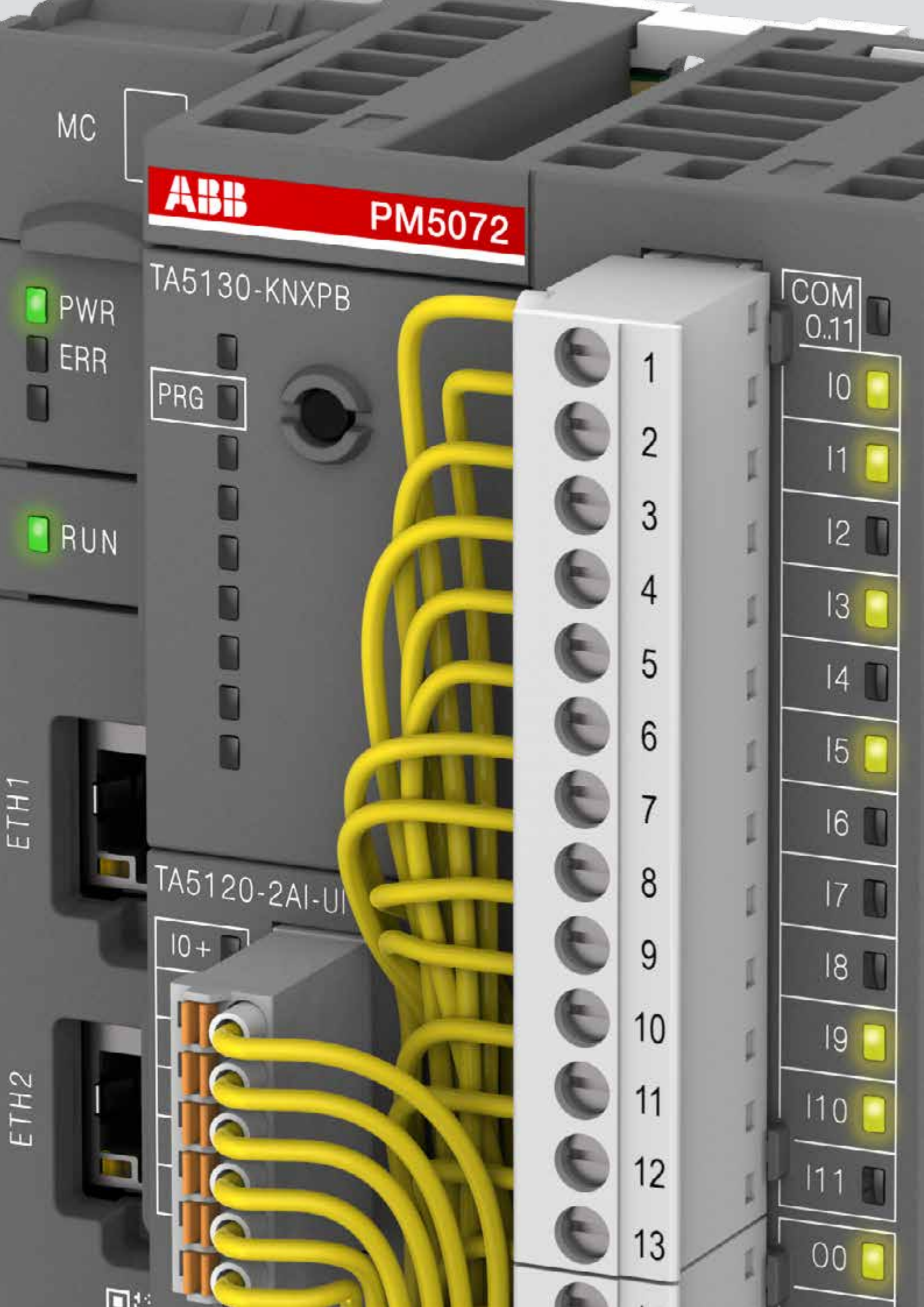
PLC AUTOMATION

# AC500-eCo V3 PLC

## Performance built with modularity, connectivity and scalability


MC
ABB
PM5072
TA5130-KNXPB
PWR
ERR
PRG
RUN
ETH1
ETH2
TA5120-2AI-UI
I0+
1
2
3
4
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7
8
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12
13
COM 0..11
I0
I1
I2
I3
I4
I5
I6
I7
I8
I9
I10
I11
O0

# AC500-eCo V3 PLC

**More...**

Modularity
Connectivity
Scalability

**... Performance**

# 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.

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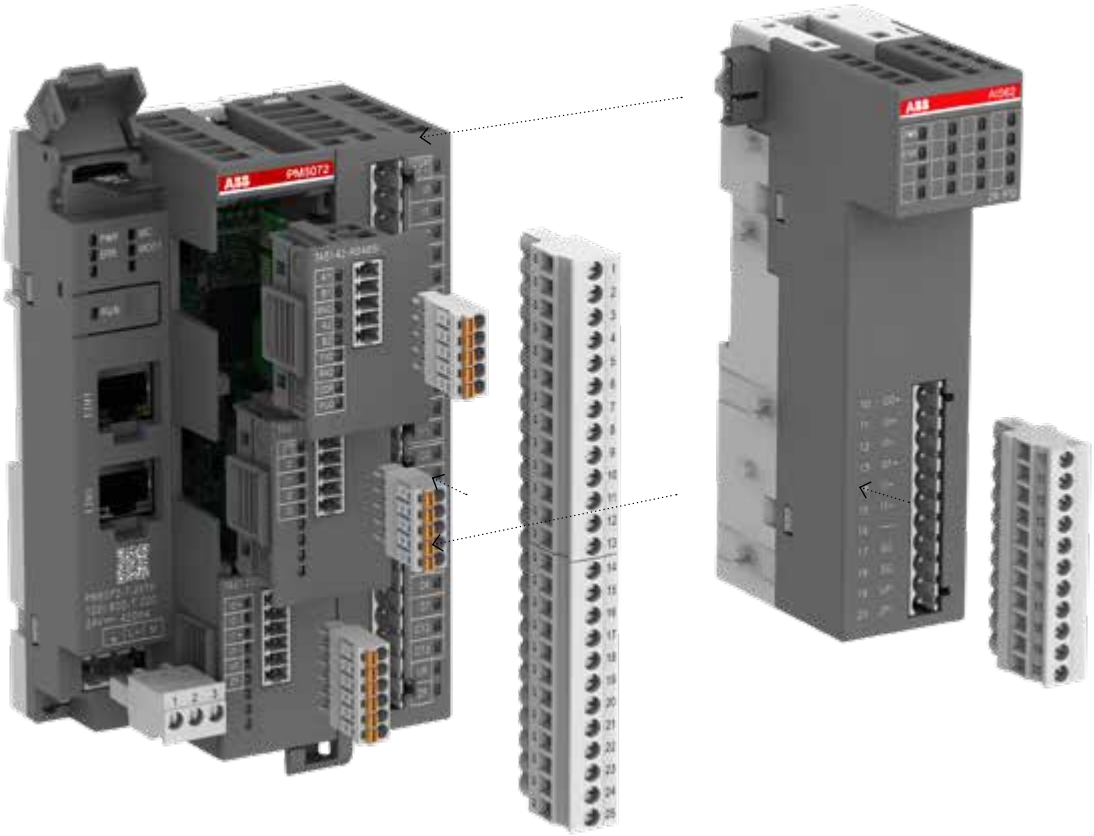


### Basic

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

### Standard

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

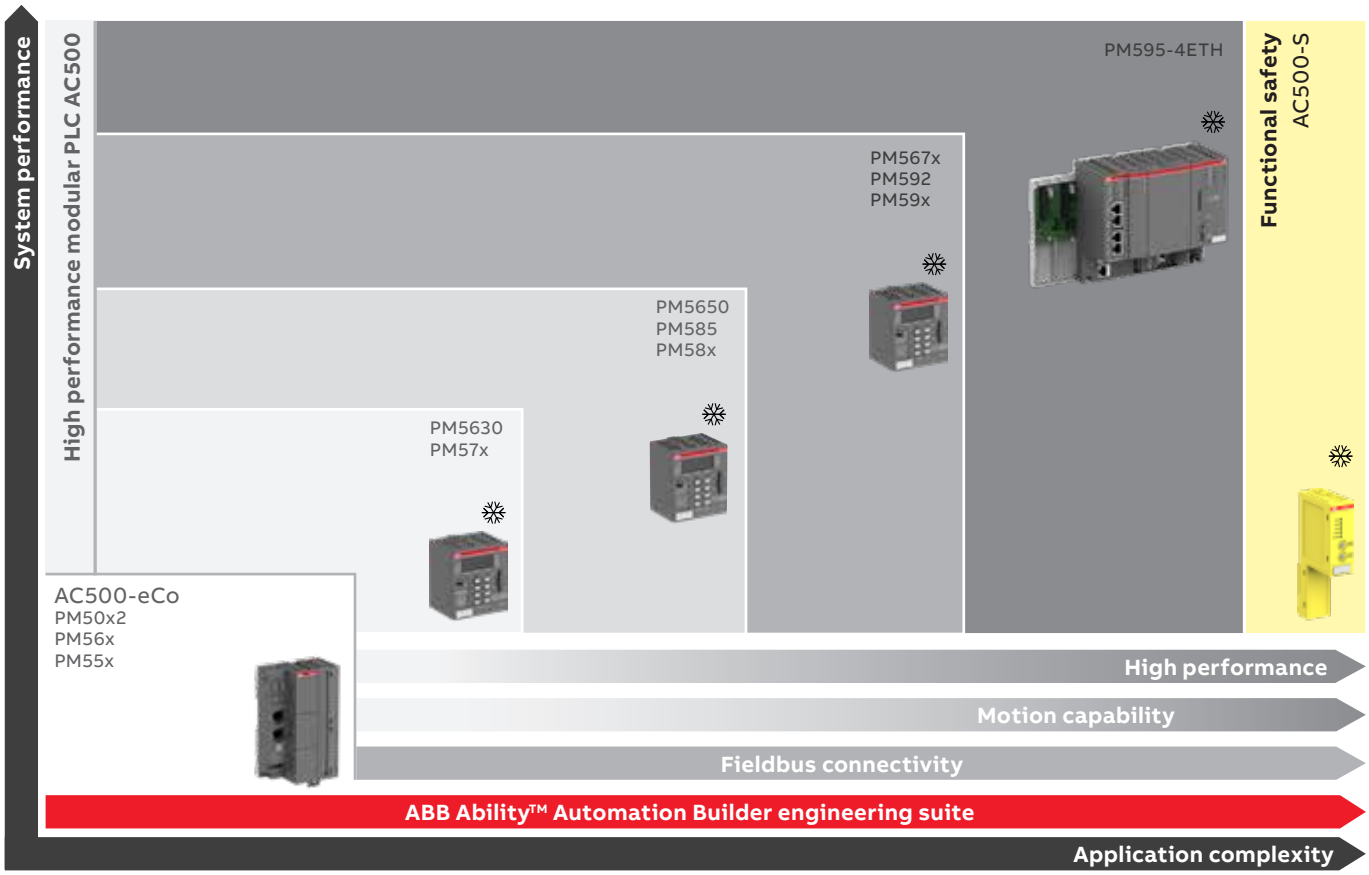
### Pro

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

# AC500 PLC platform

## Unique scaling across the entire product range

AC500 PLC platform



# AC500-eCo V3 highlights

## New standard of flexibility in entrance-level PLCs

Three different performance classes: Basic, Standard and Pro

Seamlessly scalable from extremely cost-sensitive, stand-alone machines to demanding applications

Up to 150 % more onboard I/O channels

Prepared for IoT with secured protocols such as OPC UA and MQTT

Encrypted communication between PLC and engineering tool, secure web visualization with HTTPS and secure data transfer with FTPS

Built-in Ethernet protocols KNX, BACnet, IEC 61850 and IEC 60870 Telecontrol

Compatible with the existing S500 and S500-eCo I/O modules

Optimized state-of-the-art IEC 61131-3 programming editors

Efficient engineering with object-oriented programming possibilities

# **Performance built up step by step** For extremely cost-sensitive stand-alone applications

The AC500-eCo V3 PLCs are ready for use as a rich set of I/Os and communication features can be found directly on the CPUs. One of the basic features of the AC500-eCo V3 PLC range is to provide just the right performance in all aspects. This is obtained with the ingenious concept of modularity, connectivity and scalability.

