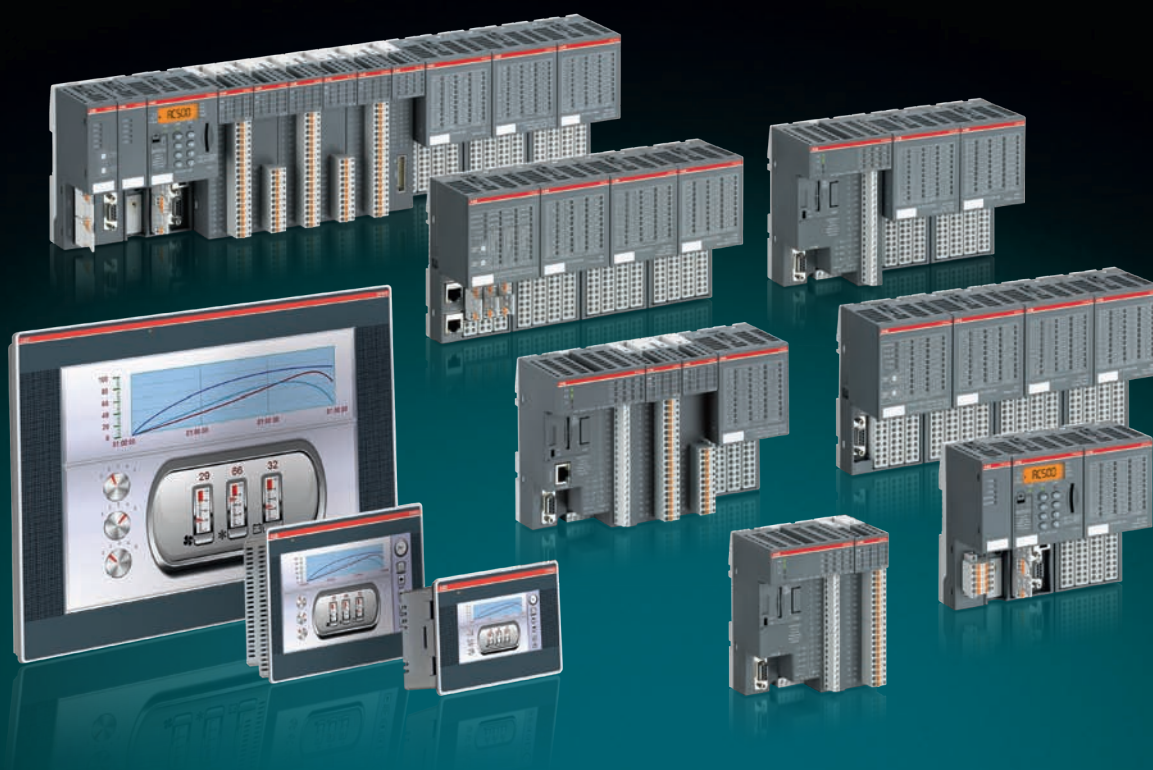




Main catalog

Industrial automation
PLC, control panels, SCADA,
engineering software, wireless

Power and productivity
for a better world™





AC500 products family	1
Overview data	2
Technical data	3
Ordering data	4
Other automation from ABB	5

AC500 products family

Overview

ABB offers a comprehensive range of scalable PLCs and robust HMI control panels as well as high-availability solutions.

Since its launch in 2006, the AC500 PLC platform has achieved significant industry recognition for delivering high performance, quality and reliability. ABB delivers scalable, flexible and efficient ranges of automation components to fulfill all conceivable automation applications.



Some connectivity options to AC500



Control Panels



Programming software



DigiVis 500



Motor Starter



Motors



Flowmeter



Push buttons



Drives



Softstarter



Temperature probe



Programming software

Control Builder Plus complies with the IEC61131-3 standard offering all 5 IEC programming languages. In addition it includes continuous function chart, C, extensive function block libraries, and powerful embedded simulation/visualization feature. It also supports a number of languages (e.g. French, English, German, Chinese, Spanish, etc). New libraries, FTP functions, SMTP server, smart diagnostics and debugging.



AC500

ABB's powerful flagship PLC offering a wide range of performance levels and scalability within a single, simple concept where most competitors require multiple product ranges to deliver similar functionality. Web server integrated and IEC 60 870-5-104 remote control protocol.



AC500-eCo

Meets the cost-effective demands of the small PLC market whilst offering total inter-operability with the core AC500 range. Up to 10 I/O modules connected to the CPU, fast counter onboard CPU up to 50 kHz. Web server, FTP server and Modbus-TCP for all Ethernet versions.



S500 I/O modules

Digital and analog modules can be configured to best meet customer requirements as well as offering local and/or remote expansion options using most industry standard communication protocols. "Extreme conditions" modules and an assortment of PROFINET interface modules.



AC500-XC

"Extreme conditions" modules with extended operating temperature, immunity to vibration and hazardous gases, use at high altitudes, in humid conditions, etc.



Control panels

Touchscreen or keypad graphical displays utilizing low cost, user friendly configuration software, offering extensive libraries and drivers for ABB PLC platforms and other automation devices. CP600 range up to 15" available with Panel Builder 600 engineering software or web panel version.



DigiVis 500

DigiVis 500 software is a simple and easily accessible solution in the development of supervision applications. It offers all the functions that are essential to a secure environment, its functional reliability and dual-display mode will simplify all your supervision operations, keeping interruptions to a minimum.



