

PLC AUTOMATION

AC500-eCo V3 PLC

Performance built with modularity, connectivity and scalability

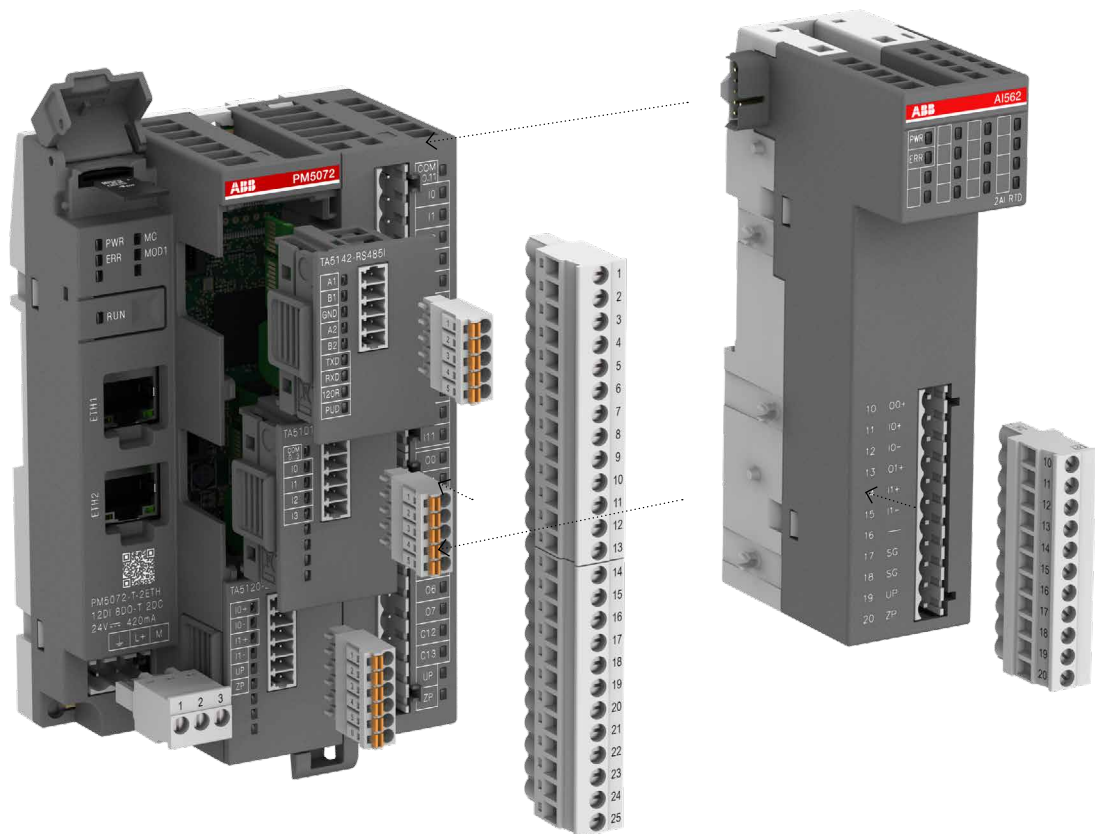


003	AC500-eCo V3
004	AC500 PLC platform
006–007	Performance built up step by step
008–009	Think sustainability
010–011	High density of features onboard
012–013	AC500-eCo V3 – Basic
014–015	AC500-eCo V3 – Standard
016–017	AC500-eCo V3 – Pro
018–019	Precise, flexible and scalable solutions for motion applications
020–021	Wide temperature range
022–023	Compatibility matrix
024–025	Configure AC500 and CP600 HMI in ABB GoSelect
026–027	Choose your option boards
028	S500-eCo I/O modules
029	Extension with I/O modules of the AC500 product family
030–031	Grow your application
032–033	AC500-eCo V3 CPU
034–035	Extended Ethernet connectivity
036	Secure connectivity
037	How AC500-eCo meet security challenges according to IEC 62443
038–039	Building automation
040–041	Motion control with onboard I/Os
042	Real-time Motion control performance
043	AC500-eCo MC-KIT
044–045	ABB Drives integration
046	Onboard HTML5 visualization
047	The perfect match: AC500-eCo V3 and CP600-eCo control panels
048–049	Automation Builder
050–058	AC500-eCo V3 AC500-eCo V3 Starter kit AC500-eCo Motion Control kit Automation Builder Ordering data

AC500-eCo V3

New standard of flexibility for entrance-level PLCs

AC500-eCo V3 is a comprehensive range of PLCs providing ready-to-go solutions with all necessary components onboard to be used for entry level automation solutions. The CPUs in the three different performance classes Basic, Standard and Pro are compatible for seamless scaling.



Basic

The Basic PLC is designed to meet the requirements of extremely cost-sensitive stand-alone applications.

1

Standard

The Standard PLCs seamlessly scale up in performance to meet higher requirements and provide more extensive connectivity.

2

Pro

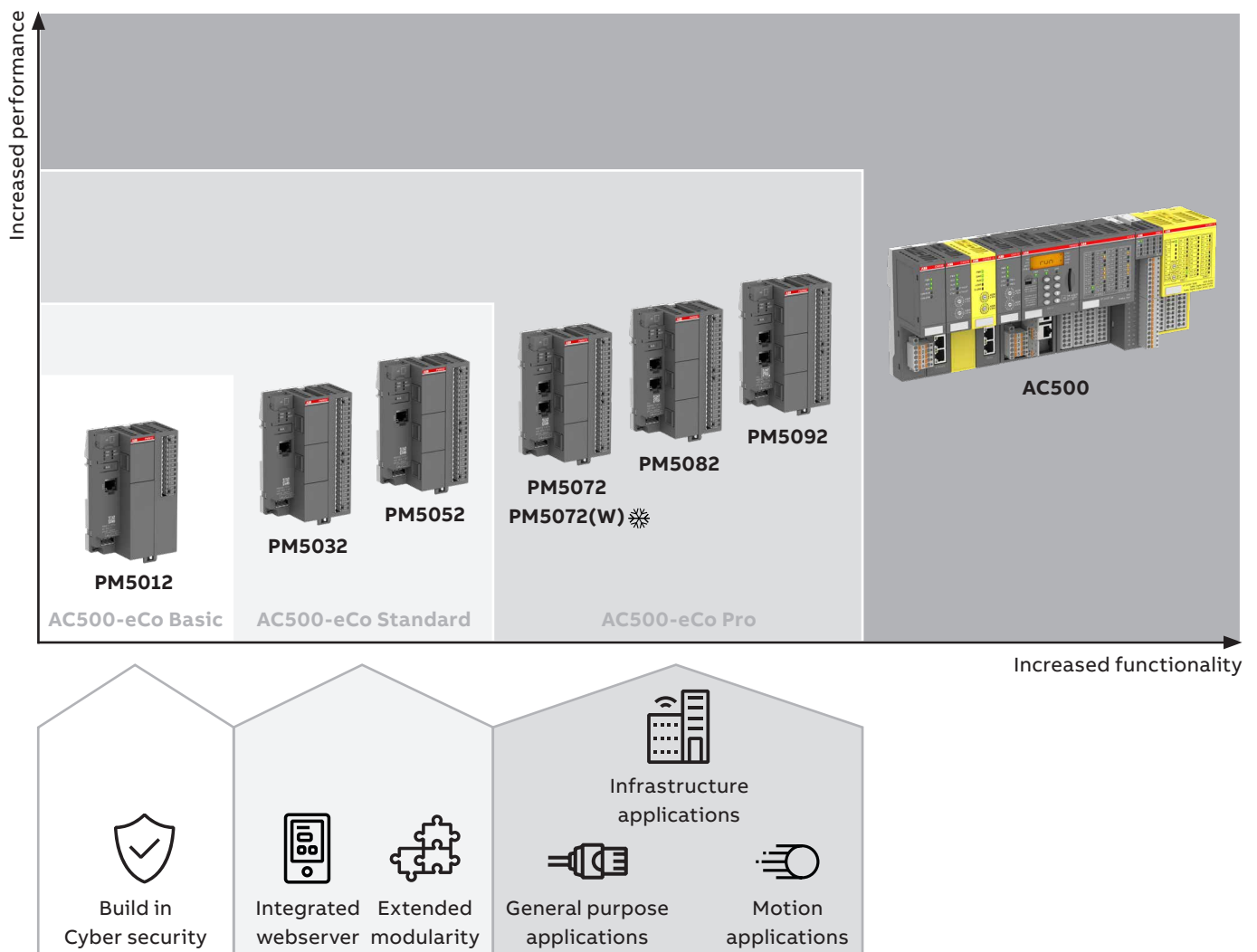
The Pro is the top-level performer in the range, to be selected for higher requirements and more extensive complexity.

3

AC500 PLC platform

Unique scaling across the entire product range

AC500 PLC platform



MC

ABB

PM5072

TA5130-KNXPB

☒ PWR

☐ ERR

PRG

☒ RUN

ETH1

TA5120-2AI-UI

10+

ETH2

COM
0.11

I0

I1

I2

I3

I4

I5

I6

I7

I8

I9

I10

I11

00

1

2

3

4

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8

9

10

11

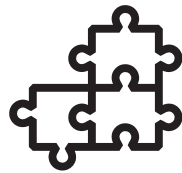
12

13

Performance built up step by step

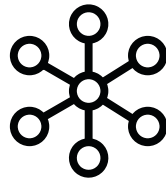
For extremely cost-sensitive stand-alone applications

The AC500-eCo V3 PLCs are ready to use straight out of the box, offering built-in I/Os and communication features on the CPUs. With a modular, scalable, and connected design, they deliver the perfect balance of performance for a wide range of applications.



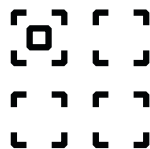
Modularity

Provides the features you need, starting with a low-cost standalone solution that scales with machine innovations.



Connectivity

Adaptable communication capabilities ensure seamless information exchange and future-ready flexibility.



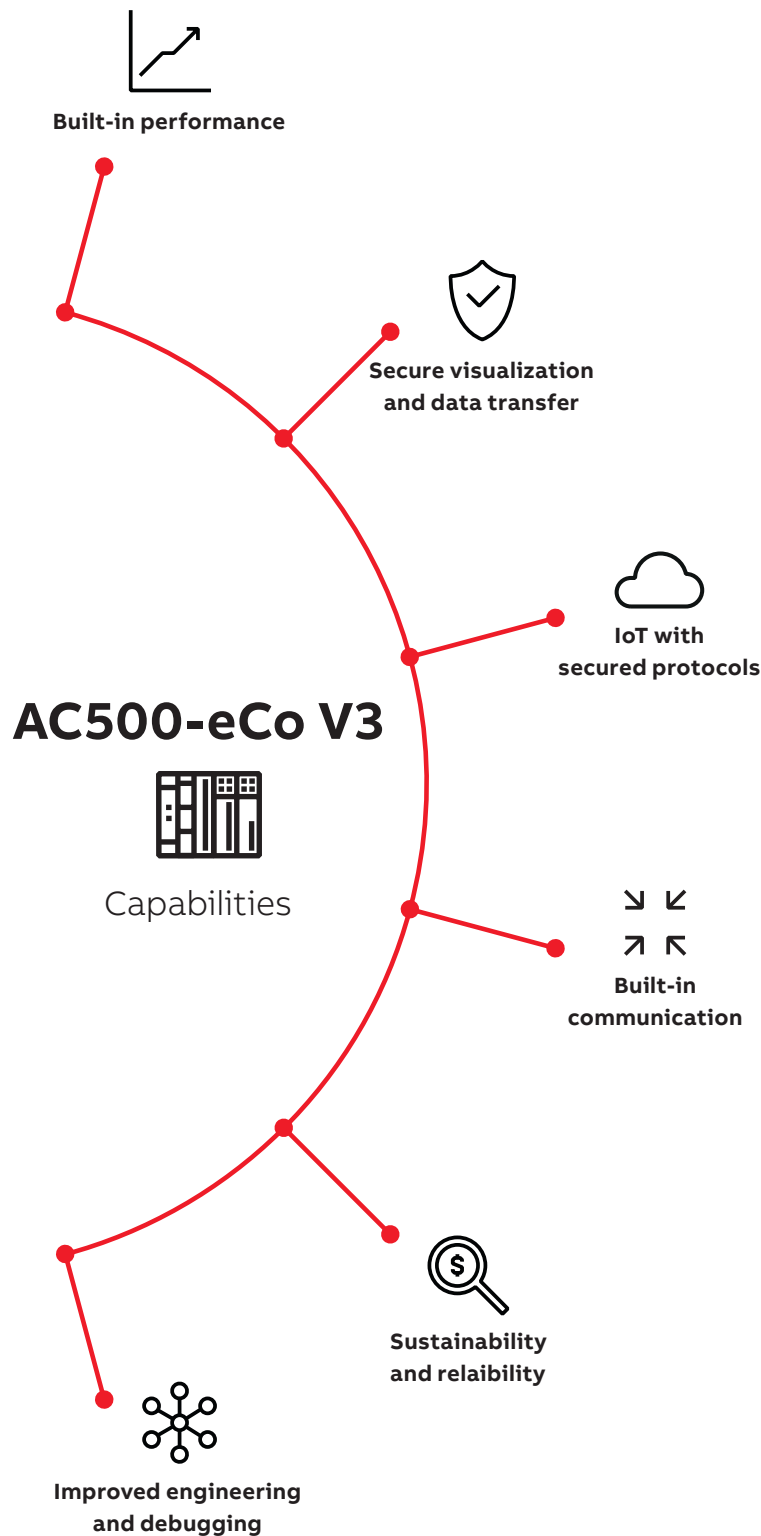
Scalability

Three CPU versions offer easy retrofitting and compatibility with the AC500 platform, protecting your investments.



Reliability

Built on a proven foundation, the AC500-eCo V3 delivers dependable, future-ready automation for sustainable solutions..



Built-in performance

- Powerful processors with floating point unit
- Scalable CPU memory for user program and data
- Onboard I/O channels

Secure visualization and data transfer

- Secure communication protocols: HTTPS, FTPS
- Encrypted communication with Automation Builder and boot application

IoT with secured protocols

- OPC UA for easy connectivity to SCADA systems
- MQTT for lightweight cloud messaging
- Onboard HTML5 web server technology

Built-in communication

- Ethernet interfaces for use as switch or independent ports
- Onboard Ethernet fieldbus protocol:
 - Modbus TCP, PROFINET, EtherCAT, Ethernet/IP, KNX and BACnet
- Onboard Ethernet Infrastructure protocol:
 - DNP3, IEC 60870 for telecontrol and IEC 61850

Sustainability and Reliability

- No battery needed for storage of program or data
- Regular software updates may be run for an extended life cycle
- Upgrade to new features while re-using existing installation of S500/S500-eCo I/O modules
- W-version for extended environment temperature

Improved engineering and debugging

- Object-oriented programming
- Optimized IEC 61131-3 editors
- Offline simulation capabilities

Think sustainability

Choose green

The AC500-eCo V3 is designed with sustainability in mind, reducing waste through reusability, extending product life cycles, and eliminating battery reliance. Its proven quality ensures long-term reliability, making it the smart choice for long-term automation solutions.



Reusability

From a production perspective by reusing the form factor reduces emissions by enabling parts and pieces to be reused in production.



Life cycle

Software updates extend system life, safeguarding your investment and optimizing the application lifecycle before final recycling of the equipment.



Don't produce waste

Reuse existing installed base of AC500-eCo units while upgrading to state-of-the-art functionality with the AC500-eCo V3 CPUs.



No battery

The AC500-eCo V3 removes the need for external batteries, keeping data and applications current while simplifying maintenance.



Quality

With 15 years of proven performance, ABB's AC500 series delivers reliable, high-quality technology for seamless daily operations. Designed to withstand tough conditions, the AC500-eCo V3 ensures durability while supporting waste reduction.



A photograph of an offshore wind farm with several white wind turbines against a clear blue sky and dark blue sea. A red circular graphic is overlaid in the upper right corner.

**Reduce waste,
Embrace reuse!**

High density of features onboard

Though invisible to the naked eye, when diving into the AC500-eCo V3 CPUs, you will be impressed with the functionality available directly on the CPU.