## Modularity

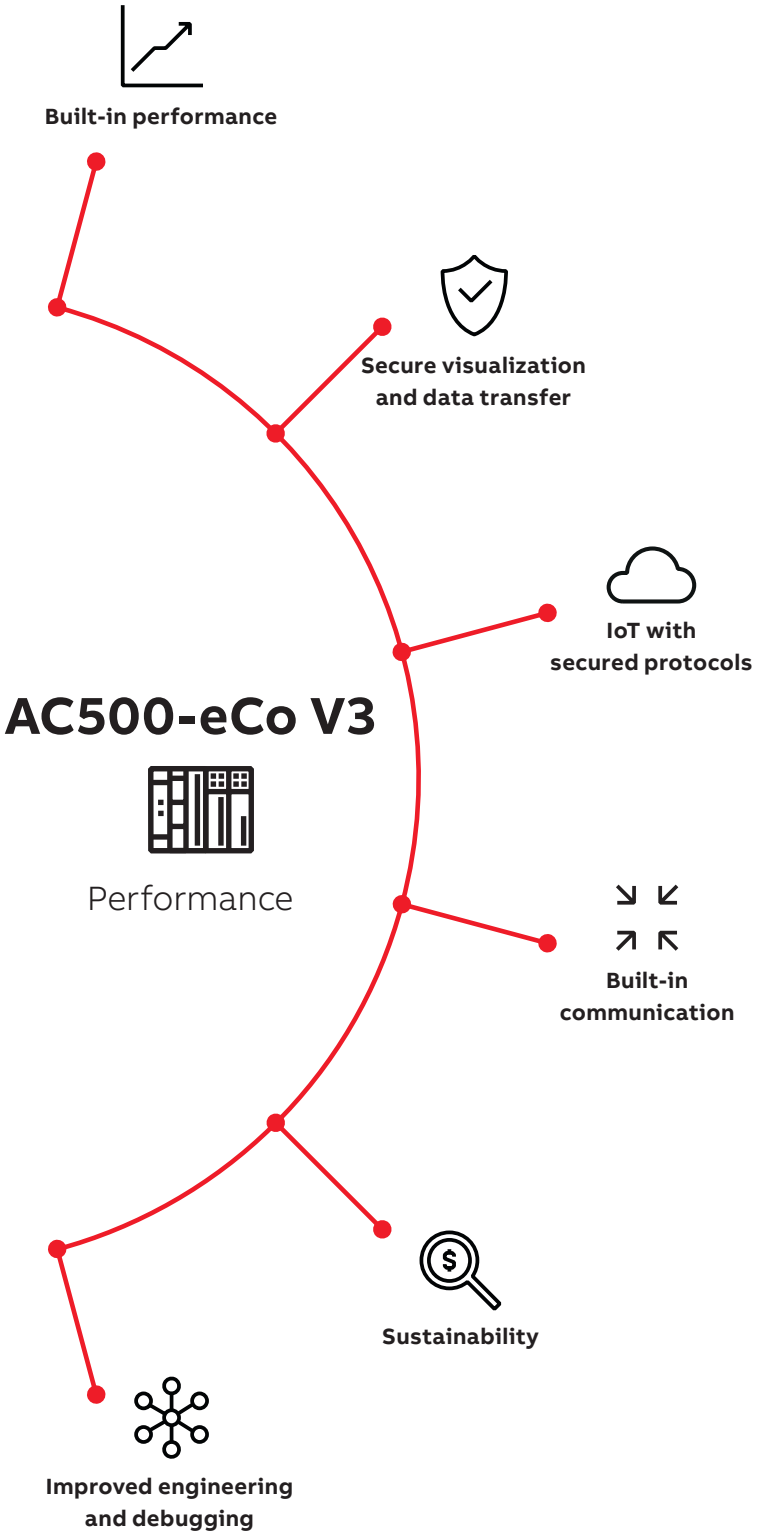
This new flexibility offers the advantage of providing exactly the features required by the application. You can start with a low-cost, stand-alone application and extend it whenever necessary so that it matches the next level of machine innovation.

## Connectivity

Make your application more open to the world. The features can be adapted easily to future trends and market requirements thanks to the comprehensive communication capabilities of the CPU. In this way the application has greater freedom in the exchange of information whether the recipient is another system, operator or an update is required.

## Scalability

New technology and scalability principles offer greatest possible programming, debugging and hardware compatibility with the current AC500 PLC platform. The three different CPU versions allow easy adaptation to an existing automation solution in your machine or application. AC500-eCo V3 is therefore the easiest way to secure previous investment in an existing AC500 installation over the long term.




**Built-in performance**
- More powerful processors with floating point unit
- More CPU memory for user program and data
- More onboard I/O channels

**Secure visualization and data transfer**
- Secure communication protocols: HTTPS, FTPS
- Encrypted communication with ABB Ability™ 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 protocol
- KNX and BACnet
- IEC 61850 and IEC 60870 telecontrol

**Sustainability**
- Reuse existing installation of S500/S500-eCo I/O modules
- No battery needed for storage of program or data
- Regular software updates may be run for an extended life cycle

**Improved engineering and debugging**
- Object-oriented programming
- Optimized IEC 61131-3 editors
- Offline simulation capabilities

# **Think sustainability**
# Go for a green footprint

It is not without reason that the new AC500-eCo V3 is built on the same tried and tested basis as its predecessor. This offers many benefits but above all, it provides a future-proof and intelligent way of creating the next generation of sustainable automation solutions or upgrades.

## Reusability

From a production perspective there is sustainable value in reusing the form factor from its predecessor. This reduces emissions in the factory when machines, parts and pieces can be reused.

## Life cycle

Regular software updates add new features to the system, secure your investment in the long term and extend the life cycle of the application or machine before final recycling of the equipment.

## Don’t produce waste

Reusing the form factor offers the opportunity to reuse an installed base of AC500-eCo units while reaching for state-of-the-art functionality that comes with the new AC500-eCo V3 CPUs.

## No battery

The new AC500-eCo V3 requires no external batteries normally used to keep data and the application program up to date.

## Quality

ABB stands for high-quality technology and during its 15 years on the market, AC500 has enabled trouble-free everyday operation for countless customers. By delivering outstanding quality and products able to withstand rough conditions, we can proudly say that AC500-eCo V3 will help to reduce waste.


Don't waste,
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)**
Create fast and exact calculations or positioning in all CPUs

—

**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

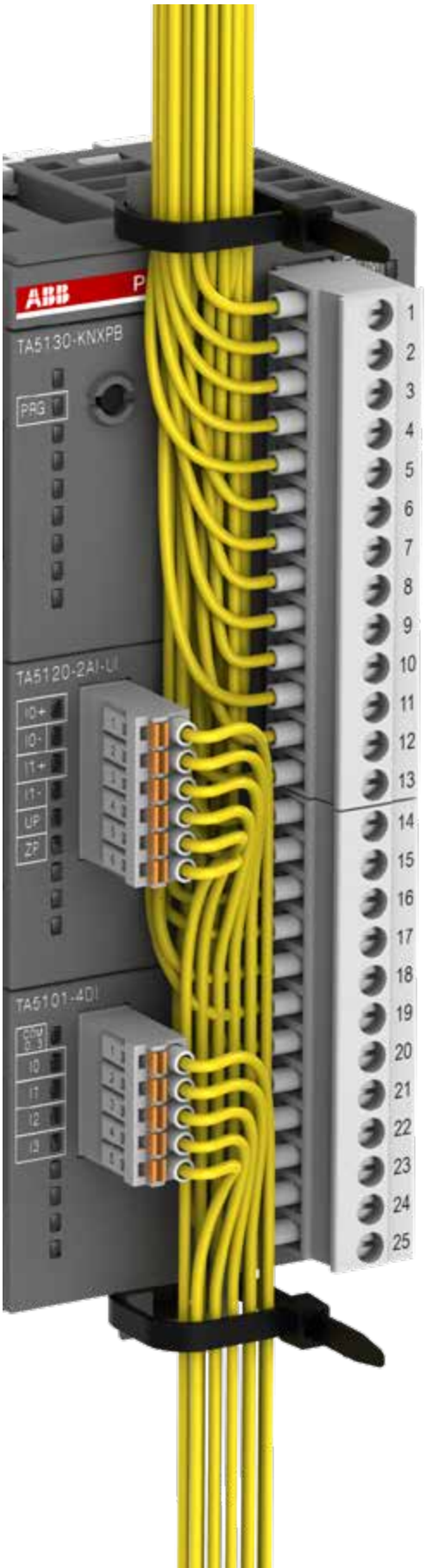
—

**Programming and configuring**
With Automation Builder via Ethernet interfaces

—

**Cable fixing**
For a nice and neat installation

Up to 150 % more onboard I/Os with option boards




—

**LED close to the I/O channels**
Improve visibility of I/O status

—

**I/O bus connector**
Compatible with up to 10 standard I/O modules

—

**Integrated onboard I/O**
Up to 50 % more than before

—

**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**
Extends the number of I/Os up to 150 % and increases the number of communication interfaces