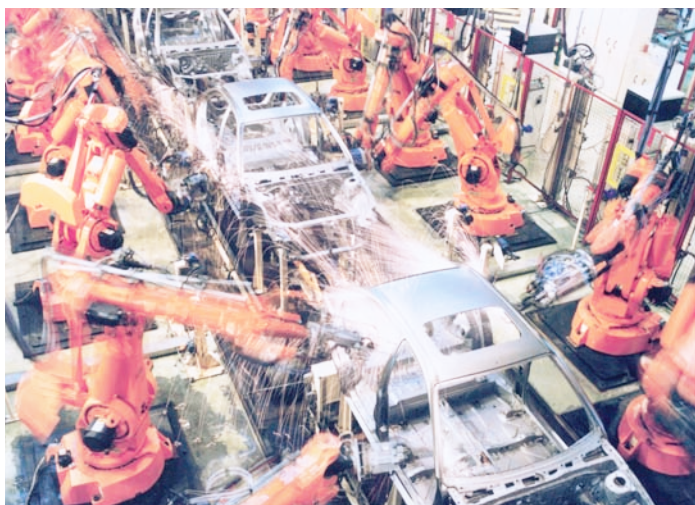
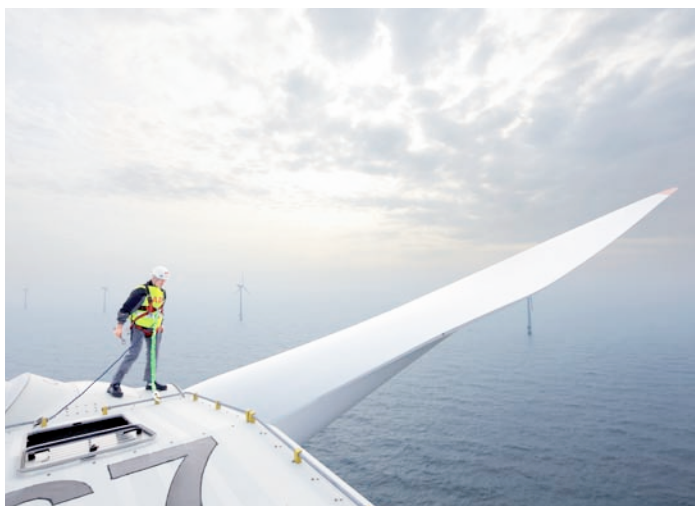
Wireless automation for sensors and actuators

Factory automation for high productivity thanks to reliable sensor and actuator networks. Broken cable and wire issues can be a thing of the past with this solution. Wireless is ideal for robots with sensors or actuators on end moving effectors.

AC500 products family

Fields of application

ABB's automation devices deliver solutions with performance and flexibility to be effectively deployed within diverse industries and applications including water, building infrastructure, data centers, renewable energy, machinery automation, material handling and marine.



- Material handling: cranes, winches, hoists etc.
 - XC for eXtreme Conditions, integration with ABB drives, scalability.
- Rubber & plastic: extruder, injection molding, etc
- Water and waste water: pumping and dosing in both water and waste water treatment plants, etc. :
 - Web server for remote control, high availability and extreme conditions capability, data logging, scalability for small to large applications.
- Building infrastructure: hospitals, stadium, boats, etc. :
 - High availability, marine certifications, large network capabilities.
- Data center: HVAC, access management, High Availability, IT-protocol services including web servers
- Solar: thermo-solar, photovoltaic:
 - 0.0003° tracker positioning, single-click download to 1000 PLCs, string monitoring.
- Wind: turbine control, high speed, extreme conditions, multiple communication, data logging
- Machinery: most applications including robotics, press automation, transfer systems, assembly quality control, tracking, high performance:
 - Motion control, web server, remote access, communication capabilities, scalability.

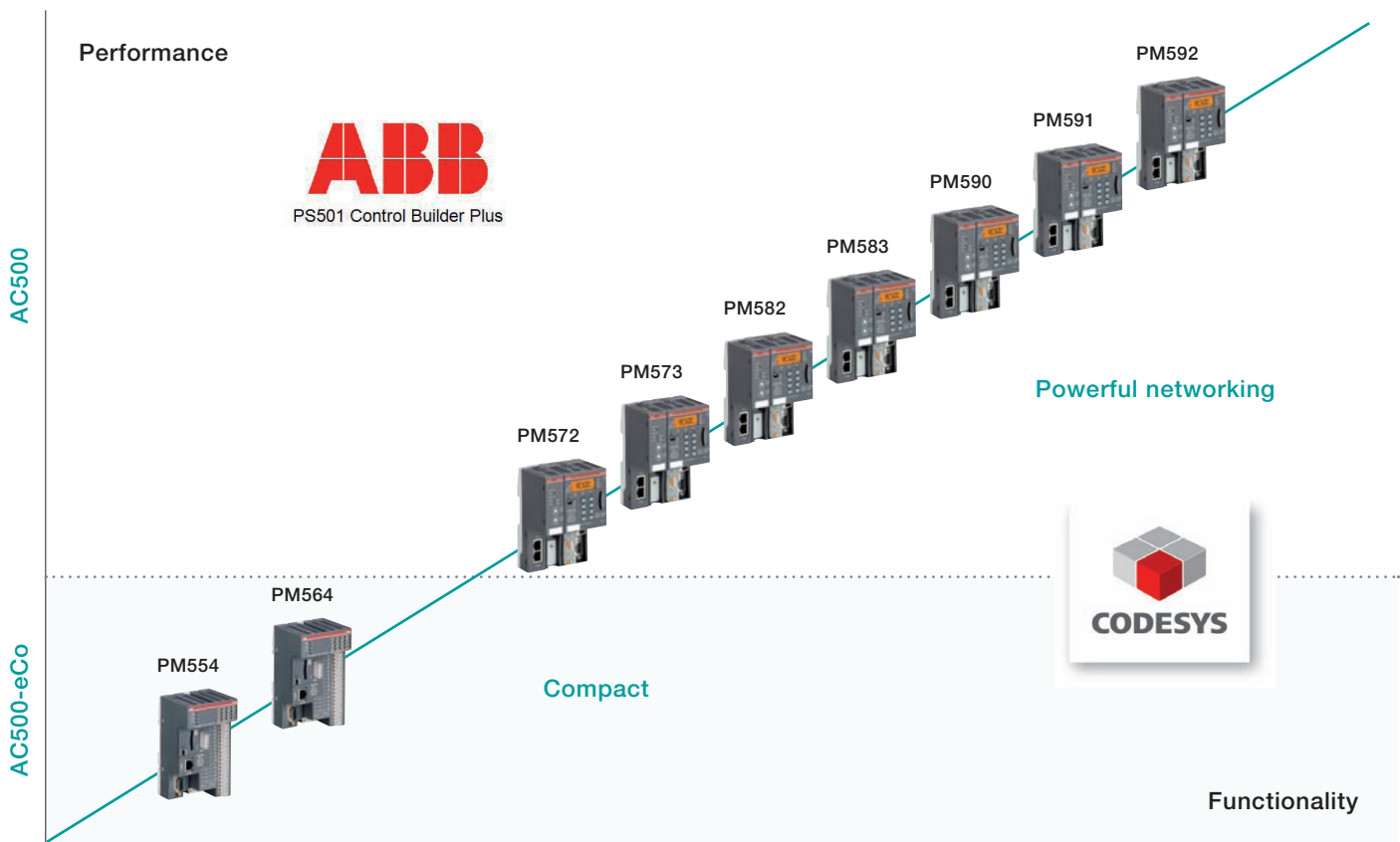


AC500 products family

System characteristics

The AC500 programmable logic controller offers the latest technology enhancements with greater performance in a scalable package.

