs:
  - Voltage: 0 to 10 V
  - Current: 0 to 20 mA, 4 to 20 mA

PRODUCT HIGHLIGHTS



ETHERNET

- MODBUS TCP Client/Server
- OPC DA/OPC UA
- MQTT (TLS 1.2)
- PROFINET Controller
- EtherNet/IP
- EtherCAT Master
- SNTP
- IEC 60870-5-104 (XP340)
- Webserver (XP340)
- Programming and configuration

RS-485

- MODBUS RTU Master/Slave

CAN

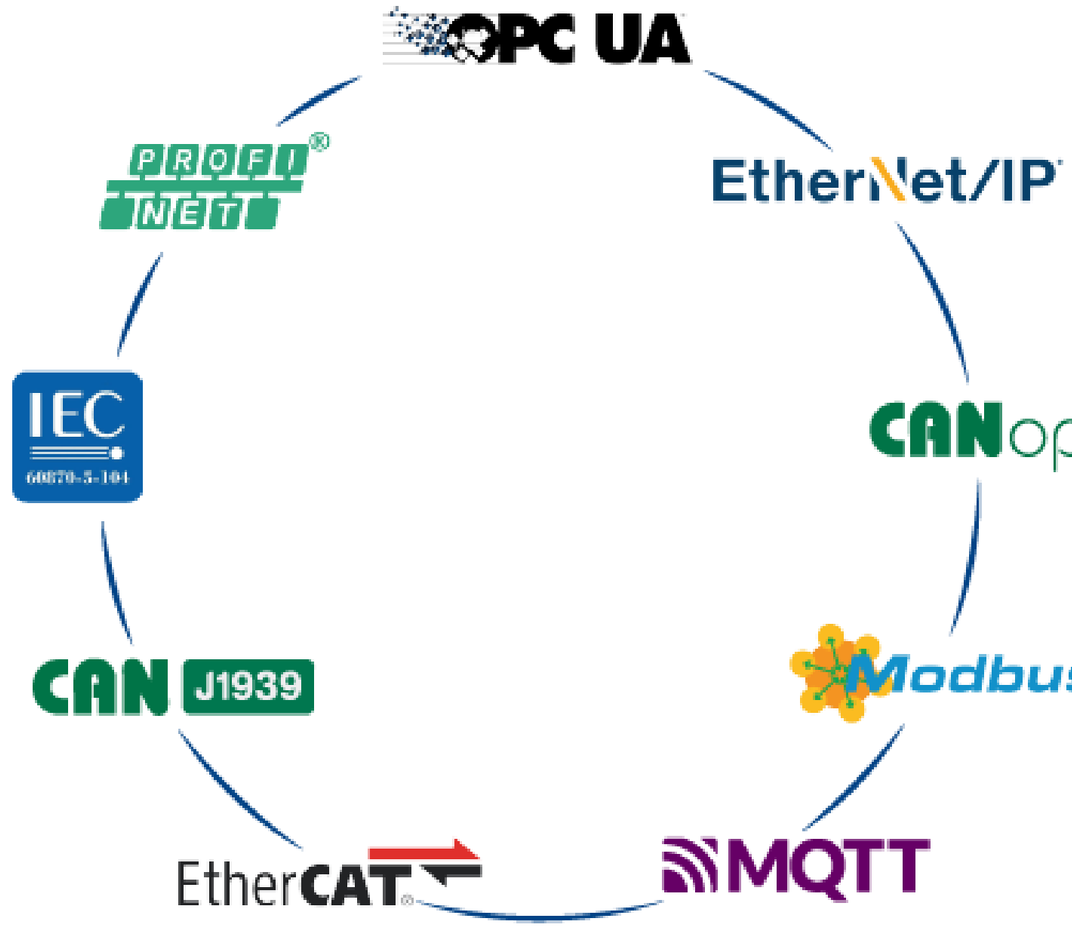
- CANopen Master
- CAN *low level* (proprietary protocols dev.)
- I/O Expansion

USB

- Datalogger (external memory)
- Ethernet converter
- RS-232 adapter
- WiFi adapter
- 3G/4G modem
- Programming and configuration