—

**I/O terminals**
Push-in spring or screw connectors for cables up to 2.5 $mm^2$

# 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.

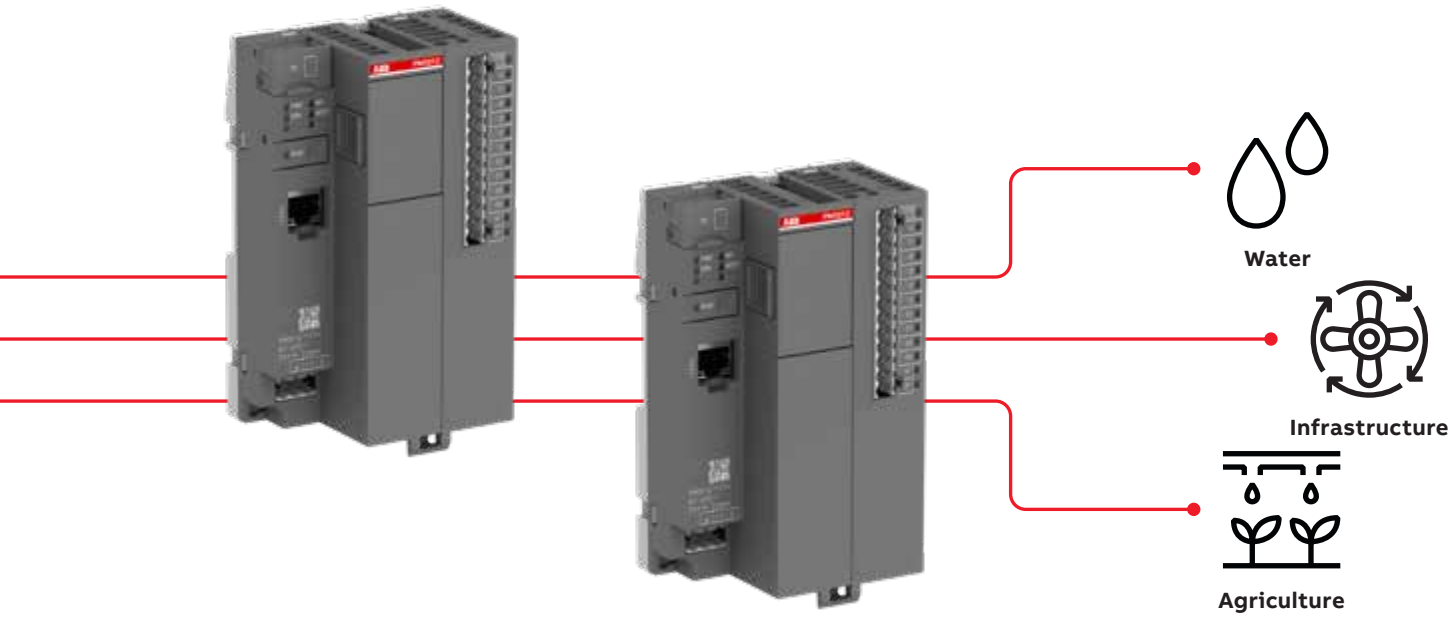
If the applications are more demanding, it is possible to extend the functionality with one of the available option boards.

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 ABB Ability™ Automation Builder is sufficient to engineer the onboard functionality.

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




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.

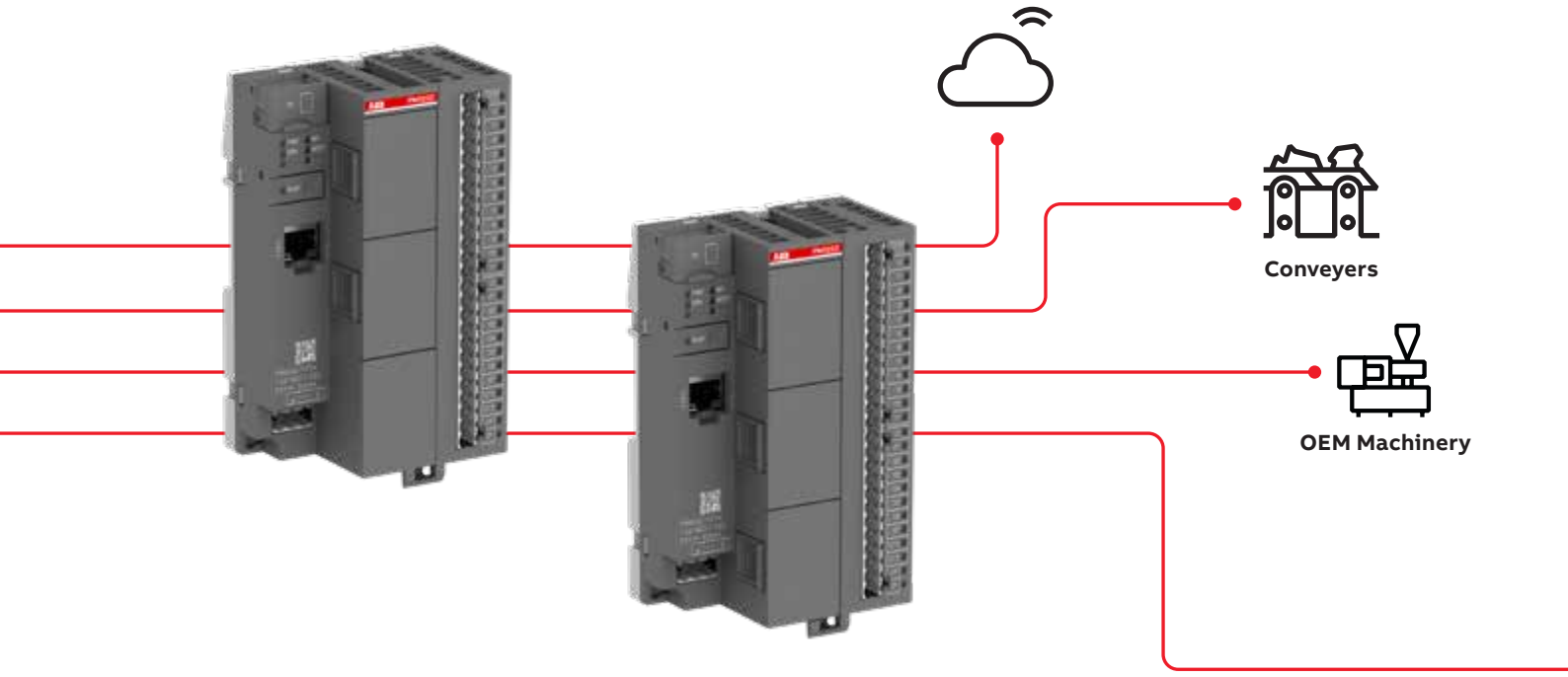
**More flexibility**
Larger memory and more onboard I/Os as well as the possibility of up to three option boards.

**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.

**Cloud 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 cloud services or SCADA.

**Distributed automation**
The integrated Ethernet port feature in addition to protocols such as Modbus TCP and Ethernet IP supports remote connectivity.




## Motion I/O

**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 pulse/direction PTOs (max. 100/200 (1) kHz each), or up to two pulse/direction or CC/CCW PTOs (max. 200 kHz each), or four PWMs (max. 30 kHz each).

**Application**
A comprehensive set of function blocks for simple motion applications (i.e. point to point, velocity control) is available free of charge. The licensed PLCopen motion control library for coordinated motion can also be used with the PLC. Configuration of some protocols requires Standard Edition of Automation Builder software.

**Onboard**
- 12 digital inputs
- 8 digital outputs (6 with relais)
- 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 ABB Ability™ Automation Builder software platform.

**Motion Control**

(1) In preparation

# AC500-eCo V3 – Pro
## Enter the new dimension of communication

**For demanding applications and extended connectivity**
The AC500-eCo Pro is the most powerful PLC 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 Ethernet/IP (1), IEC 61850, BACnet, KNX can be used.

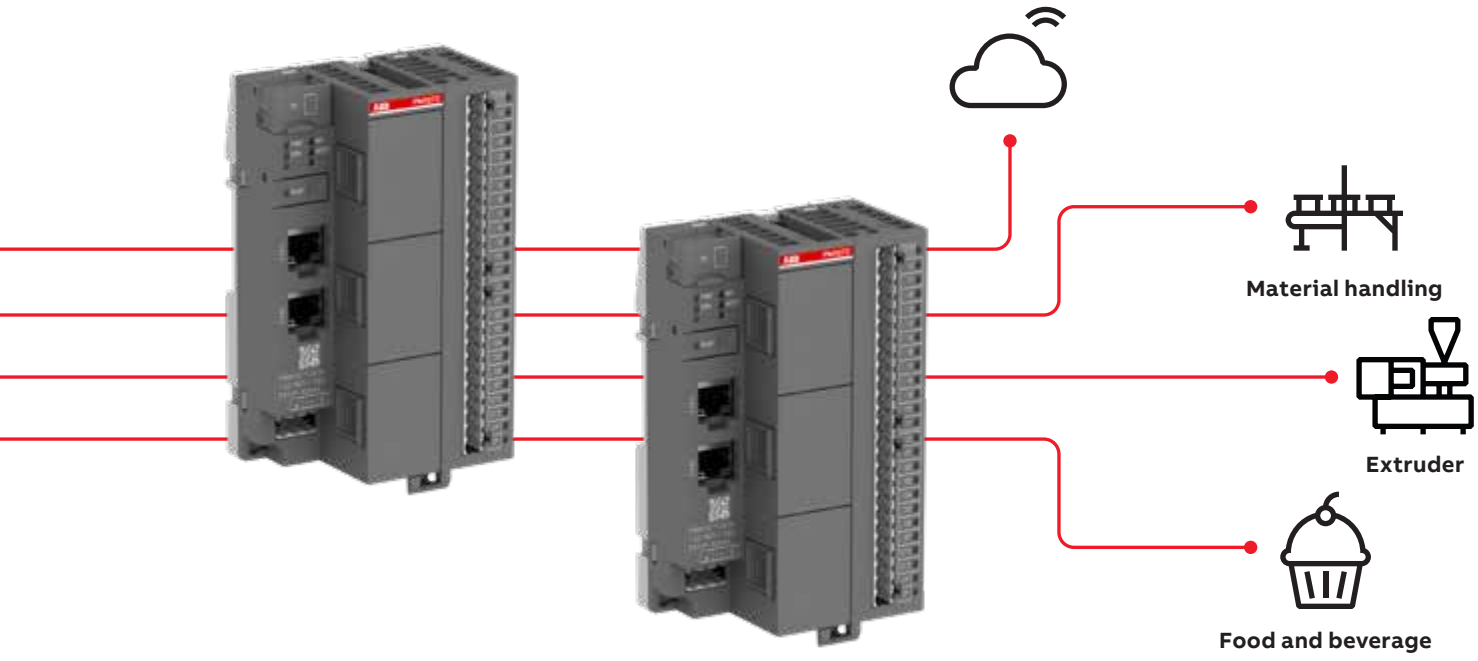
(1) In preparation

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 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.




Pro
available
for extended
temperature
range

# **Touch the reality**
## Award-winning PLC with ergonomic high-quality housing

—

**RUN-STOP toggle-switch**
Well integrated for robustness and easy control of the application or machine

—

**Cable fixing** possibility from both top and bottom to facilitate a clean and proper installation

—

**Micro memory** card slot on all CPUs for project or data saving, program or firmware update

—

**Ethernet ports**
Up to two ports to be used individually or as switch for enhanced accessibility

—

**Please try the virtual AC500-eCo V3 device in your own environment**

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# **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 foot-print 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.