Micro memory card

For project or data saving,
program or firmware update

Floating Point Unit (FPU)

High performance CPU to be
used in Real-time applications

Status LED

2 LEDs available for user-defined
functions

RUN-STOP toggle-switch

For easy control of the application

Ethernet ports

Up to two ports to be used
individually or as switch

HTML5 web server

Full access to the process through
standard browsers

Programming and configuring

With Automation Builder via
Ethernet interfaces

Cable fixing

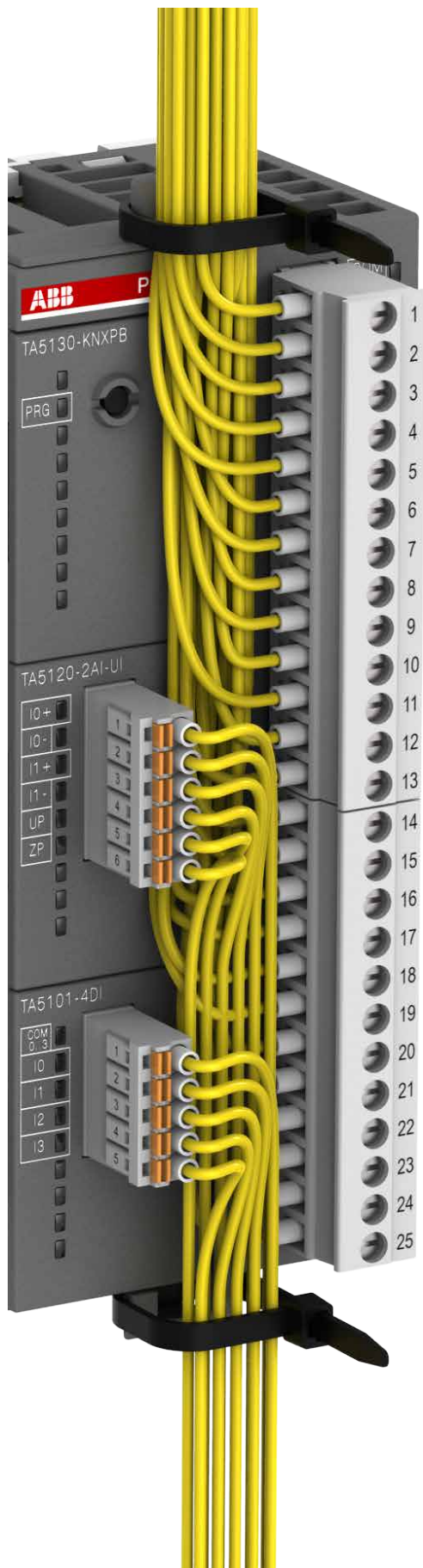
For a nice and neat installation

QR code for self service

Easy access to up-to-date
documentation and manuals



Standard
and Pro
temperature
range
-20 °C to
+60 °C



LED close to the I/O channels

Improve visibility of I/O status

I/O bus connector

Compatible with up to
10 I/O modules

Integrated onboard I/O

To provides a versatile and
compact solution

Fast I/Os

Up to 200 kHz for motion
applications and axis control

PTO and PWM output

Up to 200 kHz used for simple motion

Smart option board

Increases I/Os and adds more
communication interfaces

I/O terminals

Push-in spring or screw connectors
for cables up to 2.5 mm²

AC500-eCo V3 – Basic

Enter the eCo PLC family

To meet the most cost-sensitive and basic applications.

The “Basic” versions provide more performance on the same footprint.

The CPU is equipped with a high-performance processor and ample memory to use the extensive features and power the fast 6 digital inputs and 4 digital outputs onboard.

Two Basic CPU versions with differing transistor or relay output available to increase savings even further.

If the applications are more demanding, it is possible to extend the functionality with one of the available option boards.

The CPU has one Ethernet port to be used for programming or connectivity via the Modbus TCP protocol.

Feel confident with full PLC functionality that meets all the requirements of the machine or the customer.

The free software version “Basic” of the proven Automation Builder is sufficient to engineer the onboard functionality.

Configuration of some protocols requires Standard Edition of Automation Builder software.



PM5012-T-ETH



PM5012-R-ETH



Water



Infrastructure



Agriculture

For extremely
cost-sensitive
applications



AC500-eCo V3 – Standard

Enter the next level of flexibility and motion control

For modular and distributed applications

The “Standard” CPUs are available in four different types with different feature sets. With these CPUs you can go for larger and more demanding applications. The modularity makes it easy to adapt the product to your needs.

More flexibility

Larger memory and more onboard I/Os as well as the possibility of up to three option boards.

Tailor the product to your need

The CPU can easily be extended locally using up to 10 I/O modules from the S500 and S500-eCo range.

Insight into your application

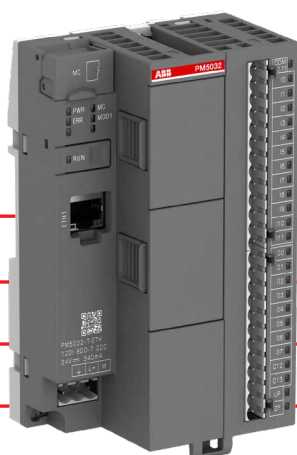
All standard CPUs have an HTML5 web server. The visualization of the web server is efficiently built-up within the engineering tool Automation Builder.

Secure connectivity

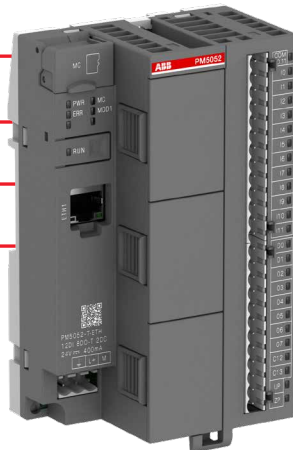
IoT is in the DNA of these CPUs. The latest Ethernet technology provides secure and encrypted communication via protocols such as MQTT and OPC UA to e.g. to SCADA systems.

Distributed automation

Beside the serial protocols Modbus RTU and CANopen, the integrated Ethernet port feature in addition protocols such as Modbus TCP, PROFINET and Ethernet/IP supports remote connectivity.



PM5032-T-ETH
PM5052-T-ETH



PM5032-R-ETH
PM5052-R-ETH



Conveyers



OEM Machinery



Motion I/Os for point-to-point Motion control

Input

The CPUs provide either up to four high-speed counters (max. 100 kHz each) or up to two A/B encoders (max. 200 kHz each).

Output

The CPUs offer motion capability via up to four 200 kHz PTOs (pulse/direction or CC/CCW), or four PWMs with 30 kHz.

Application

A comprehensive set of function blocks for simple motion applications (i.e. point to point, velocity control) is available free of charge.

Onboard

- 12 digital inputs
- 8 digital outputs (6 with relays)
- 2 digital, configurable
- One version with transistor outputs and one with relays.
- Up to three slots available for easy extension with option boards.
- Supported by the Automation Builder software platform.



Simple Motion Control

AC500-eCo V3 – Pro

Enter the new dimension of communication

For demanding applications and extended connectivity

The four AC500-eCo Pro CPUs are the most powerful PLCs in the range. More memory and great flexibility make the CPUs the best choice for large and demanding applications.

In addition to the feature set of the Standard CPU, the Pro version has 2 Ethernet ports and extends the connectivity considerably.

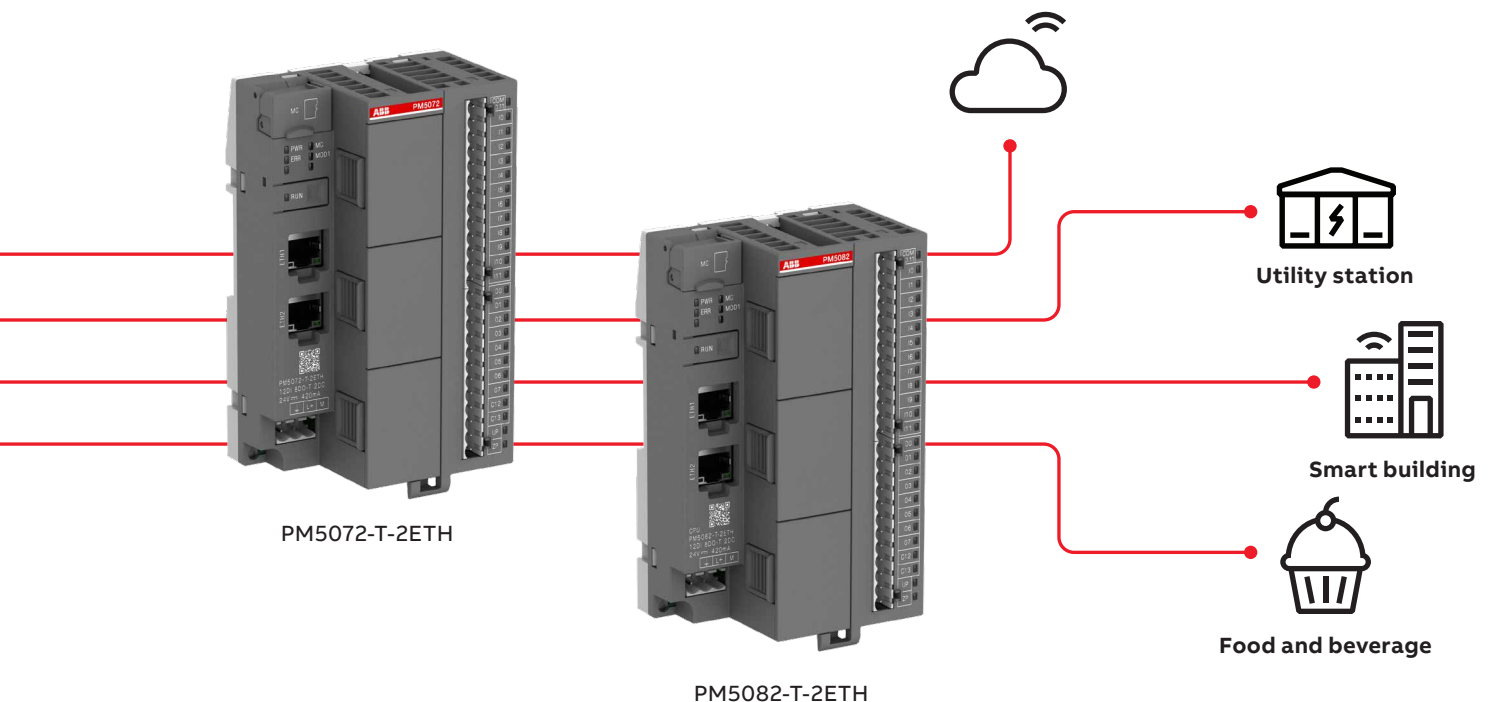
Standard protocols such as Modbus TCP, OPC UA, MQTT, IEC 60870 (telecontrol) are always supported. Additionally, licensed protocols such as DNP3, PROFINET, Ethernet/IP, EtherCAT, IEC 61850, BACnet, KNX can be used.

The AC500-eCo V3 fits perfectly into building applications. The KNX license and KNX option board enable you to use the CPU as an KNX IP controller. The onboard BACnet protocol further contributes to HVAC applications.

The Ethernet ports come with extended utility protocols such as IEC 61850, DNP3 and IEC 60870 for easy integration into new or existing applications.

The OPC UA protocol available onboard bridges between the application and the upper-level main control system to securely and efficiently manage big data volume transfer.

Configuration of some protocols requires standard edition of Automation Builder software.



CPU range
for general
purpose
applications



AC500-eCo V3 – Pro

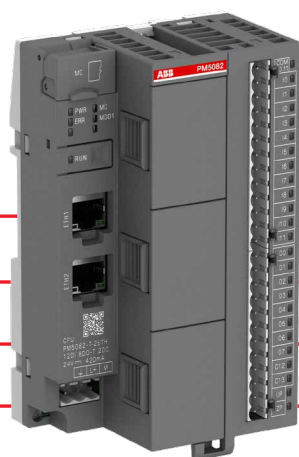
Precise, flexible and scalable solutions for motion applications

The PM5082 and PM5092 motion controller features a more powerful processor and increased memory capacity. This enhanced performance supports advanced real-time EtherCAT based motion control while incorporating standard AC500-eCo Pro CPU capabilities for general machine control, including OPC UA, MQTT, HTML5, PROFINET, and Ethernet/IP.

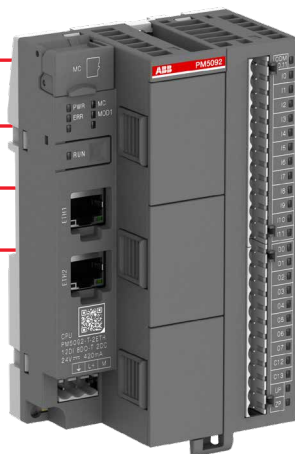
Designed for the future, its advanced communication features ensure seamless integration with digital solutions. Transform your automation with innovative and versatile control.

The PM5092 CPU empower motion control with seamless, wizard-based axis commissioning. Utilize diverse motion control application libraries based on PLCopen motion control standard to address industry challenges effortlessly.

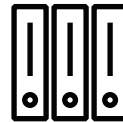
The CPUs support hybrid control modes supporting from the most complex coordination motion control via the real-time protocol EtherCAT and fast motion via Modbus TCP along side with pulse train, analog, and hybrid motion control modes for unparalleled flexibility and adaptability.



PM5082-T-2ETH



PM5092-T-2ETH



PLCopen
Motion Control
Libraries



Material handling



Extruder



Coordinated
Motion control
application

A close-up, low-angle shot of a conveyor belt in an industrial egg processing facility. The conveyor belt is made of dark green metal rollers and is filled with hundreds of brown eggs, arranged in neat, parallel rows. The eggs are moving from the foreground towards the background. The background is slightly blurred, showing more of the conveyor system and industrial structures. A red metal frame is visible on the left side of the conveyor. In the top right corner, there is a white circular graphic containing text.

Real-time
motion control
based on EtherCAT
and PLCopen
function libraries

Wide temperature range

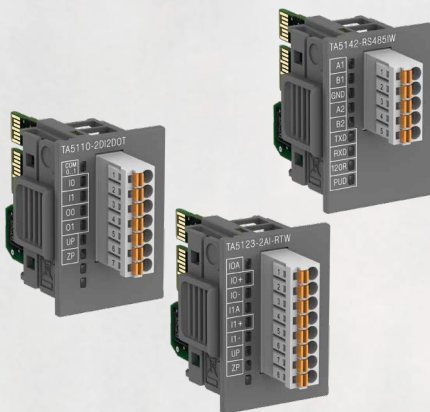
Reliability in low temperature zones

The W-version CPU from the AC500-eCo Pro range including the complete range of option boards can be used in extended environment temperature.

The W-versions of AC500-eCo V3 CPUs and their dedicated option boards are built to perform in challenging environments, withstanding temperatures from -40 °C to +70 °C. A simple coating enhances durability, allowing them to handle short-term humidity exposure while maintaining performance.



PM5072-T-2ETHW



W-version option boards

The full range of W-version option modules can be seamlessly paired with W-CPU's, offering a compact, space-saving footprint and smooth scalability. Designed for reliability, these components thrive in extreme conditions, ensuring consistent operation even at the outer temperature limits.

(W) Wide extended temperature -40 °C to +70 °C

W-versions
for
temperature
-40 °C to
+70 °C

All Standard and Pro
AC500-eCo V3 CPUs are
qualified for use in lower
temperature from
-20 °C to +60 °C in areas
without condensation.



Compatibility matrix

What CPU to select to fit your purpose

The options are many, what will be your selection of CPU-type for your next automation project based on AC500-eCo.

The onboard capacity of the Basic, Standard, and Pro CPU series varies based on their architecture. The chart below provides guidance on I/O counts, I/O types, and the number of I/O modules that can be connected to a CPU. It also highlights the available slots for option boards and the number of Ethernet ports.