Standard industrial communications fieldbus, networks and protocols supported by the 'One Platform' solution enable the AC500 to be a very capable automation solution in demanding environment. The flexible scalable range of superior performance CPUs enable complete control of your application whenever and wherever you need it.



- Highly modular
- Scalable from small to large installation
- All modules used on any CPU
- Terminals without electronics
- No rack required
- Simple build
- From 8 to 80,000 I/O.

Communication modules

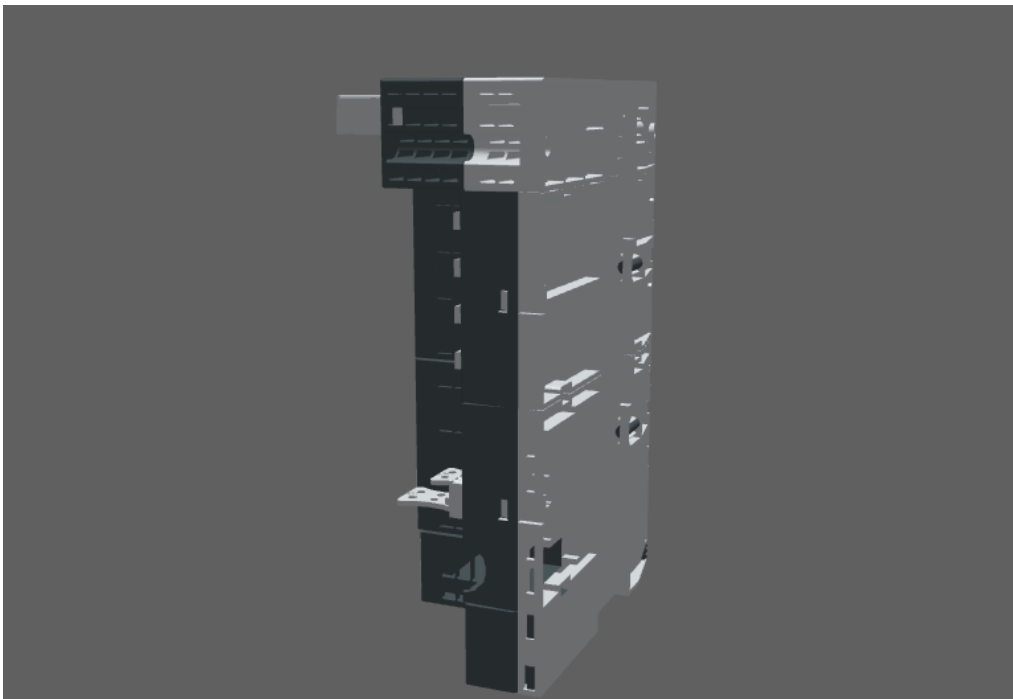
For fieldbus, network or serial link

Up to 4 pluggable

Central unit

Different performance levels

Integrated network



Terminal base

Same for all CPU types, for 1, 2 or 4 communication lines and with serial interfaces.