PRODUCT HIGHLIGHTS

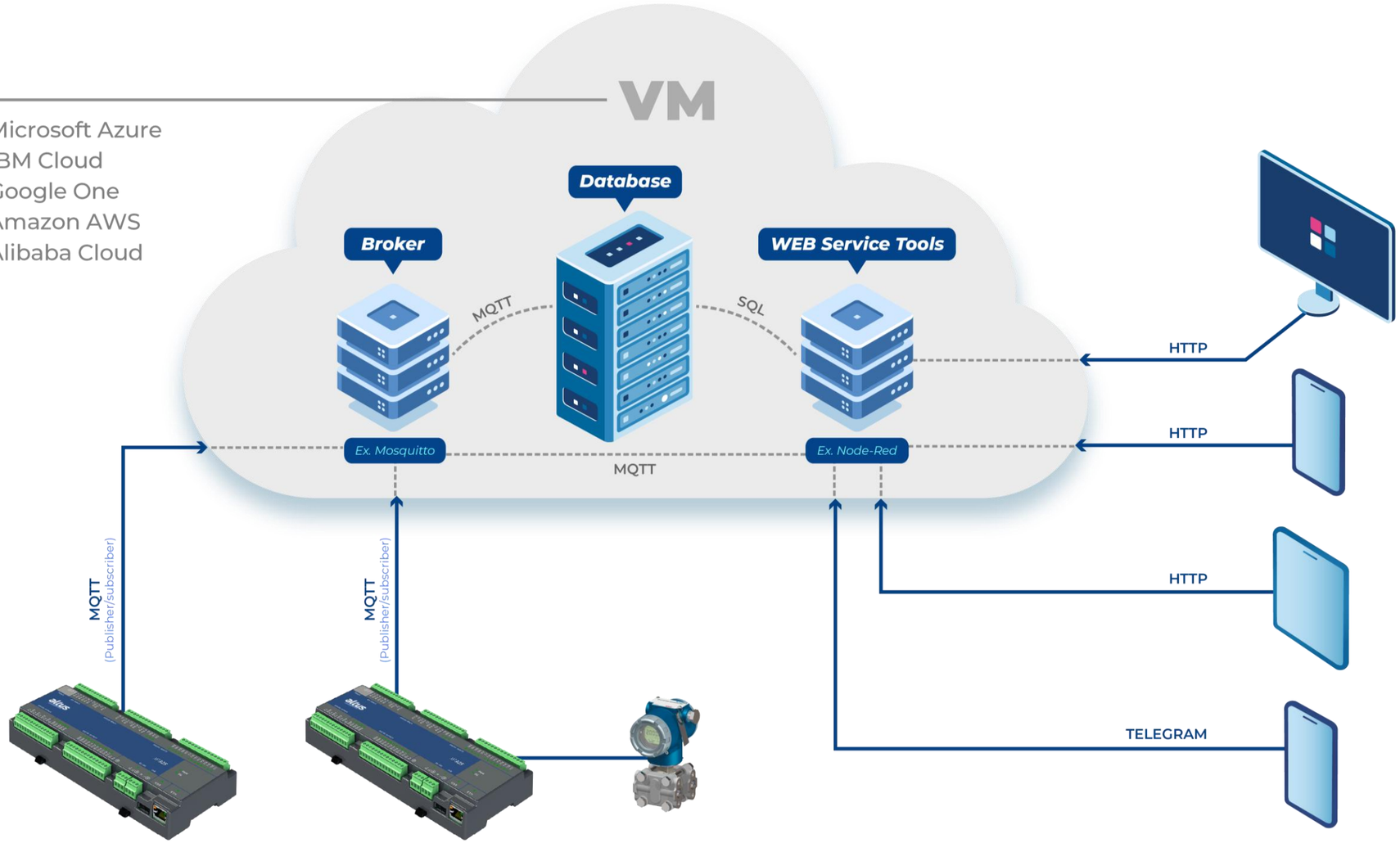
IoT-READY PLC PREPARED TO FACE THE CHALLENGES OF THE INDUSTRY 4.0



CONNECTIVITY

PRODUCT HIGHLIGHTS

Microsoft Azure
IBM Cloud
Google One
Amazon AWS
Alibaba Cloud

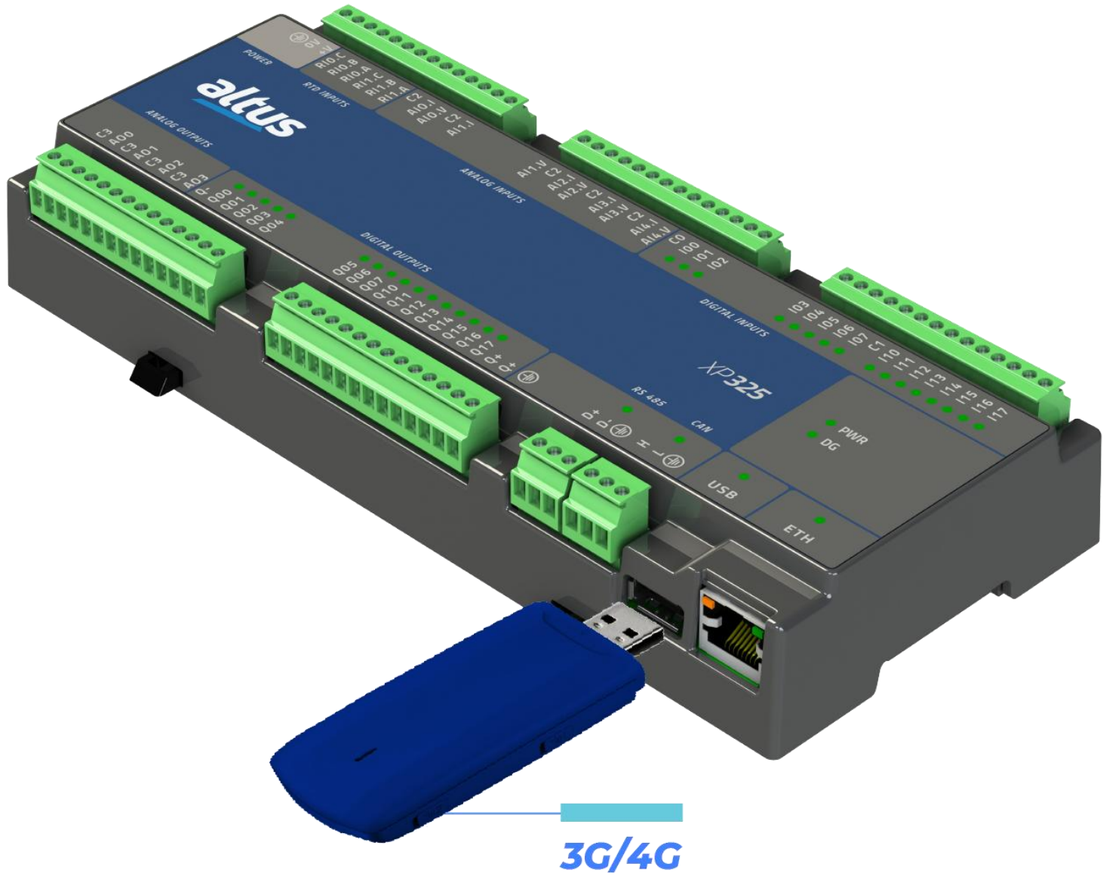


3G/4G MODEM AND WIFI ADAPTER

PRODUCT HIGHLIGHTS

SUPPORT TO 3G/4G MODEM AND WIFI ADAPTER ON THE USB INTERFACE

- The new feature allows Nexto Xpress PLCs to be connected to wireless, corporate or cellular networks, wherever they are.
- This feature allows, for example, the controller to use the 3G/4G network available in the region to transmit data from process units far from the command centers, without the need for a dedicated physical structure.
- Communication via MQTT protocol, remote access via MasterTool software and visualization of the embedded screens on the Webserver.



VPN, FIREWALL & FTP

PRODUCT HIGHLIGHTS

REMOTE ACCESS, CYBERSECURITY AND FILE TRANSFER PROTOCOL

- Cybersecurity through resources available in the processor, at the application level of the Linux kernel and with resources provided by CODESYS.
- Firewall with configuration of user rules and availability of services (protocols) on the Ethernet port.
- VPN tunnel support (P2P) for remote access to the controller and communication with other network devices.
- FTP (server) for file transfer.



XP340 – IEC 104 PROTOCOL

PRODUCT HIGHLIGHTS

THE XP340 HAS SUPPORT TO IEC 60870-5-104 PROTOCOL

- Common to the electrical segment, the standard provides a communication profile for supervision and data acquisition between power systems.
- Based on the client-server model, the IEC 104 standard allows communication between the control station and a substation through a TCP/IP network.



