

MAIN CATALOG

# PLC Automation

PLCs, Control Panels, Engineering Suite  
AC500, CP600, ABB Ability™ Automation Builder





# PLC Automation

## PLCs, Control Panels, Engineering Suite

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# PLC Automation product family

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# PLC Automation product family

## Overview

ABB offers a comprehensive range of scalable PLCs and robust HMI control panels. Since its launch, the AC500 PLC platform has achieved significant industry recognition for delivering high performance, quality and reliability.

### Comprehensive range

- ABB delivers scalable, flexible and efficient ranges of automation components to fulfill all conceivable requirements of the most diverse automation applications.
- ABB's automation devices deliver solutions with high performance and flexibility to be effectively deployed within various industries and applications including water, building infrastructure, data centers, renewable energy, machinery automation, material handling, marine and many more.

### Engineering suite

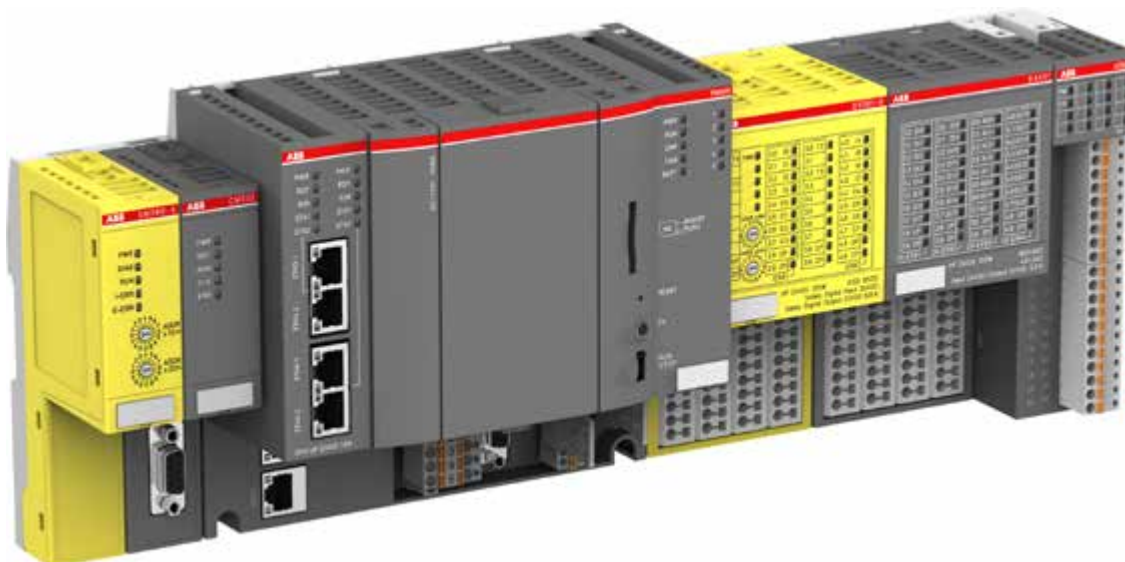
- ABB Ability™ Automation Builder is the integrated software suite for machine builders and system integrators requiring state-of-the-art productive machine and system automation.
- Combining the tools required for configuring, programming, debugging and maintaining automation projects from one common intuitive interface, Automation Builder addresses the largest single cost element of most of today's industrial automation projects - software.

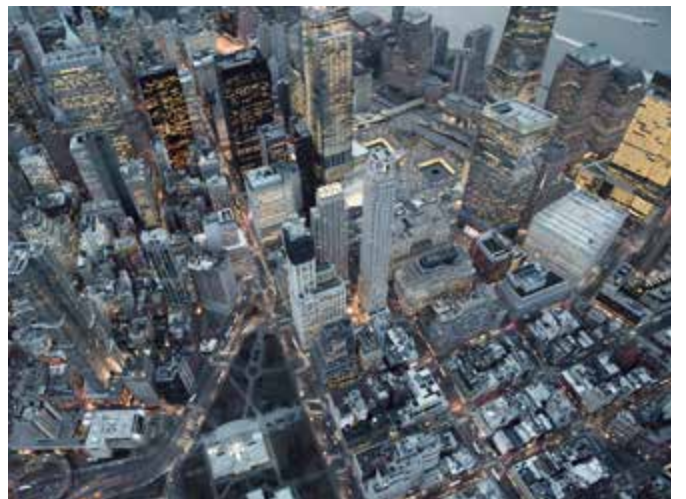
### Programmable Logic Controllers PLCs

- The AC500-eCo, AC500, AC500-XC and AC500-S scalable PLC ranges provide solutions for small, medium and high-end applications.
- Our AC500 PLC platform offers different performance levels and is the ideal choice for high availability, extreme environments, condition monitoring, motion control or safety solutions.
- Our AC500 PLC platform offers interoperability and compatibility in hardware and software from compact PLCs up to high end and safety PLCs.

### Control panels

- CP600-eCo, CP600 and CP600-Pro control panels in combination with the PB610 Panel Builder 600 offer a wide range of features and functionalities for maximum operability.
- ABB control panels are distinguished by their robustness and easy usability, providing all the relevant information from production plants and machines at one single touch.





# PLC Automation product family

## Overview

### Engineering suite



#### ABB Ability™ Automation Builder

- Connects the engineering tools for PLC, safety, control panels, drives and motion.
- Combines the tools required for configuring, programming, debugging and maintaining automation projects from one common intuitive interface.



#### Library packages

- For efficient engineering of demanding applications.
- Easy-to-use application examples.

### Visualization



#### CP600-eCo

- Economical control panel aimed for standard functions and high usability for clear interaction with the operation process.

### Programmable Logic Controllers PLCs



#### AC500-eCo

- Compact PLC for economical automation solutions in smaller applications.
- Integrates seamlessly into the broader AC500 PLC platform.

### I/O modules



#### S500-eCo

- Range of modular I/Os for economical configurations in smaller applications.
- Connected directly to the AC500 or AC500-eCo CPU modules.
- S500-eCo I/O modules can be mixed with standard S500 modules.
- Usage as remote I/O with fieldbus communication interface modules.





**CP600**

- Robust HMI with high visualization performance, versatile communication and representative design for machines and systems.



**CP600-Pro**

- HMI with high end visualization performance, multi-touch operation, versatile communication and representative design, partly usable to trigger safety actions with AC500-S.



**AC500**

- Powerful PLC featuring a wide range of performance, communications and I/O capabilities for industrial applications.
- For complex, high-speed machinery and networking solutions.



**AC500-XC**

- Extreme condition PLC variant.
- With extended operating temperature, immunity to vibration and hazardous gases, use at high altitudes and in humid environments.



**AC500-S**

- Integrated safety PLC (SIL3, PL e) for safety applications in factory, machinery or process automation area.
- For simple and complex safety solutions.



**S500**

- Range of modular I/O with protected outputs and comprehensive diagnosis, covering a wide range of signal types.
- Installed as remote I/O with a communication interface module or directly connected to the AC500 CPU.
- Support of different fieldbuses to use the S500 I/O modules with PLCs from different manufacturers.



**S500-XC**

- Extreme condition S500 I/O variant.
- With extended operating temperature, immunity to vibration and hazardous gases, use at high altitudes and in humid environments.



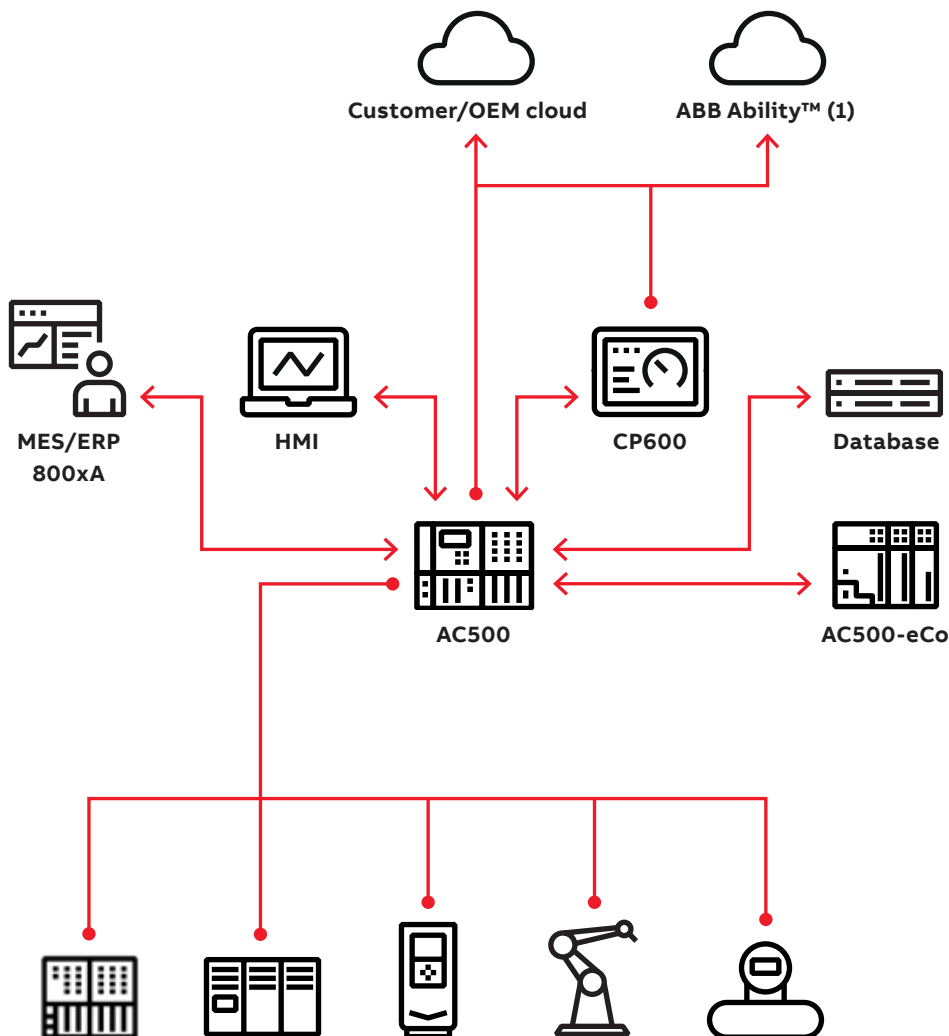
**S500-S**

- Safety S500 I/O variant.
- Extreme condition variants available.

# PLC Automation product family

## Connectivity

ABB's PLC and control panel portfolio provides a high number of scalable products, communication protocols and connectivity options, from the field layer right through to the management and visualization layers.



(1) In preparation

### IT network/Internet

- FTP(S)
- HTTP(S)
- MQTT
- OPC UA
- SNTP

### Factory/site network

- BACnet
- FTP(S)
- HTTP(S)
- IEC 60870-5-104
- IEC 61850
- KNX
- MySQL/MSSQL
- OPC DA/AE
- OPC UA
- SNMP
- SNTP
- TCP/IP
- UDP

### Control network

- CANopen
- CAN 2A/2B
- EtherCAT
- Ethernet/IP (1)
- IEC 60870-5-104
- IEC 61850
- Modbus RTU
- Modbus TCP
- PROFIBUS DP
- PROFINET/PROFIsafe
- SAE J1939



Protocol	Application
Connector to SQL Database	Save to or get data from MSSQL or MySQL databases
FTP(S)	Server and client for secure and efficient exchange of big data
HTTP Request	Request information like temperature, humidity etc. from devices with web server functionality
HTTP(S)	Publish HTML5 websites for monitoring and control
IEC 60870-5-104	Telecontrol in distributed plants such as water, solar, power infrastructure (control- and substation)
IEC 61850	Mainly used in the electrification part of infrastructure projects
KNX/BACnet	Standard protocols used in building and infrastructure automation projects
MQTT	Certificated based publishing of data to private clouds for dashboards or data analytics
OPC DA/AE/UA	Connectivity for SCADA, DCS and management applications
SNTP/SNMP	Protocol for time synchronization, network supervision and configuration
UDP and TCP/IP	Implement specific and efficient own communication

# PLC Automation product family

## ABB Ability™ Automation Builder

Engineering productivity for machine builders and system integrators.



### Product license options

	Automation Builder Basic	Automation Builder Standard	Automation Builder Premium
Free	●		
AC500-eCo	●	●	●
AC500 with local I/O & network (1)	●	●	●
AC500 with fieldbus (2)		●	●
AC500-S Safety		○	○
Drive Manager		●	●
Drive application programming (3)	●	●	●
Motion programming	● (4)	●	●
Panel Builder 600	○	●	●
Panel Builder 600 Basic	●	●	●
Integrated engineering (5)		●	●
Productivity features (6)			●
Additional features (7)		○	○

- fully
- partly

(1) TCP protocols, Modbus, IEC 60870-5-104, CS31

(2) PROFIBUS, PROFINET, EtherCAT, CAN

(3) Drive application programming for drives with embedded PLC (only available with Automation Builder 2.1 and before). Drive Composer pro license included in Standard and Premium Edition.

(4) No fieldbus connectivity in Automation Builder Basic

(5) PLC, Safety, Panel, Drive, Motion, SCADA

(6) C/C++, ECAD data exchange, CSV interface extensions, project compare, project scripting

(7) Virtual Commissioning Platform for virtual system testing, Professional Developer Tools e.g. for multi-user engineering or static code analysis





**Discover engineering productivity when designing your automation solutions**

Automation Builder is ABB's integrated programming, simulation, commissioning and maintenance environment for PLCs, safety, drives, motion, control panels and SCADA. Automation Builder combines the proven ABB tools Drive Manager, Drive composer pro, Mint WorkBench, Panel Builder and ABB zenon.

**Always get the right scope of Automation Builder for your automation solutions**

One single software installer helps you to create and maintain your personal Automation Builder configuration - either on your PC or on a server. Any changes or updates are just a matter of a few mouse clicks.

The Automation Builder licensing system is designed for supporting most operation scenarios. Licenses can be installed on PCs, USB dongles or license servers. In case of changes in the organization or in the engineering workflows the licenses can easily be transferred to where you need them.

**Next level engineering efficiency**

Improve your engineering efficiency by maximizing data re-use. Data that is available from third party tools can be imported or synchronized, either via dedicated interfaces or generic Excel sheets. Configurations that have been created for the PLC can automatically be re-used e.g. for the configuration of drives or operator panels.