	DI/DO/DC	Transistor	Relay	Slot for Option board	Ethernet ports	I/O module expansion	Motion axis nr. @2ms	Extended temperature range -20 °C to +60 °C
PM5012-T-ETH	6/4	•		1	1	–	–	–
PM5012-R-ETH			•					
PM5032-T-ETH	12/8/2	•		2	1	10 (1)	–	•
PM5032-R-ETH	12/6/2		•					
PM5052-T-ETH	12/8/2	•		3	1	10	–	•
PM5052-R-ETH	12/6/2		•					
PM5072-T-2ETH	12/8/2	•		3	2	10	4	•
PM5072-T-2ETHW		•						-40 °C to +70 °C
PM5082-T-2ETH	12/8/2	•		3	2	10	8	•
PM5092-T-2ETH	12/8/2	•		3	2	10	12	•

(1) with limits of 128 bytes input/128 bytes output data

(W) Wide extended temperature -40 °C to +70 °C

Protocol support and compatibility guide

To simplify selection, we've created a comprehensive table outlining CPU type compatibility with various protocols. The table indicates which protocols are supported by each CPU type, those requiring a license, and whether an additional option module is necessary to achieve compatibility. This guide ensures an informed and efficient choice for your automation needs.



CPU family			Basic	Standard		Pro
CPU type	Communication architecture model	Requires an option board	PM5012-x	PM5032-x	PM5052-x	PM5072 PM5082 PM5092
Serial protocol						
CAN/CANopen	Master	•	–	•	•	•
CS31 (1)	Master	•	•	•	•	•
Modbus RTU	Master/Slave	•	•	•	•	•
SAE J1939	Peer-to-peer	•	–	•	•	•
Ethernet protocol						
BACnet	Master/Slave	–	–	–	–	Licensed
DNP3	–/Outstation	–	–	–	–	Licensed
Global variables	Producer/Consumer	–	•	•	•	•
EtherCAT	Master	–	–	–	–	Licensed
Ethernet/IP	Adapter/Scanner	–	–	Licensed	Licensed	Licensed
IEC 60870-5-104	Controlstation/Substation	–	–	–	–	•
IEC 61850	–	–	–	–	–	Licensed
MMS	Server					
Goose	Publisher/Subscriber					
KNX/IP	Peer-to-peer	•	–	–	–	Licensed
Modbus TCP	Master/Slave	–	•	•	•	•
MQTT	Publisher/Subscriber	–	–	•	•	•
OPC UA	Server	–	–	•	•	•
PROFINET IO	Controller/Device	–	–	–	Licensed	Licensed
SMTP	–	–	–	•	•	•
SNTP	–	–	–	•	•	•
WEB server	–	–	–	•	•	•

(1) In preparation: CS31 – an easy-to-engineer, cyber-secure, and proprietary low-cost fieldbus for connecting S500 remote I/O to AC500 CPUs!



Configure AC500 and CP600 HMI in ABB GoSelect

ABB GoSelect is a web-based selection, dimensioning and efficiency tool for motors, drives, and the AC500 PLC platform.

Start today and take your automation to the next level!

Streamline your automation projects with ease

The intuitive ABB GoSelect web application simplifies the creation of PLC configurations, allowing you to structure and organize your PLC project topology effortlessly.

Creating and customizing configurations is straightforward, with **advanced filters making product selection easy** and efficient.

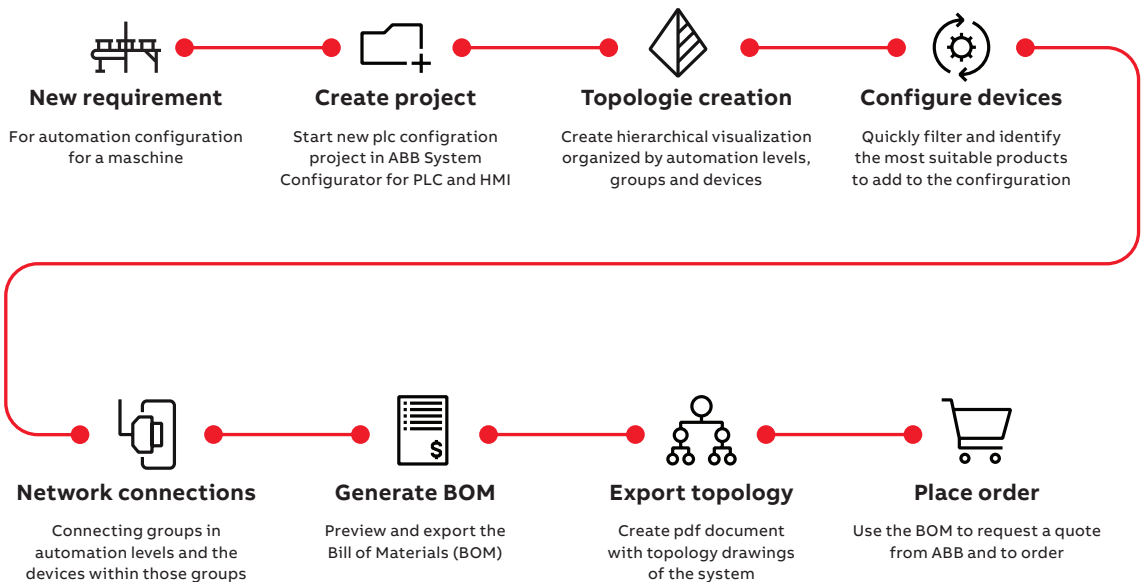
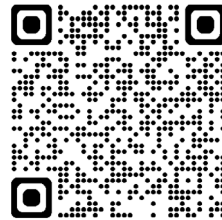
Built-in validation ensures correct configuration, while the tool's visualization capabilities provide clear insights into networks and connections.

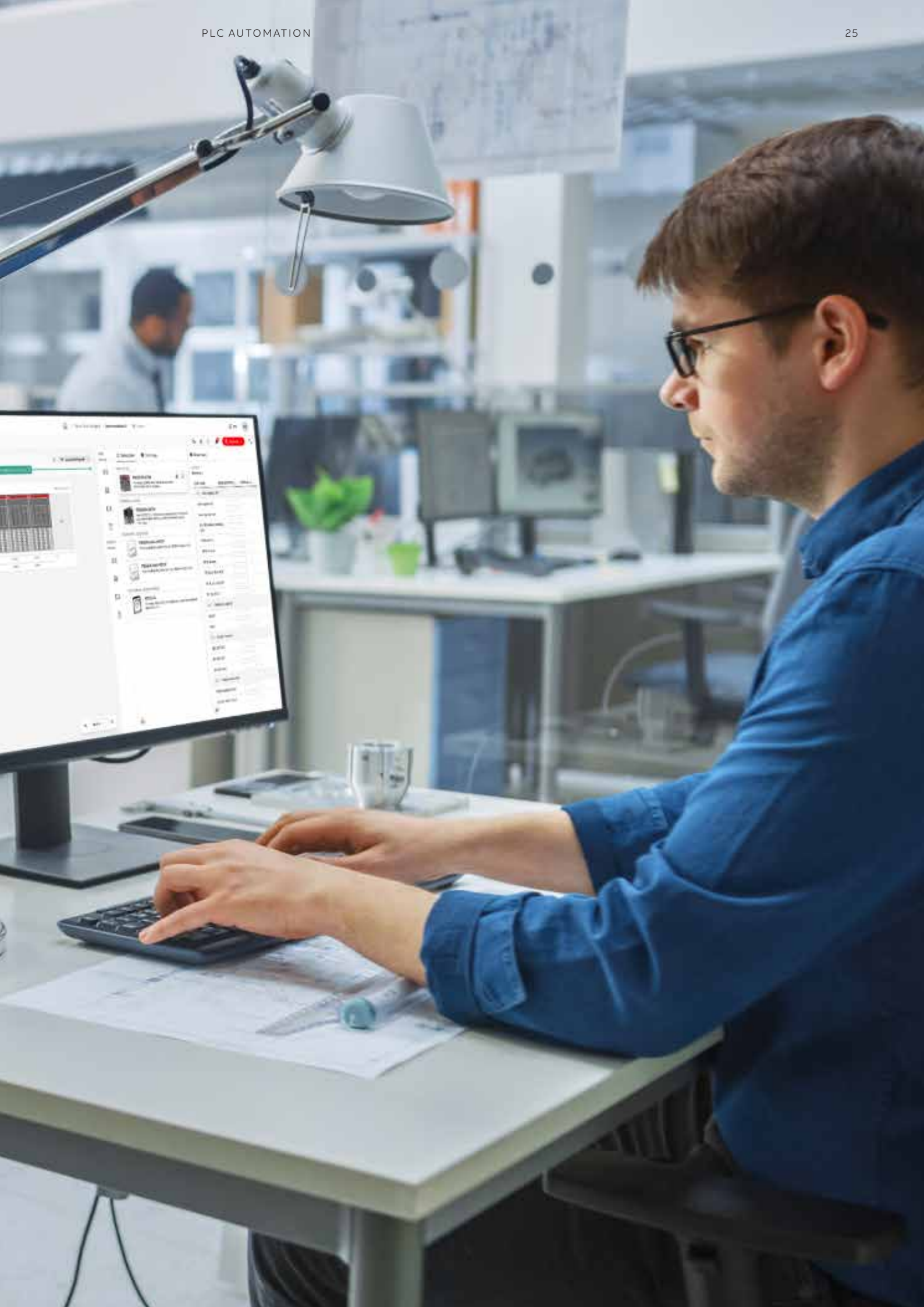
Export a detailed bill of materials which is used to obtain a quotation and to order from ABB.

Generate a project report that contains a graphical representation of the system topology and network structure as well as a bill of materials.

The tool **securely stores projects in the cloud**, protects your work and enables easy access.

ABB GoSelect





Choose your option boards

Innovative extension of onboard functionality

The option board gives the user a unique opportunity to add features easily and in a cost-efficient way without increasing the footprint of the system. Up to three option boards can be used on one CPU, depending on CPU type.

The option boards can be freely assigned to any available slot, and it is even possible to use the same type of option board several times on one CPU. All option boards are delivered with spring terminal blocks.

Digital input/output

Three option boards are available to extend the number of digital I/O channels on the CPU. Each module offers 4 additional I/O channels.



Type	DI/DO	Description
TA5101-4DI(W)	4/-	24 V DC input
TA5105-4DOT(W)	-/4	24 V DC, 0,5 A Transistor output
TA5110-2DI2DOT(W)	2/2	24 VDC input/ 24 VDC, 0,5 A Transistor output

(W) Wide extended temperature -40 °C to +70 °C

Analog input/output

Onboard analog I/O extension is done via option boards. Different analog modules are available to connect analog sensors and actuators (voltage, current, resistance) and thermocouples.



Type	AI/AO	Resolution
TA5120-2AI-UI(W)	2/- 0...10 V 0/4...20 mA	12 bits
TA5122-2AI-TC(W) (1)	2/- Thermocouple Types J, K, T, N, S, E, R	15 bits + sign
TA5123-2AI-RTD(W)	2/- PT100/PT1000, (2/3wire) Ni100/Ni1000, (2/3wire) Resistor 0...150 Ω NTC 10K, -40 °C to +110 °C NTC 20K Resolution of temperature measurement 0.1 °C	15 bits + sign
TA5126-2AO-UI(W)	-/2 0...+10 V 0/4...20 mA	12 bits
TA5128-2AI1AO(W)	2/1 0...+10 V 0/4...20 mA	10 bits

(1) In preparation

(W) Wide extended temperature -40 °C to +70 °C



Serial communication

Three different option boards with or without galvanic isolation allow interfacing to serial devices via the Modbus RTU or ASCII protocol using either RS232 or RS485.



Type	Communication type
TA5141-RS232I(W)	RS232 isolated
TA5142-RS485I(W)	RS485 isolated
TA5142-RS485(W)	RS485 non-isolated
TA5146-CN(W)	1xCAN-bus isolated

(W) Wide extended temperature -40 °C to +70 °C

Accessories

A real-time clock is available onboard on the Standard and Pro versions and can be added via an option board on the Basic version if the application requires it.

KNX address setting module to connect to the KNX ETS5 configuring software and Automation Builder via DCA.



Type	Description
TA5131-RTC	Real Time Clock for upgrade of AC500-eCo Basic CPUs
TA5130-KNXPB(W)	KNX addressing switch

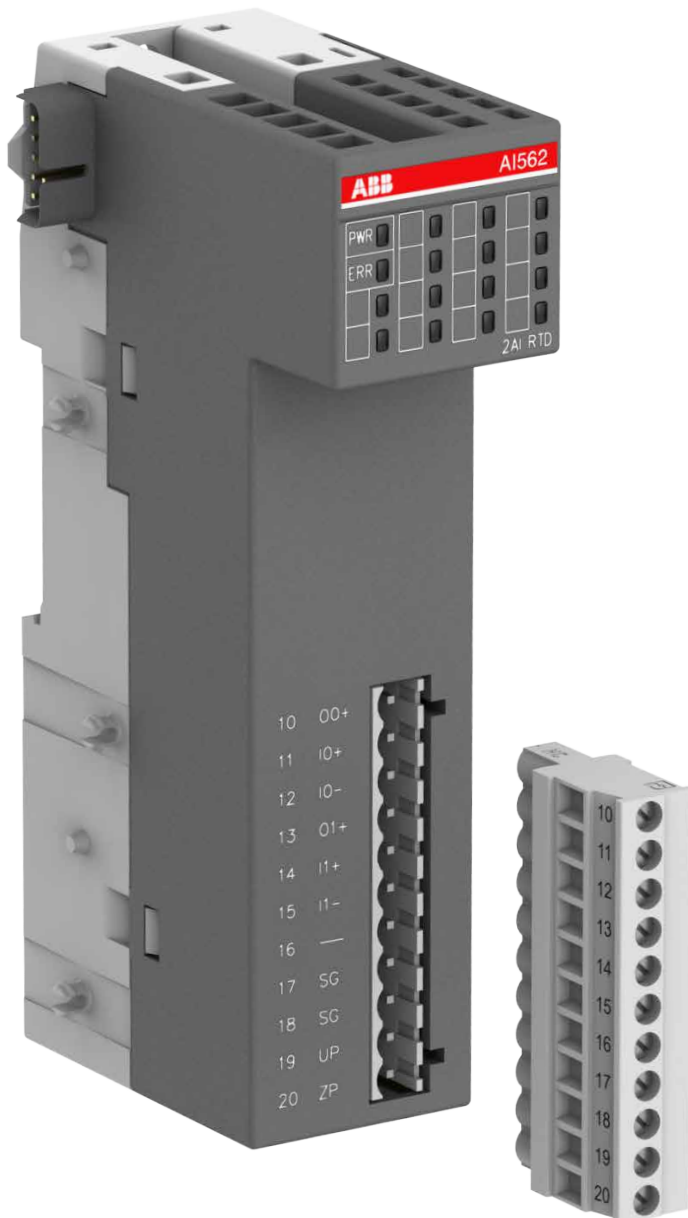
(W) Wide extended temperature -40 °C to +70 °C

	Basic	Standard		Pro		
CPU type	PM5012-x-ETH	PM5032-x-ETH	PM5052-x-ETH	PM5072-T-2ETH(W)	PM5082-T-ETH	PM5092-T-ETH
User program memory Thereof program code and data	1 MB (256 kB)	2 MB (512 kB)	4 MB (768 kB)	8 MB (1 MB)	8 MB (1 MB)	18 MB (2 MB)
Option board slot 1	•	•	•	•	•	•
Option board slot 2	–	•	•	•	•	•
Option board slot 3	–	–	•	•	•	•
DI / DO-T or R / DC	6/4	12/8 or 6/2		12/8/2		
I/O bus	–	10 I/O extension (128 Byte input and 128 Byte output)	10 I/O extension	10 I/O extension	10 I/O extension	10 I/O extension
ETH ports	1	1	1	2	2	2

S500-eCo I/O modules

Compact and cost-effective I/O solutions

AC500-eCo I/O modules deliver cost efficiency without sacrificing quality or performance. Their compact footprint makes them ideal for smaller cabinets, ensuring a perfect fit for space-constrained applications.