XP340 – WEBSERVER

PRODUCT HIGHLIGHTS

FLEXIBILITY IN THE DEVELOPMENT OF SMALL AND MEDIUM APPLICATIONS

- System that allows the creation of supervision and monitoring screens without the use of a SCADA software
- Embedded in the controller’s memory, it’s possible to access the screens through a Web browser directly from the computer, tablet or smartphone
- Control and supervision application on a single programming software
- Considerable cost reduction in the project

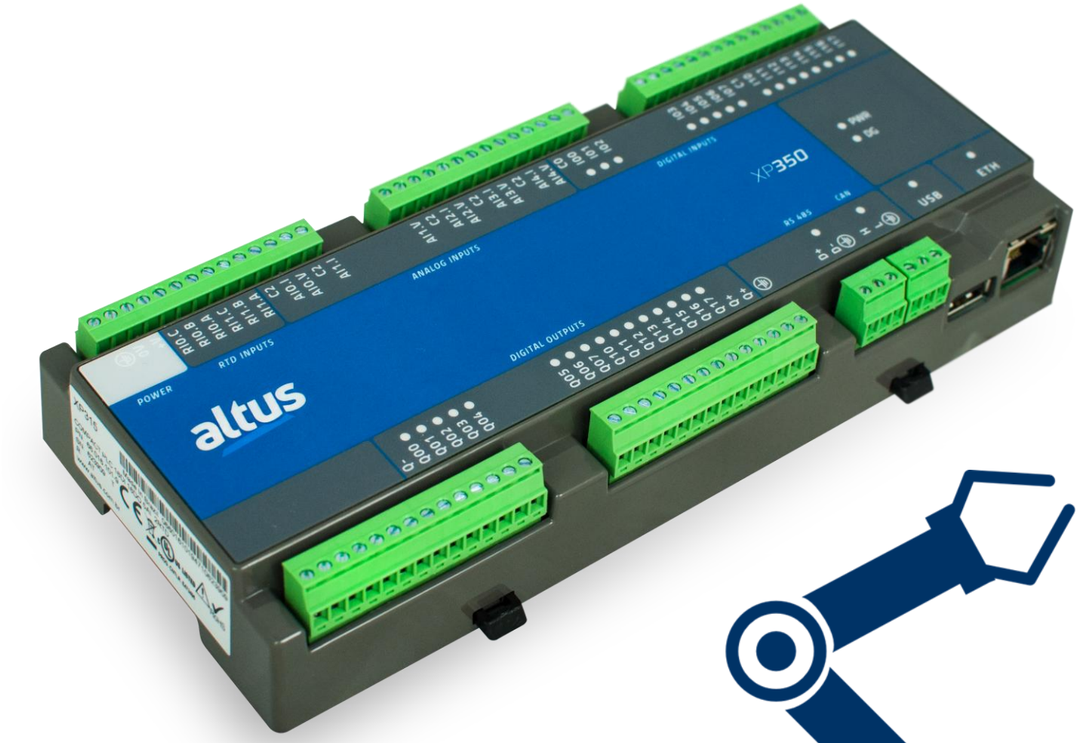


XP350 – MOTION CONTROL

PRODUCT HIGHLIGHTS

MOTION CONTROL APPLICATIONS WITH XP350

- PLCopen Motion Control Part 1 function blocks support for single-axis control and multi-axis synchronization
- Electronic gearing (CAMe)
- Special editor for motion planning (CAM)
- EtherCAT and CANopen protocols



CERTIFICATION

PRODUCT HIGHLIGHTS

RoHS DIRECTIVE, CE AND UKCA MARKINGS

- Nexto Xpress was designed to comply with Ecodesign requirements from its simplest supplies to the transport packaging and is in compliance with European standards.

RoHS IS AN EUROPEAN DIRECTIVE THAT PROHIBITS THE USE OF CERTAIN HAZARDOUS SUBSTANCES IN MANUFACTURING PROCESSES.

- Cadmium (Cd)
- Mercury (Hg)
- Hexavalent chromium (Cr6+)
- Polybrominated biphenyls (PBBs)
- Diphenyl-polybrominated ethers (PBDEs)
- Lead (Pb)

CERTIFICATION

PRODUCT HIGHLIGHTS

UL AND cUL CERTIFICATION

- The Nexto Xpress CPUs are listed as in compliance with Underwriters Laboratories safety standards, a mandatory certification in markets such as the United States and Canada.

DNV-GL CERTIFICATION

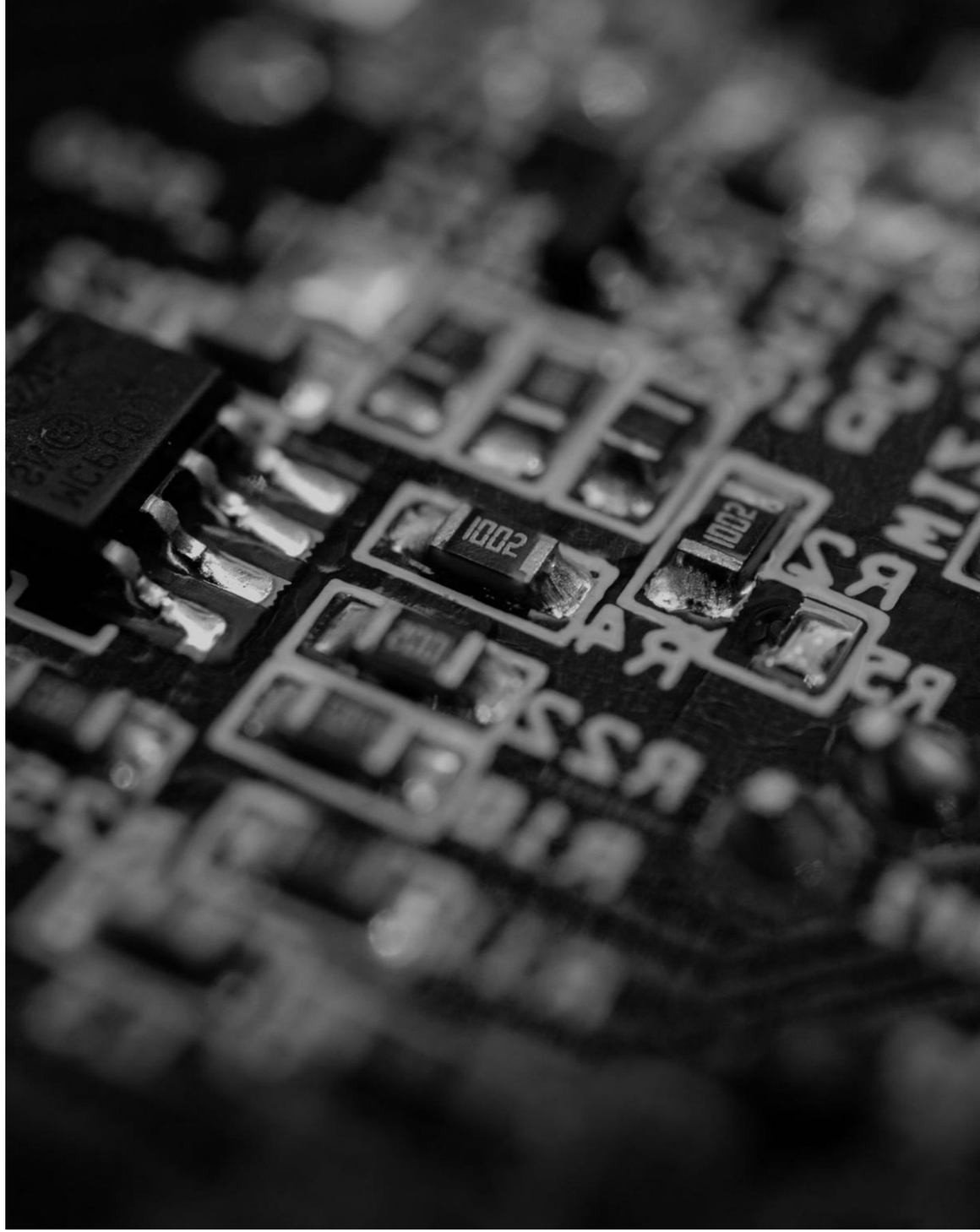
- The high quality of Nexto Xpress CPUs are attested by renowned world-class technology institutes such as DNV-GL - Type Approval category.