Central I/Os

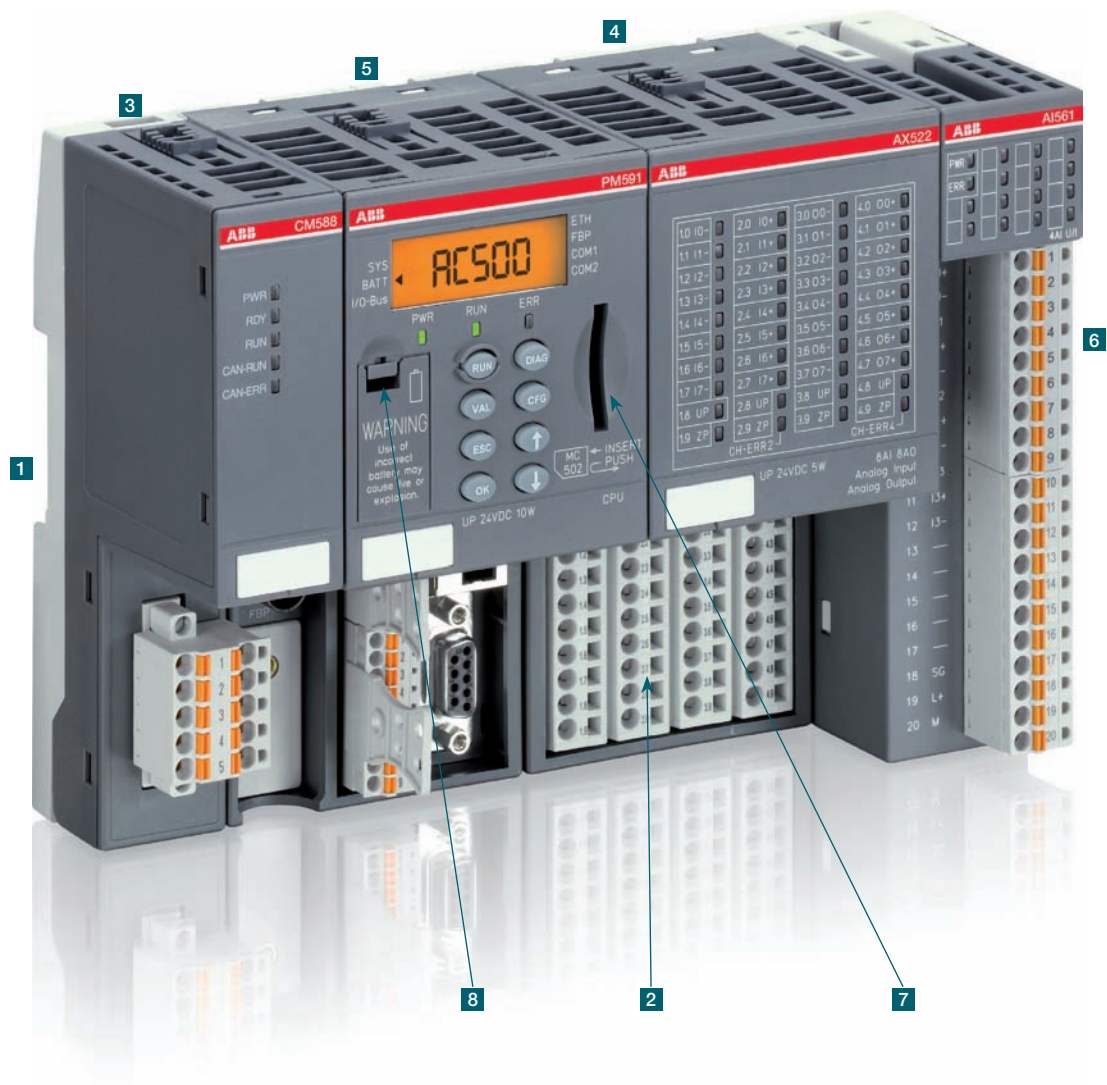
Up to 10 expansions

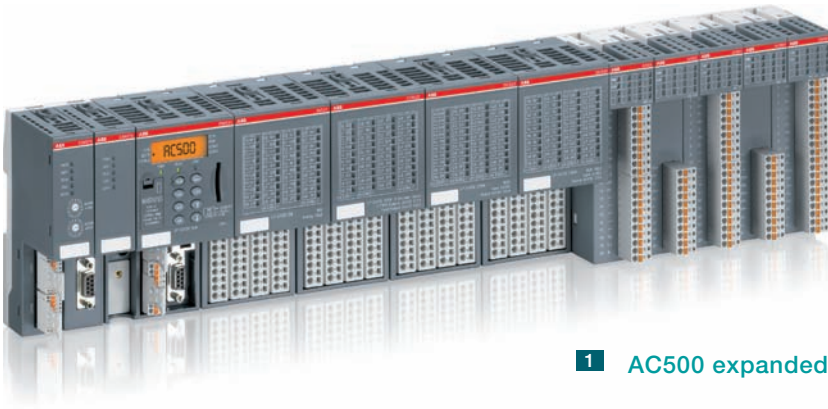
This picture is a screenshot of the pdf version. It includes 3D modelling and provides capabilities such as measurements, changing the light, zoom in, out, angle of the product. A model tree includes all modules that were used to create this configuration. You can hide or highlight the different items.

AC500 products family

System characteristics

AC500, superior local extension capabilities for I/O communication and amazing CPU functionality and industry leading performance.