Flexible used cases

For central I/O extension of the AC500-eCo V3 CPUs or for decentralized extension over various protocol

Precise measuring

Available for digital and analog versions for voltage, current and thermoelement

Status LED

Direct on the I/O module to detect signals status without engineering PC

Terminal block

Available three different version, spring or screw for optimal performance, ordered separately

Compact module

High density I/O module with up to 16 I/O channels in narrow space

Configurable digital I/O channels

The Standard and PRO CPUs provide two digital configurable I/O to be used either as digital in our out

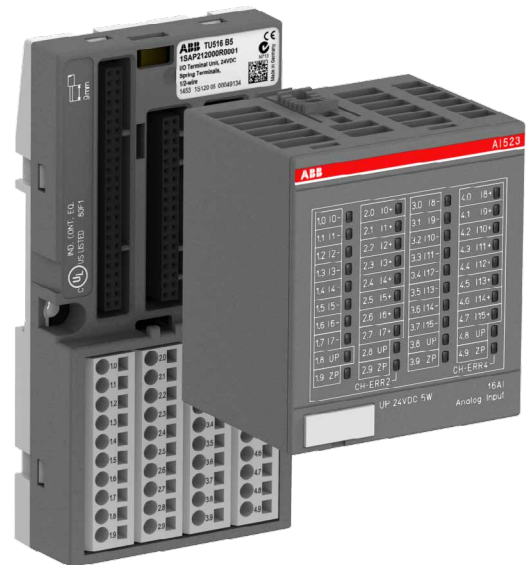
Extension with I/O modules of the AC500 product family

For central I/O extension of the AC500-eCo V3 CPUs or for decentralized extension in combination with CS31 (1), CANopen, Modbus TCP, PROFINET or EtherCAT communication interface modules.

S500 I/O Modules:

Flexible and High-Performance

S500 I/O modules seamlessly integrate with AC500-eCo, offering high-density configurable digital I/O channels and configurable analog options with enhanced resolution for voltage, current, or resistance. With robust protection, extended diagnostics, and scalable expansion, they provide a compact, cost-effective solution for reliable and advanced automation.



(1) In preparation: CS31 – an easy-to-engineer, cyber-secure, and proprietary low-cost fieldbus for connecting S500 remote I/O to AC500 CPUs!

Up to 10
additional I/O
modules

Grow your application

Extending I/O with S500 and S500-eCo modules

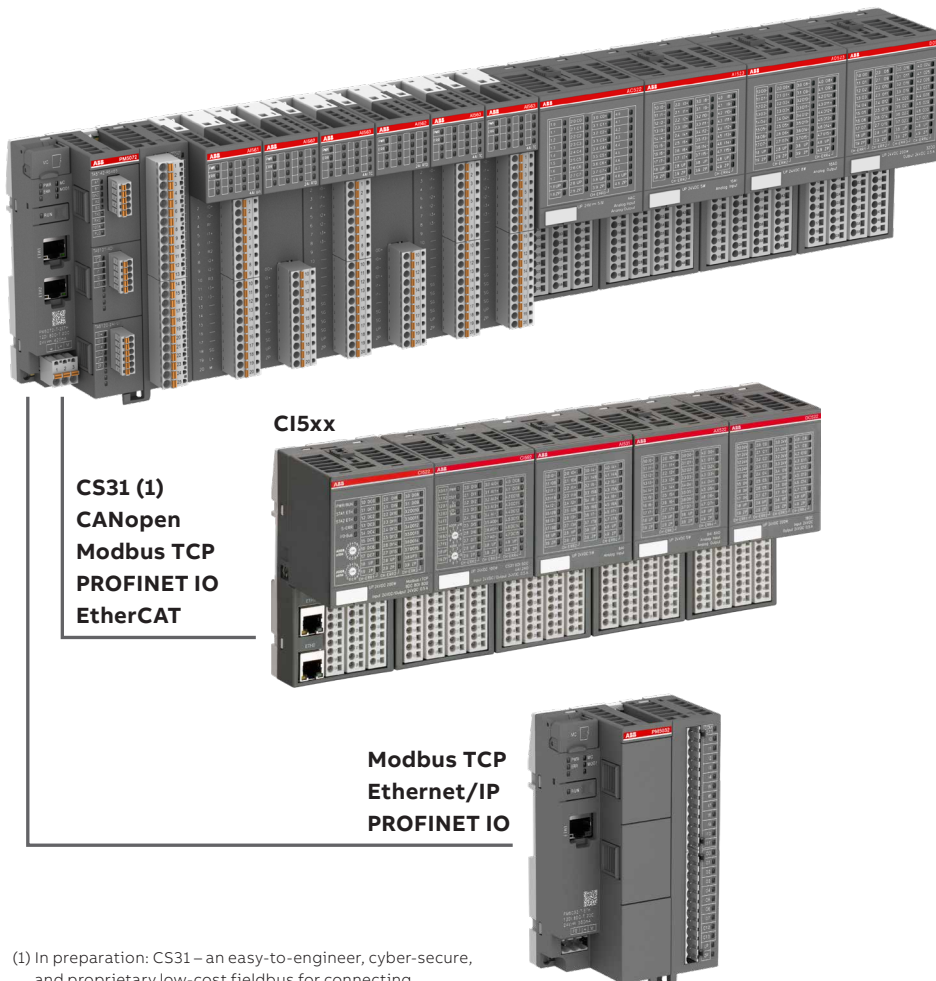
Standard or Pro CPUs are the ideal choice for I/O extension needs. Up to 10 I/O modules from the S500 I/O range can be directly added to the CPUs, offering flexibility and scalability.

This allows users to leverage the cost-effective S500-eCo modules for standard tasks, while utilizing the advanced S500 modules for demanding applications.

Remote I/O extension with AC500-eCo CPUs

Using remote I/O protocols like CS31 (1), CANopen, Modbus TCP, Ethernet/IP, EtherCAT or PROFINET via corresponding communication interface modules (CI5x1/5x2), these modules provide built-in I/Os and can expand with up to 10 additional S500 I/O modules.

The AC500-eCo CPU can also act as a cost-effective, intelligent remote I/O station. Both options support daisy-chaining with dual Ethernet ports for flexible system configurations.



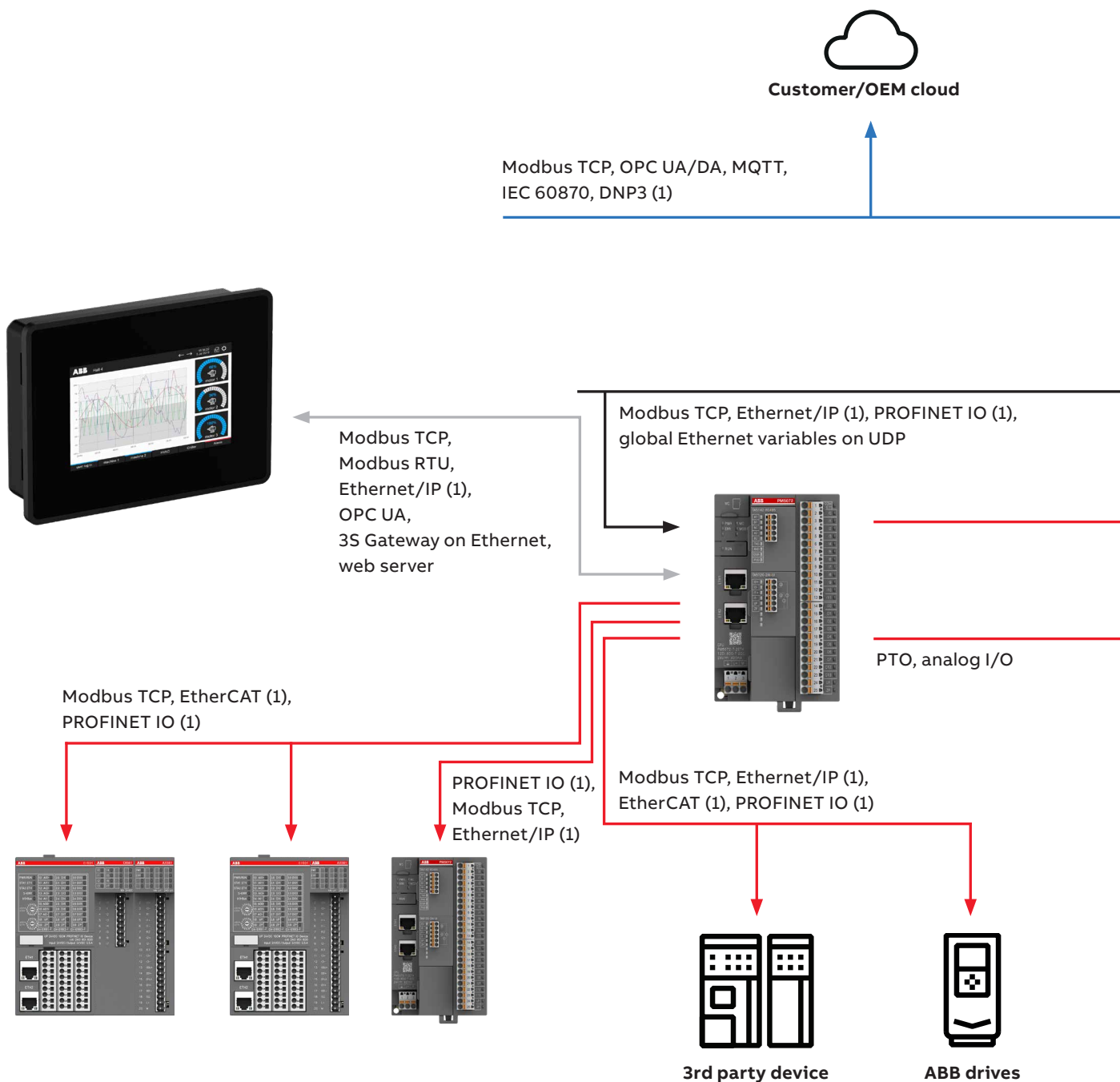
(1) In preparation: CS31 – an easy-to-engineer, cyber-secure, and proprietary low-cost fieldbus for connecting S500 remote I/O to AC500 CPUs!

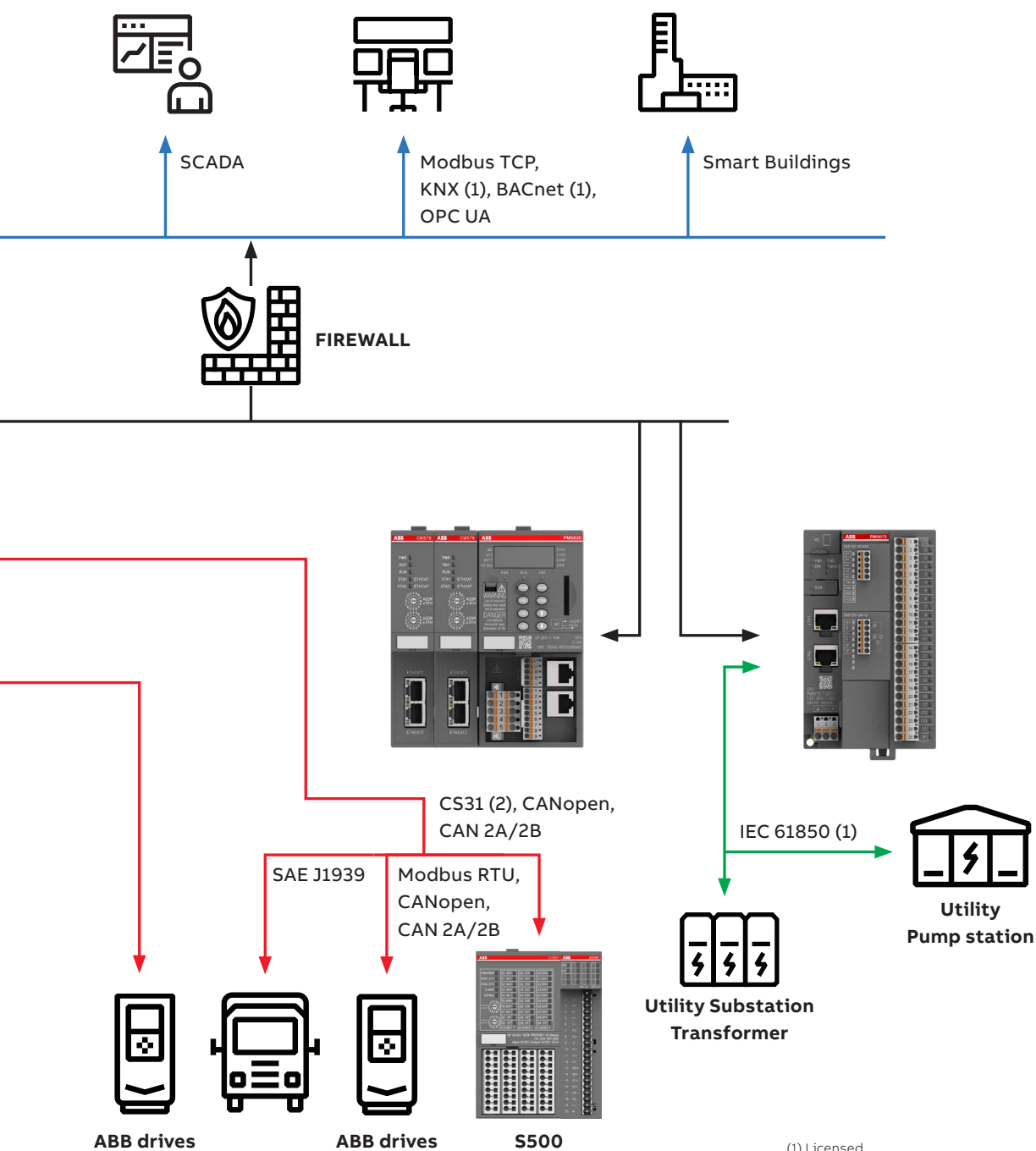


AC500-eCo V3 CPU

Connectivity

The AC500-eCo V3 PLCs provide a high number of communication protocols and connectivity options, from the field layer through to the management and visualization layers.





(1) Licensed

(2) In preparation: CS31 – an easy-to-engineer, cyber-secure, and proprietary low-cost fieldbus for connecting S500 remote I/O to AC500 CPUs!

Extended Ethernet connectivity

Onboard protocol IEC 61850 and IEC 60870 and DNP3

Modernize and digitalize an existing and aging infrastructure

AC500-eCo V3 as freely programmable 61850 controller, gateway or IED

The AC500-eCo V3 can act as an Intelligent Electronic Device (IED), RTU or controller thanks to the availability of IEC 61850 on the CPU.

With the IEC 61850 library and the comfortable communication the AC500-eCo V3 can be used for publishing of and subscribing to GOOSE messages.

The AC500 PLC can also act as server for connection-oriented communication according to the Manufacturing Messaging Specification (MMS).

Integral, all-in-one platform

AC500 can in addition interface with a large amount of IEDs and map their data in control and monitoring directions using the 60870-5-104 protocol. It can also interact with other IEDs e.g. with advanced logic in load shedding control applications. AC500 can also help to modernize and digitalize an existing and aging infrastructure.

Reliable DNP3 file transfer

Experience reliable and secure data file transfer with the DNP3 protocol, it ensures secure transfer with integrated buffering, CSV event archiving, time synchronization, and support for up to 8 Masters for seamless control.