CONFORMAL COATING

PRODUCT HIGHLIGHTS

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.



PRODUCT HIGHLIGHTS

	XP300	XP315	XP325	XP340	XP350
Digital Inputs (DI)	16				
Digital Outputs (DO)	16				
Analog Inputs – V/I (AI)	-	5 to 10*			
Analog Inputs – RTD (AI)	-	2			
Analog Outputs (AO)	-	-	4		-
Ethernet TCP/IP interface	1				
RS-485 serial interface	1				
CAN Interface	1				
USB host	1				
Webserver and IEC 104 Protocol	-	-	-	Yes	-

*By default, each analog input is composed by 2 terminals (AIx.V and AIx.I), and when selecting one mode (V, for example), the other pin (I, for example) becomes unused. With the function *AnalogInputProbe*, provided by the *LibIntegratedIoExt* library, it is possible to use these free inputs, allowing to have up to 10 analog inputs (5 on terminals AIx.V and other 5 on terminals AIx.I), with the same technical characteristics of standard inputs.

PRODUCT HIGHLIGHTS

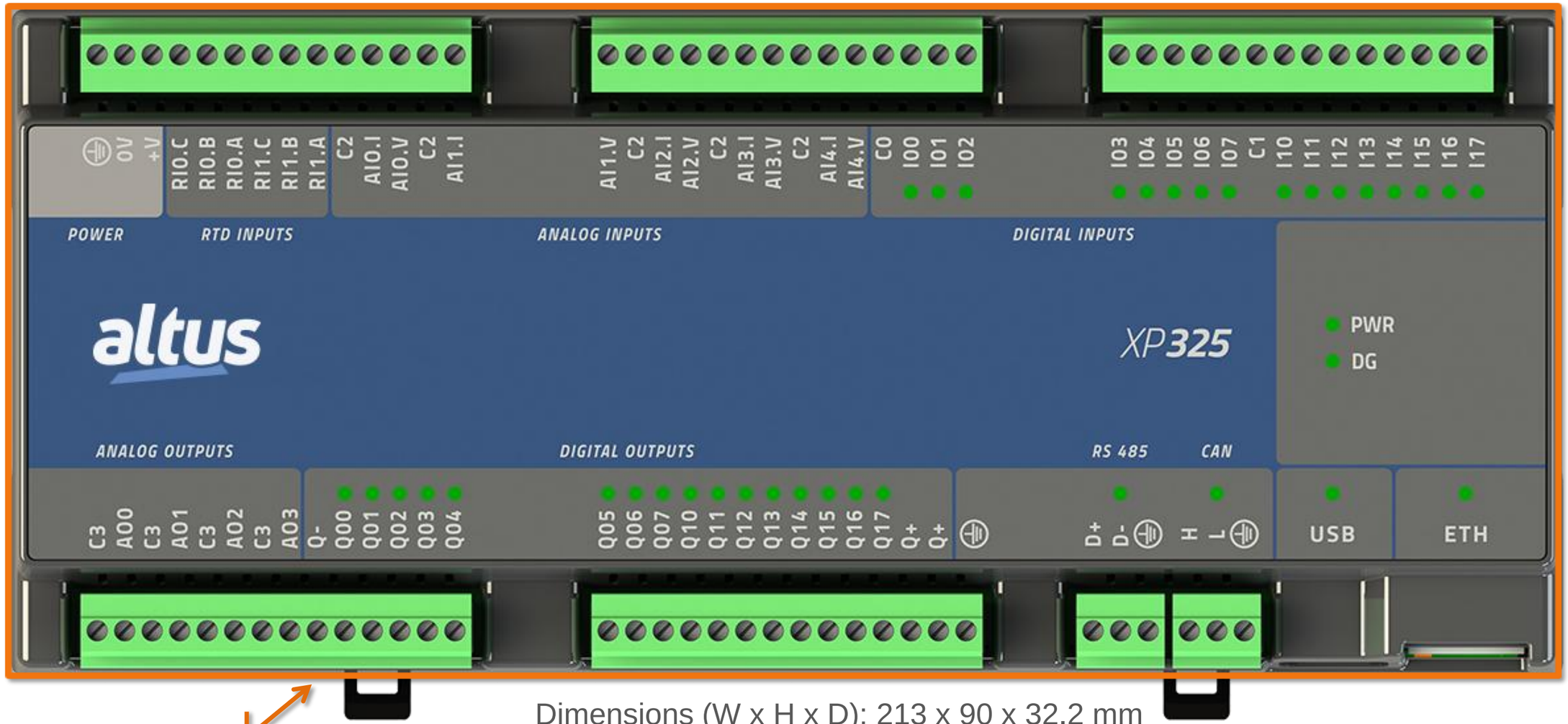
FLEXIBILITY AND SCALABILITY FOR ALL PROJECTS