Engineering efforts can be reduced further by using easy-to-use libraries e.g. for wind, water, solar, drives, motion, robotics, safety and building automation applications. And in case building blocks are missing for your automation solution simply create them yourself. Project scripting allows you to automate the creation of any part of your configuration or application.

The quality of the resulting PLC application can be automatically checked by static code analysis. More than 100 pre-defined rules can be used to define and keep the quality level that is required for your business.

# PLC Automation product family

## ABB Ability™ Automation Builder

### **Fast track to comprehensive applications**

For creating the application code all five IEC 61131-3 languages can be used. This opens up access to a large community of developers sharing proven code snippets. Even existing PC based functions or protocols can be re-used by using the C/C++ integration. Furthermore, Simulink models and MATLAB functions can be used as well by converting them to PLC code.

### **Minimized efforts for project code and data administration**

Configure and program all devices of your automation solution in one single project. This makes it easy to share your solutions with others. For more advanced usage the integrated version control system supports further scenarios like multi-user engineering or product line management.

Managing the life-cycle of your automation solutions is also easy. The annual Automation Builder release also supplies you with the latest versions of device firmware. The decision, whether to use the latest firmware with the latest feature set or to keep the current firmware with the current feature set can be made for each project and independent of the installed Automation Builder version.

### **Speeding up during commissioning and maintenance**

Whenever there is an issue in the automation system, it is required to quickly and efficiently fix it. Automation Builder supports this by a generic three-step approach:

- General diagnosis provides a traffic light view on devices and (sub)systems.
- Detailed diagnosis provides detailed information e.g. about the source and the type of the issue.
- Extended diagnosis is available for some subsystems such as fieldbuses and offers advanced commissioning functions such as comparing connected vs. configured devices or manual control of bus states.

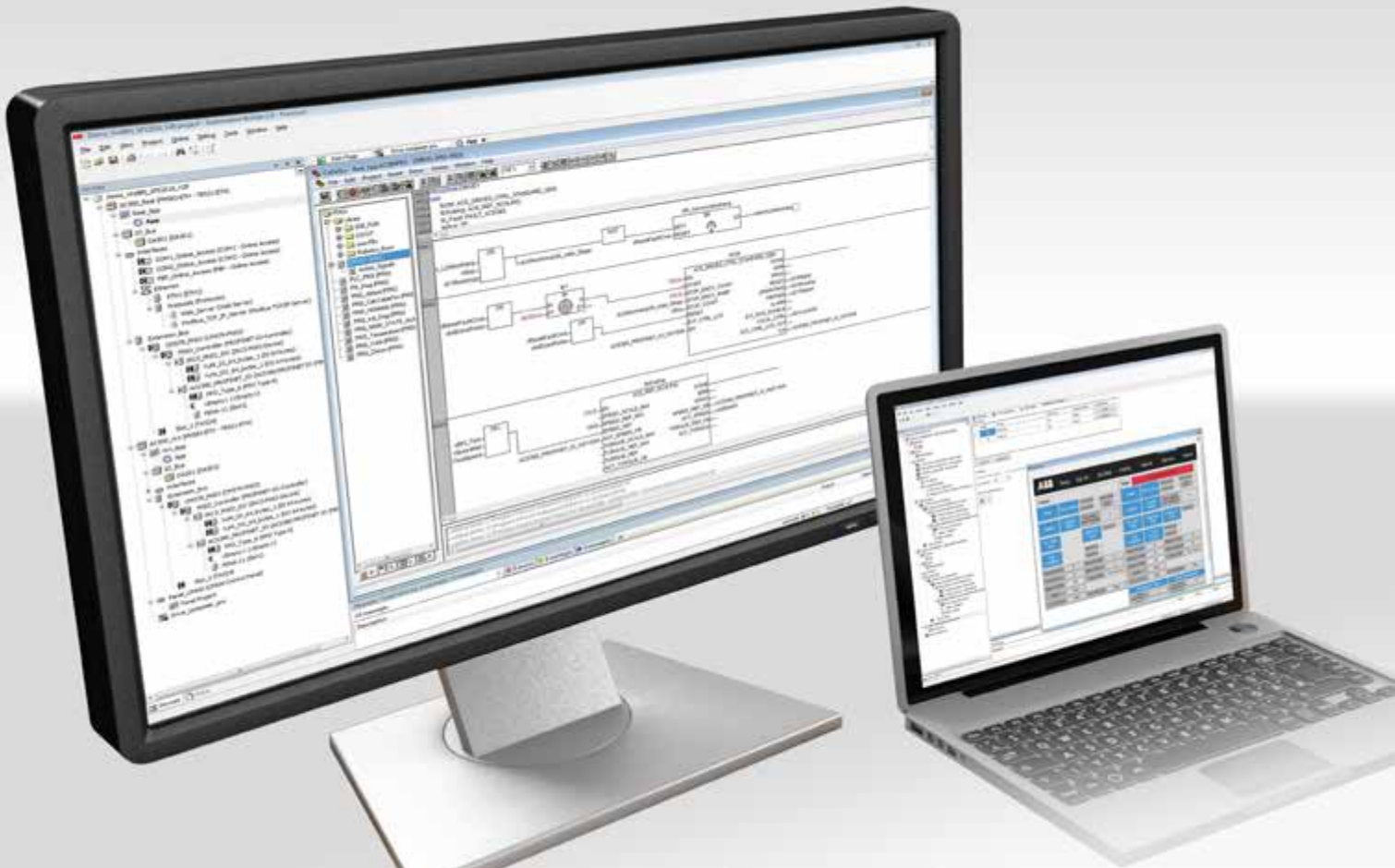
The diagnosis information is accessible not only via Automation Builder, but also via the AC500 display, the PLC application or operator panels.

### **Easily create a connected world**

Connectivity can be achieved in multiple ways. Different cloud protocols like MQTT or OPC UA are deeply integrated into ABB AC500 PLCs. For advanced connectivity needs the integration with CP600 operator panels or even with the ABB zenon software can be used for further processing and transmission of any data. Setting up the interfaces and sharing the data is not much more than a single click in Automation Builder.

### **Advanced simulation – a game changer in engineering**

Simulate all kinds of applications with minimum effort. Test the complete system seamlessly before involving real hardware. Even complex systems can be built up efficiently, ensuring smooth interaction of all components and operator training at an early stage.



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### Download Automation Builder from

[www.abb.com/automationbuilder](http://www.abb.com/automationbuilder)

Familiarize yourself with Automation Builder using the 30-day test license.

# PLC Automation product family

## AC500 libraries and software

A good investment for system integrators and end-users, AC500 libraries and software improve stability while reducing warranty costs and service. Library and software packages contain functions or protocols and easy-to-use examples for minimal programming effort and quick implementation of complex and demanding applications.

AC500 libraries and software deliver the seamless integration of PLCs, drives and HMI required to build and commission automation solutions quickly and easily. AC500 libraries and software by ABB are maintained to ensure that your programs can also be used with less risk.







#### **Solar library**

Library package for solar trackers increasing energy efficiency, providing quick commissioning and excellent positioning accuracy.

#### **Water library**

Library package with energy efficiency functionalities offering quick commissioning of water applications, such as pump stations with remote communication.

#### **Temperature control library**

Library package for the advanced PID temperature control of demanding applications, for example extrusion.

#### **HA-CS31 library**

Library package adds high availability system functionality for redundant hot standby over serial CS-31 bus.

#### **Drive integration library**

Library package for the quick integration of ABB ACS drives using different fieldbusses.

#### **Motion control library**

Library package for decentral, central and coordinated motion according to the PLCopen standard.

#### **BACnet library**

Library package adds BACnet-ASC device profile for communication to BMS Building Management Systems in larger infrastructure projects.

#### **HA-Modbus TCP library**

Library package adds High Availability System functionality for redundant hot standby over Ethernet field network via Modbus TCP.

#### **KNX protocol**

Engineering and protocol package which seamlessly integrates ETS and Automation Builder.

#### **61850 protocol**

Adds engineering tool and library for 61850 Ed.1 MMS Server and GOOSE publish and subscribe functionalities.

#### **PCO library**

Contains process control function blocks for integration of AC500 as controller in a DCS solution. For ABB Ability™ System 800xA an object library is available which provides matching symbols and faceplates.

# PLC Automation product family

## PLCs at a glance...

AC500 Programmable Logic Controllers with scalable, state-of-the-art technology for better performance.

Standard industrial communication fieldbus, network and protocols supported by the 'One Platform' solution make the AC500 the perfect automation solution in even the most demanding

environments. Flexible and scalable superior CPUs deliver performance whenever and wherever you need it.



Secure cloud connectivity options



One programming tool for the entire AC500 PLC platform



Scalable and flexible range of products, with various communication protocol and connectivity options

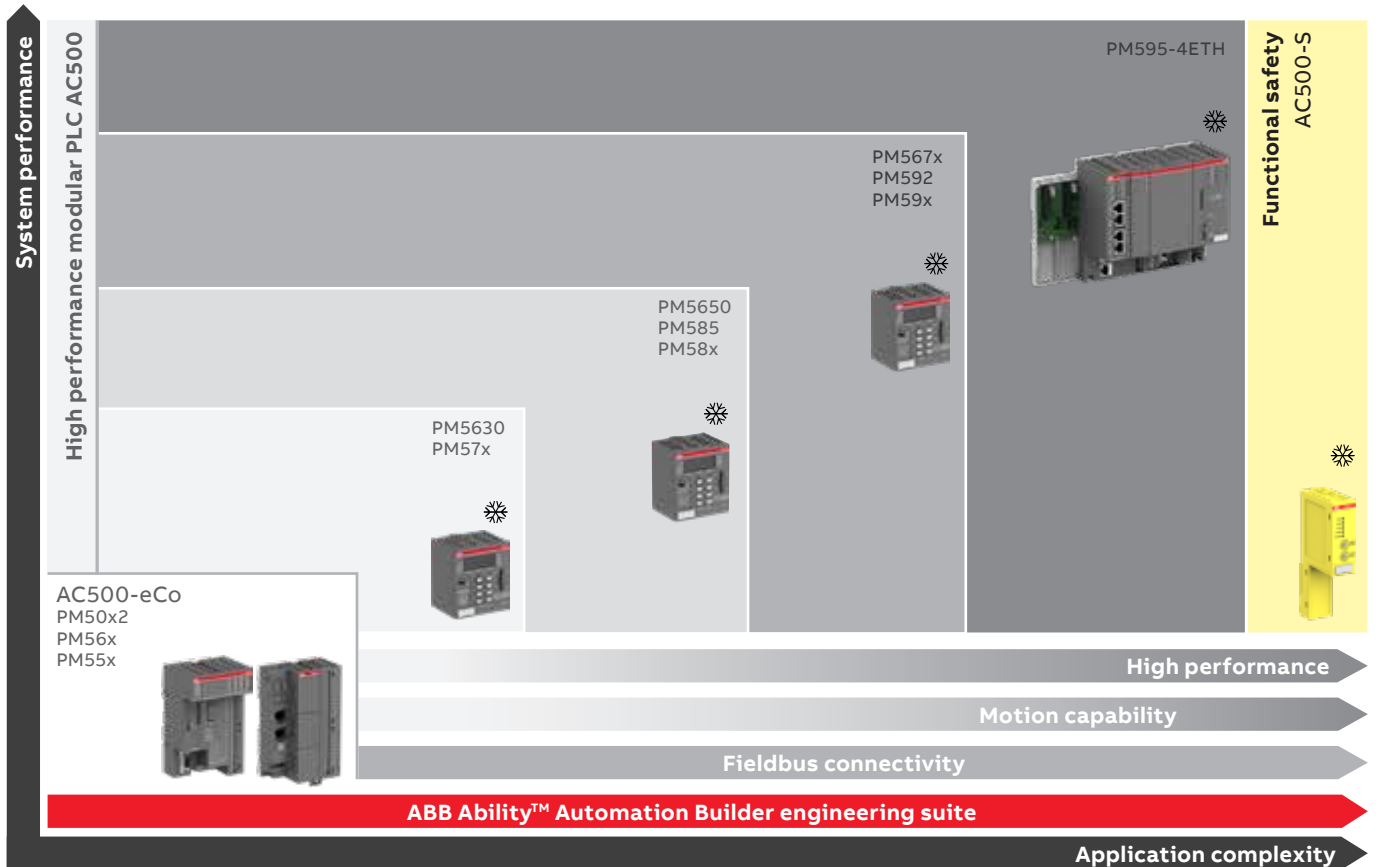


Reliable, secure and safe with different performance levels



The ideal choice for high availability, extreme environments, condition monitoring, motion control or safety solutions