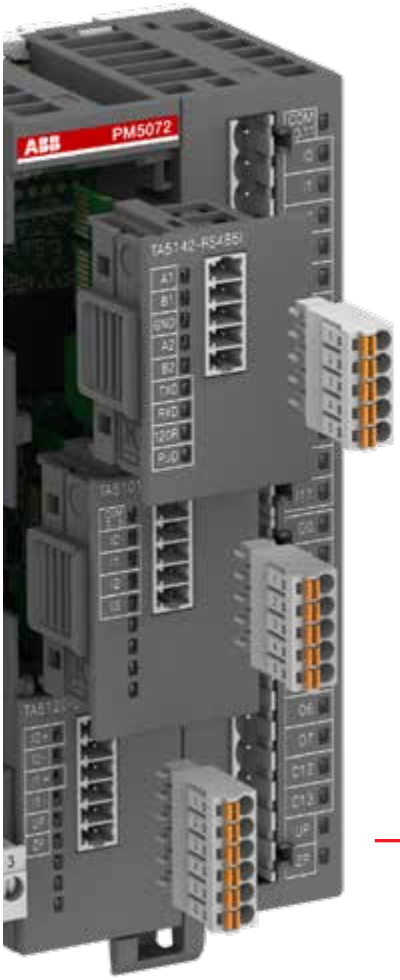

| Type | DI/DO | Description |
|---|---|---|
| TA5101-4DI (1) | 4/- | 24 V DC input |
| TA5105-4DOT (1) | -/4 | 24 V DC, 0,5 A Transistor output |
| TA5110-2DI2DOT (1) | 2/2 | 24 VDC input/ 24 VDC, 0,5 A Transistor output |

(1) In preparation W-version for extended temperature

**Analog input/output**
Onboard analog I/O extension is done via option boards. Four different analog modules are available to connect analog sensors and actuators (voltage, current, resistance) and thermocouples.

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

(1) In preparation W-version for extended temperature
(2) In preparation TC




## 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 (1) | RS232 isolated |
| TA5142-RS485I (1) | RS485 isolated |
| TA5142-RS485 (1) | RS485 non-isolated |

(1) In preparation W-version for extended temperature

## 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 (1) | KNX adressing switch |

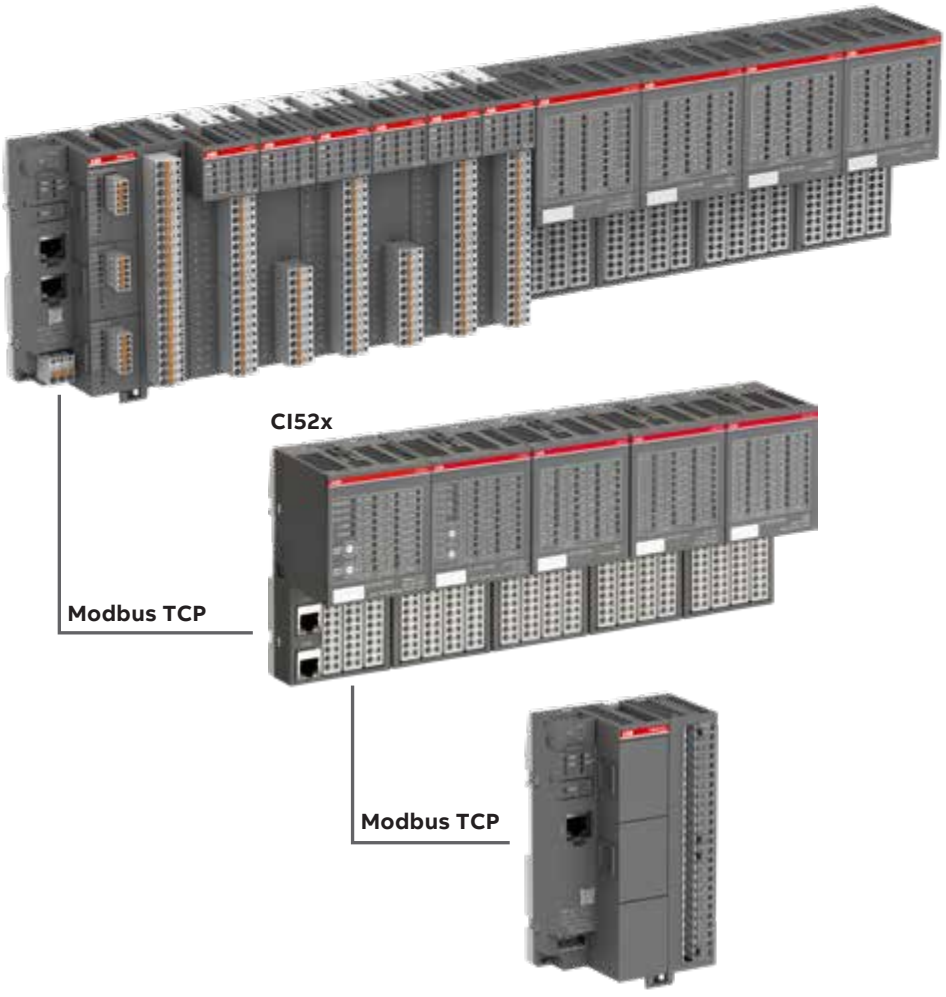
(1) In preparation W-version for extended temperature

| | Basic | Standard | | Pro |
|---|---|---|---|---|
| CPU type | PM5012-x-ETH | PM5032-x-ETH | PM5052-x-ETH | PM5072-T-2ETH |
| User program memory<br>Thereof program code and data | 1 MB<br>(256 kB) | 2 MB<br>(512 kB) | 4 MB<br>(768 kB) | 8 MB<br>(1 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 | |
| I/O bus | – | 10 I/O extension (128 Byte input and 128 Byte output) | 10 I/O extension | 10 I/O extension |

# Grow your application

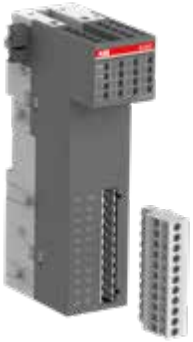
**S500 and S500-eCo I/O modules**
The Standard or Pro CPUs are the right choice if I/O extension is required. Up to 10 I/O modules from the existing S500 I/O range can be added directly to the CPUs. In this way it is possible to benefit from both the low-cost S500-eCo I/O range and the S500 I/O range for more demanding applications. With the Modbus TCP protocol the installation may be extended with distributed remote I/Os.

**Modbus TCP I/O extension with CI52x remote I/O interface or PM50x2 CPUs**
AC500-eCo V3 remote I/O extension uses Modbus TCP via the two interface modules CI521/522. The CI modules themselves have several I/Os and can additionally be extended easily with up to 10 more S500 I/O modules. If intelligent remote I/O stations are required, you can use AC500-eCo V3 CPUs. Thanks to the switch functionality of the two Ethernet ports, daisy-chaining is possible.



# Smart 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 the Modbus TCP communication interface module CI52x-MODTCP

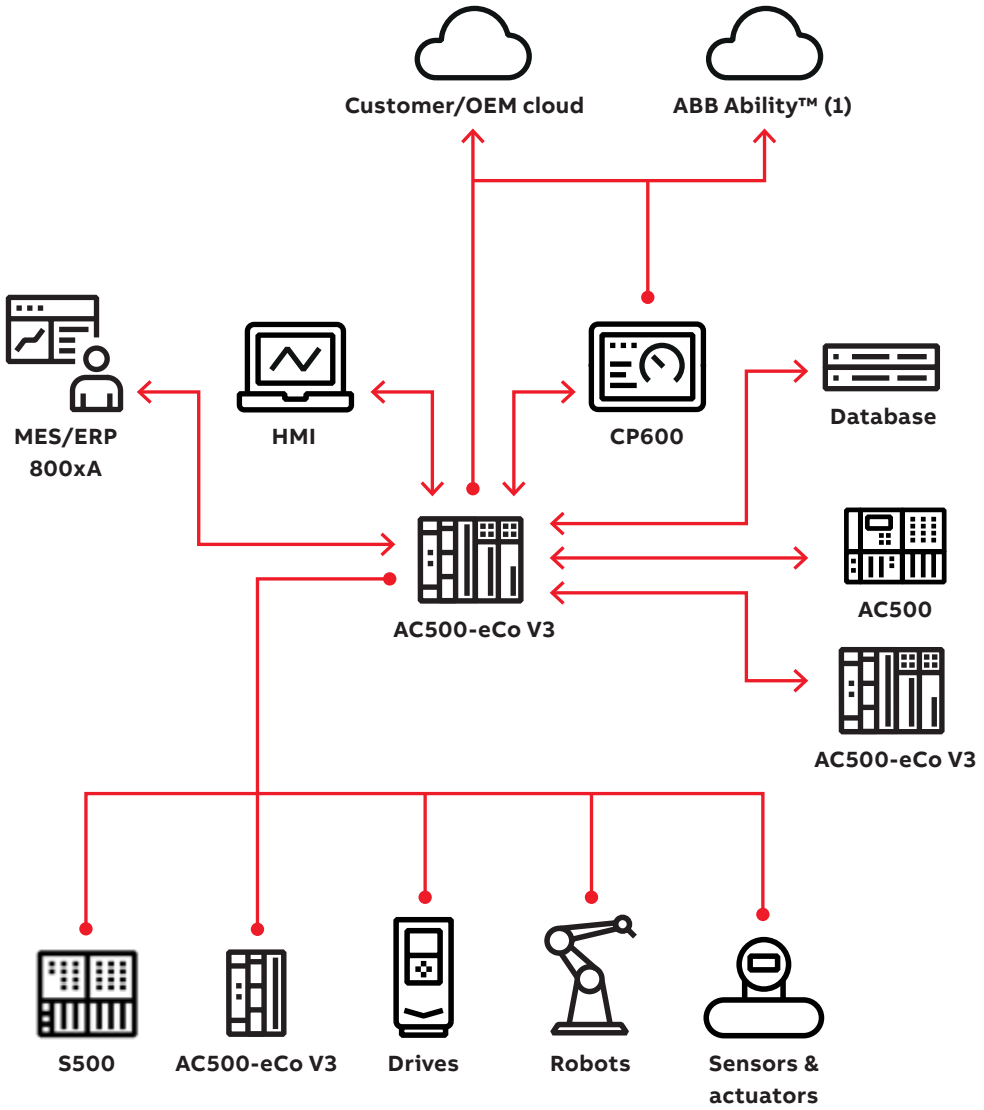


**S500-eCo I/O modules**
This is a cost-efficient I/O range without compromising quality and performance. Thanks to their small footprint they fit perfectly into the smaller cabinets. Available in digital and analog versions.

**S500 I/O modules**
They are high-density I/O modules, with freely configurable digital I/O channels. Each of the analog I/O channels may be set to voltage, current or resistance. In addition, these modules provide extended diagnostic information.

# Connect your PLC

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.