CPU family		Basic	Standard		Pro
CPU type	Communication architecture model	PM5012-x	PM5032-x	PM5052-x	PM5072 PM5082 PM5092
DNP3	-/Outstation	–	–	–	Licensed
IEC 60870-5-104	Controlstation/ Substation	–	–	–	•
IEC 61850	–	–	–	–	Licensed
	MMS Server Goose Publisher/Subscriber				



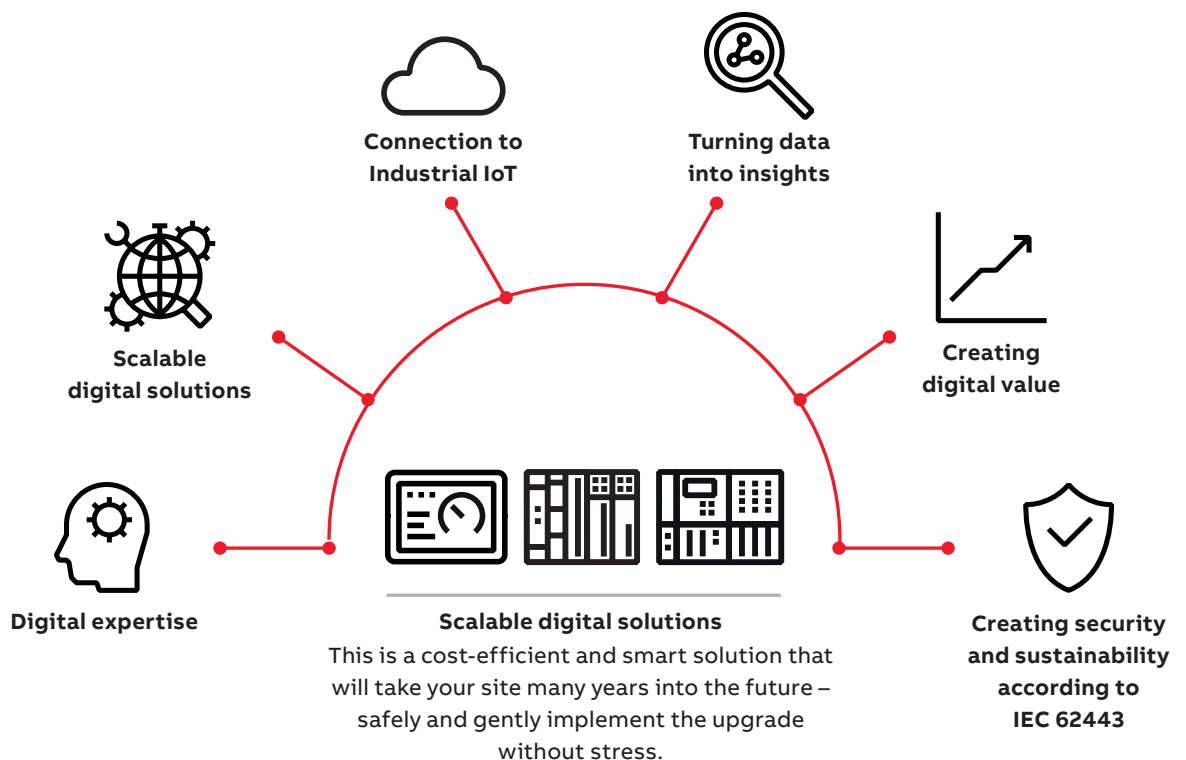
Secure connectivity

The perfect data collector to your cloud

The huge computing capacity in combination with the open connectivity philosophy makes the AC500-eCo V3 CPUs the perfect and cost-efficient IoT solution when bridging between an existing equipment and a cloud application by sending and receiving secure data. Combining the inbuilt security features of the CPU with a secure gateway is a perfect match for all machines and applications, even those in critical infrastructures.

Safe data transfer protocol

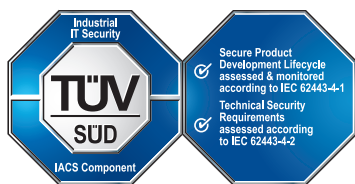
OPC UA and MQTT are frequently used to extend the visibility of your process or application while sending data to a cloud-based application. In the AC500-eCo V3 Standard and Pro CPUs the two protocols are implemented with the latest security mechanism. In addition, HTTPs and FTPs are implemented to allow safe data transfer or visualization of the integrated HTML5 web applications.



How AC500-eCo meet security challenges according to IEC 62443

Certified product design

The AC500-eCo products are certified in accordance with the IEC 62443-4-2:2019 standard (Security for industrial automation components). This confirms the fulfillment of the security requirements defined by the IEC 62443-4-2 and the respective security level of the AC500-eCo PLCs.



Designing secure automation systems

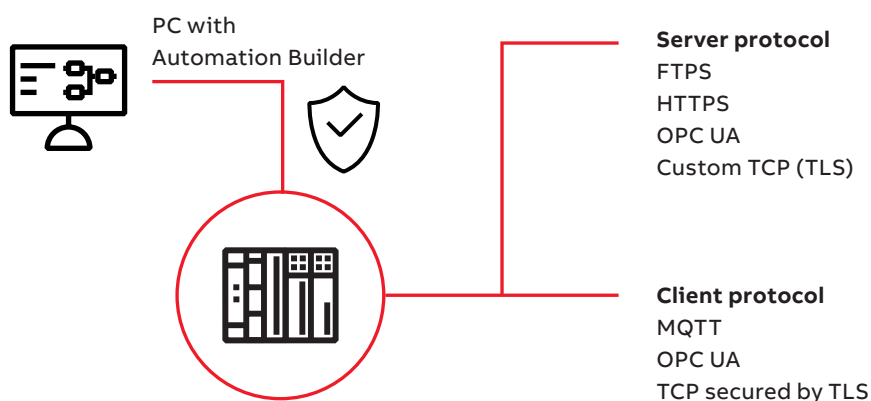
The design of an automation system should follow the IEC 62443-3-3 standard. This standard describes the requirements to be fulfilled by the automation system in total.

A risk and threat analysis of the planned automation system is the entry point of the secure planning process. The IEC 62443-4-2 certification of the AC500 PLC supports the process, as this component delivers the needed security functions.



Supported secure protocols

- FTPS
- HTTPS
- OPC UA
- MQTT
- Encrypted communication between engineering software and PLC
- Custom TCP protocols secured by TLS



Building automation

Use the AC500-eCo V3 and S500 I/O for modular control e.g. for an advanced energy-efficient, safe and secure operation and monitoring task, from small to large buildings.

Positioning in smart building automation

The scalability within the AC500-eCo range offers great possibilities from cost-efficient expansion for sensing temperature reading NTC sensors in room management controller or heating, cooling and lighting.

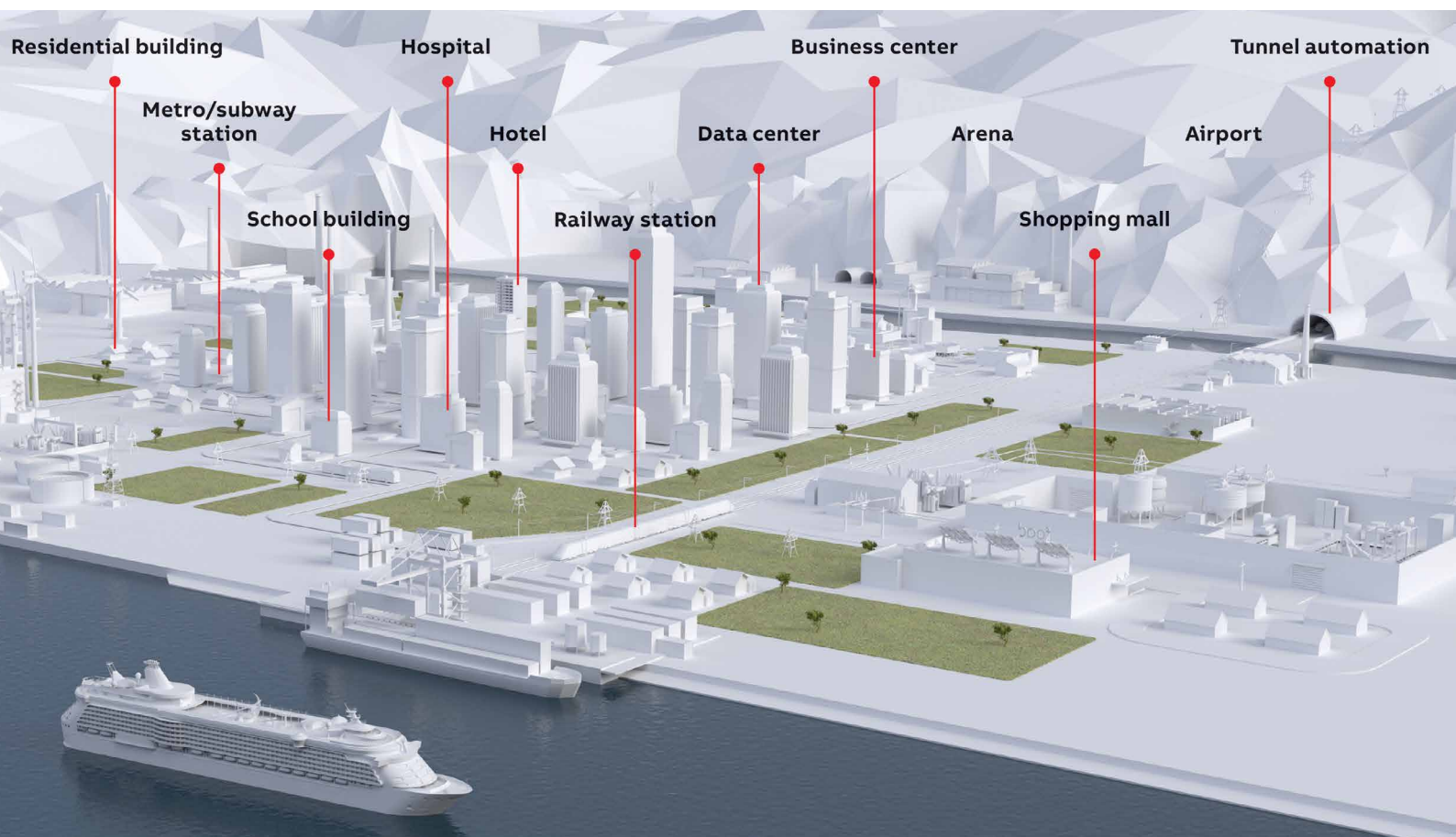
The local room management controllers connect to the floor management system using Modbus TCP.

KNX and BACnet in buildings

AC500-eCo “Pro” versions are the perfect solution that interconnects all subsystems seamlessly on the floor, with the photovoltaic system on the roof or the heating and ventilation system.

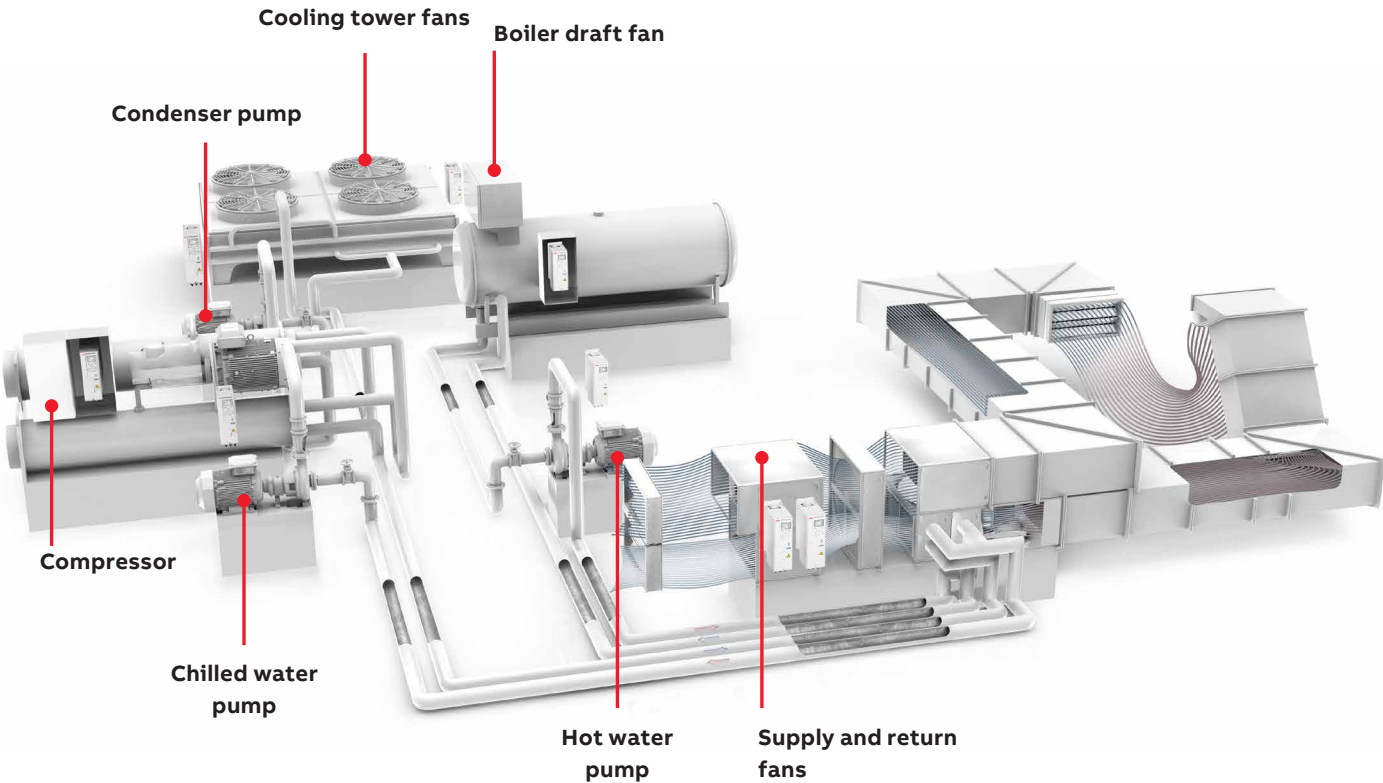
This is possible thanks to the opportunities to add more functionalities in the form of more I/Os and extended communication. The onboard protocols KNX and BACnet make it easy not only to interconnect with other AC500-eCo PLCs but also with devices accessible via the standardized KNX and BACnet interfaces.

CPU family			Basic/Standard	Pro
CPU type	Communication architecture model	Requires an option board	PM5012-x PM5032-x PM5052-x	PM5072 PM5082 PM5092
Serial protocol				
BACnet	Master/Slave	–	–	Licensed
KNX/IP	Peer-to-peer	•	–	Licensed
Modbus TCP	Master/Slave	–	•	•



—

All within one system family



—

KNX

The KNX on the AC500-eCo V3 Pro uses the Ethernet port of the CPU

The KNX option board is used to identify the AC500-eCo V3 controller as a device on the KNX bus so that the PLC can be an integral part of the complete system. In addition to KNX the CPUs can run several Ethernet protocols in parallel such as Modbus TCP, OPC UA or MQTT.

Utilize the KNX option on the AC500-eCo V3 for efficient and secure operation and monitoring tasks, from small to largest buildings. KNX connectivity extends the communication capabilities of the proven ABB i-bus® KNX devices like e.g. Dali, M-Bus etc. to the PLC automation level to have everything in one system.

This enables an efficient, integrated engineering workflow including integration of ETS into Automation Builder.

—

BACnet

Efficient engineering when using the BACnet protocol on the AC500-eCo V3 Pro CPUs

Heating, ventilation and air-conditioning technology often consists of various systems that spread over the room, floor and central levels.

All these systems can be integrated into a single AC500-eCo V3 system with the BACnet protocol and the same integrated engineering to enable optimization across all levels.

Everything in one system from room to central building functions, based on BTL-certified BACnet (IP and MS/TP) with comfortable configuration in Automation Builder.

AC500-eCo BACnet-kit			
Type kit	Description	Type	Order code
PM5072-KIT-BACnet	PM5072-T-ETH, I/O Terminals, BACnet License	PM5072-KIT-BACnet	1SAP125600R0173

Motion control with onboard I/Os

It could not be easier

DriveControl

AC500-eCo V3 Standard and Pro CPUs utilize the fast onboard I/O channels for high performance in extremely cost-sensitive motion control tasks or constant speed applications.

All fast I/Os can be used as normal I/Os or they can be configured. The fast inputs can be used as encoders, counters, limit switches or interrupt inputs.

The fast output can either be configured as Pulse Train Output (PTO) to control a Stepper motor or as Pulse-Width Modulation (PWM) for velocity control.

To support further an efficient axis configuration wizard with a cam editor is available for smooth single or multi-axis motion control.