# AC500 PLC platform



# PLC Automation product family

## PLCs at a glance...

	AC500-eCo	AC500-eCo V3	AC500	AC500 V3
<b>System configuration and application programming</b>				
Automation Builder (common programming tool)	●	●	●	●
Application Features				
Extended temperature range		● Pro W version (5)		
Extreme conditions in harsh environments				
Functional safety			●	●
Support of simple motion with FM562 module (1)	●		●	
Support of simple motion with onboard I/O PTO/PWM	●	●		
Support of PLCopen Motion Control		● (3)(5) not Basic version	●	● (3)(5)
Support of High Availability (HA) CS31 based			●	
Support of High Availability (HA) Modbus TCP based			● (4)	● (4)
Hot Swap of attached I/Os mounted on Hot Swap terminal unit			● (9)	●
<b>CPU features</b>				
	<b>AC500-eCo</b>	<b>AC500-eCo V3</b>	<b>AC500</b>	<b>AC500 V3</b>
Performance (time per binary instruction)	0.08 μs	0.20...0.02 μs	0.0006...0.06 μs	0.001...0.02 μs
Program memory	128...512 kB	1 ... 8 MB (8) thereof	128 kB...16 MB	8 ... 160 MB (8) thereof
User data memory	14...130 kB	Prog. code + Data (12) 256 kB... 1 MB	128 kB...16 MB	Prog. code + Data (12) 2 MB ... 32 MB
Remanent data (= saved)	2 kB	8... 100 kB	12 kB...3 MB	256 kB ... 1.5 MB
Serial communication				
RS232		● with option board	●	●
RS485	●	● with option board	●	●
Isolated interface	Option TA569-RS-ISO	● with option board	●	●
Modbus RTU Master/Slave	●	● with option board	●	●
CS31 protocol	●		●	
CAN communication interface on CPU				
CANopen Master, J1939 and CAN 2A/2B protocols				●
Ethernet features on CPU with integrated Ethernet or external communication module				
Online access (Programming)	● only onboard	● only onboard	●	● only onboard
ICMP (Ping), DHCP, IP configuration protocol	● only onboard	● only onboard	●	● only onboard
UDP data exchange, Modbus TCP	● only onboard	● only onboard	●	● only onboard
Ethernet features on CPU with integrated Ethernet only				
HTTP / HTTPS (integrated web server)	● / -	● / ● not Basic version	● / -	● / ●
HTML 5 Web Visu		● / ● not Basic version		●
SNTP (Time synchronization) Client / Server	● / ●	● / ●	● / ●	● / ●
FTP / FTPS server	● / -	● / ●	● / -	● / ●
FTP client	● (7)		● (7)	
SMTP client (Simple Mail Transfer Protocol)	○	● (5)	●	● (5)
IEC 60870-5-104 remote control protocol		● Pro version	●	●
MQTT for IoT connection with TLS security	● PM556/566 only	● not Basic version	●	●
Network variables on UDP		●	●	●
Socket programming		●	●	●
OPC DA (AC500 V2 and V3)	●	●	●	●
OPC UA server (AC500 V3 only)		● not Basic version		●
Selectable protocol				
BACnet (B-ASC profile)	● (4)		● (4)	
BACnet (B-BC profile)		● (4) Pro version		● (4)
KNX protocol for building communication		● (4) Pro version		● (4)
IEC 61850 protocol (MMS Server, GOOSE)		● (4) Pro version		● (4)
EtherCAT Master		● (4) (5) (11)	● (6)	
PROFINET IO Controller			● (6)	
Ethernet/IP Scanner / Adapter		● (4) (5) not Basic version		● (4)(5)
Capability to connect fieldbus modules	○ CS31, Modbus TCP	○ Modbus TCP	●	●
I/Os integrated on CPU	●	● with motion I/Os		
<b>I/O modules features</b>				
	<b>S500-eCo</b>		<b>S500</b>	<b>S500</b>
Analog modules				
Configurable			●	●
Dedicated	●	●		
Digital modules				
Configurable	○	○	●	●
Dedicated	●	●	●	●
Transistor outputs short circuit protected				
Output diagnosis			●	●
Hot Swap of I/O modules (10)			●	●
Extension with S500-eCo and S500(-XC) I/O modules	●	●	●	●



AC500-S (2)	AC500-XC	AC500-XC V3	AC500-S-XC (2)
●	●	●	●
	●	●	●
	●	●	●
●	●	●	●
●	●	●	●
●	●	● (3)(5)	●
	●		
	● (4)	● (4)	
	● (9)	●	
AC500-S (2)	AC500-XC	AC500-XC V3	AC500-S-XC (2)
0.05 μs	0.0006...0.06 μs	0.001...0.02 μs	0.05 μs
1...1.3 MB	128 kB...16 MB	8 ... 160 MB (8) thereof	1...1.3 MB
1024 kB	128 kB...16 MB	Prog. code + Data (12) 2 MB ... 32 MB	1024 kB
120 kB	12 kB...3 MB	256 kB...1.5 MB	120 kB
●	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
		●	
●	●	● only onboard	●
●	●	● only onboard	●
●	●	● only onboard	●
● / -	● / -	● / ●	● / -
		●	
● / ●	● / ●	● / ●	● / ●
● / -	● / -	● / ●	● / -
● (7)	● (7)	● (7)	● (7)
●	● (5) for V3	● (5) for V3	●
●	●	●	●
●	●	●	●
●	●	●	●
●	●	●	●
● (4)	● (4)	● (4) ● (4) ● (4)	● (4)
	● (6)		
	● (6)		
		● (4)(5)	
●	●	●	●
S500-S (2)	S500-XC	S500-XC	S500-S-XC (2)
●	●	●	●
	●	●	
●	●	●	●
●	●	●	●
●	●	●	●
● (2)	●	●	● (2)

- fully
- partly
- (1) Requires Library PS552-MC-E
- (2) AC500-S and AC500-S-XC require AC500 or AC500-XC modules to operate. The latter supports all communication interfaces.
- (3) Requires new V3 Library PS5611-MC
- (4) Licensed features, runtime license per CPU.
- (5) In preparation
- (6) PM595 and/or CPU V3 only
- (7) Application library download from "application examples"
- (8) Memory size is complete size for program, data and web server with AC500 V3 CPU, thereof size of User data and User program is smaller
- (9) As of PM585-ETH
- (10) Mounted on Hot Swap terminal unit when attached to AC500 CPU V2 as of PM585-ETH or AC500 CPU V3 or communication interface modules for Modbus TCP, PROFINET (CI501-PNIO, CI502-PNIO) or PROFIBUS.
- (11) Only Standard PM5052 or Pro PM5072 versions
- (12) Memory size of V2 versus V3 CPUs is not comparable. Projects have a different and separate User Program code and Data memory calculation in Automation Builder 2.4.0 version or later: System, configuration and web server parts are not counted anymore. This results in typically about 50% lower memory usage compared to V2, and even lower memory usage compared to V3 projects compiled in Automation Builder 2.3.0 or before.

# PLC Automation product family

## AC500 CPU Selector

### Your requirements

You are looking for a well established PLC solution with large product range for all kind of applications. You need particularly:

- Support of CS31 serial interface communication and High Availability solution with fast switching time
- Condition Monitoring capability
- Support of various types of communication protocols like PROFIBUS DP, CANopen, PROFINET, EtherCAT or serial interface protocols
- IoT connection with MQTT support
- Safety applications with support of PROFI-safe communication (F-Host and F-Device)
- PLC integration into System 800xA DCS communication

### Application specification and performance needs

#### Cost-effective application

- with compact PLC and a small number of I/Os

		AC500-eCo	
		PM5x4	PM5x6
<b>Basic</b>	<b>What does your project need?</b>		
	Compactness and onboard I/Os ?	●	●
	230 V AC power supply onboard ?	●	●
	Standard operational temperature ?	●	●
<b>Application feature</b>	Extreme environmental conditions (e.g. high temperature, humidity or vibrations) ?	-	-
	Functional Safety up to SIL3 ?	○	○
	Simple motion with PTO module FM562 / onboard I/O ?	● / -	● / -
	High-speed motion or interpolated motion ?	-	-
	Data logging ?	-	-
	Condition monitoring CMS ?	-	-
	High availability with CS31 protocol ?	-	-
	High availability with Ethernet Modbus TCP protocol ?	-	-
	HTML5 web server ?	-	-
	Telecontrol with IEC 60870-5-104 ?	-	-
Process control objects library (PCO) for DCS integration ?	●	●	
<b>Application performance</b>	More than 1 Cyclic and 1 Interrupt IEC 61131 Task ?	○	○
	4 or more IEC 61131 Tasks ?	-	-
	More than 2 kB retain variables ?	-	-
	User program / User data memory ?	128 kB / 14 kB	512 kB / 130 kB
	Large flash disk for data collecting ?	-	-
	Web server data ≤ 1MB ?	●	●
	Web server data ≥ 4MB ?	-	-
	Floating point arithmetic calculation with FPU ?	-	-
	Number of Ethernet Sockets for parallel connection ?	≤ 13	≤ 13
	Number of Modbus TCP Sockets (part of Ethernet Sockets) ?	≤ 12	≤ 12
CPU performance (ns per bit instruction) ?	80 ns	80 ns	
<b>Communication/Fieldbus</b>	Decentralized I/Os or communication on serial CS31 fieldbus ?	●	●
	Decentralized I/Os or communication on serial Modbus RTU fieldbus ?	●	●
	Decentralized I/Os or communication on PROFIBUS DP master / slave fieldbus ?	-	-
	Decentralized I/Os or communication on CAN/CANopen master / slave fieldbus ?	-	-
	Decentralized I/Os or communication on Modbus TCP network ?	●	●
	Decentralized I/Os or communication on PROFINET IO controller / device network ?	-	-
	Decentralized I/Os or communication on EtherCAT master network ?	-	-
	Two or more onboard Ethernet interfaces ?	-	-
	Onboard selectable protocols PROFINET IO / EtherCAT ?	-	-
	KNX building communication	-	-
	BACnet (B-ASC profile) / BACnet (B-C profile)	-	● / -
IEC 61850 MMS / GOOSE protocol ?	-	-	
IoT enabled with MQTT with TLS secured communication, support of JSON library	-	●	
OPC UA server ?	-	-	

- Not possible

○ Possible but not optimal solution

● Possible with additional devices

● Possible and best selection



# Automation product family

## AC500 V3 CPU Selector

### Your requirements

You are looking for a well established PLC solution with a large product range for extended features and large communication capability. You need particularly:

- Large memory and computing performance for your application
- High Ethernet capability with secured communication and support of communication network with extensive Modbus TCP communication
- IoT connection with MQTT support and OPC UA server
- Very efficient web visualization with HTML5 support
- Safety applications with local or decentralized I/O on PROFINET/PROFIsafe
- Fast coordinated motion capability from small to large CPU with embedded motion I/O or EtherCAT support

### Application specification and performance needs

#### Extremely cost-sensitive simple application

- with compact PLC and a small number of I/Os

#### Cost-effective small application

- with compact PLC and large number of onboard I/Os
- effective modularity with option boards
- less-complex communication on Ethernet-based industrial fieldbus
- IoT enabled with MQTT and OPC UA
- web server applications
- simple motion capability with high-speed onboard I/Os

		A500-eCo V3		
		Basic	Standard	
		PM5012-x-ETH	PM5032-x-ETH	PM5052-xETH
Basic	<b>What does your project need?</b>			
	Compactness and onboard I/Os ?	●	●	●
	230 V AC power supply onboard ?	○	○	○
	Standard operational temperature ?	●	●	●
Application feature	Extreme environmental conditions (e.g. high temperature, humidity or vibrations) ?	-	-	-
	Functional Safety up to SIL3 ?	○	○	○
	Simple motion with PTO module FM562 / onboard I/O ?	- / ○	- / ●	- / ●
	High-speed motion or interpolated motion ?	-	-	-
	Data logging ?	-	-	-
	Condition monitoring CMS ?	-	-	-
	High availability with CS31 protocol ?	-	-	-
	High availability with Ethernet Modbus TCP protocol ?	-	-	-
	HTML5 web server ?	-	●	●
	Telecontrol with IEC 60870-5-104 ?	-	-	-
Application performance	Process control objects library (PCO) for DCS integration ?	-	-	-
	More than 1 Cyclic and 1 Interrupt IEC 61131 Task ?	○	●	●
	4 or more IEC 61131 Tasks ?	-	●	●
	More than 2 kB retain variables ?	●	●	●
	Total user program memory / thereof user program code + data max.	1 MB / 256 kB (5)	2 MB / 512 kB (5)	4 MB / 768 kB (5)
	Large flash disk for data collecting ?	-	-	○
	Web server data ≤ 1MB ?	-	-	-
	Web server data ≥ 4MB ?	-	see above (2)	see above (2)
	Floating point arithmetic calculation with FPU ?	-	●	●
	Number of Ethernet Sockets for parallel connection ?	Unlimited (3)	Unlimited (3)	Unlimited (3)
Communication/Fieldbus	Number of Modbus TCP Sockets (part of Ethernet Sockets) ?	8	20	20
	CPU performance (ns per bit instruction) ?	20 ns	20 ns	20 ns
	Decentralized I/Os or communication on serial CS31 fieldbus ?	-	-	-
	Decentralized I/Os or communication on serial Modbus RTU fieldbus ?	●	●	●
	Decentralized I/Os or communication on PROFIBUS DP master / slave fieldbus ?	-	-	-
	Decentralized I/Os or communication on CAN/CANopen master / slave fieldbus ?	-	-	-
	Decentralized I/Os or communication on Modbus TCP network ?	●	●	●
	Decentralized I/Os or communication on PROFINET IO controller / device network ?	-	-	-
	Decentralized I/Os or communication on EtherCAT master network ?	-	-	-
	Two or more onboard Ethernet interfaces ?	-	-	-
Communication/Fieldbus	Onboard selectable protocols Ethernet/IP ?	-	● (1) (4)	● (1) (4)
	KNX building communication	-	-	-
	BACnet (B-ASC profile) / BACnet (B-C profile)	-	-	-
	IEC 61850 MMS / GOOSE protocol ?	-	-	-
	IoT enabled with MQTT with TLS secured communication, support of JSON library	-	●	●
	OPC UA server ?	-	●	●

- Not possible

○ Possible but not optimal solution

● Possible with additional devices

● Possible and best selection

**Small application**

- large program/data memory
- medium-complex communication via Ethernet-based industrial fieldbus
- IoT capability with MQTT and OPC UA
- building control applications with KNX
- simple or coordinated motion

**Small application**

- large program/data/web memory
- good capability for communication via standard industrial fieldbus and Ethernet-based protocols
- simple safety application local or decentralized on PROFI-safe
- coordinated motion capability on EtherCAT or CAN onboard

**Medium to large application**

- very large program/data and web server memory
- good coordinated motion capability on EtherCAT or onboard CAN
- medium to complex communication via industrial fieldbus and Ethernet-based protocols
- medium safety applications with PROFI-safe

**Extremely demanding application**

- with fast response time and complex communication with industrial fieldbus and Ethernet-based protocols
- highly-complex OPC UA communication and MQTT
- larger web server applications
- very large High Availability application with complex Modbus TCP communication
- highly-complex safety applications with PROFI-safe
- high speed and/or large coordinated motion control
- very large flash disk for data collection