**IT network/Internet**
- FTP(S)
- HTTP(S)
- MQTT
- OPC UA
- SMTP
- SNTP/NTP

**Factory/site network**
- BACnet
- FTP(S)
- HTTP(S)
- IEC 60870
- IEC 61850
- KNX
- OPC DA/AE
- OPC UA
- SNMP
- SNTP/NTP
- TCP/IP
- UDP

**Control network**
- EtherCAT (1)
- Ethernet/IP
- IEC 61850
- Modbus RTU
- Modbus TCP

# **Extended Ethernet connectivity**
# Onboard protocol IEC 61850 and IEC 60870

## 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.

| | Basic | Standard | Standard | Pro |
|---|---|---|---|---|
| CPU type | PM5012-X | PM5032-X | PM5052-X | PM5072-X |
| Modbus TCP | ● | ● | ● | ● |
| OPC UA | – | ● | ● | ● |
| Web server | – | ● | ● | ● |
| MQTT | – | ● | ● | ● |
| SMTP | – | ● | ● | ● |
| SNMP | – | ● | ● | ● |
| IEC 60870-5-104 | – | – | – | ● |
| IEC 61850 | – | – | – | Licensed |
| Ethernet/IP | – | Licensed | Licensed | Licensed |
| EtherCAT (1) | – | – | – | Licensed |
| BACnet | – | – | – | Licensed |
| KNX/IP | – | – | – | Licensed |

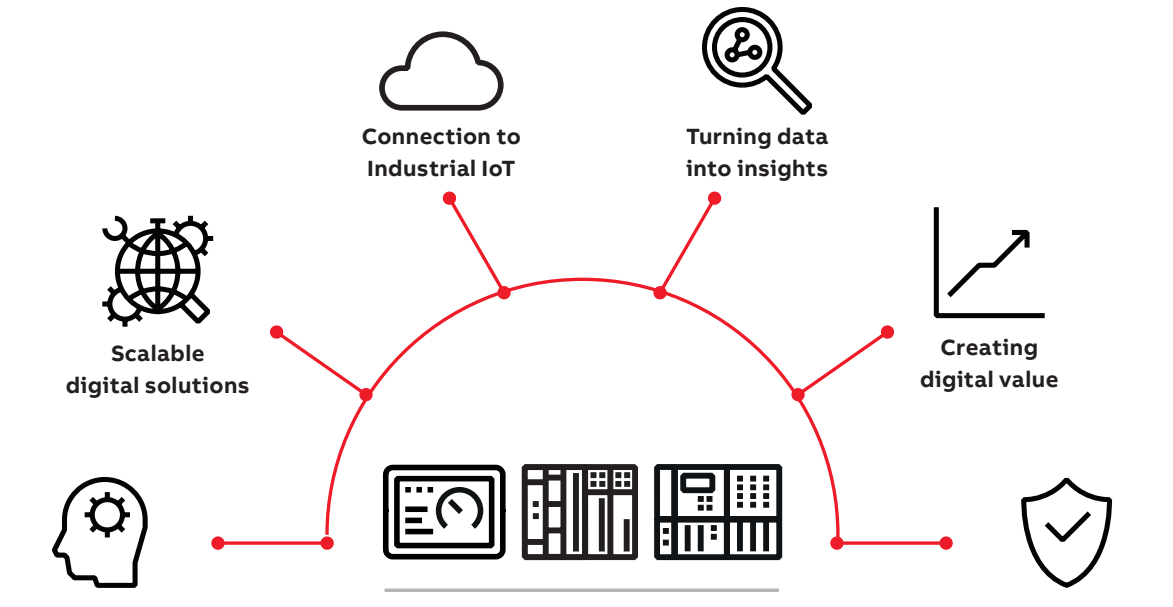
(1) In preparation

# Secure connectivity

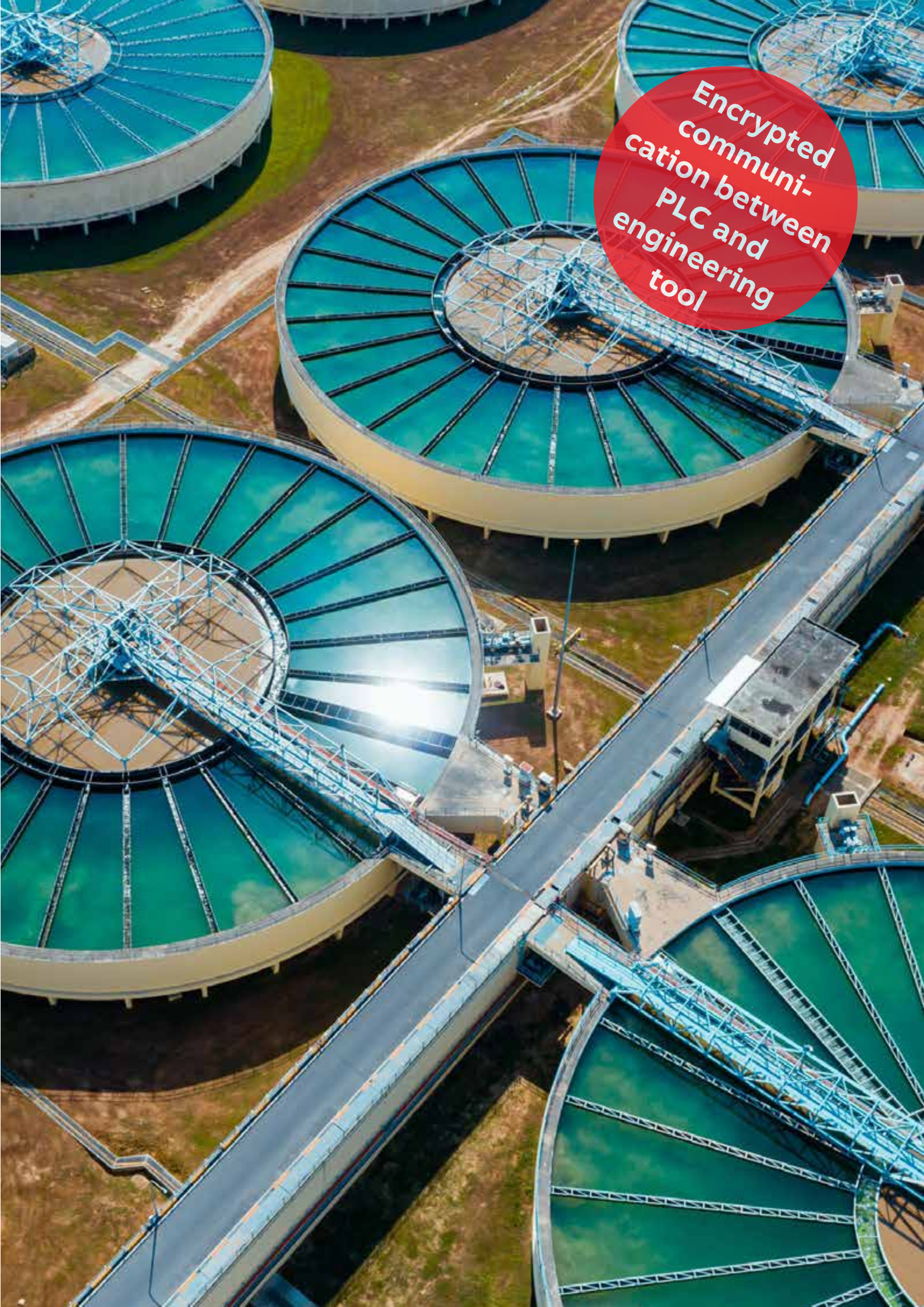
**The perfect bridge to your cloud**
The huge computing capacity in combination with the open connectivity philosophy makes the AC500-eCo V3 CPUs the perfect and cost-efficient IoT solution when bridging between an existing equipment and a cloud application by sending and receiving secure data. The security mechanism implemented in the CPUs is reliable 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.

**AC500 cloud demo**




**Scalable digital solutions**
This is a cost-efficient and smart solution that will take your site many years into the future – safely and gently implement the upgrade without stress.


Encrypted communi-
cation between
PLC and
engineering
tool

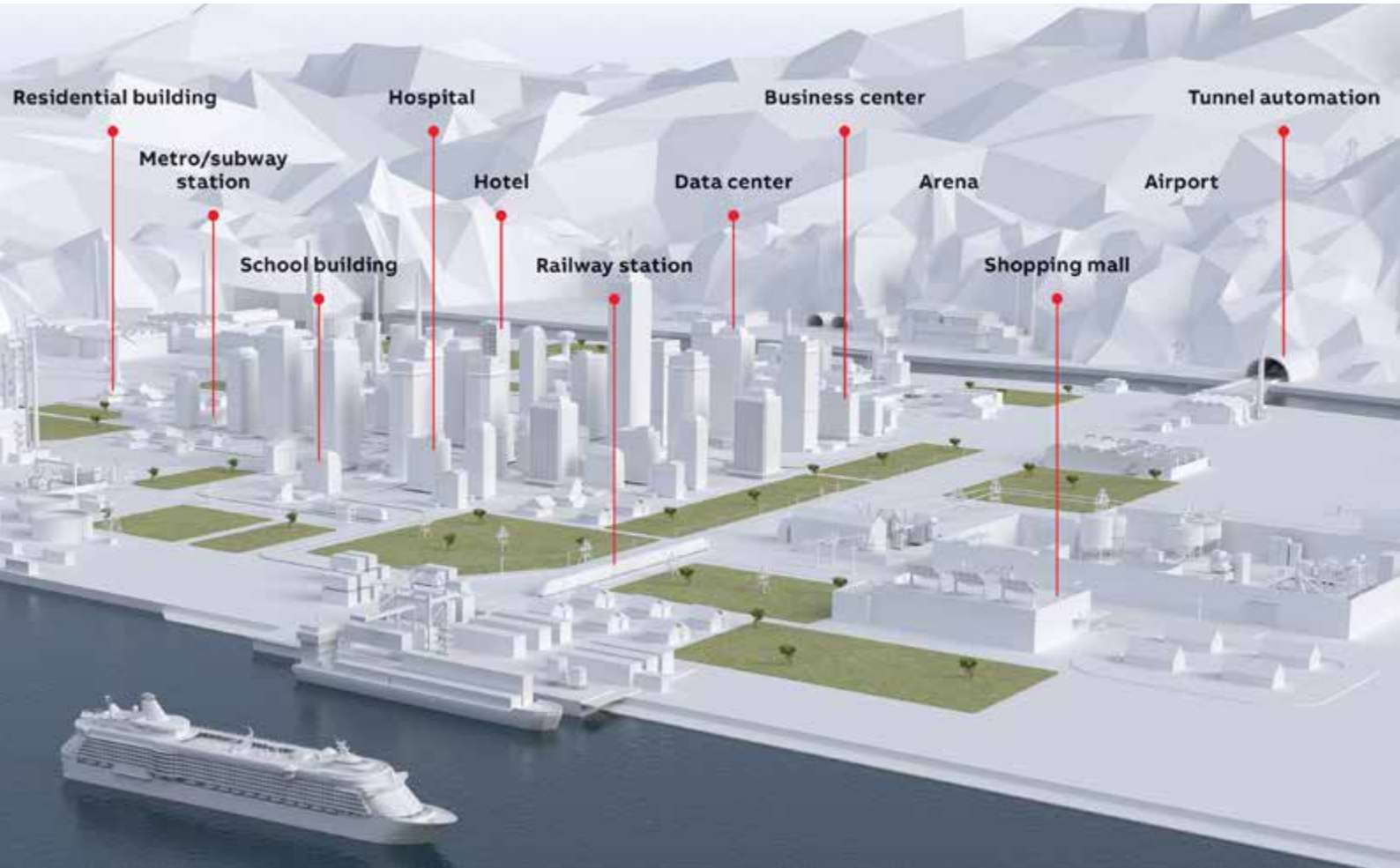
# Building automation

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.