1 AC500 expanded with S500-eCo and S500 I/O



2 S500 Terminal unit



3 Communication coupler
Up to 4 modules in numerous combinations to communicate with nearly everything



4 S500 with S500 Terminal Unit



5 CPU module



6 S500-eCo I/O modules



7 SD-card

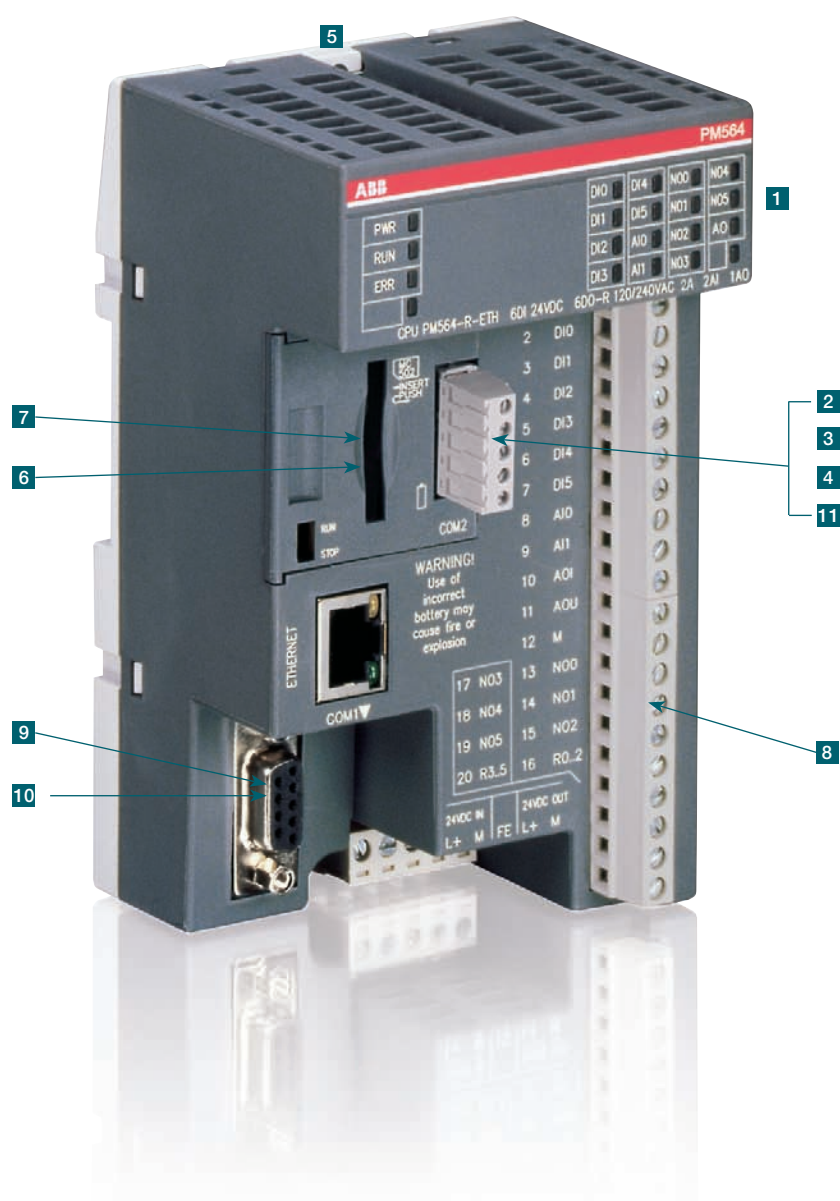


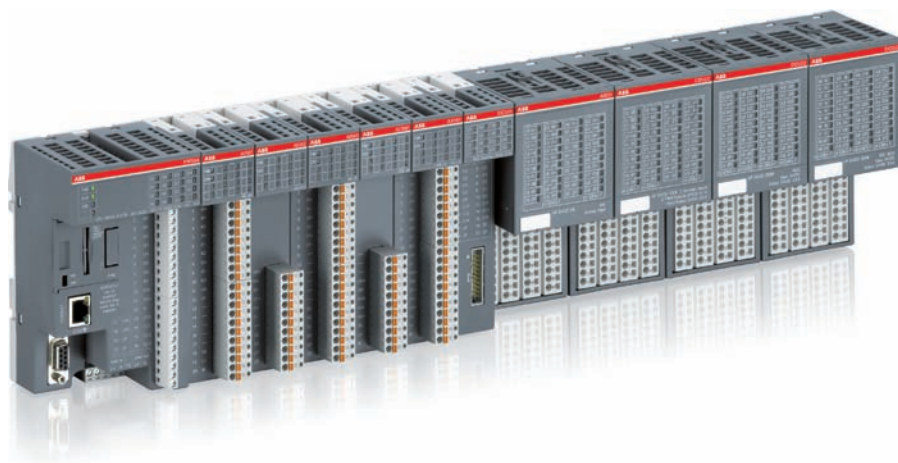
8 Battery

AC500 products family

System characteristics

AC500-eCo CPUs can be locally expanded with up to 10 I/O modules (Standard S500 and S500-eCo I/O modules can be mixed).





- 1** AC500-eCo CPUs can be locally expanded with up to 10 I/O modules (S500 & S500-eCo).



- 2** Adapter with realtime clock
Battery is not supplied by ABB.
Standard battery CR2032



- 3** Adapter with COM2 & realtime clock



- 4** Adapter with COM2



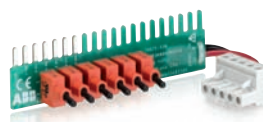
- 5** Wall mounting



- 6** SD-card adapter



- 7** SD-card



- 8** Simulator TA571-SIM



- 9** TK506 RS485
isolator for COM 1



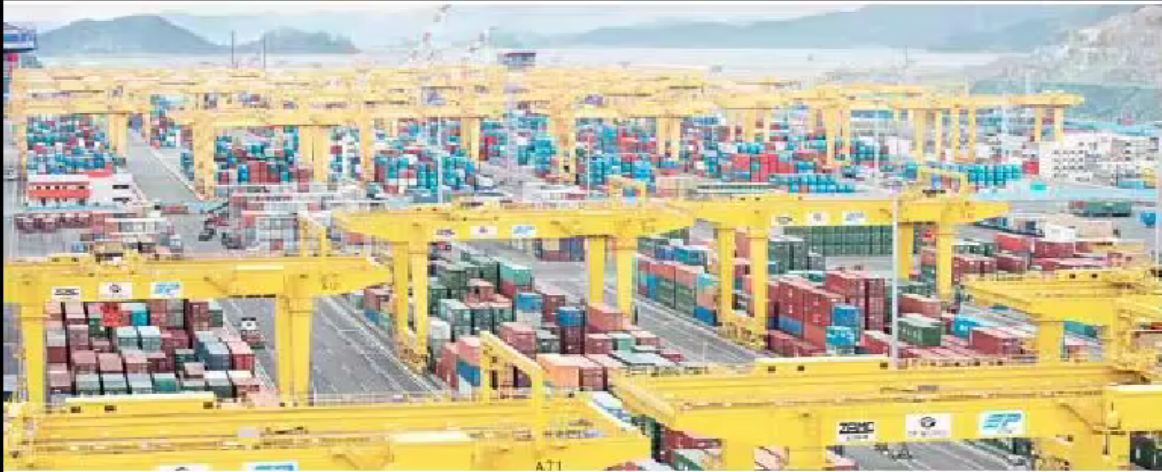
- 10** COM1 USB
programming cable



- 11** COM2 USB
programming cable

PLC AC500-XC for extreme conditions

Ruggedized variants when interacting with the elements wind, solar, water, cranes, robotics, marine.



XC stands for extreme conditions

ABB expands the AC500 product line from traditional applications in Factory automation to applications in eXtreme Conditions such as renewable waste water treatment and offshore applications. Almost all of the AC500 product range is available as XC versions, keeping physical dimensions, electrical characteristics and software compatibility standard across the assortment.

Extreme conditions details

AC500-XC withstands harsh conditions during operation and storage. In many cases, this makes engineering and operation much more cost-effective.

Specifications details

Extended operating temperature

- Operating temperature -30 °C up to +70 °C (two couplers, regular mounting, display readable above 0 °C)
- Reliable system start at -40 °C

Extended immunity to vibration

- 4 g root mean square random vibration up to 500 Hz
- 2 g sinusoidal vibration up to 500 Hz, including SD-card

Extended immunity to hazardous gases and salt mist

- G3, 3C2 immunity

- Salt mist EN 60068-2-52 / EN 60068-2-11
- Hazardous gases from the standard IEC60721-3.3 3C2 mean for example:

- H₂S
- SO₂/SO₃
- CL₂
- NO_x.

Use at high altitudes

- Operating altitude up to 4,000 m above sea level.

Extended EMC requirements

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

Benefits

AC500-XC benefit is cost saving in engineering and operations.

This makes many of the traditional installation practices become obsolete:

- Sealing at cable entrances and doors
- Shock absorbers
- HVAC for the panel
- Cooling fins and cut-outs
- EMC protection.

For example, eliminating the need for HVAC reduces energy and maintenance costs can be kept at a minimum.

So the efforts to design, purchase, install and arguments for expensive enclosures are reduced.



Operating in wet environment

- Increased resistance to 95% humidity.



Extended operating temperature

- -30 °C up to +70 °C operating temperature
- reliable system starts at -40°C.



Use at high altitudes

- Operating altitude up to 4,000 m above sea level.



Extended immunity to hazardous gases and salt mist

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



Extended immunity to vibration

- 4 g root mean square random vibration up to 500 Hz
- 2 g sinusoidal vibration up to 500 Hz.



Extended EMC requirements

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

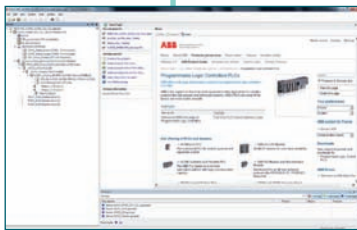
AC500 products family

Programming software PS501 Control Builder Plus

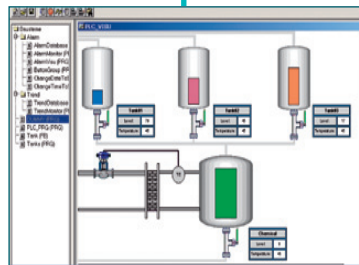
The PS501 Control Builder Plus is a product which combines all of the tools you require for configuring, programming, debugging and maintaining your automation project from a single, intuitive interface.