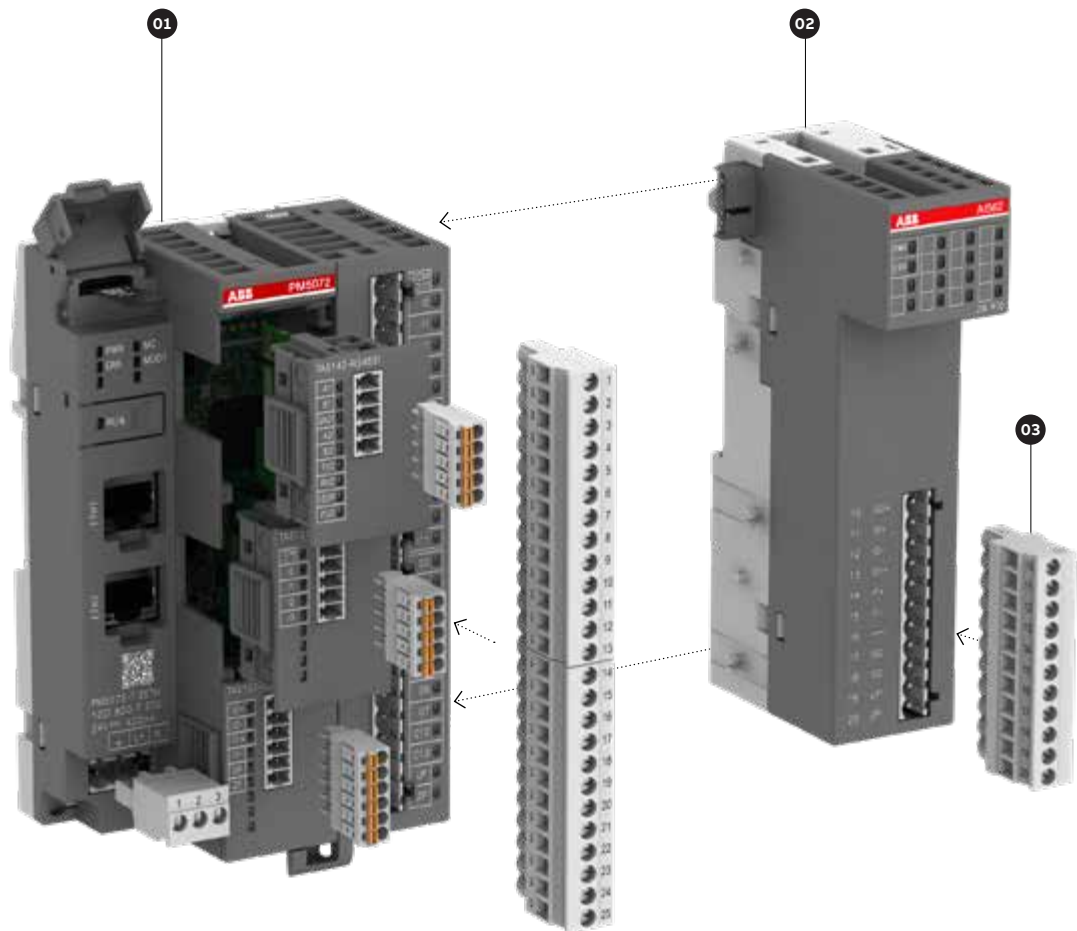
	AC500 V3				
Pro					
PM5072-x-2ETH(W)	PM5630 V3	PM5650 V3	PM5670 V3	PM5675 V3	
●	○	○	○	○	○
○	○	○	○	○	○
●	●	●	●	●	●
○ (W version)	● (XC)	● (XC)	● (XC)	● (XC)	● (XC)
○	●	●	●	●	●
- / ●	- / -	- / -	- / -	- / -	- / -
● (4)	● (4)	● (4)	● (4)	● (4)	● (4)
○	○	●	●	●	●
-	-	-	-	-	-
-	-	-	-	-	-
●	●	●	●	●	●
●	●	●	●	●	●
●	●	●	●	●	●
-	-	-	-	-	-
●	●	●	●	●	●
●	○	●	●	●	●
●	●	●	●	●	●
8 MB / 1 MB (5)	8 MB / 2 MB (5)	80 MB / 8 MB (5)	160 MB / 32 MB (5)	160 MB / 32 MB (5)	
○	○	○	○	8GB	
-	○	○	○	○	
see above (2)	see above (2)	see above (2)	see above (2)	see above (2)	
●	●	●	●	●	
Unlimited (3)	Unlimited (3)	Unlimited (3)	Unlimited (3)	Unlimited (3)	
30	30	50	120	120	
20 ns	20 ns	10 ns	2 ns	2 ns	
-	-	-	-	-	
●	●	●	●	●	
-	● / ● (1)	● / ● (1)	● / ● (1)	● / ● (1)	
-	● / -	● / -	● / -	● / -	
●	●	●	●	●	
-	● / ●	● / ●	● / ●	● / ●	
○ (1) (4)	●	●	●	●	
●	●	●	●	●	
● (1)(4)	● (1)(4)	● (1)(4)	● (1)(4)	● (1)(4)	
● (4)	● (4)	● (4)	● (4)	● (4)	
- / ● (4)	- / ● (4)	- / ● (4)	- / ● (4)	- / ● (4)	
● (4)	● (4)	● (4)	● (4)	● (4)	
●	●	●	●	●	
●	●	●	●	●	

(1) In preparation  
 (2) Total memory for code, data and web server with AC500 V3 CPU, thereof size of User data and User program is smaller and dynamically allocated  
 (3) Number of ETH Socket total is basically not limited, but depends on: CPU load, priority of application tasks, kind of used protocols, amount of data transferred, network structure  
 (4) Feature(s) is (are) licensed, runtime license per CPU.  
 (5) Memory size of V2 versus V3 CPUs is not comparable. Projects have a different and separate User Program code and Data memory calculation in Automation Builder 2.4.0 version or later. System, configuration and web server parts are not counted anymore. This results in typically about 50% lower memory usage compared to V2, and even lower memory usage compared to V3 projects compiled in Automation Builder 2.3.0 or before.



# PLC Automation product family

## AC500-eCo – modular concept



### 01 – AC500-eCo central processing unit (CPU)

- Different memory options
- Different CPU types and performances
- Integrated communication option
- Onboard I/O extension using option board slots of AC500-eCo V3 CPU
- Ethernet-based communication.

### 02 – S500-eCo I/O modules

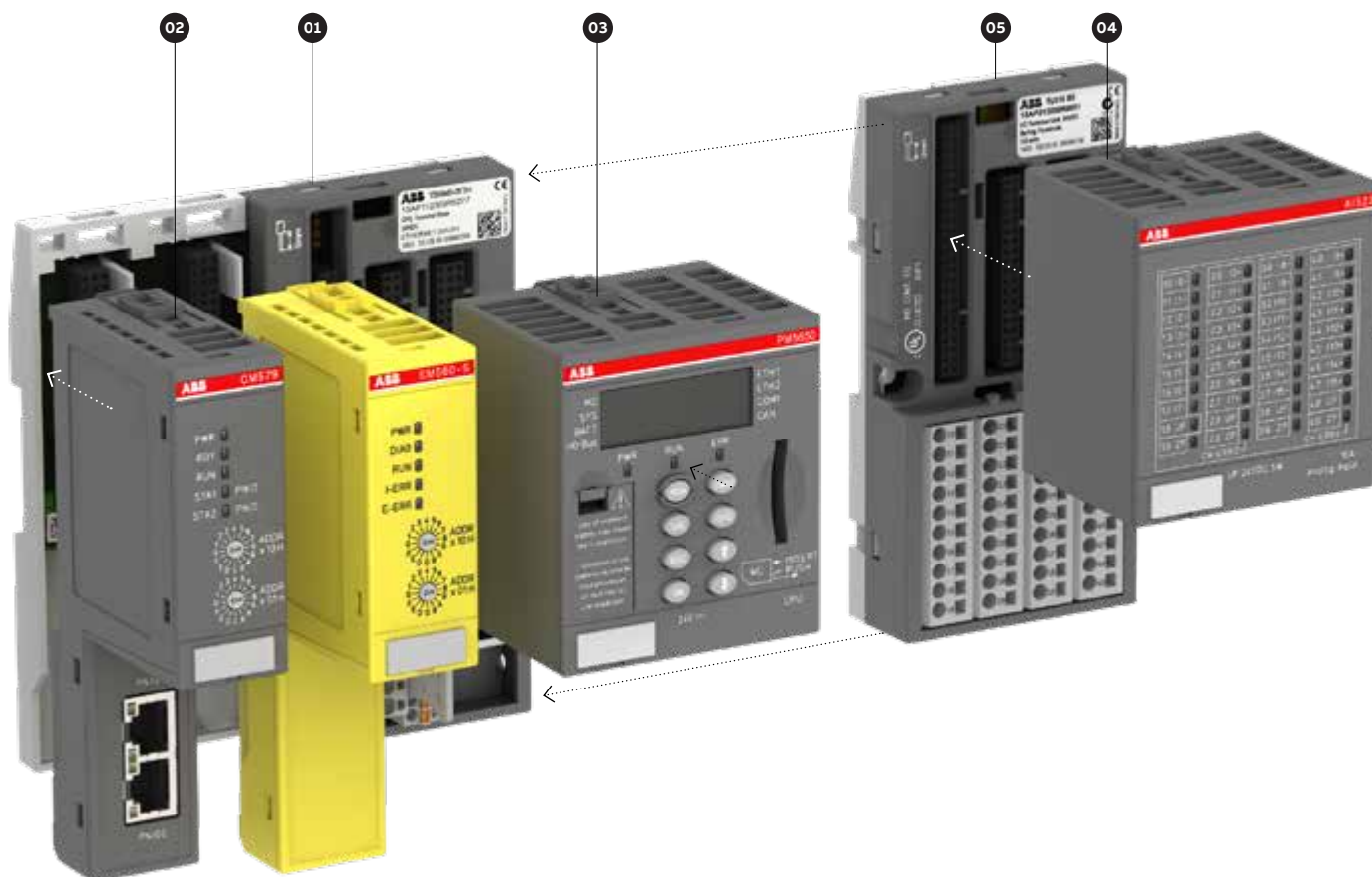
- Up to 10 modules
- Decentralized extension available.

### 03 – Terminal blocks

- Three types of pluggable terminal blocks available for AC500-eCo V2 and S500-eCo I/O modules
- Two types of terminal block sets for AC500-eCo V3.

# PLC Automation product family

## AC500 and AC500-XC – modular concept



### 01 – Terminal base

- Common for all AC500 V2 CPU types
- For 1, 2 or 4 communication modules
- With serial interfaces
- With 1 or 2 Ethernet interfaces
- New specific terminal base only for AC500 V3 CPU with 0, 1, 2, 4 and 6 communication modules.

### 02 – Communication modules

- For PROFIBUS DP, Ethernet, Modbus TCP, EtherCAT, CANopen, PROFINET IO or serial programmable
- Up to 4 pluggable
- Up to 6 pluggable for AC500 V3 CPU
- Support of AC500-S safety solution.

### 03 – AC500 central processing unit (CPU)

- Different performance, memory, network, operating conditions options
- Integrated communication
- New AC500 V3 CPU with large memory and high performance (requires new specific terminal base).

### 04 – S500 I/O modules

- Up to 10 modules
- Decentralized extension available
- Hot swap I/Os local or decentralized on PROFINET IO and additionally PROFIBUS DP for V2.

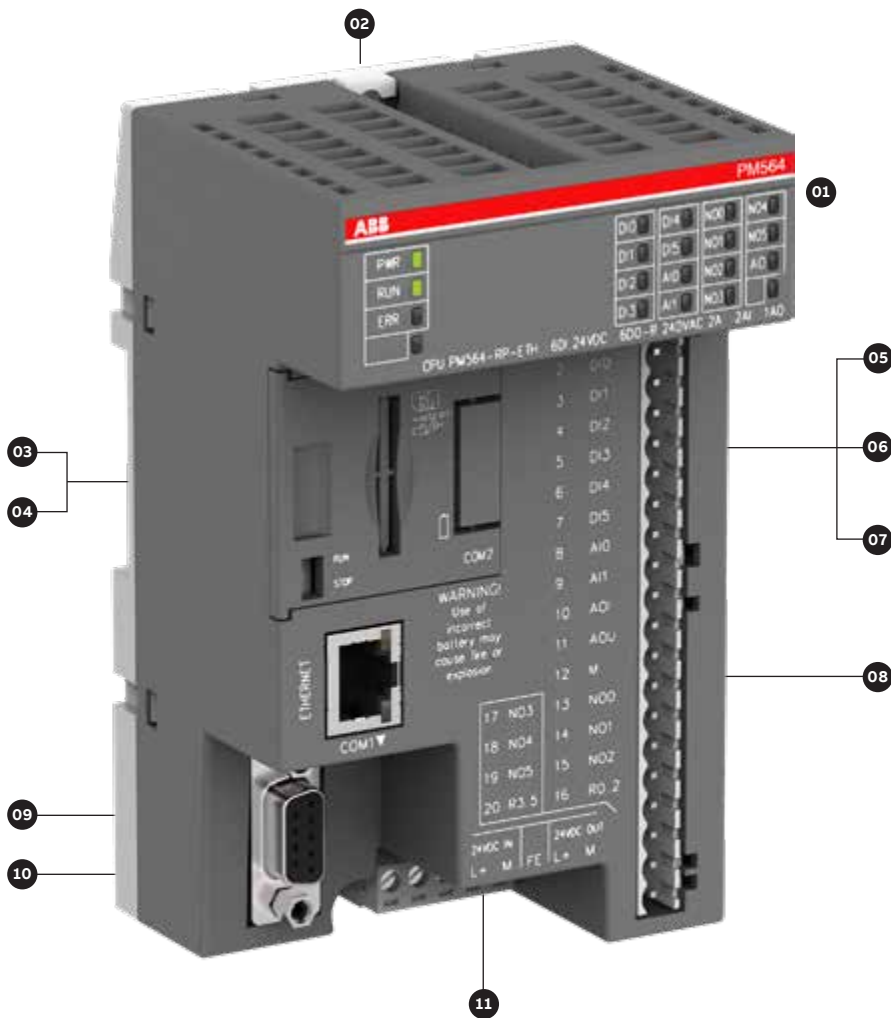
### 05 – Terminal units

- Up to 10 terminal units
- Decentralized extension available.

# PLC Automation product family

## AC500-eCo system characteristics

Locally, AC500-eCo CPUs can be extended with up to 10 I/O modules. AC500-eCo CPUs with different performance levels are available.



—  
01 AC500-eCo CPUs are locally extendable with up to 10 I/O modules (standard S500 and S500-eCo I/O modules can be mixed).