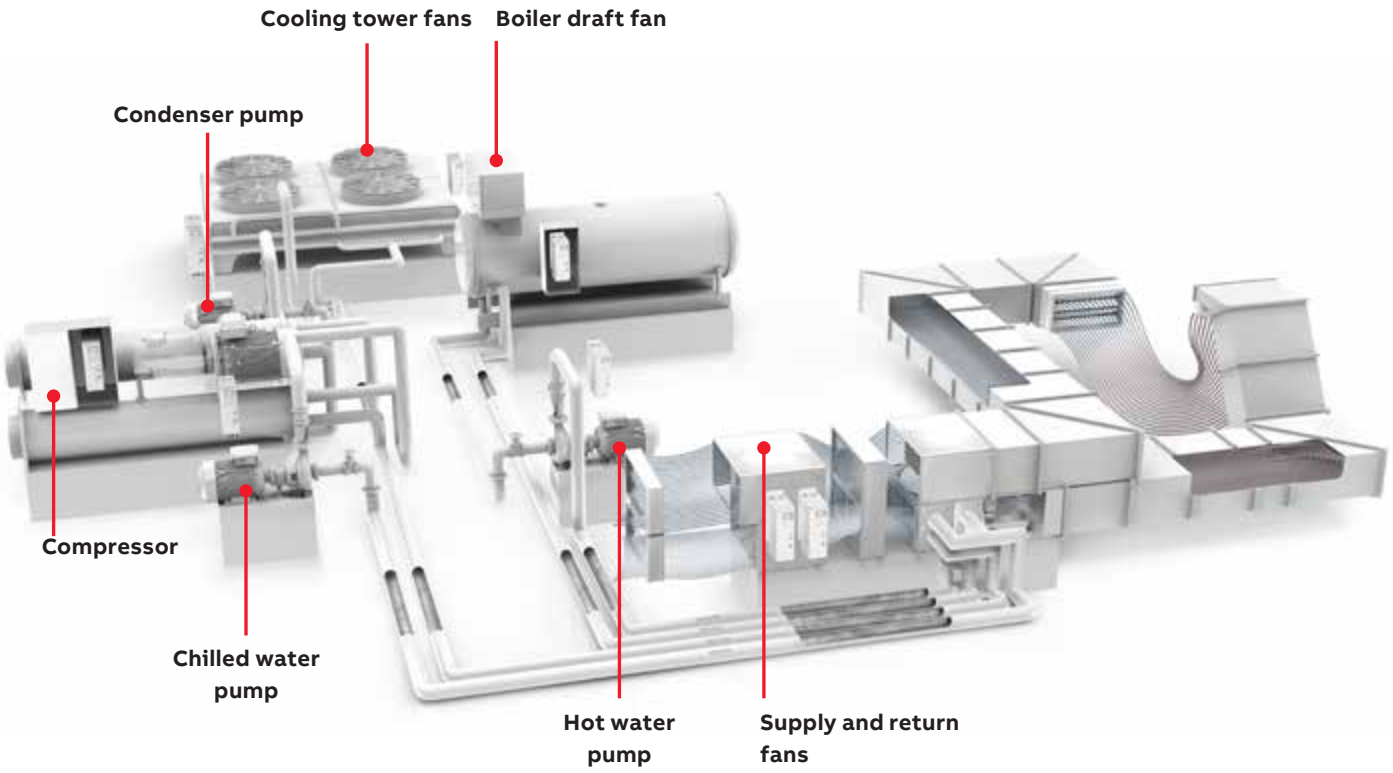
**Modbus TCP in buildings**
The scalability within the AC500-eCo range offers great possibilities within a building.
The AC500-eCo V3 “Basic” or “Standard” versions are perfect as cost-efficient, local room management controllers for heating, cooling and lighting. Nowadays, they are often used in big numbers in efficient and smart buildings. 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.



## 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 ABB Ability™ 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 ABB Ability™ Automation Builder.

# Motion control with onboard I/Os

## It could not be easier

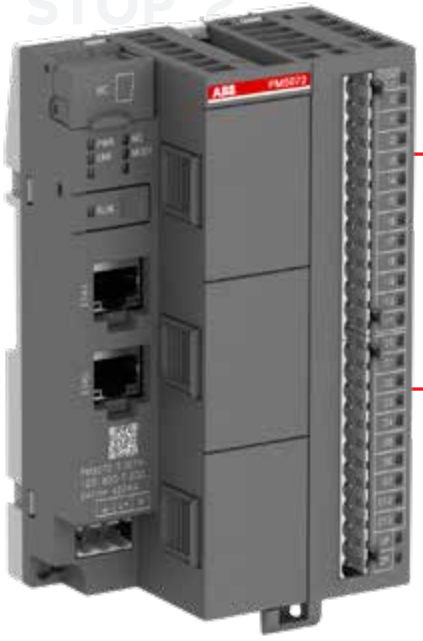
AC500-eCo V3 Standard and Pro CPUs utilize the fast onboard I/O channels for high performance in extremely cost-sensitive motion control tasks or constant speed applications.

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.

The function block library “eCo _Onboard.library” 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** 100/200 (1) kHz PTOs with pulse and direction
**or**
**2** 200 kHz PTOs with pulse and direction or CC/CCW
**or**
**4** 30 kHz PWMs

(1) In preparation


Free
simple
motion control
library
included

# ABB Drives integration

## Pre-made function blocks for efficient speed control

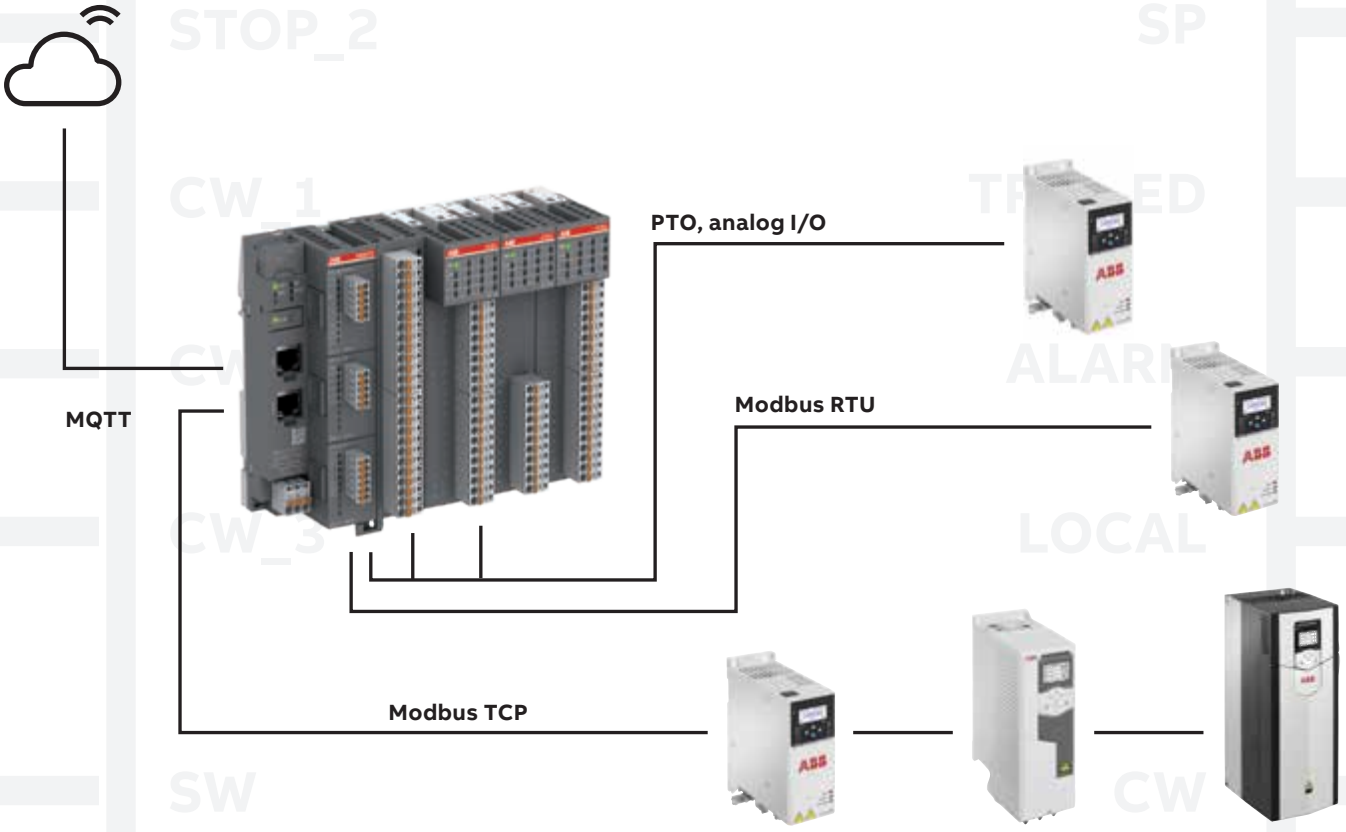
Reduce the motor speed to the actual demand to increase energy savings and reduce operating cost. Less engineering effort with the ready for use function blocks simplifies the integration of the ABB PLC AC500 and ABB Drives.

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.

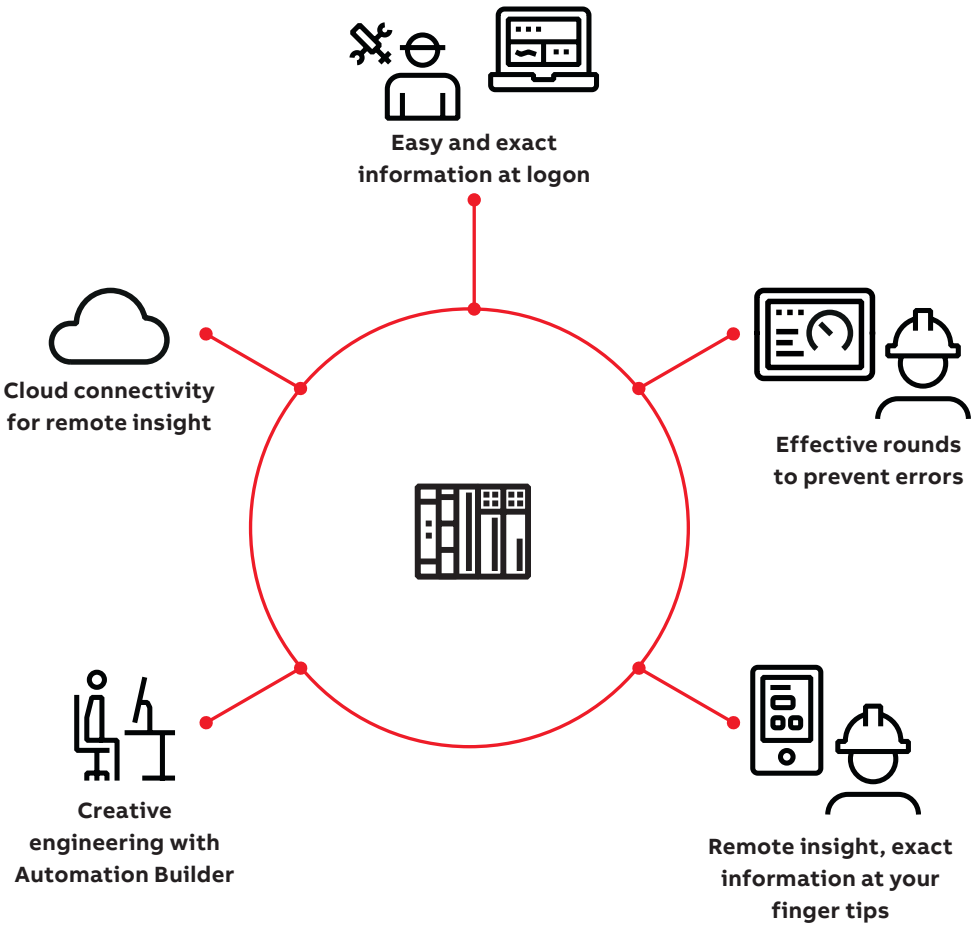
A drives library includes generic function blocks that can be used with any AC500 CPU and ABB Drives to considerably simplify engineering and commissioning.