Packed with advanced features designed specifically with today's high-tech engineering challenges in mind, PS501 Control Builder Plus takes you to the next level in terms of convenience and flexibility.

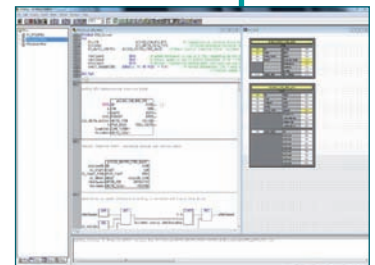
Engineering Software



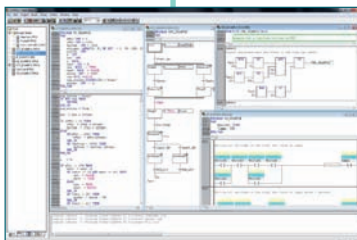
Configuration



Operate, Visualize



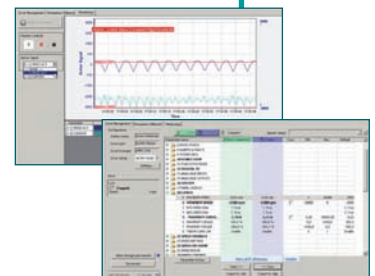
Libraries



Programming



Diagnosis, Service



Drive Manager



PS501 Control Builder Plus

Your benefits

Single comprehensive engineering tool to help reduce your engineering time, time to market and cost of ownership.

- Comprehensive, pre-built, tested libraries
- Programming, communication, visualization, libraries and drives share common data in one tool
- Effortless debugging, also supported by new multiple watch list
- Easy commissioning: single-point-of-access to machinery drives and PLC keeps setup time to minimum
- Online diagnostics for PLC and drives built-in
- Diagnostics is set up automatically
- Context-sensitive menus adapt automatically to the current task for highest efficiency.

Improve your product quality

- By data consistency
- Comprehensive diagnostics
- Programming editor with built-in syntax checking
- Variables can be directly used for HMI functions
- Ergonomic, multi-language user interface.

Your sustainable, competitive advantages

- ABB uses global standards IEC61131-3,
- PLCopen, PROFINET, PROFIBUS DP, Modbus and Modbus TCP, CANopen, EtherCAT
- IEC61131-3 enables fast development cycle and a quick learning curve for engineers
- ABB fully leverages internet technologies, fully integrating remote access and connecting to visualization, drives and entire engineered project..



Your advantages at a glance

- Comprehensive tool for configuring, programming, debugging, monitoring and maintaining your PLCs, drives and control panels
- Easy and fast programming
- Parameterization including many ABB drives
- Diagnostics is setup automatically for online monitoring of inputs and outputs
- Debugging & diagnostics with multiple, comprehensive watch list
- Integrated recipe management provides rapid product changover
- Internet, network & fieldbus configuration within one comfortable tool
- Huge savings in terms of time for drives in distributed arrangement
- One single engineering tool for the entire ABB range, from AC500-eCo through the complete AC500 family.



AC500 products family

AC500 libraries

The AC500 Libraries provide advanced functionality to further shorten development and maintenance time for AC500 programs. These library packages contain easy to use examples enabling with minimal programming effort to realize also complex and demanding applications fast.

The libraries especially focus on easy integration of drives, HMI and supervisory systems, enabling your automation solution to be built and commissioned quickly. AC500 solution libraries are maintained to ensure that your programs can also be used with less risk.



Drives integration library

Library package for fast integration of ABB ACS drives with different field busses.



Motion control library

Library package for decentral, central and coordinated motion following PLCopen standard.



Solar library

Library package for solar trackers to increase energy efficiency, fast commissioning, excellent positioning accuracy.



Water library

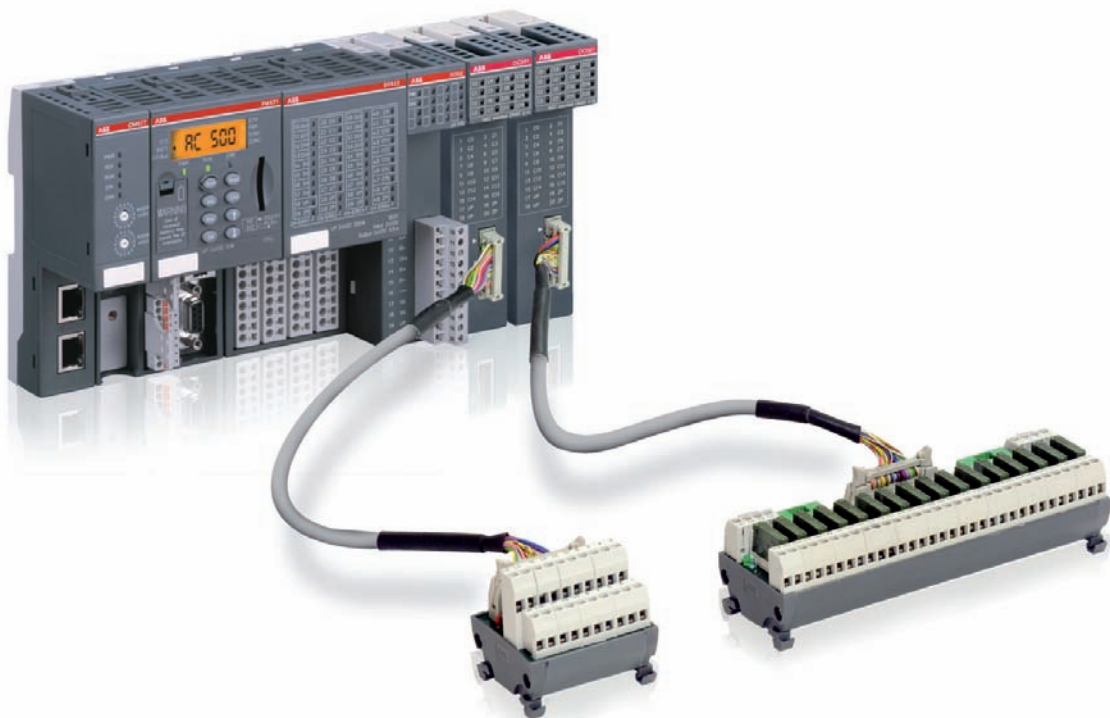
Library package with functions for energy efficiency and fast commissioning of water applications for example pumping stations and remote communications (available Q2/2013).