—  
02 Wall mounting

—  
03 Memory card adapter

—  
04 Memory card

—  
05 Adapter with realtime clock

—  
06 Adapter with COM2 & realtime clock

—  
07 Adapter with COM2

—  
08 Terminal blocks

—  
09 RS485 isolator for COM1

—  
10 COM1 USB

—  
11 COM2 USB programming cable

—  
12 AC500-eCo Starter kit. For more information, see page 259

—  
13 Input simulator



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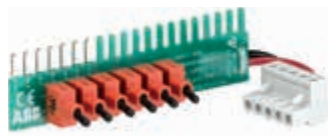


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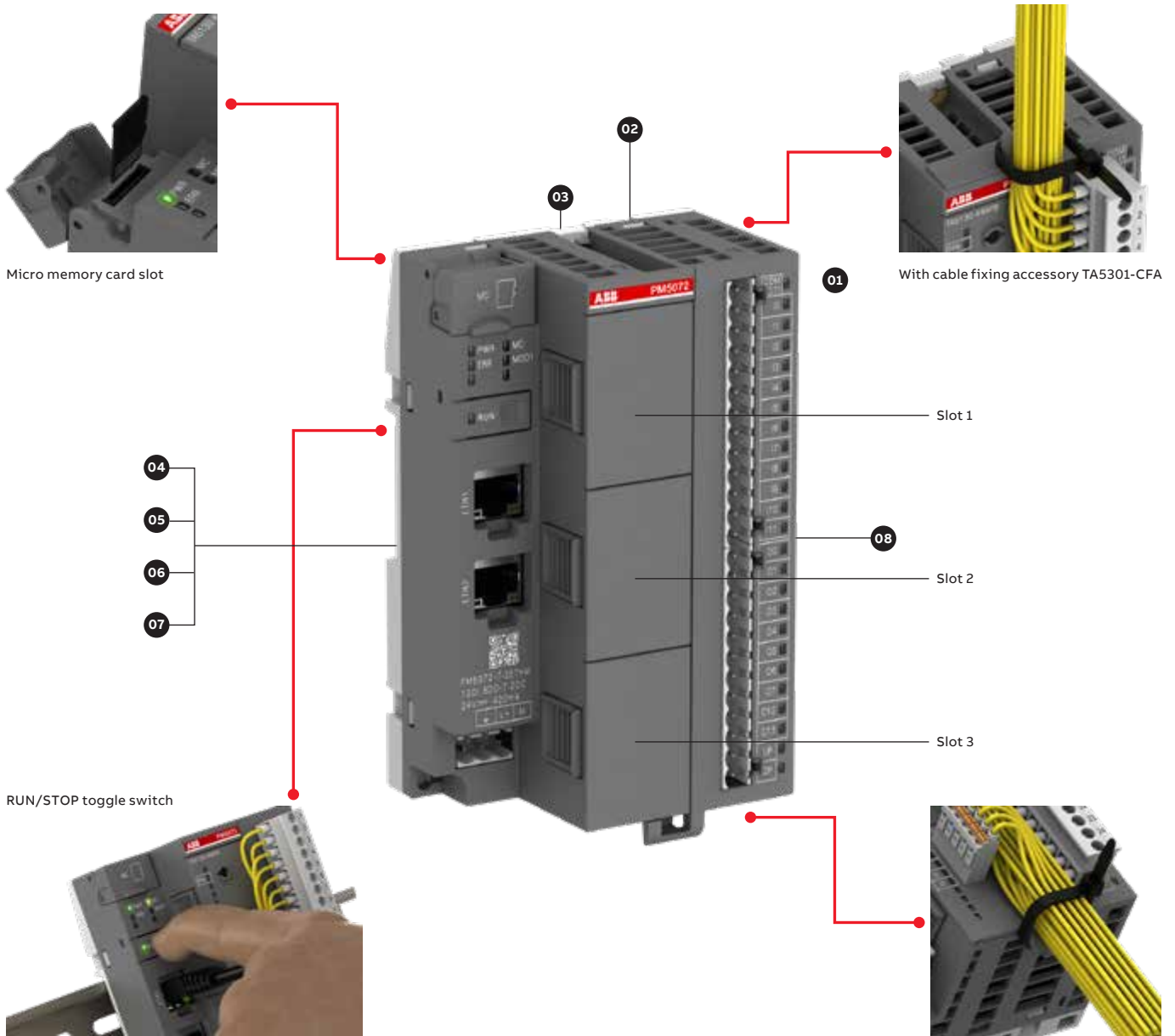


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# PLC Automation product family

## AC500-eCo V3 system characteristics

The new AC500-eCo V3 Basic, Standard and Pro CPUs are available with different performance levels. For digital and analog I/O or communication extension, option boards can be used. Locally, AC500-eCo V3 Standard and Pro CPUs can be extended with up to 10 I/O modules.



	Basic	Standard	Pro
	PM5012-x-ETH	PM5032-x-ETH	PM5052-x-ETH
Option board slot 1	●	●	●
Option board slot 2	-	●	●
Option board slot 3	-	-	●



—  
01 AC500-eCo V3 Standard and Pro CPUs are locally extendable with up to 10 I/O modules (standard S500 and S500-eCo I/O modules can be mixed).

—  
02 Cable fixing adapter

—  
03 Wall mounting

—  
04 Option boards for digital I/O extension

—  
05 Option boards for analog I/O extension - in preparation

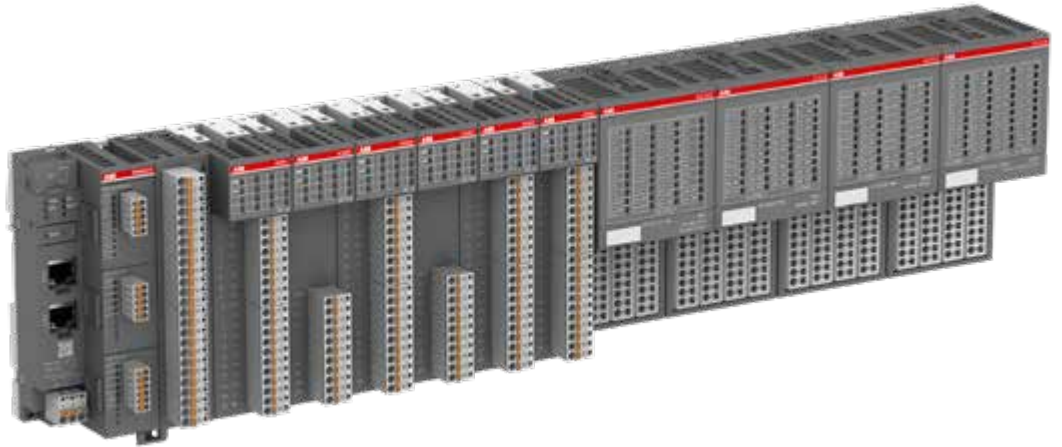
—  
06 Option boards for COMx serial communication

—  
07 Option boards KNX address push button or slot cover

—  
08 Terminal block sets

—  
09 AC500-eCo Starter kit. For more information, see page 259

—  
10 Input simulator



—  
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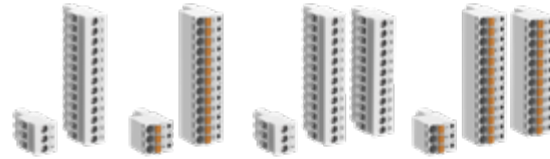
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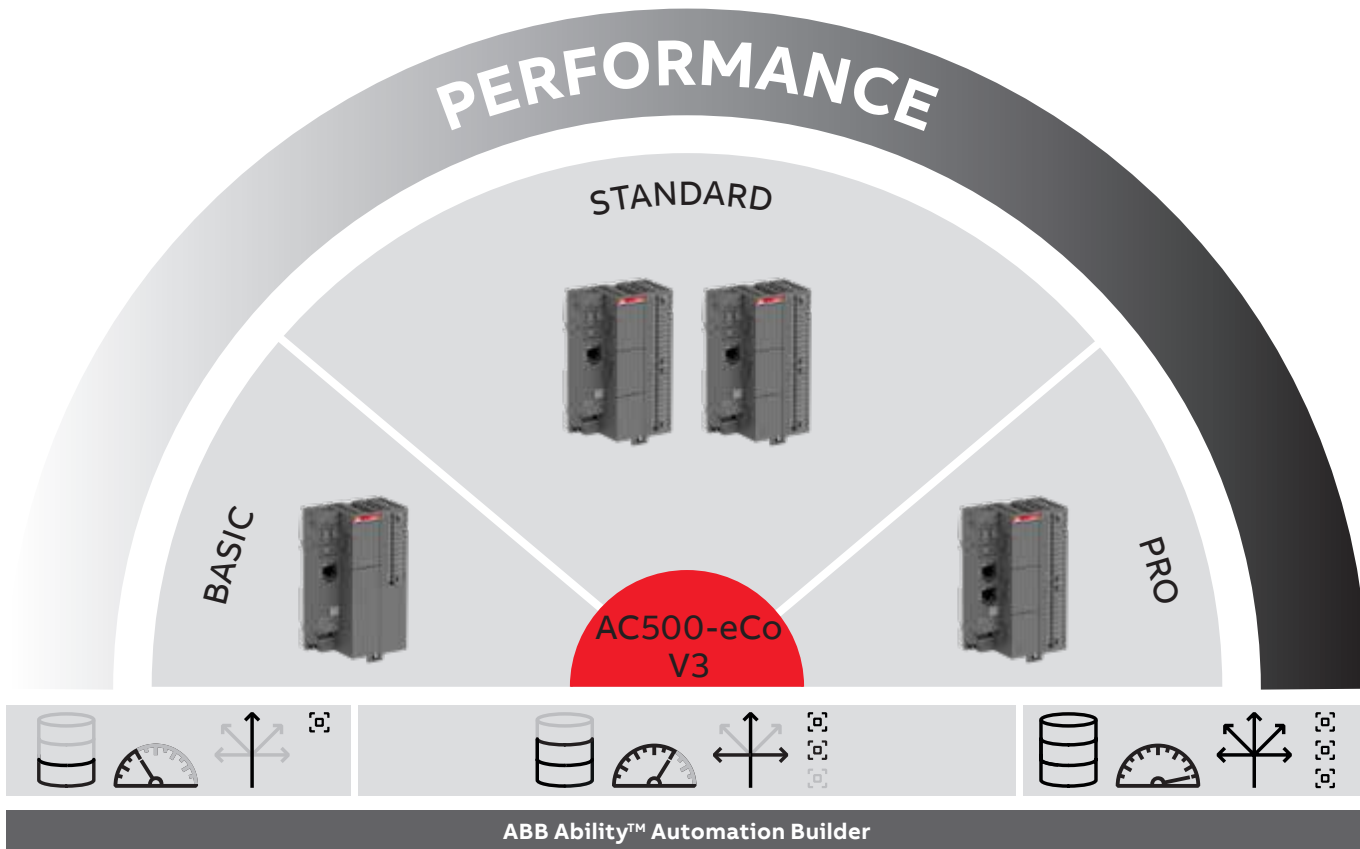


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# PLC Automation product family

## AC500-eCo V3 overview

More AC500-eCo features but the same footprint



 Memory

 Performance

 Connectivity

 Option board

**BASIC****STANDARD****PRO****Basic****Basic and compact applications**

- For extremely cost-sensitive and simple applications
- Few I/O channels only
- Ethernet communication
- Easy onboard extension with one option board, no I/O-bus
- Adequate performance
- Benefits from the ABB Ability™ Automation Builder software platform

**Standard****For modular and distributed applications**

- Powerful processor with integrated Floating Point Unit for fast calculation
- Ethernet interface on all the products for all-purpose communication (e.g. Modbus TCP, Ethernet/IP (1) (2))
- Web server with HTML5 web visualization
- IoT-enabled with OPC UA server
- MQTT protocol
- High modularity with up to 3 option boards for I/O extension and communication
- High-speed onboard I/Os with simple motion capability
- Larger number of I/Os with modular extension
- Reuse of existing S500/S500-eCo I/O modules

**Pro****For demanding logic, motion and IoT-ready applications**

- Powerful CPU for communication, gateway to IoT applications or motion control
- Larger memory for big applications and web capability
- 2 independent Ethernet interfaces with switch function
- A variety of Ethernet-based protocols
  - For building applications (KNX (1)/BACnet (1)(2))
  - Telecontrol (IEC 60870-5-104)
  - Energy management (IEC 61850 (1))
  - Motion control (EtherCAT (1)(2))
  - SCADA connection
- Coordinated motion with PLCopen library (1)(2) and EtherCAT (1)(2)

(1) Runtime license per CPU required.  
(2) In preparation

Please watch our videos on our ABB PLC YouTube channel:



[www.youtube.com/user/abbplc](https://www.youtube.com/user/abbplc)

# PLC Automation product family

## AC500 system characteristics

AC500 offers superior local extension capabilities for I/O communication, best-in-class CPU functionality and industry-leading performance.



—  
01 AC500 CPUs are locally extendable with up to 10 I/O modules (standard S500 and S500-eCo I/O modules can be mixed).