- 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 ABB Ability™ 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

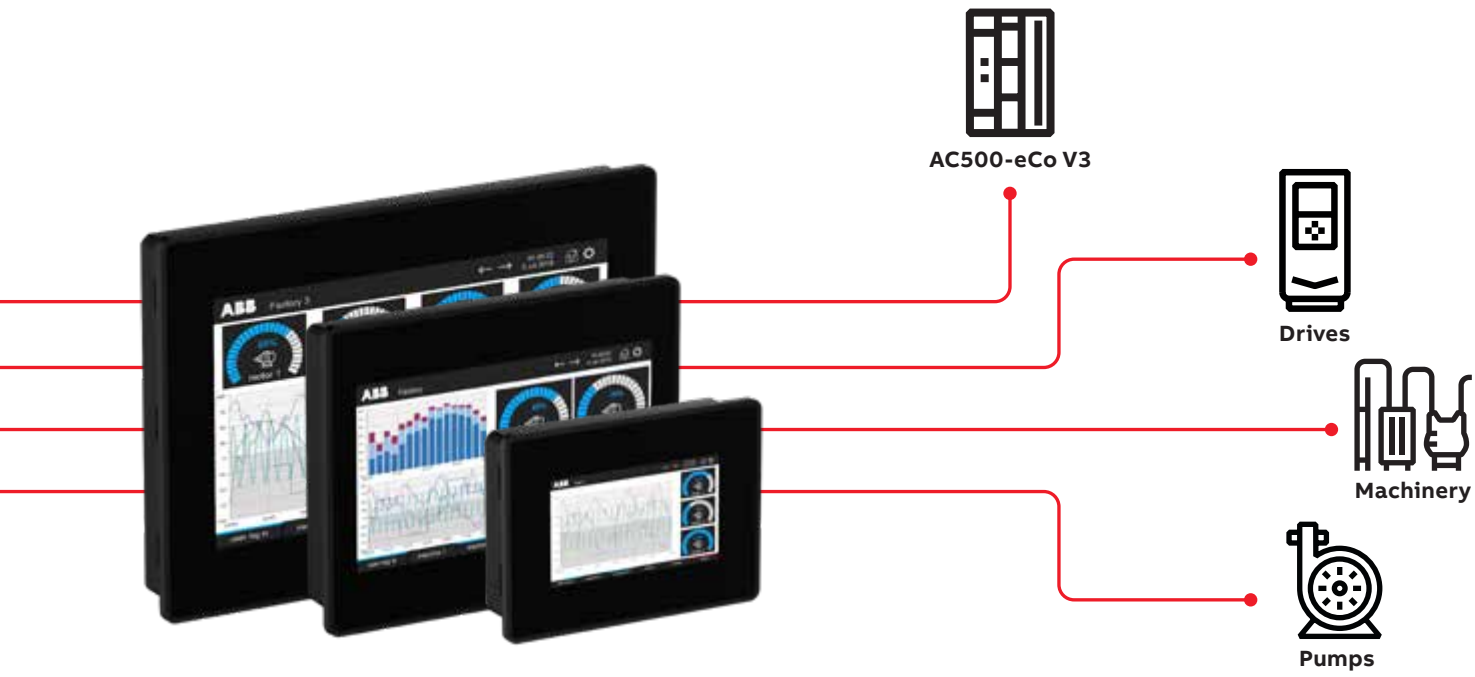
With comprehensive but easy-to-use functionalities. With one single touch, CP600-eCo control panels make machine operation efficient, predictable and user-friendly.

**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 ABB Ability™ 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.



# ABB Ability™ Automation Builder
## Key features

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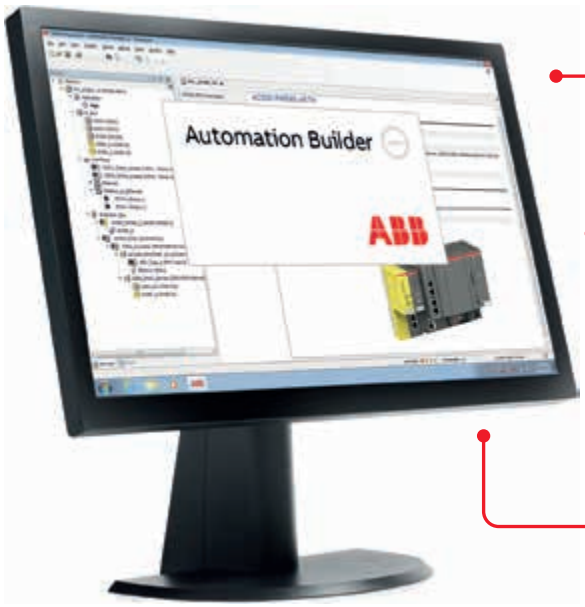
Stay in control of your project:
Automation Builder integrates engineering tools for PLCs, safety, drives, motion and control panels

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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

# ABB Ability™ Automation Builder
## Productivity features

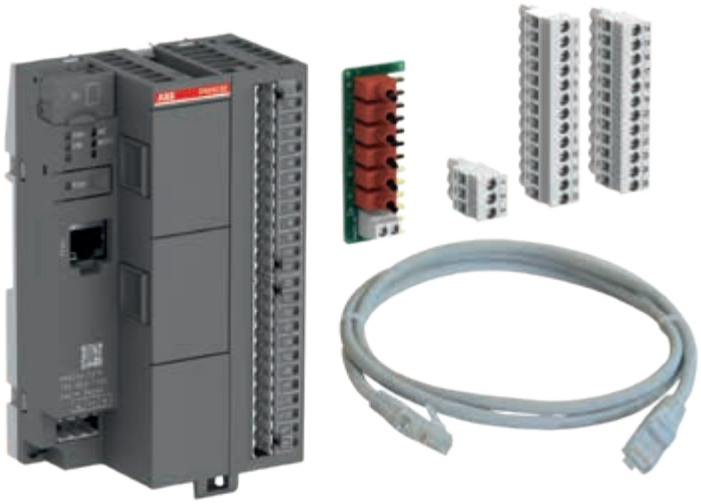
All essential features of standard object-oriented programming of AC500-eCo are included in ABB Ability™ Automation Builder

**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 POUs, 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
- IEC61850 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 Starter kits

## Discover the new compact PLC



Your benefit:

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

**The compact training package includes state-of-the-art hardware and software**

Economic PLC to get familiar with the scalable AC500 PLC platform

Example application for easy introduction into PLC programming

Simulator for easy verification and simulation of your code

PLC supports secure IoT, enabled with OPC UA server and MQTT protocols

Easy-to-use integrated HTML5 web visualization

**ABB Ability™ Automation Builder engineering suite**

Easy and efficient widget-based engineering with PB610 Panel Builder 600 included in ABB Ability™ Automation Builder engineering suite.

Automation Builder is the integrated state-of-the-art programming editor and tool for simulation, commissioning and maintenance of PLCs, drives, motion and control panels.

**CP600-eCo control panel**

Multi-color resistive touchscreen, Ethernet and serial communication interfaces

Your access to the scalable CP600 HMI portfolio for fast commissioning

**Two different starter kits contain all what is needed for an easy start with AC500-eCo**

- AC500-eCo V3 CPU with onboard I/Os
- Input simulator with six switches
- Ethernet programming cable
- Quick start instructions, engineering software and training materials are online available

**TA5415-STAKIT - kit with PLC**

- CPU with one Ethernet interface
- Visualization with web server and HTML5

**TA5426-STAKIT - kit with PLC and control panel**

- CPU with two Ethernet interfaces
- Control panel CP604 for visualization
- Additional Ethernet cable for connection of CPU and control panel

**AC500-eCo V3 Starter kits**

| Description | Type | Order code |
|---|---|---|
| CPU PM5032-T-ETH, simulator, terminal block set, programming cable | TA5415-STAKIT | 1SAP187600R0002 |
| CPU PM5072-T-2ETH, simulator, terminal block set, HMI CP604, programming cables | TA5426-STAKIT | 1SAP187600R0003 |