Nexto Xpress input and output points can be expanded via CAN interface, easily configurable by MasterTool IEC XE, using the models below:

- XP101 – 16 digital inputs (24 Vdc)
- XP106 – 8 digital inputs (24 Vdc) and 6 digital outputs (relay)
- XP201 – 16 digital outputs (transistor)
- XP600 – 4 analog inputs V/I (12-bit)
- XP610 – 4 analog outputs V/I (12-bit)



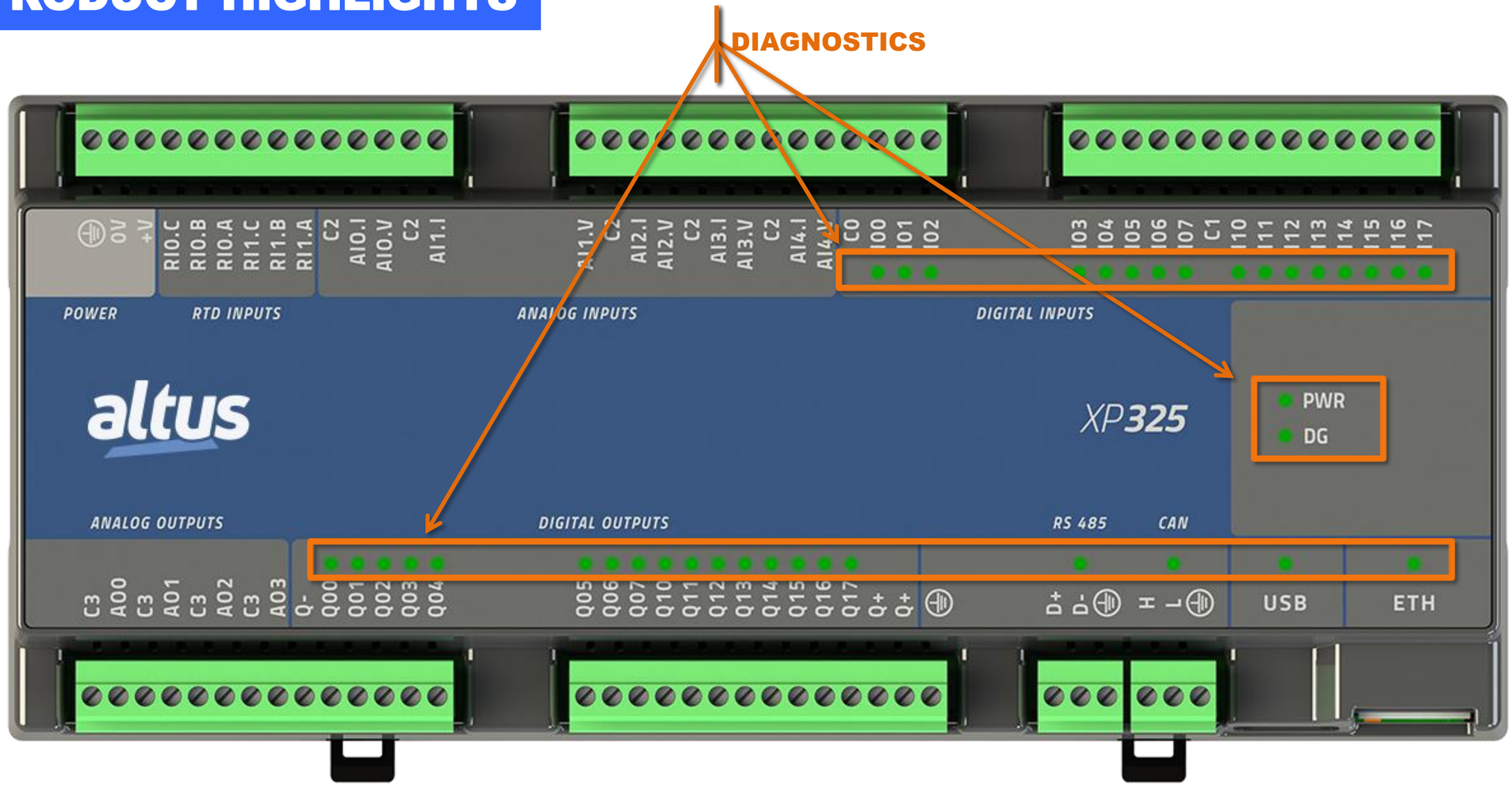
PRODUCT HIGHLIGHTS



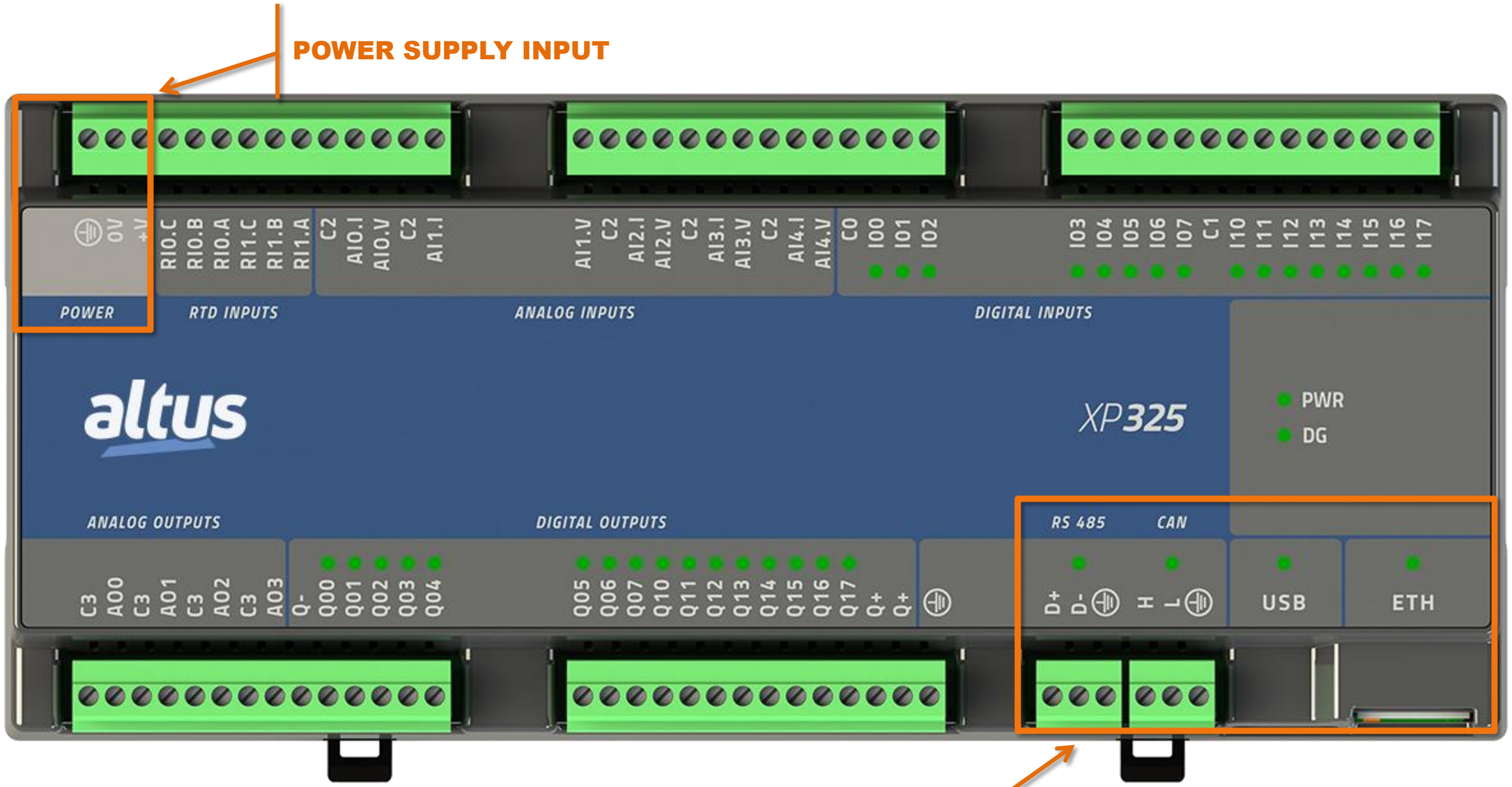