—  
02 Terminal base / Terminal base V3

—  
03 Communication module  
Up to 4 modules for multiple combinations to communicate on nearly every protocol available  
Up to 6 modules can be used with AC500 V3 CPU

—  
04 CPU module / CPU V3 module

—  
05 S500 Terminal unit

—  
06 S500 I/O module

—  
07 Pluggable marker holder for S500 I/O modules with template

—  
08 S500-eCo I/O module

—  
09 Memory card

—  
10 Battery



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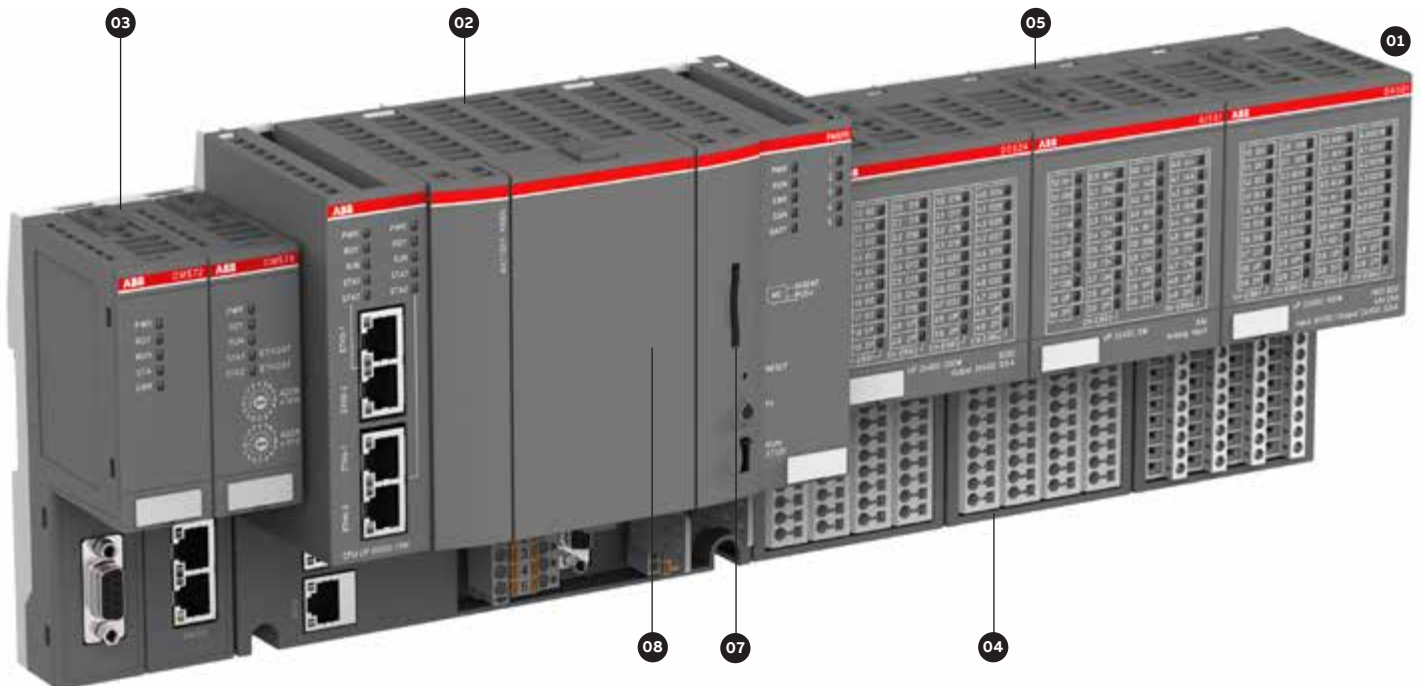
# PLC Automation product family

## AC500 PM595 controller system characteristics

The flagship of the AC500 platform, the AC500 PM595 controller, was designed to be as scalable, flexible and efficient as the entire AC500 range.

With the AC500 CPU PM595, ABB launched a new core for machine control applications. Its high-performance processor with generous memory offers performance, security and reliability for the upcoming challenges of automation applications.

A variety of connectivity capabilities, integrated safety and utilizability even under rough environment provide machine builders with valuable benefits when performing their automation tasks.



—  
01 AC500 CPUs are locally extendable with up to 10 I/O modules (standard S500 and S500-eCo I/O modules can be mixed).

—  
02 CPU with integrated connectivity and terminal base

—  
03 Communication module.  
Up to 2 modules for multiple combinations to communicate on nearly every protocol available and to include functional safety

—  
04 S500 Terminal unit

—  
05 S500 I/O module

—  
06 S500-eCo I/O module

—  
07 Memory card

—  
08 Battery

—  
09 Pluggable marker holder for S500 I/O modules with template



01



02



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04



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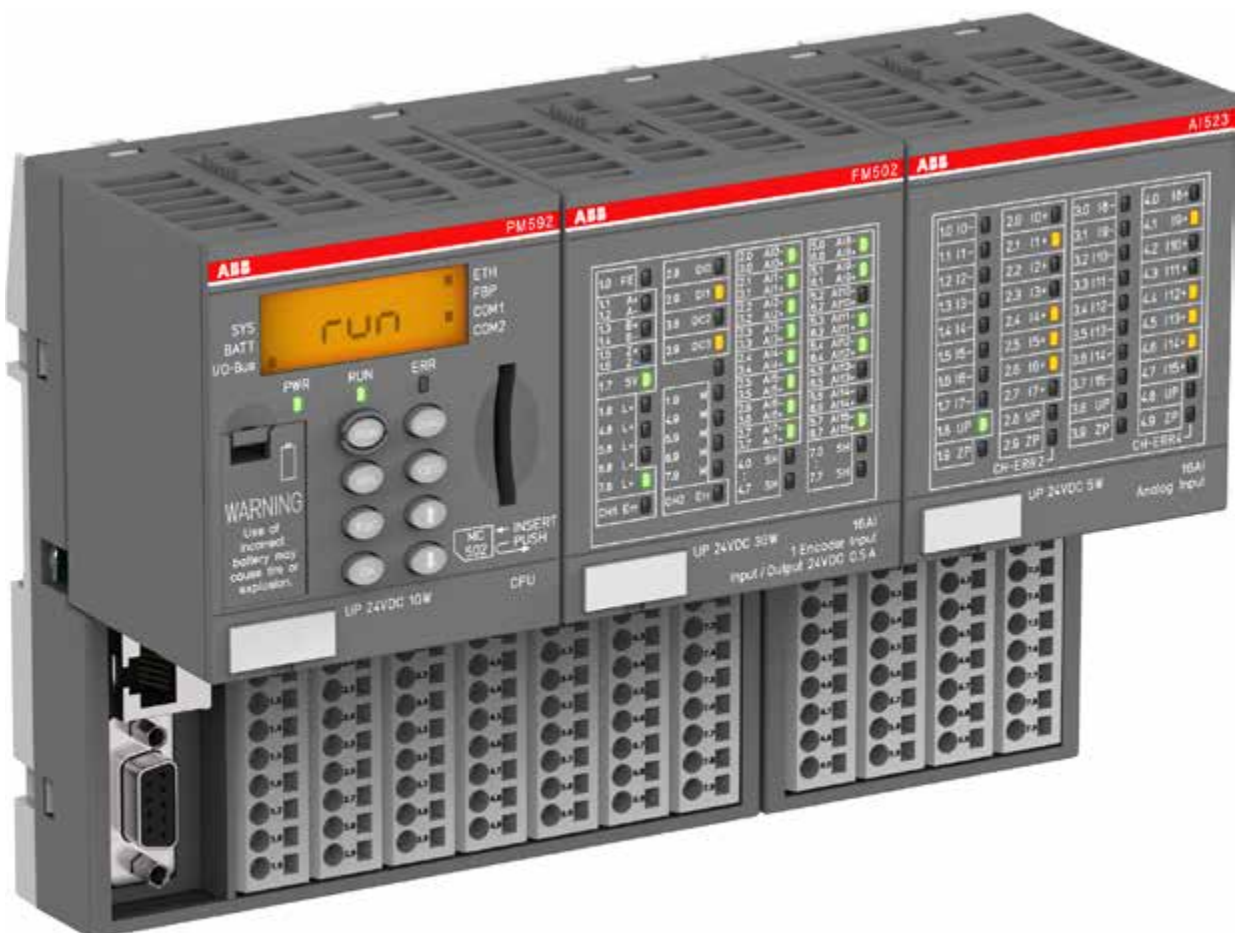
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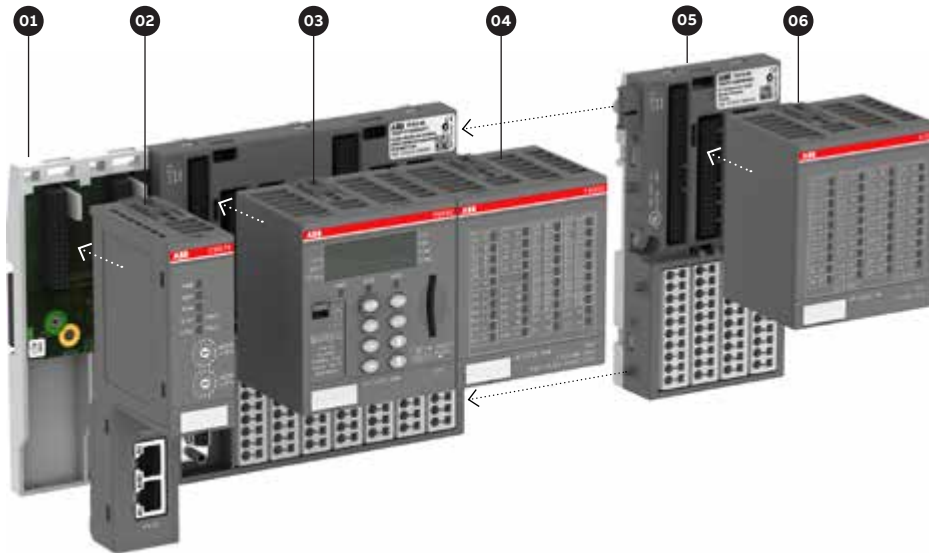
# PLC Automation product family

## Condition monitoring system CMS based on AC500

Predictable performance for your operations

Optimize your assets with a condition monitoring system (CMS) based on the proven AC500 platform. The FM502 module can help you to improve your operations resulting in greater efficiency and higher reliability while minimizing service and operating costs.





- 01 Terminal base: TF501 or TF521
- 02 Accomodating: 0 - 2 communication modules
- 03 PM592 CPU
- 04 FM502 CMS module
- 05 Extendable by I/O terminal units
- 06 Extendable by further I/O modules

**Add predictable performance and productivity**  
 The CMS module brings further reliability and easy integration with all kinds of machinery systems, enabling precise management of the real-time condition of your operation. This transparency takes your business and productivity to a new level with more efficient machines, predictable performance and significant reduction in maintenance costs.

No matter whether as stand-alone condition monitoring or integrated into machine or process control, the module is perfectly suited to build optimized, self-analyzing automation solutions that simultaneously perform condition monitoring, control, protection, safety and data logger functions with one controller. The fast data logger function also contributes to consistent high quality production, due to the possibility to combine control and production information directly.

CMS also protects against machine failures, unforeseen sudden damage, incorrect installation, and reduces maintenance and wear. Virtually no unscheduled downtimes boost plant availability and reliability.

**Advantages**

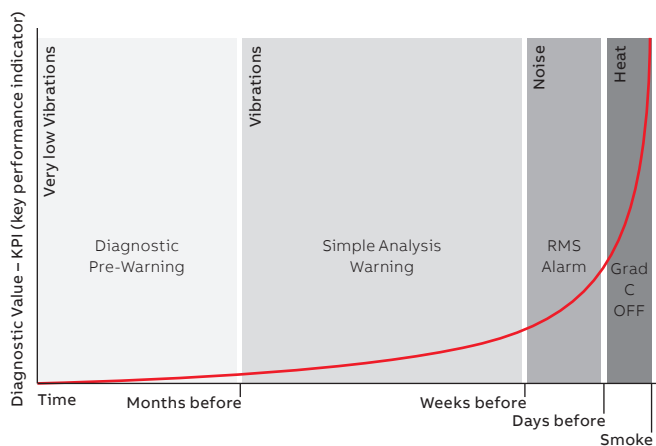
- Planned maintenance rather than spontaneous repair ensures predictable performance
- Approaching damage is identified very early
- Protection against spontaneous failures and operation in critical conditions
- Reduction of costs in maintenance and lost production time
- Plant availability is increased
- Optimum utilization of the aggregates until real end of life
- Simple to use, maintain, adapt or extend

**AC500 + CMS = increased machine efficiency**

All based on the AC500 platform modularity provides ultimate flexibility: Communication and I/O modules can be added and combined with Safety.

**Extendable, robust and proven**

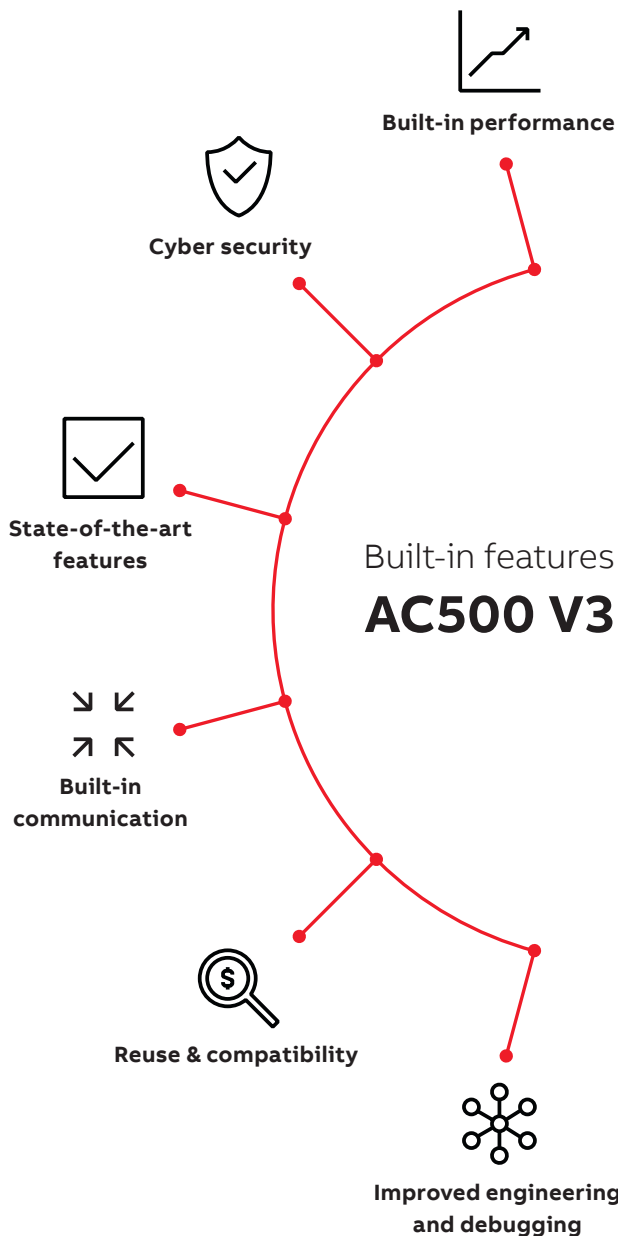
- Stand-alone CMS or control integrated
- Can be extended by AC500 communication modules and S500 I/O modules
- Proven and future proof, as based on AC500 platform
- Extreme conditions XC version available
- Fast data logger, e. g. for production quality
- Condition monitoring and fast protection (vibration, current, voltage, speed/encoder)



# PLC Automation product family

## AC500 V3 enhanced connectivity and performance

The new V3 features provide even more flexibility and freedom when it comes to connectivity and functions supplied onboard without the need of additional devices as couplers or switches. AC500 V3 is ready for the requirements of IoT and digitalization and secure cloud connectivity via new protocols and functions.