AC500 products family

Easy installation and easy wiring

Connecting a PLC to the operative parts is hard work. Transferring the different signals from your PLC to terminal blocks, using a single-wire connection system, requires a lot of time and accuracy.

Eliminate the need to have the PLC electronics in place, with Interfast compact interface modules, wiring can be started and completed before prewired cables are connected to the PLC.



With Interfast, you choose a fast and error-free system.

The system is composed of three main parts:

- Front adaptors that simply plug into the I/O board
- Pre-wired and pre-tested cables available in different lengths and pluggable in a few seconds
- Passive and active interface modules that replace traditional terminal blocks.

Your installation is flexible

- Thanks to our complete plug-and-play system, maintaining and replacing your installation has never been so easy.

Your wiring is reliable

All our products are tested and wiring errors are no longer possible.

Your requirements are met

- Find what you need in our wide range of interface modules
- From simple connecting modules to decoupling modules, many applications can be covered! Plus, with our modular system, design your own interface modules according to your own needs.

Everything is clear in your cabinet

Installation is clear, cable strands can be located easily.

Catalog reference : 1SBC127004L0201

AC500 products family

CP600 series

ABB operator panels can be distinguished from their competitors by their easy yet comprehensive functionality, making comprehensive operational information for production plants and machines available at a single touch. This enables an operator to intervene manually at any time to stop or modify the production process.

Build effective graphic interfaces with Panel Builder 600 - efficient representation of your information



PB610
programming station



CP600



AC500
without Webserver

Save engineering time by using PS501 Control Builder Plus for both your PLC and WebVisu



CoDeSys
programming station



AC500
with Webserver



CP600-WEB
with Micro browser

Connectivity with Drives directly without PLC



PB610
programming station



CP600



Drives



Individual solutions for each application

The ABB range of HMI operator panels offers an excellent diversity of features and functionalities for maximum operator comfort, at a price that meets every budget. The solution is now composed of two ranges.

The CP600 series provides a control panel portfolio from 4.3" up to 15", completed by CP400 devices of 3.5" and 5.7". The CP600 control panels offer advanced design capabilities, a complete engineering software solution or a web browser panel version.

CP600 series

The CP600 series, ABB's latest HMI, is available in a broad range, from the entry level (4.3") to the high-end panel (15"). It is highly flexible and is specifically designed for advanced applications in complex systems or processes.

Using premium graphic panels created with either the PB610 engineering software or the web browser panels via the PLC web server, the CP600 series gives better information representation to ease human-machine interaction.

The engineering software is based on XML technology, enabling you to create easy intuitive graphics. Visual objects created with the scalable vector graphics (SVG) are totally independent of the operating system, providing high customization flexibility and easy integration with your automation system, as well as the easy creation of dynamic objects with configurable properties, the ability to interconnect objects, transformation or easy resizing and, quite simply, getting the most out of your creative design.

CP400 series

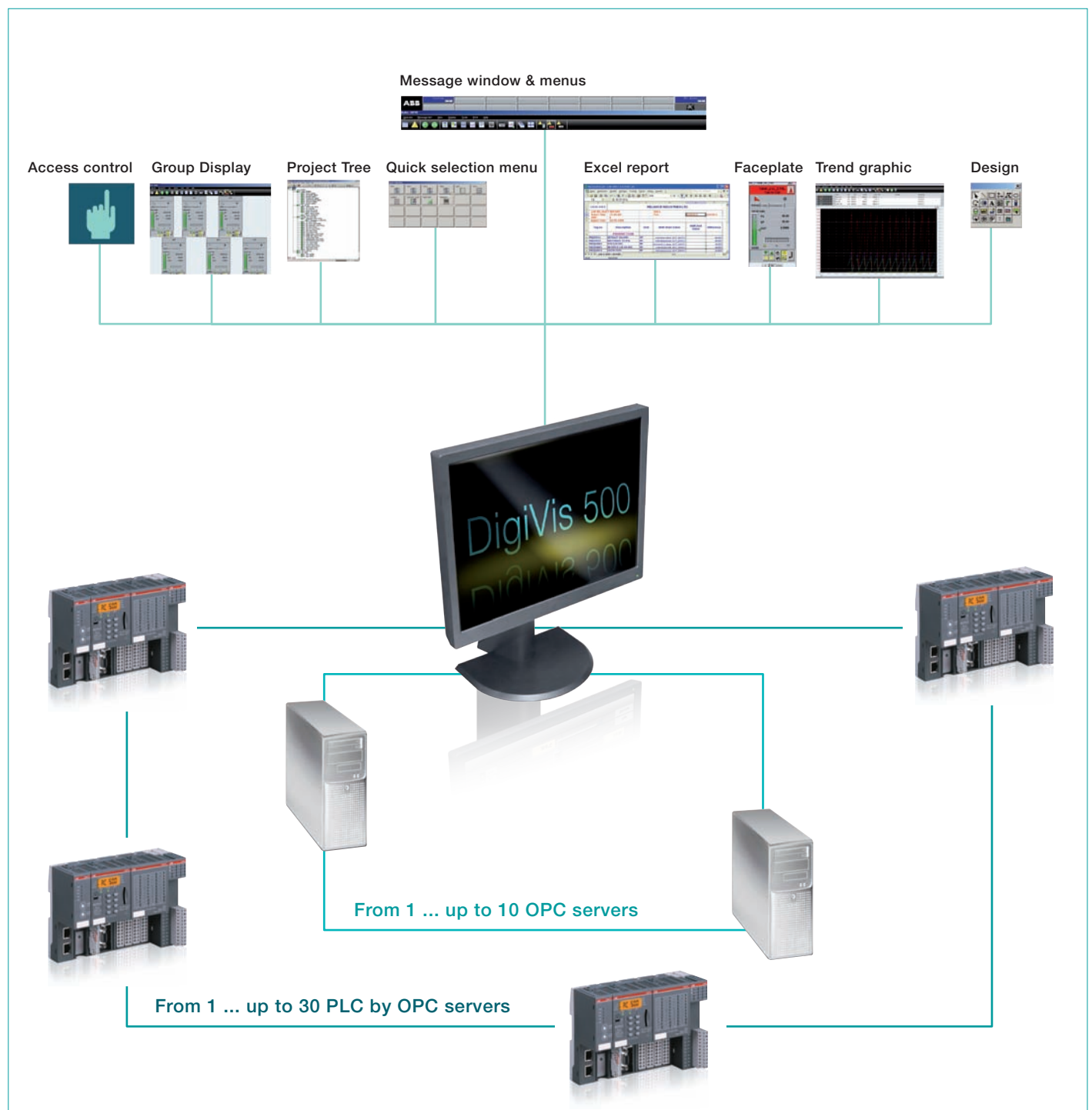
ABB operator panels offer highly efficient and effective functionality such as alarm and event management, graphics, animation, macro and ladder diagram functionality and recipe management. CP400 series include a compact 3.5" device with grey display and a 5.7" control panel with a 5.7" blue display. RS232 & 485 Modbus are standard communications options.