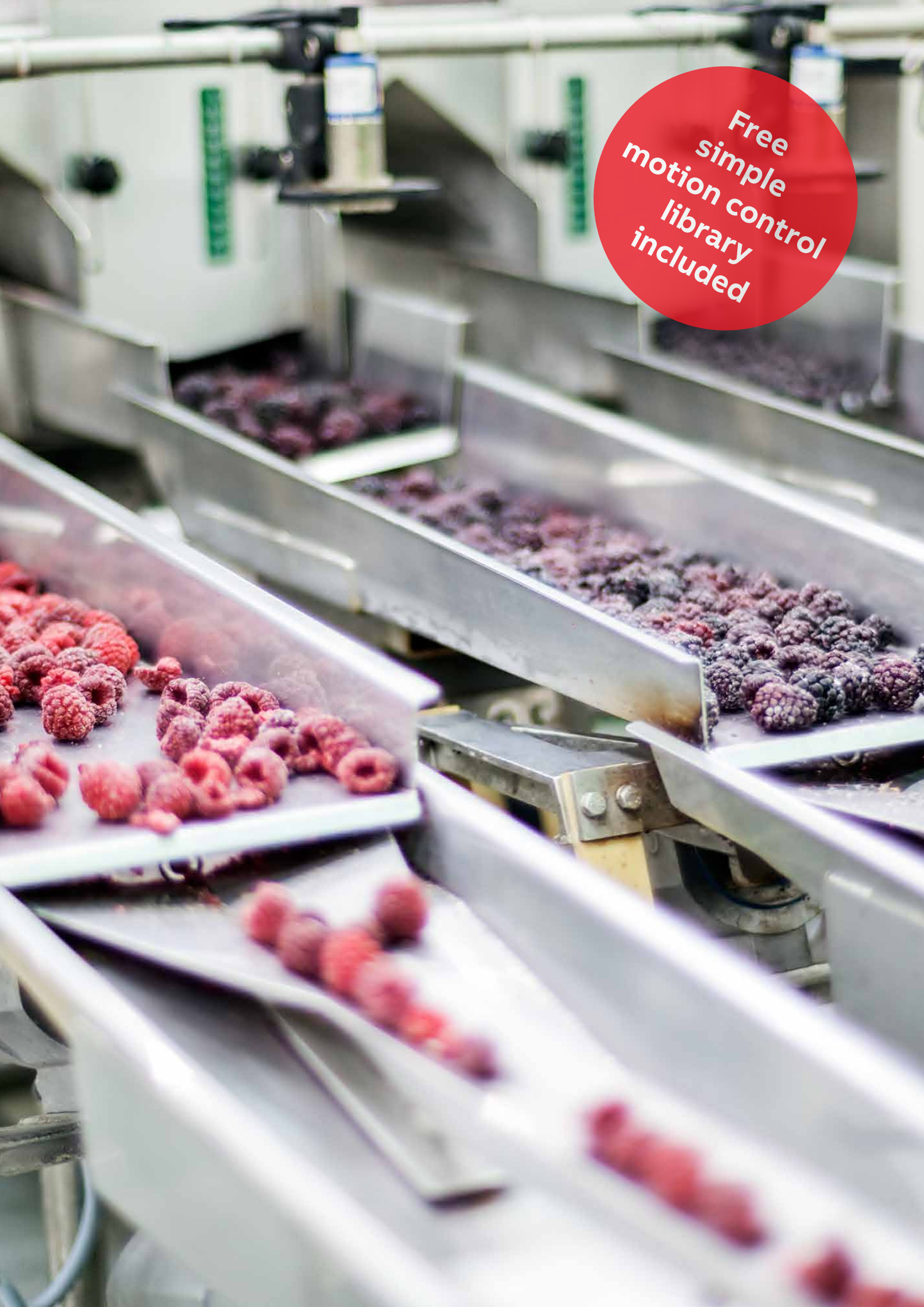
The function block library “eCo _Onboard.library” for simple motion control applications is available free of charge and provides the user with a rich set of pre-made functions to simplify engineering of the velocity control and point-to-point motion applications.

For more demanding applications where coordinated motion control is needed the licensed PLCopen motion control library can also be used with the AC500-eCo CPUs.

Available motion I/Os onboard can be used as:

- 4** 100 kHz fast counters
- or
- 2** 200 kHz A/B encoders
- 4** 200 kHz PTOs with pulse and direction
- or
- 2** 200 kHz PTOs with pulse and direction or CC/CCW
- or
- 4** 30 kHz PWMs



A close-up, slightly blurred photograph of an industrial sorting machine for raspberries. The machine consists of several parallel metal chutes or conveyor belts. The leftmost chute is filled with bright red raspberries. The middle and right chutes contain dark purple/black raspberries. The machine has various mechanical components, including rollers and sensors, visible in the background. A red circular callout is in the top right corner.

Free
simple
motion control
library
included

Real-time Motion control performance

Think AC500-eCo with EtherCAT communication

The AC500-eCo PLCs are your entry point to reliable, scalable and future-proof motion control solutions at a non-excessive cost. With its compact design and integrated features, it's the smart choice for motion applications requiring precision and efficiency.

The AC500-eCo V3 PLCs provide consistent engineering experience across all the Motion PLCs with different performance levels based on IEC 61131-3 coding.

Powerful PLCopen motion control and industry application libraries are available to realize flexible and cost-effective motion solutions based on pulse train/analog technology to high-end coordinated motion control based, Modbus TCP, real-time EtherCAT, and even hybrid control mode.

AC500-eCo with integrated EtherCAT is ready to serve up to 24 motion control axis @4ms robust and versatile motion control capabilities, delivering precise and synchronized performance across a range of automation applications.

Offering flexible options for simple, extended or hybrid motion control, the AC500-eCo ensures an optimized cost profile tailored to your application needs.

Wizard based axis set-up
streamlined commissioning
and tuning of all motion axis
from point-to-point to
coordinated motion.

Pulse Train Output (PTO) or
Pulse-Width
Modulation
(PWM)



CANopen (Add Option Board)



Modbus TCP

EtherCAT



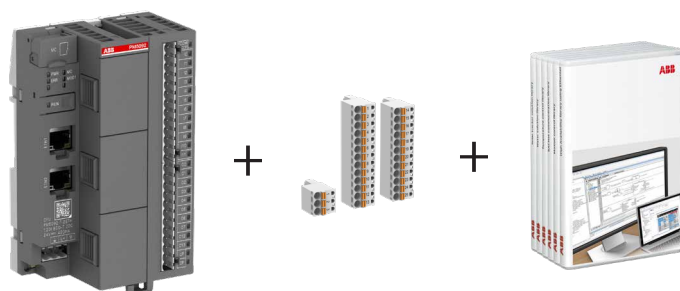


AC500-eCo MC-KIT

Easy guide to required performance

CPU module, PM5092-T-ETH Pro

- IO terminal, TA5212-TSPF
- Motion license, PS5611
 - Incl. EtherCAT (Option)
 - Incl. Ethernet/IP (Option)



AC500-eCo Motion control kit

Description	Motion Control	EtherCAT	Ethernet/IP	Type	Order code
Motion control Kit Includes CPU, terminal blocks and license bundle for: Motion Control libraries and several protocols	•	•	–	PM5072-MC-KIT-EC	1SAP125000R0173
	•	•	•	PM5072-MC-KIT-EC-EIP	1SAP125100R0173
	•	•	–	PM5082-MC-KIT-EC	1SAP125200R0173
	•	•	•	PM5082-MC-KIT-EC-EIP	1SAP125300R0173
	•	•	–	PM5092-MC-KIT-EC	1SAP125400R0173
	•	•	•	PM5092-MC-KIT-EC-EIP	1SAP125500R0173

ABB Drives integration

Pre-made function blocks for efficient speed control

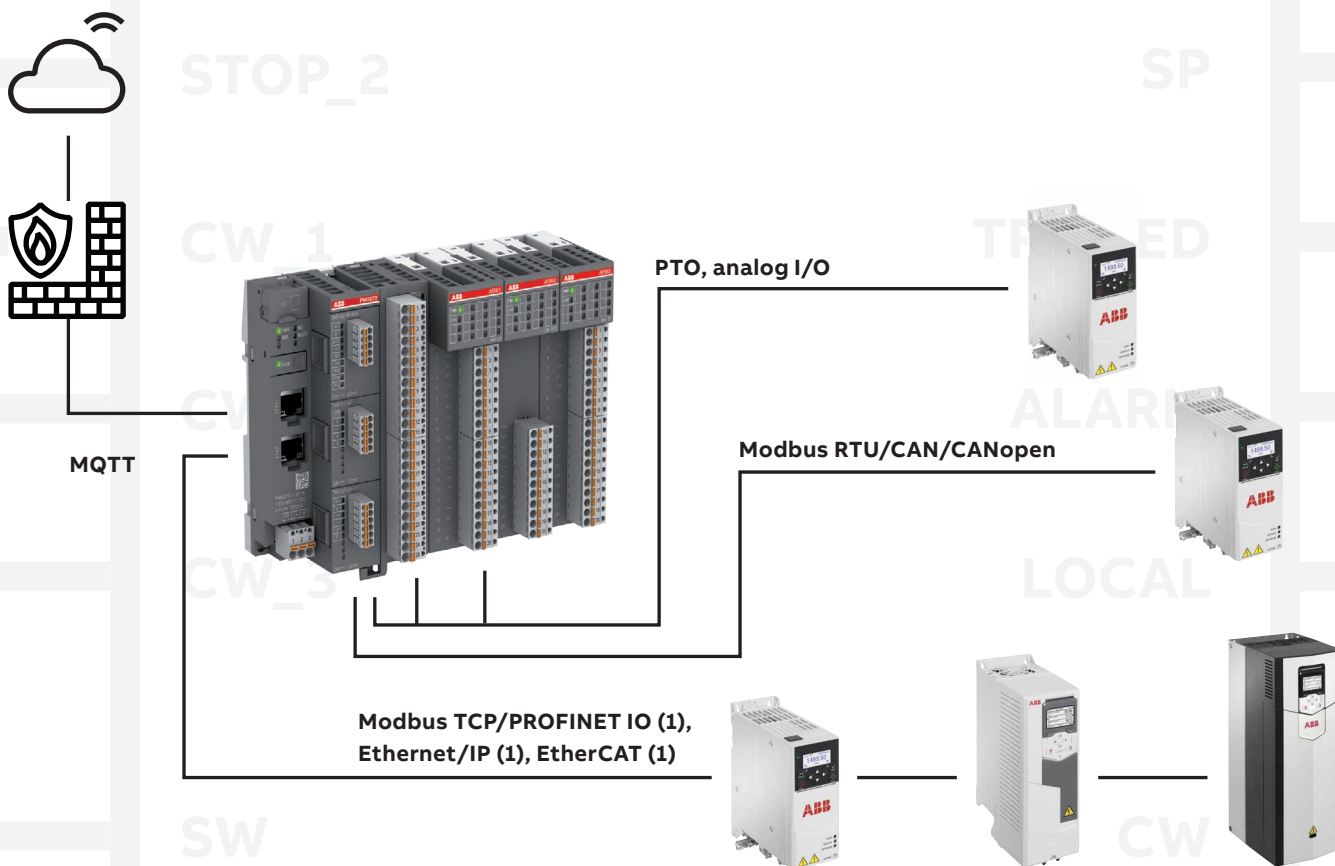
Reduce the motor speed to the actual demand to increase energy savings and reduce operating cost. Less engineering effort with the ready for use function blocks simplifies the integration of the ABB PLC AC500 and ABB Drives.

There are many ways to connect the AC500-eCo V3 CPUs to the ABB Drives. The most basic one is to utilize the analog I/O directly on the CPU and the drive.

To increase integration and efficiency the serial interface option boards or the onboard Ethernet port create conditions for seamless and efficient fieldbus connectivity.

A drives library includes generic function blocks that can be used with any AC500 CPU and ABB Drives to considerably simplify engineering and commissioning.

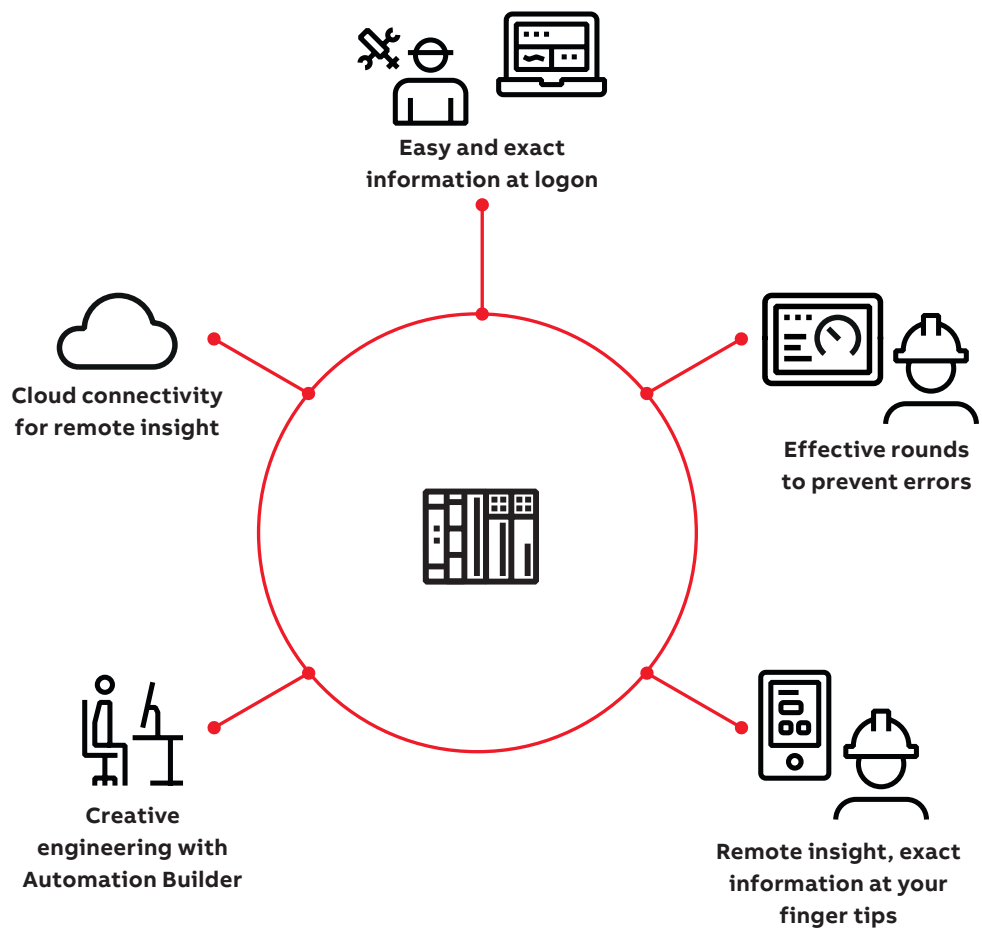
- Common configuration of cyclic data exchange
- Function blocks to control the drive and read and write any of the drive parameters
- Pre-made visualization for the HTML5 web pages inside the PLCs to support even more in engineering and commissioning





Onboard HTML5 visualization

Integrated HTML5 visualization adds a new dimension to your deliveries. The new CPUs, “Standard” and “Pro”, come with a large memory dedicated solely to web visualization without compromising on either performance or application software.



The new visualization and connectivity possibilities open up a new dimension of insight into the application or machine. This offers better and more intuitive possibilities to notify an operator or to give the operator the option to remotely access the system to prevent standstill due to malfunction or lack of material for the process.

The integrated web server is built up in a creative studio for visualization in the engineering suite Automation Builder.

A wide set of ready-made widgets is available with direct access to the variables in the application program. It can't be easier to provide an insight into your future projects.

The perfect match: AC500-eCo V3 and CP600-eCo control panels

With comprehensive but easy-to-use functionalities. With one single touch, CP600-eCo control panels make machine operation efficient, predictable and user-friendly.