Dimensions (W x H x D): 213 x 90 x 32.2 mm

PRODUCT HOUSING

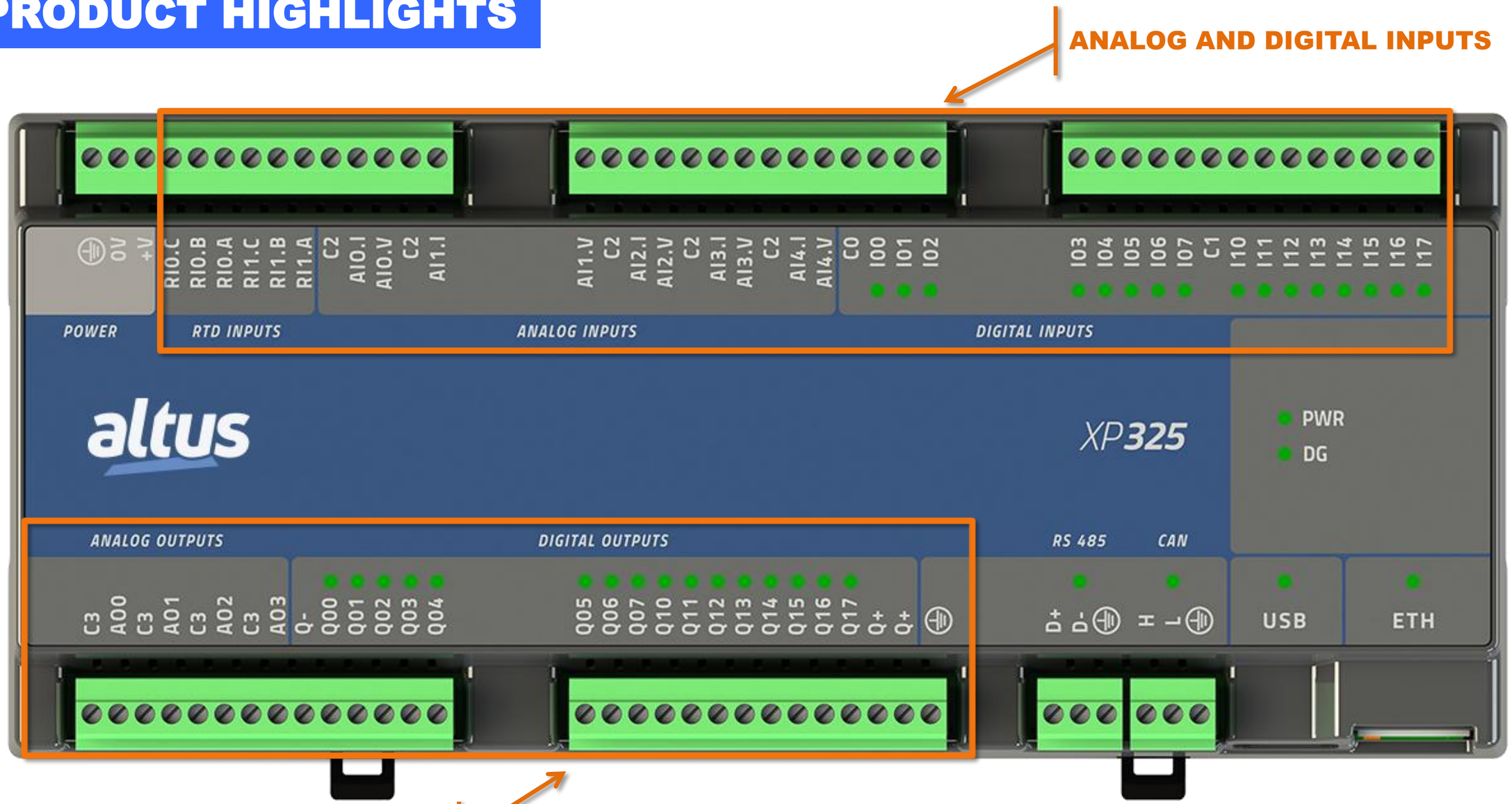
PRODUCT HIGHLIGHTS



PRODUCT HIGHLIGHTS



PRODUCT HIGHLIGHTS



SOFTWARE

PRODUCT HIGHLIGHTS

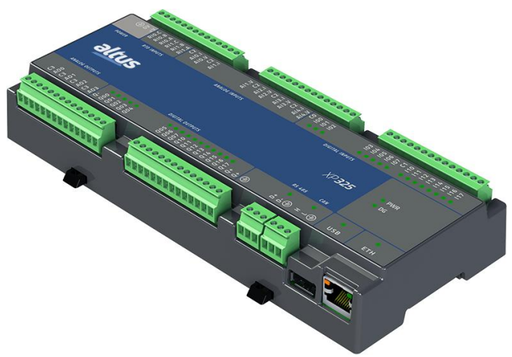
MasterTool IEC XE

The IEC 61131-3 Programming System

MASTERTOOL IEC XE

- MasterTool IEC XE: One engineering software that fits every application size.
- Free for up to 320 I/O points – XP, NX3003/4/5/8 and NX3010 CPUs