### Built-in performance

- Faster CPUs with more powerful processors
- More CPU memory allocated freely
- Modern, state-of-the-art components

### Cyber security

- Digitally signed firmware updates protected by hardware security chip
- Secure communication protocols: HTTPS, FTPS, OPC UA, MQTT
- Encrypted communication with engineering system ABB Ability™ Automation Builder and boot application

### State-of-the-art features

- OPC UA for easy connectivity to SCADA systems or operator panels
- MQTT for lightweight cloud messaging
- Onboard HTML5 web server technology
- Functional safety support with PROFIsafe communication

### Built-in communication

- Two Ethernet interfaces for use as switch or independent ports
- Onboard Ethernet protocol as Ethernet/IP\*
- CANopen master interface, CAN2A/2B, J1939
- KNX and BACnet
- OPC UA server, OPC DA alarm and event
- IEC 61850
- IEC 60870-5-104 Telecontrol

### Reuse & compatibility

- Reuse with AC500 platform:
  - S500/S500-eCo I/O modules
  - Communication modules
- Project conversion and code re-use

### Improved engineering and debugging

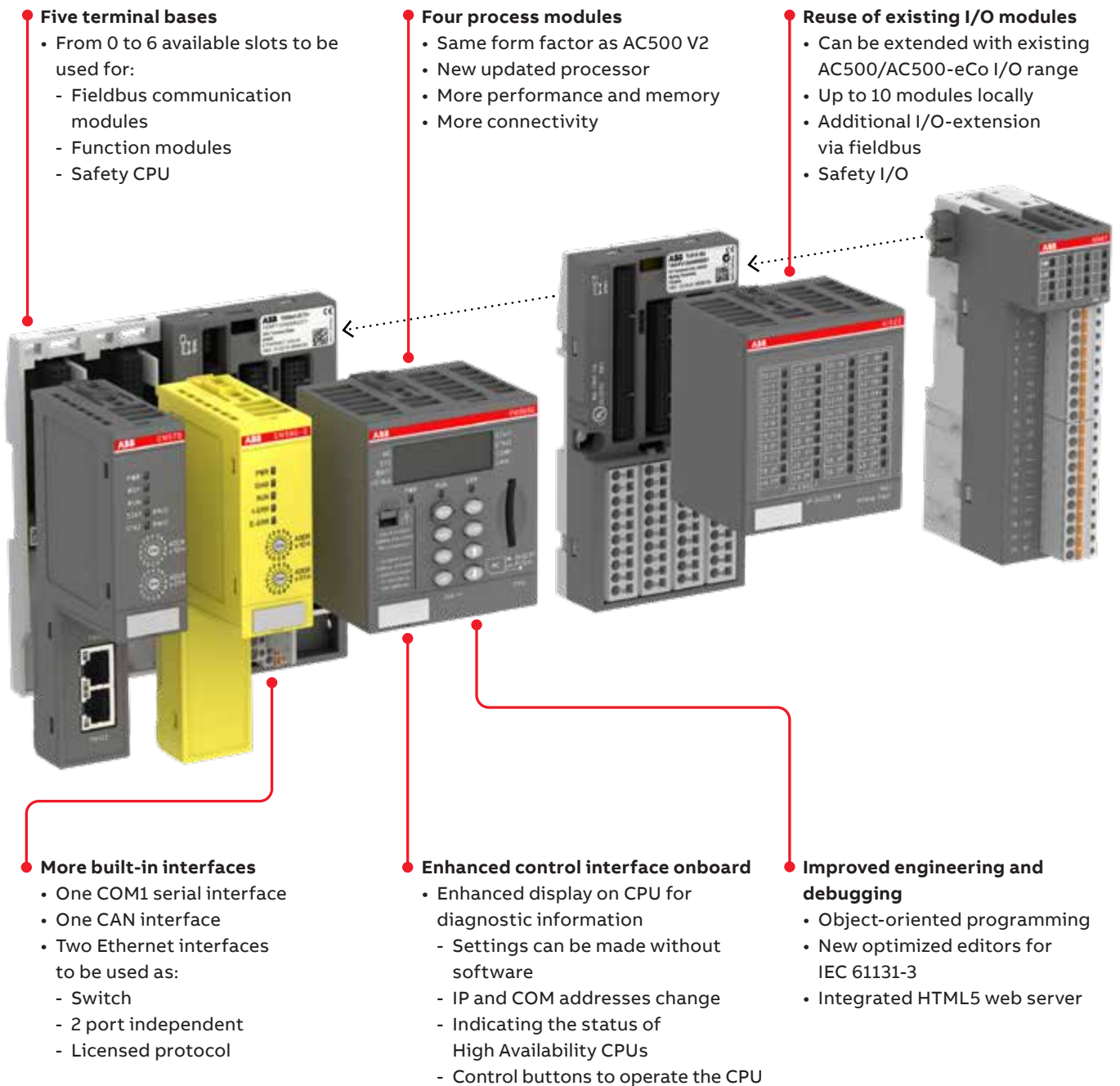
- Professional version control with subversion
- Application project management
- Object-oriented programming
- Optimized IEC 61131-3 editors
- Offline simulation capabilities\*

\* In preparation



The flexibility, scalability and footprint of AC500 V2 have been passed on to the new CPU range. Therefore, AC500 continues to be the perfect fit for various applications or will be the natural

successor when you need to introduce new features to existing applications or extend machines and applications to reach for the cloud.



# PLC Automation product family

## AC500 extreme conditions

AC500-XC – the rugged variant of AC500 for extreme indoor and outdoor conditions.

The PLC AC500-XC is reliable, functionally safe and operational even under rough environmental conditions.





04



01



02



03



05



06

01 Terminal base

02 Extreme conditions communication module

03 Extreme conditions CPU

04 Extreme conditions CPU with integrated connectivity and terminal base

05 Extreme conditions S500 terminal unit

06 Extreme conditions S500 I/O module



**Operation in extremely humid environments**

- Increased resistance against 100 % humidity and condensation.



**Extended operating temperature**

- -40 °C up to +70 °C operating temperature.



**Reliable in high altitudes**

- Operation in altitudes up to 4000 m above sea level or air pressures up to 620 hPa.



**Extended immunity to corrosive gases and salt mist**

- G3, 3C2 / 3C3 immunity
- Salt mist EN 60068-2-52 / EN 60068-2-11.



**Extended immunity to vibration**

- 4 g rms random vibration up to 500 Hz
- 2 g sinusoidal vibration up to 500 Hz.



**Extended EMC requirements**

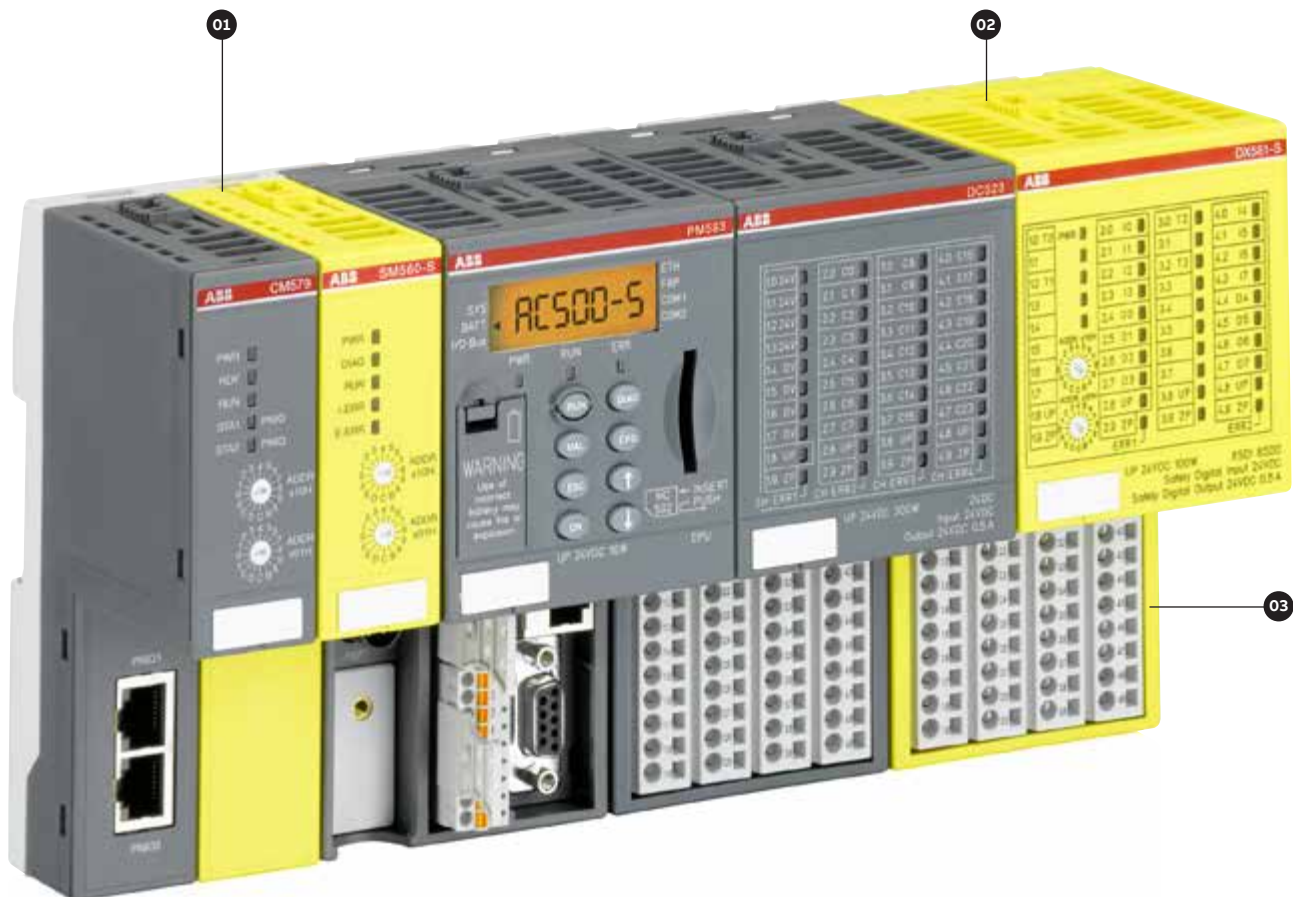
- EN 61000-4-5 surge immunity test
- EN 61000-4-4 transient / burst immunity test.

# PLC Automation product family

## AC500-S safety PLC – functional safety

AC500-S safety PLC is the solution for both simple and complex machine and process safety applications requiring maximum reliability, efficiency and flexibility.

This safety PLC protects people, machines and processes, the environment and investments – the ideal choice for hoist, wind turbine, crane, material handling, robot and other factory and process applications.





01



02



03

- 01 Safety CPU
- 02 S500 Safety I/O module
- 03 Safety terminal unit

**Better integration and ease of programming**

Featuring a consistent look and feel across the entire range, the AC500 is the PLC of choice for applications where uncompromised flexibility, comprehensive integration and seamless communication are a must.

ABB Ability™ Automation Builder seamlessly integrates your safety application in ABB PLC, Safety, Drives, Motion and HMI. Through integrated standard languages, such as IEC 61131-3, Automation Builder is easy to use, thus, allowing you to get started in virtually no time at all. And what is more: intuitive system configuration using one single tool ensures optimal transparency.

The AC500-S safety PLC facilitates the implementation of even most complex safety applications. Support of safety-relevant calculations, such as COS, SIN, TAN, ASIN, ACOS and LOG makes the AC500-S the ideal solution for crane engineering, wind power generation, robotics and hoisting applications.

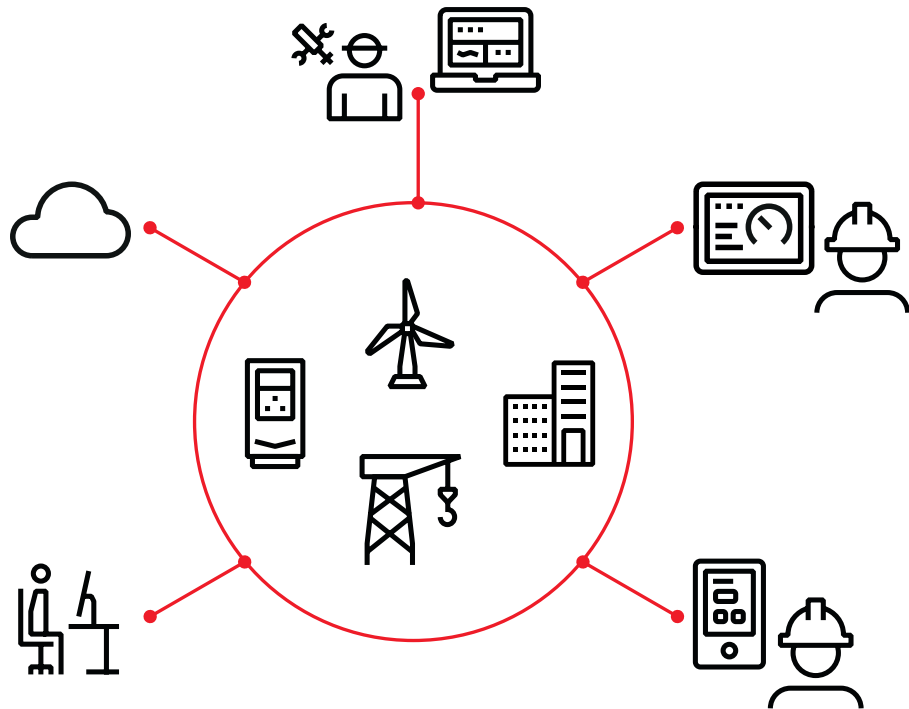
Safety programming with Structured Text (ST) and full support for Function Block Diagram (FBD) and Ladder Diagram (LD) programming and advanced features in PROFI-safe over PROFINET communication, like Shared Device functions, gives you greater flexibility and simplifies safety application development. The AC500-S safety PLC is also available in a version for extreme conditions.