Suitable for many different applications

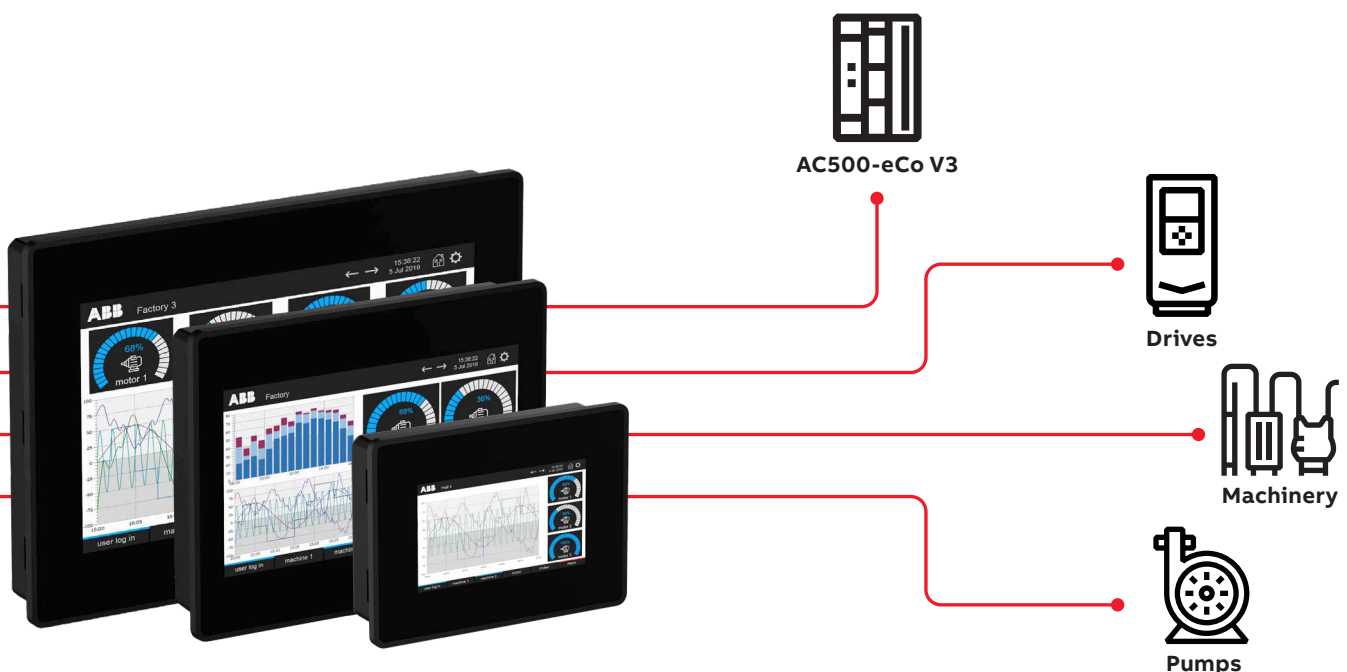
To match the design of your machine, CP600-eCo control panels are available in the screen sizes 4.3", 7" and 10.1" with a black or an ABB design front foil. All panels can be mounted in portrait and landscape mode. Their plastic housing has a depth of just 29 mm to save cabinet space.

Engineering with Panel Builder 600, which is part of the Automation Builder, ensures easy scalability and combination with other CP600 ranges and AC500 PLCs.

Flexible connectivity

Protocols for ABB PLCs, machinery and motion drives for Ethernet and serial connection make these control panels the first choice for entry-level ABB automation solutions and allow you to configure your network the way you want.

Furthermore, through OPC UA as well as MQTT client and server functions, the panels are well prepared for future communication solutions. Therefore, they offer one Ethernet interface, one serial interface as well as a USB host for flexible data storage and easy updating.



Automation Builder

Key features



Stay in control of your project:
Automation Builder integrates engineering tools for PLCs, safety, drives, motion and control panels

Reduce risk: Manage complexity and realize connectivity easily

Increase efficiency:
Build comprehensive solutions with integrated engineering that add value to your business

Combine tools: One common intuitive interface for configuring, programming, debugging and maintaining automation projects

Save time: Test systems effortlessly in virtual time without real hardware using advanced simulation support



Automation Builder

Productivity features

All essential features of standard object-oriented programming of AC500-eCo are included in Automation Builder

Object-oriented programming of AC500-eCo V3

- Reuse of code for defining specialized sub-classes (inheritance), reuse of code running on different implementations of an interface (polymorphism)
- New optimized editors for IEC programming languages
- Continuous Function Chart (CFC) with auto-routing of connections between POU's, unrestricted definition and display of the execution order
- Structured Text (ST) with quick editing and extensive support, such as IntelliSense, grouping, collapsible tree structure and indented brackets

Integrated configuration of AC500 software

- KNX object configuration and export to ETS for connecting to room- and floor automation devices
- KNX gateway for connecting to building automation devices
- BACnet IP and MS/TP configuration tree and library-based engineering for objects of the B-BC profile and beyond, EDS import and export for all building automation devices
- IEC 60870 protocol for data exchange with control stations
- IEC 61850 Goose and MMS with configurator for comfortable engineering and SCL import and export
- Time synchronization via NTP and SNTP
- Variables shared with other AC500 PLCs



AC500-eCo V3

Ordering data

AC500-eCo V3 CPUs

- Three performance classes CPU (Basic, Standard and Pro) with large memory
- From low-entry and cost-sensitive to large and complex applications
- One or two independent Ethernet interfaces with integrated switch functionality
- Up to three RS232 or RS485 serial interfaces using option boards
- Micro memory card slot for data storage and program backup
- Real time clock for Standard and Pro CPU, optional for Basic
- Web server functionality with HTML5 Web visualization for Standard and Pro CPU
- Minimum cycle time per instruction: Bit 0.02 µs, Word 0.02 µs, Floating point 0,6 µs.
- High amount of onboard I/Os with relay or transistor outputs
- Onboard high-speed I/Os (up to 200 kHz) with motion control function for up to 4 axis PTO
- Extendable with up to three digital or analog option boards
- Standard and Pro version can be locally extended with up to 10 I/O modules (S500 and/or S500-eCo modules can be mixed)
- 24 V DC power supply.



PM5092-T-2ETH
Pro CPU

Total user program memory	Onboard I/Os	Relay / Transistor outputs	Integrated communication	Option board slots for extension	Power supply	Type	Order code	Weight (1 pce)
kB	DI/DO/DC							kg
Basic CPU PM5012-x-ETH: 1MB CPU, Ethernet interface, onboard digital I/O, not extendable, 1 slot for option board								
1 MB (thereof 256 kB Program code and Data) (2)(3)	6 / 4 / -	Transistor	1x Ethernet	1	24 V DC	PM5012-T-ETH	1SAP122600R0172	0.225
	6 / 4 / -	Relay	1x Ethernet	1	24 V DC	PM5012-R-ETH	1SAP122700R0172	0.235
Standard CPU PM5032-x-ETH: 2MB CPU, Ethernet interface, RTC and micro memory card, onboard digital I/O, extendable, 2 slots for option board								
2 MB (thereof 512 kB Program code and Data + 1.5 MB Web max.) (2)(3)	12 / 8 / 2	Transistor	1x Ethernet	2	24 V DC	PM5032-T-ETH	1SAP123400R0172	0.253
	12 / 6 / 2	Relay	1x Ethernet	2	24 V DC	PM5032-R-ETH	1SAP123500R0172	0.268
Standard CPU PM5052-x-ETH: 4MB CPU, Ethernet interface, RTC and micro memory card, onboard digital I/O, extendable, 3 slots for option board								
4 MB (thereof 768 kB Program code and Data + about 3 MB Web max.) (2)(3)	12 / 8 / 2	Transistor	1x Ethernet	3	24 V DC	PM5052-T-ETH	1SAP124000R0172	0.257
	12 / 6 / 2	Relay	1x Ethernet	3	24 V DC	PM5052-R-ETH	1SAP124100R0172	0.273
Pro CPU PM50x2-T-2ETH: 8MB CPU with two Ethernet interface, RTC and micro memory card, onboard digital I/O, extendable, 3 slots for option board								
8 MB (thereof 1 MB Program code and Data + 7 MB Web max.) (2)(3)	12 / 8 / 2	Transistor	2x independent Ethernet with switch	3	24 V DC	PM5072-T-2ETH	1SAP124500R0173	0.265
8 MB (thereof 1 MB Program code and Data + 7 MB Web max.) extended wide temperature (2)(3)	12 / 8 / 2	Transistor	2x independent Ethernet with switch	3	24 V DC	PM5072-T-2ETHW (1)	1SAP124400R0173	0.265
8 MB (thereof 1 MB Program code and Data + 7 MB Web max.) (2)(3)	12 / 8 / 2	Transistor	2x independent Ethernet with switch	3	24 V DC	PM5082-T-2ETH	1SAP124600R0173	0.265
18 MB (thereof 2 MB Program code and Data + 16 MB Web max.) (2)(3)(4)	12 / 8 / 2	Transistor	2x independent Ethernet with switch	3	24 V DC	PM5092-T-2ETH	1SAP124700R0173	0.265

Terminal block sets are necessary for each AC500-eCo V3. The terminal blocks must be ordered separately.

(1) Wide extended temperature -20 °C to +70 °C.

(2) The maximum downloadable application size which is shown in Automation Builder contains all the user program code+user data+web server and infrastructure data.

The size is depending on the CPU Type (see the value in the technical data pages).

(3) 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.

(4) The memory size values will be available from AB2.8.1.



**Guide for easy migration
of new AC500 V3 CPUs**

AC500-eCo V3

Ordering data

AC500-eCo V3 wide temperature range (W versions)

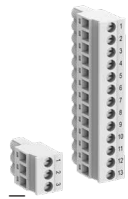
AC500-eCo V3 CPU PM5072-T-2ETHW with dedicated option boards

- - 20 °C to +70 °C usage temperature without condensation, derating is sometimes necessary
- Simple coating for accidental humidity withstand, no conformal coating
- High reliability in application

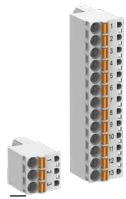
Terminal block sets for AC500-eCo V3 CPU

Content of the sets	Connection type		Cable entry	Type	Order code	Weight (1 set) kg
For Basic CPU						
1x 3 poles for power supply, 1x 13 poles I/O terminal blocks	Screw	5 mm pitch	Side	TA5211-TSCL-B	1SAP187400R0001	0.034
1x 3 poles for power supply, 1x 13 poles I/O terminal blocks	Spring	5 mm pitch	Front	TA5211-TSPF-B	1SAP187400R0002	0.035
For Standard and Pro CPU						
1x 3 poles for power supply, 1x 13 + 1x 12 poles I/O terminal blocks	Screw	5 mm pitch	Side	TA5212-TSCL	1SAP187400R0004	0.054
1x 3 poles for power supply, 1x 13 + 1x 12 poles I/O terminal blocks	Spring	5 mm pitch	Front	TA5212-TSPF	1SAP187400R0005	0.055

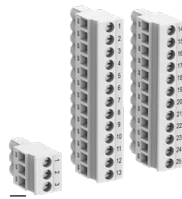
Only ABB terminal blocks must be used with AC500-eCo V3.



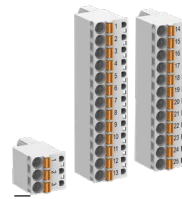
TA5211-TSCL-B



TA5211-TSPF-B



TA5212-TSCL



TA5212-TSPF

Accessories for AC500-eCo V3 CPUs

Description	Type	Order code	Weight (1 set) kg
For Basic CPU only			
Real Time Clock without battery, option board for AC500-eCo Basic CPU	TA5131-RTC	1SAP187200R0002	0.031
For all AC500-eCo V3 CPU types			
Micro memory card 8 GB for program, data or firmware update, with adapter (1)	MC5102	1SAP180100R0002	0.015
Screw mounting accessory for AC500-eCo V3 CPU (same as PM595-4ETH-x), 20 pieces per packing unit	TA543	1SAP182800R0001	0.011
Cable binding pluggable accessory, 20 pieces per packing unit	TA5301-CFA	1SAP187500R0003	0.039
Option board cover, removable plastic part, 6 pieces per packing unit	TA5300-CVR	1SAP187500R0001	0.056
Input simulator, 6 switches, 24 V DC	TA5400-SIM	1SAP187600R0001	0.033

(1) For temporary use, e.g. firmware- or project-download to the CPU. Not to be used during vibration or shock.



TA5301-CFA



TA543



TA5300-CVR



MC5102 and adapter



Input simulator

AC500-eCo V3

Ordering data

AC500-eCo V3 option boards

- Up to three option board slots for extension according to CPU type
- All option board modules can be used on all option board slots of a CPU
- Up to three RS232 or RS485 serial interfaces using option boards
- Four different option boards for analog channels extension / Three different option boards for digital channels extension
- KNX push button address switch
- All the option boards are delivered with spring connector terminal block.

Description	Onboard I/Os	Relay / Transistor outputs	Type	Order code	Weight (1 pce)
	DI/DO/AI/AO				kg
Option board for digital input/output channel extension					
4 DI digital input channels 24 V DC, 5 pole spring/ cable front terminal 3.50 mm pitch	4 / - / - / -	-	TA5101-4DI	1SAP187000R0001	0.015
			TA5101-4DIW	1SAP187000R0201	0.015
4 DO digital output channels transistor 24 V DC / 0.5A, 7 pole spring/cable front term. 3.50 mm pitch	- / 4 / - / -	Transistor	TA5105-4DOT	1SAP187000R0002	0.016
			TA5105-4DOTW	1SAP187000R0202	0.016
2 DI/2DO digital in/output chan. Trans. 24 V DC / 0.5A, 7 pole spring/cable front term. 3.50 mm pitch	2 / 2 / - / -	Transistor	TA5110-2DI2DOT	1SAP187000R0003	0.015
			TA5110-2DI2DOW	1SAP187000R0203	0.015
Option board for analog input/output channel extension					
2 AI analog input channels U/I, 0 ... 10V/0 ... 20mA, 6 pole spring/cable front term. 3.50 mm pitch	- / - / 2 / -	-	TA5120-2AI-UI	1SAP187100R0001	0.015
			TA5120-2AI-UIW	1SAP187100R0201	0.015
2 AI analog input channels TC thermocoupler, 6 pole spring/cable front term. 3.50 mm pitch	- / - / 2 / -	-	TA5122-2AI-TC (1)	1SAP187100R0004	0.015
			TA5122-2AI-TCW (1)	1SAP187100R0204	0.019
2 AI analog input channels RTD PT100, PT1000, 8 pole spring/cable front term. 3.50 mm pitch	- / - / 2 / -	-	TA5123-2AI-RTD	1SAP187100R0002	0.019
			TA5123-2AI-RTW	1SAP187100R0202	0.015
2 AO analog output channels U/I, 0 ... 10V/0 ... 20mA, 6 pole spring/cable front term. 3.50 mm pitch	- / - / - / 2	-	TA5126-2AO-UI	1SAP187100R0003	0.019
			TA5126-2AO-UIW	1SAP187100R0203	0.019
2 AI anlog input channels U, 0 ... 10V and 1 AO analog output channel U/I, 0 ... 10V/0/4 ... 20mA, 6 pole spring/cable front term. 3.50 mm pitch	- / - / 2 / 1	-	TA2128-2AI1AO	1SAP187100R0005	0.019
			TA5128-2AI1AOW	1SAP187100R0205	0.019

(1) In preparation



TA5101-4DI(W)



TA5105-4DOT(W)



TA5110-2DI2DOT(W)



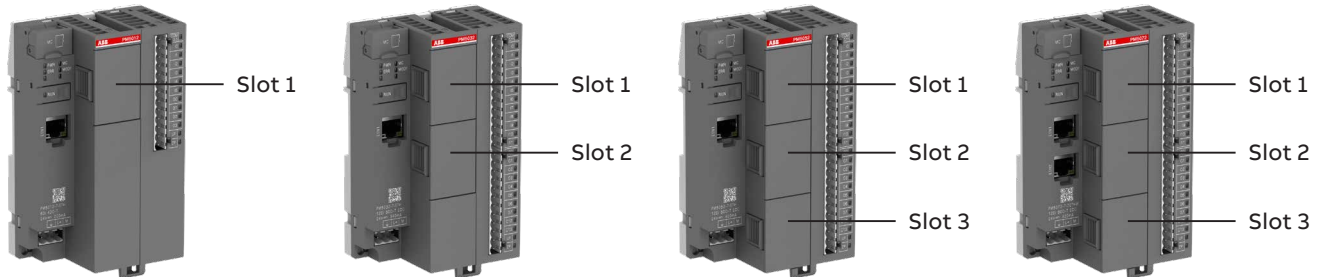
TA5120-2AI-UI(W)



TA5126-2AO-UI(W)

AC500-eCo V3

Ordering data



	Basic	Standard		Pro
	PM5012-x-ETH	PM5032-x-ETH	PM5052-x-ETH	PM5072/82/92-T-2ETH(W)
Option board slot 1	●	●	●	●
Option board slot 2	–	●	●	●
Option board slot 3	–	–	●	●
Usable option board on AC500-eCo V3 CPU				
TA5130-KNXPB	–	–	–	●, max 1 (W)
TA5131-RTC	●, max 1	–	–	–
TA5101-4DI	●	●	●	● (W)
TA5105-4DOT	●	●	●	● (W)
TA5110-2DI2DOT	●	●	●	● (W)
TA5120-2AI-UI	●	●	●	● (W)
TA5122-2AI-TC	●	●	●	● (W)
TA5123-2AI-RTD	●	●	●	● (W)
TA5126-2AO-UI	●	●	●	● (W)
TA5128-2AI1AO	●	●	●	● (W)
TA5141-RS232I	●	●	●	● (W)
TA5142-RS485I	●	●	●	● (W)
TA5142-RS485	●	●	●	● (W)
TA5146-CN	●	●	●	● (W)

AC500-eCo V3

Ordering data

Description	Communication type	Type	Order code	Weight (1 pce) kg
Option board for serial communication extension				
RS232 serial adapter isolated, 5 pole spring/cable front terminal 3.50 mm pitch	RS232 isolated	TA5141-RS232I	1SAP187300R0001	0.015
		TA5141-RS232W	1SAP187300R0201	0.015
RS485 serial adapter isolated, 5 pole spring/cable front terminal 3.50 mm pitch	RS485 isolated	TA5142-RS485I	1SAP187300R0002	0.016
		TA5142-RS485IW	1SAP187300R0202	0.016
RS485 serial adapter non-isolated, 5 pole spring/cable front terminal 3.50 mm pitch	RS485 non-isolated	TA5142-RS485	1SAP187300R0003	0.015
		TA5142-RS485W	1SAP187300R0203	0.015
Option board for communication address setting or real time clock				
KNX address switch option board, 1 push button	–	TA5130-KNXPB	1SAP187200R0001	0.014
		TA5130-KNXPBW	1SAP187200R0201	0.014
Real Time Clock without battery, option board for AC500-eCo Basic CPU only	–	TA5131-RTC	1SAP187200R0002	0.016
TA5146-CN:AC500, CAN serial interface adapter, Option board, 1xCAN-bus isolated, Spring terminals	CAN isolated	TA5146-CN	1SAP187300R0005	0.016
TA5146-CNW:AC500, CAN serial interface adapter, Option board, 1xCAN-bus isolated, Spring terminals, Wide temperature	CAN isolated	TA5146-CNW	1SAP187300R0205	0.016

The necessary spring terminal blocks are delivered with each option board. Only ABB terminal blocks must be used with AC500-eCo V3.