NEXTO XPRESS



NEXTO JET



NEXTO



SOFTWARE

PRODUCT HIGHLIGHTS

MASTERTOOL IEC XE

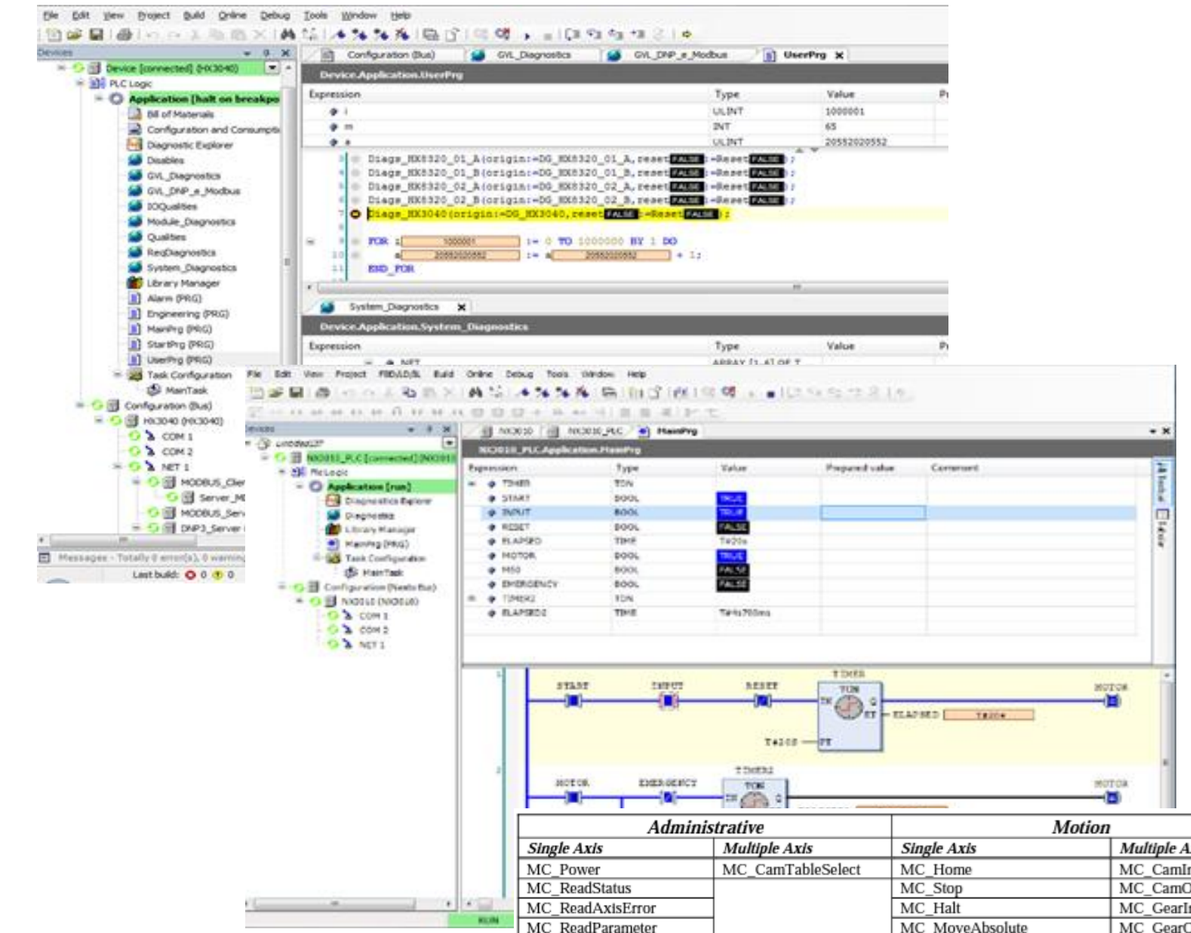
- One easy-to-use software environment for all your automation needs
- Friendly user interface and easy to use
- Single control platform with modern programming environment
- 6 programming languages
- Online programming

SOFTWARE

PRODUCT HIGHLIGHTS

ENGINEERING AND BACKUP FEATURES

- Online debugging and monitoring
- Online changes
- Offline simulation
- Symbolic variables
- Easy hardware configuration
- System diagnostics
- Global variable lists
- Source code memory area
- PLCopen Motion Control Part 1 function blocks support for single-axis control and multi-axis synchronization
- Electronic gearing (CAMe) and special editor for motion planning (CAM)