# PLC Automation product family

## Visualization options

PB610 Panel Builder 600 in combination with the CP600 HMI platform provides flexible possibilities for visualization.



### Your interface to the application

Whether you prefer to use your smart device anywhere, stand in front of a control panel at your application or want to inform yourself about an installation abroad e.g. via the cloud: CP600 platform control panels with PB610 Panel Builder 600 provide you with the free selection of how to get the information you need, let you operate your application easily and support the effective analysis of your processes.

### Tailor-made for easy, intuitive operation

PB610 Panel Builder 600 supports the design of easy to use and reliable to operate graphical user interfaces for all control panels of the CP600 platform, mobile smart devices and notebooks. Standardized faceplates are easily realized by means of so called custom widgets and structured tags.

### User management and cyber security

Configuration of users and user groups allows to define access rights and permissions for and from different devices and media according to your needs. Devices and software are regularly tested accordant latest known possible vulnerabilities.

### Web panels

CP600 control panels with PB610 provide web servers for HTML5 based visualization on various users' devices. The majority of the control panels comes with a browser for using them for

- visualization of AC500 web server (V3)
- nearly unlimited information through general web access
- easy combination of PB610 user interface with information from the web.

### Mobile / remote access to HMI

HTML5 based graphical user interfaces enable remote access and operation via mobile devices like smartphones, tablets etc.

# PLC Automation product family

## PB610 Panel Builder 600



### Engineering tool for easy design of tailor-made graphical user interfaces for the entire CP600 platform

PB610 Panel Builder 600 software is integrated in the ABB Ability™ Automation Builder engineering suite and can be downloaded via Automation Builder installer.

Tailor-made human machine interface (HMI)

- For the efficient design of flexible HMI applications in versatile automation solutions.
- Vector graphics (\*.SVG) for precise, easily scalable and dynamic HMI design.
- Alpha blending for realistic transparency effects.

- Libraries including rich sets of widgets – ready-to-use graphical objects.
- Easy creation of customized widgets through the combination/modification of standard widgets.
- Customized widgets clearly arranged in user galleries.
- Page templates for professional design.
- Numerous configuration options for all HMI elements.
- Realization of customized functions and individual dynamic manipulation via Java Script with debugger.
- Easy data acquisition and trend presentation.
- Reliable user management and secure access control.
- Rich set of configurable features: dynamic objects, data acquisition, alarm handling, multi-language applications, recipes, ...
- HMI simulation for efficient commissioning.
- Numerous drivers for easy connection to e.g. PLCs, drives, robots.
- OPC UA client and server for future-orientated cloud connectivity and IoT.
- Gateway function for easy data exchange between different protocols and systems.

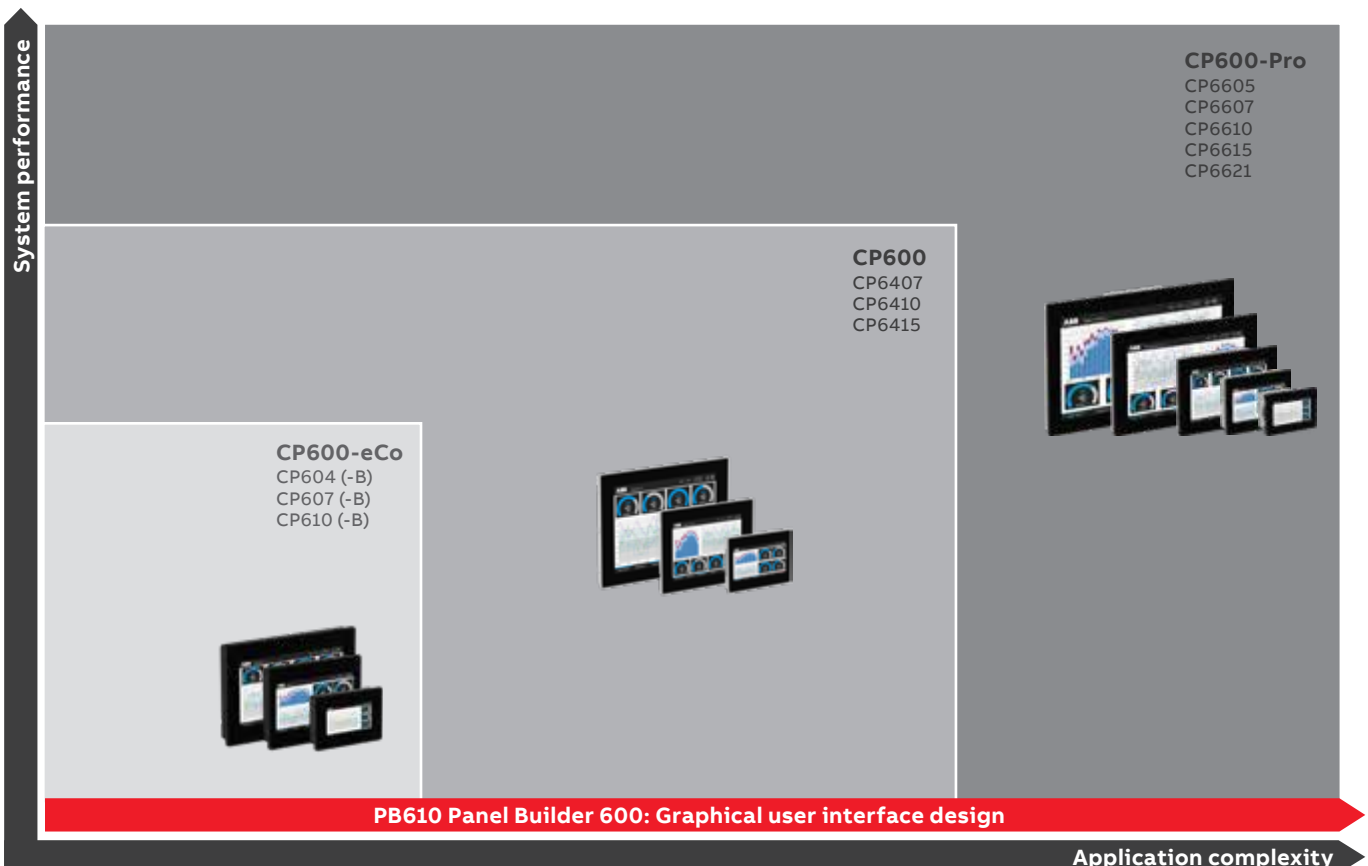
# PLC Automation product family

## CP600 control panels platform at a glance ...

With comprehensive but easy-to-use functionalities, ABB control panels stand out from competitor products. At one single touch, they intuitively provide operators with tailor-made operational

information for production plants and machines. CP600-eCo, CP600 and CP600-Pro control panels make machine operation efficient, predictable and user-friendly.

New comprehensive CP600 control panels platform for different applications



**CP600-eCo, CP600, CP600-Pro**

Wide range of control panel offerings in three assortments. Ideal choice for visualization of AC500 PLC platform automation solution.

The economical CP600-eCo control panel is aimed for standard functions and high usability for clear interaction with the operation process.

The robust CP600 HMI provides state-of-the-art performance, versatile communication and representative design for machines and systems.

The CP600-Pro HMI comes with high end visualization performance, multi-touch operation, versatile trendsetting communication and representative design.

Due to the good scalability between CP600-eCo, CP600 and CP600-Pro, CP600-eCo HMI applications can be re-used easily for CP600 or CP600-Pro control panels and vice versa.

**PB610 Panel Builder 600**

PB610 Panel Builder 600 is the engineering tool for the entire CP600 control panels platform. PB610 Panel Builder 600 software is integrated in the ABB Ability™ Automation Builder engineering suite. For integration into a couple of third party automation systems, drivers are available. OPC UA client and server support future-orientated communication solutions.

**CP600 platform selection guide for tailor made HMI applications**

CP600-eCo	for PB610 HMI applications; CP610: Or visualization of AC500 V3 web server (*)
CP600	for PB610 HMI applications or visualization of AC500 V3 web server
CP600-Pro	for PB610 HMI applications or visualization of AC500 V3 web server

(\*) Supported by products with revision index C1 or higher

**What does your application need ?**

	CP600-eCo	CP600	CP600-Pro
Screen sizes	sizes from 4" to 10" 4.3", 7", 10.1"	sizes from 7" to 15" 7", 10.4", 15"	wide range from 5" to 21" 5", 7", 10.1", 15.6", 21.5"
Operation	single-touch	single-touch	multi-touch
Communication	1 SER, 1 ETH, 1 USB	1 SER, 2 ETH, 2 USB, 1 SD	1 SER, 3 ETH (1), 2 USB (2), 1 SD
Operating temperature	0...50 °C	-20...+60 °C	-20...+60 °C
Enclosure	plastic / glass + front foil	aluminium / glass + front foil	aluminium / real glass
Operating system	Linux	Linux	Linux
PB610 application	60 MB	150 MB	240 MB (3)

(1) CP6605: 2 ETH

(2) CP6605: 1 USB

(3) CP6605: 60 MB

# PLC Automation product family

## CP600-eCo control panels



### Economic HMI range for basic applications

Control panels in three different screen sizes from 4.3" to 10.1" in ABB design or just black provide HMI functions typically required for basic applications. The engineering tool PB610 Panel Builder 600, part of Automation Builder, ensures easy scalability on the CP600 platform.

### Designed for basic applications

- The widescreens available in 4.3", 7" and 10.1" are suitable for many applications.
- Protocols for ABB PLCs, machinery and motion drives for Ethernet and serial connection make these control panels first choice for ABB automation solutions.
- OPC UA client and server functions make them well prepared for future communication solutions.
- Engineering by means of PB610 Panel Builder 600, part of Automation Builder, facilitates integration into automation packages and enables good scalability on the CP600 platform for different applications.

### Slim industrial design

The slim plastic enclosure in attractive industrial design with a mounting depth of 29 mm enables installation even in narrow spaces. All connectors are located on one side. Landscape and portrait mounting options provide installation flexibility and various HMI presentations. These devices are available either in ABB design or in black.

### State-of-the-art connectivity

- Ethernet interface 10/100 Mbit for easy connectivity to ABB automation components.
- Flexible serial connectivity to automation components without Ethernet interface.
- USB host for flexible data storage and easy updating.





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The CP600 platform is many customers' first choice for their individual visualization projects.

# PLC Automation product family

## CP600 control panels



### State-of-the-art HMI range for diverse applications

The CP600 control panels in screen sizes of 7", 10.4" and 15" provide comprehensive HMI functions for a wide range of applications. The engineering tool PB610 Panel Builder 600, part of Automation Builder, ensures easy scalability on the CP600 platform. Same front dimensions, cutouts and screen resolutions support an easy replacement of former CP600 control panels.

### Tailor-made for your needs

- Three different screen sizes with standard aspect ratio or widescreen from 7" to 15" are suitable for a lot of different applications.
- Protocols for ABB PLCs, machinery and motion drives for Ethernet and serial connection make these control panels first choice for ABB automation solutions. The IRC5 protocol enables easy direct communication with ABB robot controllers.
- OPC UA client and server functions make them well prepared for future communication solutions.
- Integrated chromium browser usable e.g. for AC500 V3 web visualization

- Engineering by means of PB610 Panel Builder 600, part of Automation Builder, facilitates integration into automation packages and enables good scalability of the CP600 platform for various applications.

### Solid design, wide operating temperature range

The robust aluminum enclosure in attractive industrial design, providing all connectors on one side, enables installation in various environments. Wide operating temperature range from -20 up to +60 °C makes these panels suitable for even challenging environments. Landscape and portrait mounting options provide installation flexibility and various HMI presentations.

### Various options for flexible connectivity and data storage

- 2 Ethernet interfaces 10/100 Mbit with configurable bridge mode for easy connectivity with ABB automation components.
- Flexible serial connectivity with automation components without Ethernet interface.
- USB hosts for the flexible connection of accessories or data storage and easy updating.
- Memory card slot for easy data storage and updating.



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CP600  
control panels  
are your interface  
to the application.



#### Benefits of the new CP600 generation

- Increased performance for applications of up to 150 MB
- Improved network capabilities: 2x ETH with different physical layers (PHY)
- Extended operating temperature: -20...+60 °C
- Increased brightness: 400 cd/m<sup>2</sup>
- Black, neutral front foils suitable for most applications
- Harmonized with CP600 platform:
  - Operation system LINUX
  - Enhanced features
- Three most requested screen sizes: 7", 10.4" and 15"
- Easy replacement of former CP600 devices

# PLC Automation product family

## CP600-Pro control panels



### Outstanding HMI range designed for challenging applications

Control panels in screen sizes from 5" to 21.5" provide comprehensive HMI functions with multi-touch operation for a wide range of applications. Real glass fronts and an increased operating temperature range of  $-20\dots+60\text{ }^{\circ}\text{C}$  make them first choice even for harsh environments. The engineering tool PB610 Panel Builder 600, part of ABB Ability™ Automation Builder, ensures easy scalability on the CP600 platform.

### Multi-touch control panels for high-end applications

- The portfolio includes five screen sizes from 5" to 21.5", all widescreen, with multi-touch real glass screens for demanding high-end applications.
- The wide range of operating temperatures of  $-20\dots+60\text{ }^{\circ}\text{C}$  makes them suitable for versatile applications and first choice for demanding ones.
- Protocols for ABB PLCs, machinery and motion drives for Ethernet and serial connection make these control panels preferred option for ABB automation solutions.
- OPC UA client and server functions make them well prepared for future communication solutions.

- Engineering by means of PB610 Panel Builder 600, part of Automation Builder, facilitates integration into automation packages and enables good scalability on the CP600 platform for versatile applications.

### Real glass front and solid aluminum enclosure

CP600-Pro control panels have real glass fronts and robust aluminum enclosures in attractive industrial design, with all connectors located on one side, for installation in various even demanding environments. Landscape and portrait mounting options support installation flexibility for various HMI presentations.

### Flexible connectivity and data storage with a view to the future

- Up to 3 Ethernet networks with different physical layers for easy connectivity to ABB automation components for upcoming networking concepts.
- Flexible serial connectivity to automation components without Ethernet interface.
- USB hosts for connecting printers and accessories, data storage and updating.
- Memory card slot for easy data storage and updating.





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The CP600-Pro control panels (7"... 15") can also be used to trigger safety actions in combination with AC500-S.