TA5141-RS232I(W)



TA5142-RS485I(W)



TA5142-RS485(W)



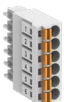
TA5130-KNXPB(W)

Description	Type	Order code	Weight (1 pce) kg
Spare parts for option boards (terminal blocks)			
TA5220-SPF5:S500, terminal block, 5 pole, spring front/cable front, pitch 3.5 mm, pack.unit: 6 piece	TA5220-SPF5	1SAP187400R0012	0.015
TA5220-SPF6:S500, terminal block, 6 pole, spring front/cable front, pitch 3.5 mm, pack.unit: 6 piece	TA5220-SPF6	1SAP187400R0013	0.019
TA5220-SPF7:S500, terminal block, 7 pole, spring front/cable front, pitch 3.5 mm, pack.unit: 6 piece	TA5220-SPF7	1SAP187400R0014	0.022
TA5220-SPF8:S500, terminal block, 8 pole, spring front/cable front, pitch 3.5 mm, pack.unit: 6 piece	TA5220-SPF8	1SAP187400R0015	0.170

Only ABB terminal blocks must be used with AC500-eCo V3.



TA5220-SPF5



TA5220-SPF6



TA5220-SPF7



TA5220-SPF8

AC500-eCo V3

Ordering data

W-version

Description	Onboard I/Os	Relay / Transistor outputs	Type	Order code	Price	Weight (1 pce)
	DI/DO/AI/AO					kg
Option board for digital input/output channel extension						
4 DI digital input channels 24 V DC, 5 pole spring/cable front terminal 3.50 mm pitch	4 / - / - / -	-	TA5101-4DI	1SAP187000R0001		0.015
			TA5101-4DIW	1SAP187000R0201		0.015
4 DO digital output channels transistor 24 V DC / 0.5A, 7 pole spring/cable front term. 3.50 mm pitch	- / 4 / - / -	Transistor	TA5105-4DOT	1SAP187000R0002		0.016
			TA5105-4DOTW	1SAP187000R0202		0.016
2 DI/2DO digital in/output chan. Trans. 24 V DC / 0.5A, 7 pole spring/cable front term. 3.50 mm pitch	2 / 2 / - / -	Transistor	TA5110-2DI2DOT	1SAP187000R0003		0.015
			TA5110-2DI2DOW	1SAP187000R0203		0.015
Option board for analog input/output channel extension						
2 AI analog input channels U/I, 0 ... 10V/0 ... 20mA, 6 pole spring/cable front term. 3.50 mm pitch	- / - / 2 / -	-	TA5120-2AI-UI	1SAP187100R0001		0.015
			TA5120-2AI-UIW	1SAP187100R0201		0.015
2 AI analog input channels TC thermocoupler, 6 pole spring/cable front term. 3.50 mm pitch	- / - / 2 / -	-	TA5122-2AI-TC (1)	1SAP187100R0004		0.015
			TA5122-2AI-TCW (1)	1SAP187100R0204		0.019
2 AI analog input channels RTD PT100, PT1000, 8 pole spring/cable front term. 3.50 mm pitch	- / - / 2 / -	-	TA5123-2AI-RTD	1SAP187100R0002		0.019
			TA5123-2AI-RTW	1SAP187100R0202		0.015
2 AO analog output channels U/I, 0 ... 10V/0 ... 20mA, 6 pole spring/cable front term. 3.50 mm pitch	- / - / - / 2	-	TA5126-2AO-UI	1SAP187100R0003		0.019
			TA5126-2AO-UIW	1SAP187100R0203		0.019

(1) In preparation



TA5101-4DI(W)



TA5105-4DOT(W)



TA5110-2DI2DOT(W)



TA5120-2AI-UI(W)



TA5126-2AO-UI(W)

Terminal blocks for S500-eCo I/O modules

Number of poles	Connection type	Cable entry	Type	Order code	Weight (1 pce) kg
9	Screw	Side	TA563-9	1TNE968901R3101	0.018
11	Screw	Side	TA563-11	1TNE968901R3102	0.021
9	Screw	Front	TA564-9	1TNE968901R3103	0.031
11	Screw	Front	TA564-11	1TNE968901R3104	0.036
9	Spring	Front	TA565-9	1TNE968901R3105	0.018
11	Spring	Front	TA565-11	1TNE968901R3106	0.021



Only ABB terminal blocks must be used with AC500-eCo.
Package unit for these terminal blocks = 6.



TA563-9



TA564-11



TA565-9

AC500-eCo V3

Ordering data

S500-eCo I/O modules

- For central extension of the AC500 or AC500-eCo CPUs
- For decentralized extension in combination with communication interface module DC551-CS31, CI52x-MODTCP, PROFINET CI50x modules, CI592-CS31, PROFIBUS modules CI54x, EtherCAT modules CI51x, and CANopen modules CI58x (not usable with DC505-FBP module and CI590-CS31-HA).

Digital I/O

- DC: Channels can be configured individually as inputs or outputs.

Number of	Input signal	Output type	Output signal	Terminal block required		Type	Order code	Weight (1 pce) kg
DI/DO/DC				9 poles	11 poles			
8 / - / -	24 V AC / DC	-	-	1	-	DI561	1TNE968902R2101	0.113
16 / - / -	24 V AC / DC	-	-	1	1	DI562	1TNE968902R2102	0.116
8 / - / -	100-240 V AC	-	-	1	1	DI571	1TNE968902R2103	0.129
16 / - / -	100-240 V AC	-	-	1	1	DI572	1SAP230500R0000	0.135
- / 8 / -	-	Transistor	24 V DC, 0.5 A	-	1	DO561	1TNE968902R2201	0.118
- / 16 / -	-	Transistor	24 V DC, 0.5 A	1	1	DO562	1SAP230900R0000	0.160
- / 8 / -	-	Relay	24 V AC / DC, 120 / 240 V AC, 2 A	-	1	DO571	1TNE968902R2202	0.138
- / 8 / -	-	Triac	24 V AC, 100 / 240 V AC, 0.3 A	1	1	DO572	1TNE968902R2203	0.120
- / 16 / -	-	Relay	24 V DC, 120 / 240 V AC, 2 A	1	1	DO573	1SAP231300R0000	0.190
8 / 8 / -	24 V DC	Transistor	24 V DC, 0.5 A	1	1	DX561	1TNE968902R2301	0.120
8 / 8 / -	24 V AC / DC	Relay	24 V AC / DC, 120 / 240 V AC, 2 A	1	1	DX571	1TNE968902R2302	0.140
- / - / 16	24 V DC	Transistor	24 V DC, 0.5 A	1	1	DC562	1SAP231900R0000	0.150

Terminal blocks (9 or 11 poles) are necessary for each S500-eCo I/O. The terminal blocks must be ordered separately.

Analog I/O

- Each channel can be configured individually
- Resolution:
 - AI561, AO561, AX561: 12 bits including sign
 - AI562, AI563: 16 bits including sign.

Number of AI/AO	Input signal	Output signal	Terminal block required		Type	Order code	Weight (1 pce) kg
			9 poles	11 poles			
4 / 0	±2.5 V, ±5 V, 0...5 V, 0...10 V, 0...20 mA, 4...20 mA	–	1	1	AI561	1TNE968902R1101	0.120
2 / 0	PT100, PT1000, Ni100, Ni1000, Resistance: 150 Ω, 300 Ω	–	–	1	AI562	1TNE968902R1102	0.121
4 / 0	S, T, R, E, N, K, J, Voltage range: ±80 mV	–	1	1	AI563	1TNE968902R1103	0.123
8 / 0	±2.5 V, ±5 V, 0...5 V, 0...10 V, 0...20 mA, 4...20 mA, NTC sensor	–	1	1	AI568	1SAP235200R0000	0.125
0 / 2	–	-10...+10 V, 0...20 mA, 4...20 mA	–	1	AO561	1TNE968902R1201	0.118
0 / 4	–	-10...+10 V, 0...20 mA, 4...20 mA	–	1	AO562	1SAP235300R0000	0.120
0 / 8	–	-10...+10 V, 0...20 mA, 4...20 mA	1	1	AO568	1SAP235500R0000	0.120
4 / 2	±2.5 V, ±5 V, 0...5 V, 0...10 V, 0...20 mA, 4...20 mA	-10...+10 V, 0...20 mA, 4...20 mA	1	1	AX561	1TNE968902R1301	0.122

Terminal blocks (9 or 11 poles) are necessary for each S500-eCo I/O. The terminal blocks must be ordered separately.



DI561



AI562



AX561

AC500-eCo V3 Starter kit

Ordering data

AC500-eCo Starter kits

- Quick and easy introduction into PLC programming
- Learn how to create HTML5 web visualization
- Free engineering software

Description	CPU module in the starter kit DI/DO/AI/AO	HMI in the starter kit	Type	Order code	Price	Weight (1 set) kg
AC500-eCo V3 Starter kit	PM5032-T-ETH	–	TA5415-STAKIT	1SAP187600R0002		0.591
AC500-eCo V3 Starter kit and CP600 HMI	PM5072-T-2ETH	CP604	TA5426-STAKIT	1SAP187600R0003		1.011



[Smart guide for
a smooth start up](#)



[Automation Builder
free download](#)



[For more information go to
AC500 main catalog](#)



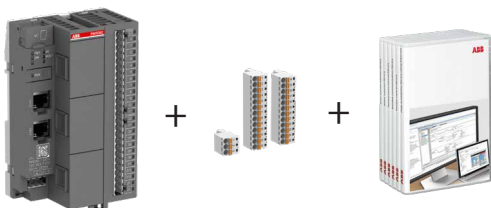
AC500-eCo Motion Control kit

Ordering data

AC500-eCo Motion control kits

- Quick and easy introduction into PLC programming
- Learn how to create HTML5 web visualization
- Free engineering software

Description	Motion Control	EtherCAT	Ethernet/IP	Type	Order code	Price	Weight (1 pce) kg
Motion control Kit Includes CPU, terminal blocks and license bundle for: Motion Control libraries and several protocols	•	•	–	PM5072-MC-KIT-EC	1SAP125000R0173		0.363
	•	•	•	PM5072-MC-KIT-EC-EIP	1SAP125100R0173		0.363
	•	•	–	PM5082-MC-KIT-EC	1SAP125200R0173		0.363
	•	•	•	PM5082-MC-KIT-EC-EIP	1SAP125300R0173		0.363
	•	•	–	PM5092-MC-KIT-EC	1SAP125400R0173		0.363
	•	•	•	PM5092-MC-KIT-EC-EIP	1SAP125500R0173		0.363



Automation Builder

Ordering data

Automation Builder

- Automation Builder connects the engineering tools for PLC, safety, drives, motion and control panels. The software suite integrates products into solutions that create value for your customers, giving you greater control of your projects, reducing risk and saving time.

Automation Builder Editions

For	Description	Type	Order code
Free 61131-3 engineering for simple PLC solutions	Automation Builder 2.x Basic (1)(2)	–	–
Integrated Engineering for PLC, drives, motion, SCADA, panels	Automation Builder 2.x Standard (3)	DM200-TOOL	1SAS010000R0102
	Automation Builder 2.x Standard Network (2)	DM204-TOOL-NW	1SAS010004R0102
Integrated Engineering for PLC, drives, motion, SCADA, panels and features for engineering productivity and collaboration	Automation Builder 2.x Premium (2)(4)	DM202-PREM	1SAS010002R0102

Accessories

Automation Builder licensing based on a USB Key	USB Key for Automation Builder without license (5)	DM-KEY	1SAP193600R0001
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All Automation Builder PC software licenses can be installed either on engineering PCs or on USB dongles.

Network licenses can also be installed on a license server. The licenses can be transferred between computers or dongles unlimited times.

(1) Free license

(2) Network license for shared usage within a local area network or for usage on Windows Server operating systems.

Per license one user can use the license at the same time. Network licenses that can be borrowed for offline use are available on request.

(3) Single user license - bound to PC or DM-KEY (USB Key)

(4) Edition upgrade licenses from Automation Builder 2.x Standard to Automation Builder 2.x Premium are available on demand.

(5) Does not contain license. Automation Builder license must be purchased separately. Can carry an arbitrary number of licenses.



Automation Builder
free download

AC500 Runtime Licenses

For	Description	Type	Order code
all AC500 V3 CPUs	IEC 61850 protocol runtime license (1)	PS5602-61850	1SAP195600R0101
all AC500 V3 CPUs	KNX IP protocol runtime license (1)	PS5604-KNX	1SAP195800R0101
all AC500 V3 CPUs	BACnet protocol B-BC runtime license (1)	PS5607-BACnet-BC	1SAP195550R0101
PM5072, PM5082	Data logger runtime license	PS5609-Log-e	1SAP195004R0101
PM5072, PM5082	Motion control library incl. EtherCAT onboard license	PS5611-MC-EC-e	1SAP192152R0101
AC500-eCo V3	Ethernet/IP scanner runtime license for AC500-eCo V3 (not for PM5012)	PS5613-EIP-S-e	1SAP196103R0101
AC500-eCo V3	Ethernet/IP adapter runtime license for AC500-eCo V3 (not for PM5012)	PS5613-EIP-A-e	1SAP196102R0101
PM5072, PM5082, PM5092	DNP3 outstation onboard license for AC500-eCo V3	PS5614-DNP3-O-e	1SAP195611R0101
PM5072, PM5082, PM5092	EtherCAT onboard runtime license for AC500-eCo V3 (for PM5072, PM5082 and PM 5092)	PS5615-ECAT-e	1SAP196201R0101
AC500-eCo V3	OPC UA client	PS5616-UACli-e	1SAP196301R0101
PM5052 and above	PROFINET Controller onboard runtime license for AC500-eCo V3 (for PM5052 and above)	PS5623-PN-C-e	1SAP196701R0101
PM5052 and above	PROFINET Device onboard runtime license for AC500-eCo V3 (for PM5052 and above)	PS5623-PN-D-e	1SAP196702R0101

For using runtime licensed features one license per CPU is required. The license has to be installed on the AC500 V3 CPU either by connecting it to Automation Builder or via Memory card that has been prepared by Automation Builder for license activation.

The licenses can be transferred between AC500 V3 CPUs unlimited times.

(1) Also available for AC500-eCo V3 PM5072 and PM5082.



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Contact us

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