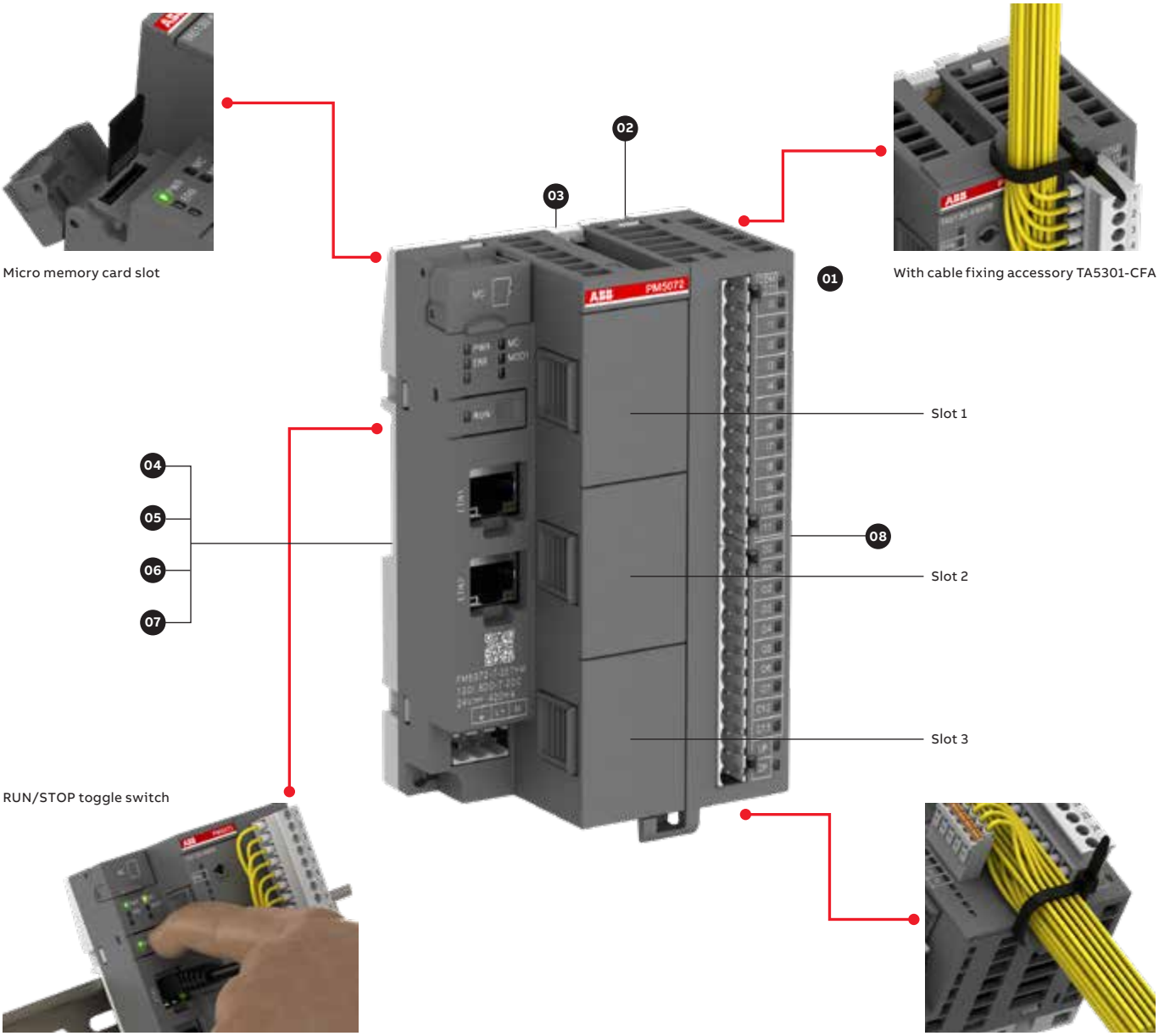
Smart guide for a smooth start up

Automation Builder free download

For more information go to AC500 main catalog

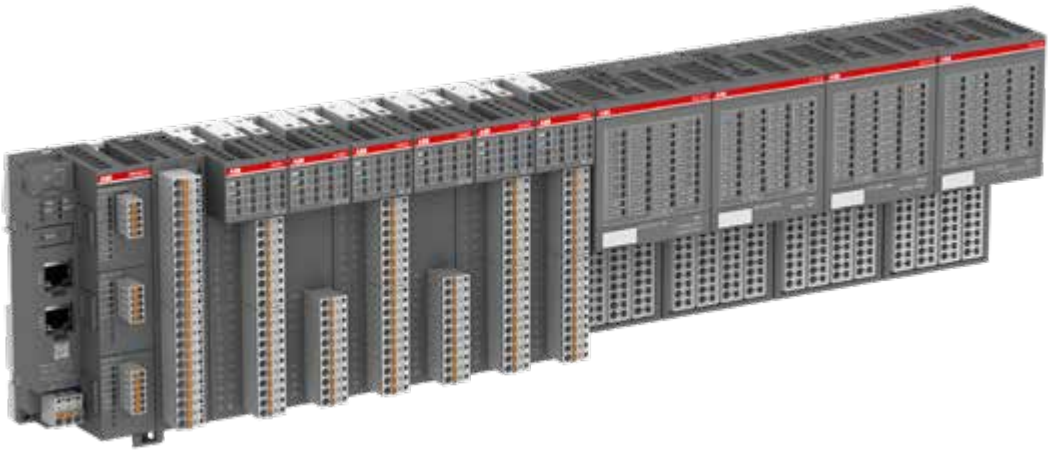
# System characteristics

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 | PM5072-T-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 Input simulator
—
10 AC500-eCo Starter kit. For more information, see page 42



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# 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.

| Total user program memory | Onboard I/Os | Relay / Transistor outputs | Integrated communication | Option board slots for extension | Power supply | Type | Order code | Price | 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) | 6 / 4 / – | Transistor | 1x Ethernet | 1 | 24 V DC | PM5012-T-ETH | 1SAP122600R0072 | | 0.225 |
| | 6 / 4 / – | Relay | 1x Ethernet | 1 | 24 V DC | PM5012-R-ETH | 1SAP122700R0072 | | 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) | 12 / 8 / 2 | Transistor | 1x Ethernet | 2 | 24 V DC | PM5032-T-ETH | 1SAP123400R0072 | | 0.253 |
| | 12 / 6 / 2 | Relay | 1x Ethernet | 2 | 24 V DC | PM5032-R-ETH | 1SAP123500R0072 | | 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) | 12 / 8 / 2 | Transistor | 1x Ethernet | 3 | 24 V DC | PM5052-T-ETH | 1SAP124000R0072 | | 0.257 |
| | 12 / 6 / 2 | Relay | 1x Ethernet | 3 | 24 V DC | PM5052-R-ETH | 1SAP124100R0072 | | 0.273 |
| **Pro CPU PM5072-x-ETH: 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) | 12 / 8 / 2 | Transistor | 2x independent Ethernet with switch | 3 | 24 V DC | PM5072-T-2ETH | 1SAP124500R0073 | | 0.265 |
| 8 MB (thereof 1 MB Program code and Data + 7 MB Web max.) extended wide temperature (2) | 12 / 8 / 2 | Transistor | 2x independent Ethernet with switch | 3 | 24 V DC | PM5072-T-2ETHW (1) | 1SAP124400R0073 | | 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 … +70 °C.
(2) 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.

—
PM5012-x-ETH
Basic CPU

—
PM5032-x-ETH
Standard CPU

—
PM5052-x-ETH
Standard CPU

—
PM5072-T-2ETH(W)
Pro CPU

# AC500-eCo V3
## Ordering data

### Terminal block sets for AC500-eCo V3 CPU

| Content of the sets | Connection type | | Cable entry | Type | Order code | Price | Weight (1 pce) 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 | | 0.027 |
| 1x 3 poles for power supply, 1x 13 poles I/O terminal blocks | Spring | 5 mm pitch | Front | TA5211-TSPF-B | 1SAP187400R0002 | | 0.027 |
| **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 | | 0.047 |
| 1x 3 poles for power supply, 1x 13 + 1x 12 poles I/O terminal blocks | Spring | 5 mm pitch | Front | TA5212-TSPF | 1SAP187400R0005 | | 0.048 |

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 | Price | Weight (1 pce) kg |
|---|---|---|---|---|
| **For Basic CPU only** | | | | |
| Real Time Clock without battery, option board for AC500-eCo Basic CPU | TA5131-RTC | 1SAP187200R0002 | | 0.016 |
| **For all AC500-eCo V3 CPU types** | | | | |
| Micro memory card 8 GB for program, data or firmware update, with adapter (1) | MC5102 | 1SAP180100R0002 | | 0.003 |
| Screw mounting accessory for AC500-eCo V3 CPU (same as PM595-4ETH-x), 20 pieces per packing unit | TA543 | 1SAP182800R0001 | | 0.010 |
| Cable binding pluggable accessory, 20 pieces per packing unit | TA5301-CFA | 1SAP187500R0003 | | 0.030 |
| Option board cover, removable plastic part, 6 pieces per packing unit | TA5300-CVR | 1SAP187500R0001 | | 0.047 |
| Input simulator, 6 switches, 24 V DC | TA5400-SIM | 1SAP187600R0001 | | 0.018 |

(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

# 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 channel extension / Three different option boards for digital channel extension
- KNX push button address switch
- All the option boards are delivered with spring terminal block.

| Description | Onboard I/Os DI/DO/AI/AO | Relay / Transistor outputs | Type | Order code | Price | Weight (1 pce) kg |
|---|---|---|---|---|---|---|
| **Option board for digital input/output channel extension, W version for extended temperature in preparation** | | | | | | |
| 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 (1) | 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 (1) | 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 (1) | 1SAP187000R0203 | | 0.015 |
| **Option board for analog input/output channel extension, W version for extended temperature in preparation** | | | | | | |
| 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 (1) | 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 (1) | 1SAP187100R0002 | | 0.019 |
| | | | TA5123-2AI-RTW (1) | 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 (1) | 1SAP187100R0203 | | 0.019 |

(1) In preparation

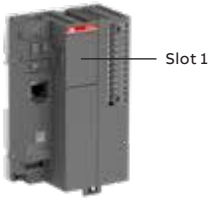

—
TA5101-4DI

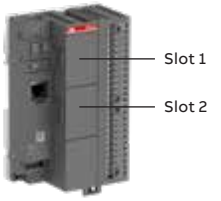

—
TA5105-4DOT

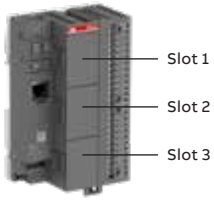

—
TA5110-2DI2DOT

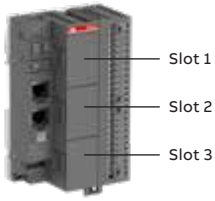

—
TA5120-2AI-UI


—
TA5126-2AO-UI




| | Basic | Standard | | Pro |
|---|---|---|---|---|
| | **PM5012-x-ETH** | **PM5032-x-ETH** | **PM5052-x-ETH** | **PM5072-T-ETH (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)** |
| TA5141-RS232I | ● | ● | ● | ● **(W)** |
| TA5142-RS485I | ● | ● | ● | ● **(W)** |
| TA5142-RS485 | ● | ● | ● | ● **(W)** |

# AC500-eCo V3
## Ordering data

| Description | Communication type | Type | Order code | Price | Weight (1 pce) kg |
|---|---|---|---|---|---|
| **Option board for serial communication extension, W version for extended temperature in preparation** | | | | | |
| RS232 serial adapter isolated, 5 pole spring/cable front terminal 3.50 mm pitch | RS232 isolated | TA5141-RS232I | 1SAP187300R0001 | | 0.015 |
| | | TA5141-RS232IW (1) | 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 (1) | 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 (1) | 1SAP187300R0203 | | 0.015 |
| **Option board for communication address setting or real time clock, W version for extended temperature in preparation** | | | | | |
| KNX address switch option board, 1 push button | - | TA5130-KNXPB | 1SAP187200R0001 | | 0.014 |
| | | TA5130-KNXPBW (1) | 1SAP187200R0201 | | 0.014 |
| Real Time Clock without battery, option board for AC500-eCo Basic CPU only | - | TA5131-RTC | 1SAP187200R0002 | | 0.016 |

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

—
TA5141-RS232I

—
TA5142-RS485I

—
TA5142-RS485

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TA5130-KNXPB

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

Only ABB terminal blocks must be used with AC500-eCo V3.
(1) In preparation

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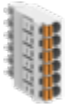
TA5220-SPF5



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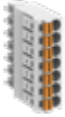
TA5220-SPF6



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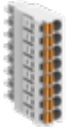
TA5220-SPF7



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TA5220-SPF8

# 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 DI/DO/DC | Input signal | Output type | Output signal | Terminal block required 9 poles | 11 poles | Type | Order code | Price | Weight (1 pce) kg |
|---|---|---|---|---|---|---|---|---|---|
| 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/11 bits + sign
  - AI562, AI563: 15 bits + sign.

| Number of AI/AO | Input signal | Output signal | Terminal block required 9 poles | 11 poles | Type | Order code | Price | Weight (1 pce) kg |
|---|---|---|---|---|---|---|---|---|
| 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 |
| 0 / 2 | – | -10...+10 V, 0...20 mA, 4...20 mA | – | 1 | AO561 | 1TNE968902R1201 | | 0.118 |
| 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
## Ordering data

### Terminal blocks for S500-eCo I/O modules and AC500-eCo V2 CPUs

| Number of poles | Connection type | Cable entry | Type | Order code | Price | 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.

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TA563-9

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TA564-11

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TA565-9

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**Additional information**
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