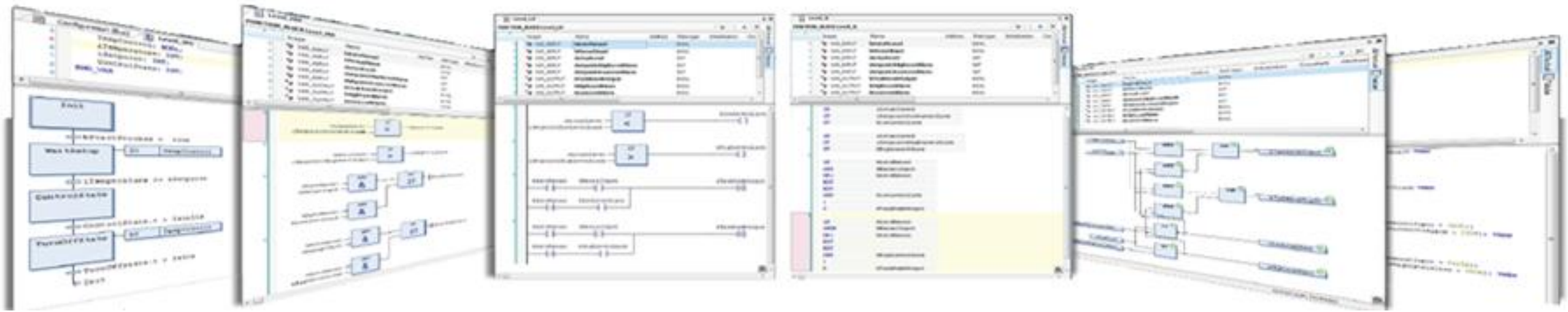
Administrative		*Motion*	
Single Axis	***Multiple Axis***	***Single Axis***	***Multiple Axis***
MC_Power	MC_CamTableSelect	MC_Home	MC_CamIn
MC_ReadStatus		MC_Stop	MC_CamOut
MC_ReadAxisError		MC_Halt	MC_GearIn
MC_ReadParameter		MC_MoveAbsolute	MC_GearOut
MC_ReadBoolParameter		MC_MoveRelative	MC_GearInPos
MC_WriteParameter		MC_MoveAdditive	MC_PhasingAbsolute
MC_WriteBoolParameter		MC_MoveSuperimposed	MC_PhasingRelative
MC_ReadDigitalInput		MC_MoveVelocity	MC_CombineAxis
MC_ReadDigitalOutput		MC_MoveContinuousAbsolute	
MC_WriteDigitalOutput		MC_MoveContinuousRelative	
MC_ReadActualPosition		MC_TorqueControl	
MC_ReadActualVelocity		MC_PositionProfile	
MC_ReadActualTorque		MC_VelocityProfile	
MC_ReadAxisInfo		MC_AccelerationProfile	
MC_ReadMotionState			
MC_SetPosition			
MC_SetOverride			
MC_TouchProbe			
MC_DigitalCamSwitch			
MC_Reset			
MC_AbortTrigger			
MC_HaltSuperimposed			

SOFTWARE

PRODUCT HIGHLIGHTS

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 of different languages in the same project

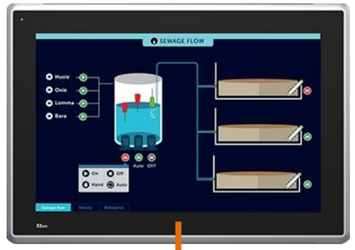


APPLICATIONS

PRODUCT HIGHLIGHTS

OEM MACHINES

- Labeling
- Filling
- Washers
- Injection Machines
- Packaging
- Grinders
- Presses
- Flow packs



OPC
MODBUS TCP
ARTII (X2 HMI)



CANopen I/O Expansion

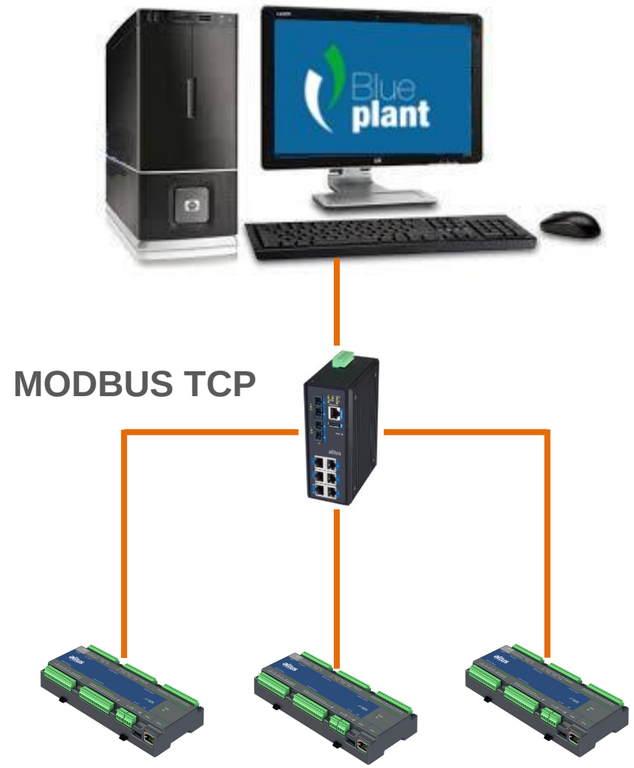


APPLICATIONS

PRODUCT HIGHLIGHTS

BUILDING AUTOMATION

- Lights
- Climate
- Supervision
- Conveyors
- Access Control



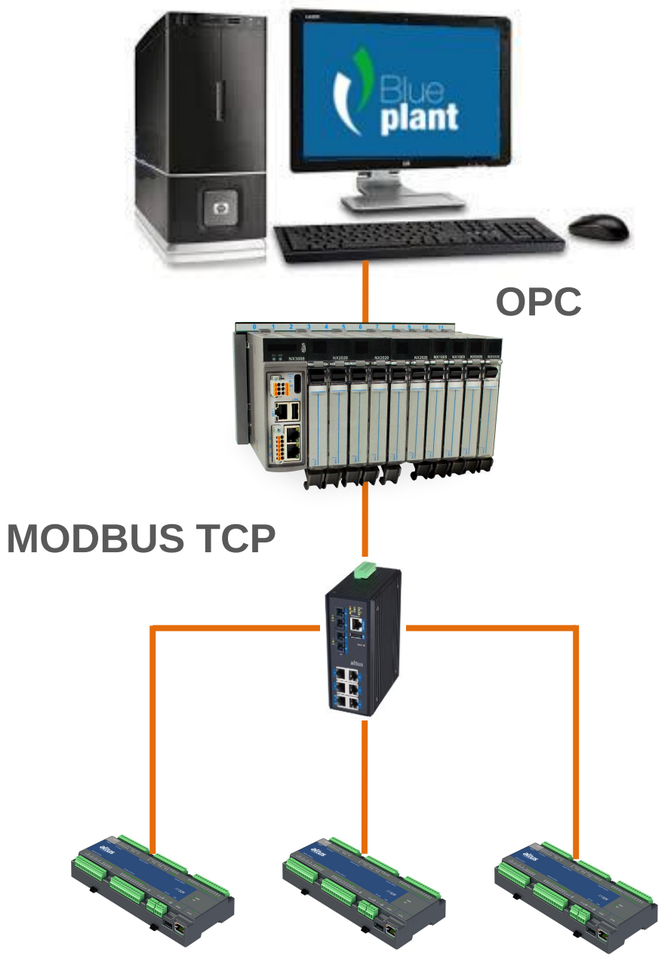


APPLICATIONS

PRODUCT HIGHLIGHTS

WATER & WASTEWATER

- Remote control sites
- Pumping stations
- Resevoir level control







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AND SOLUTIONS

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