Automation products

Supervision solution

DigiVis 500 software is a simple and easily accessible solution in the development of supervision applications.

It offers all the functions that are essential to a secure environment, its functional reliability and dual-display mode will simplify all your supervision operations, keeping interruptions to a minimum. Whether you are an OEM, a machine manufacturer or an integrator, DigiVis 500 will adapt to any application, machine or control room.



Create your applications quickly and easily

The environment and the development functions have been designed to offer greater accessibility and to be exceptionally user friendly. The management structure allows you to place data in a hierarchy and access the different elements of your project efficiently.

Configuring the supervision applications is easy, whether you create your own or choose to customize or use one of the predefined models from the different libraries.

Adaptability

A range of options is available to allow you to choose and adjust the maximum number of operational variables per project. Ranging from 50 to an infinite number of variables, you will surely find a size to fit your application needs.

Save time

DigiVis 500 is easy to connect and put into operation thanks to its interaction with our PLC AC500 solution.

The development functions require no scripting, so you will not waste time with debugging.

What is more, updating your projects on the fly allows you to quickly make any minor changes without rebooting the software.

Manage your projects efficiently

DigiVis 500 software runs on any windows XP PC platform.

The dual-display mode enhances availability.

The overview offers quick access to all available visualization screens. The “DigiBrowse” option gives you access to all the supervision data outside the software.

Manage your results

Data processing is optimized from archiving and safeguarding to exporting and making practical use of the data.

Modularity

Whatever the size of your system, DigiVis 500 will suit your needs. It will also allow you to manage High Availability systems with our turnkey PLC (CI590) supervision solution.

Reliability and security

The software's reliability and stability ensure a constant flow in the supervision of installations and the recovery of key data, particularly in managing high-availability solutions. The in-built alarm system enables you to ensure the integrity of your installations by customizing the advanced configuration.

The “Security lock” option, which controls access, allows you to configure up to 16 profiles for a maximum of 1 000 individual users.

Automation products

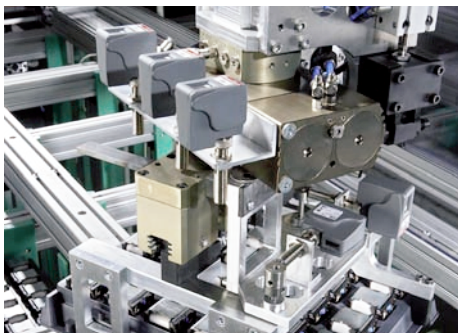
Wireless automation

Using the only technology developed specifically for discrete automation applications, wireless automation devices provide simple and robust wireless connection of sensors and actuators.

ABB's concept covers both, wireless communication and a wireless power supply option for challenging scenarios. Wireless automation allows new degrees of freedom to reduce life cycle costs in moving or flexible automation scenarios like for example tool changes.

Wireless automation advantages

- Better reliability than moving cables and connectors
- Real-time capability: Deterministic industrial protocol, delays are independent of the number of wireless field devices used
- High node density (min. 624 sensors/ actuators are possible inside a working area without change in timing, more are possible (slight delay increase), practically unlimited number of nodes inside a plant hall)
- Can replace slip rings and contacts moving on tool changers (swivels) for higher reliability and cost reduction
- Real-time capability: wireless cycle time of 2 ms
- High node density of more than 624 field devices without loss of performance
- low RF power and short telegrams limit frequency usage which results in proven coexistence with bluetooth, WLAN, and other common radio systems
- Proven since 10 years in demanding applications.





Wireless I/O modules

Gateway from field bus to wireless for different and also mixed configurations of wireless field devices. Periodical diagnostic signals of all wireless field devices enable continuous monitoring and advanced fault recognition.

Depending on the selected FieldBus, data exchange can take place via PROFIBUS DP, DeviceNet, Modbus RTU and TCP, etc. Stand-alone operation is also possible (called "Mapping"), useful for fast cable replacement.

Wireless field devices

Wireless I/O pads are particularly suitable for the integration of conventional sensor technology and actuators into a wireless system. These devices communicate via radio transmission to replace fieldbus cables and are powered with conventional 24 V DC.

In the TrueWireless communication module WSIX or the WSP sensor pad, both data and power are wireless and without batteries.

As sensors the special inductive low power sensor heads (WSIF..., WSIN...) from ABB or switches (limit switches, reed/auxiliary contacts, pushbuttons, etc.) can be used.

Optional wireless power supply

The WSP and WSIX wireless field devices receive their operating power from low-emission magnetic fields: The WPU100 power supply produces a sinusoidal current at 120 kHz to generate via primary loop antennas the magnetic field in a larger volume.

Often, the wireless power option is used to implement a more local, focused supply only for problem areas within a discrete automation application. Then circular, line and spot type wireless power concepts are implemented. Whether small or large, the possibilities are endless. Design and set-up guides are available.

Scalable PLC AC500

Technical examples - network architecture

Communication with AC500 – always the right solution Flexibility, real time capability and the highest possible data transmission speed are just some of the communication demands made on automation systems. With its AC500 control system, ABB developed a communication platform offering customer oriented solutions for the most varied communication tasks. Simple network configuration and diagnostic options using the PS501 Control Builder Plus enable fast planning, implementation and commissioning, thus helping save engineering time and project costs. Among others, ABB's AC500 supports the following communication protocols:

PROFINET

PROFINET I/O meets the sophisticated demands placed on real time Ethernet protocols in the world of automation. Very fast data transmission, integrated and standardised network structures from the control to the field level as well as flexible network management support users in the implementation of their automation solutions.

PROFIBUS DP

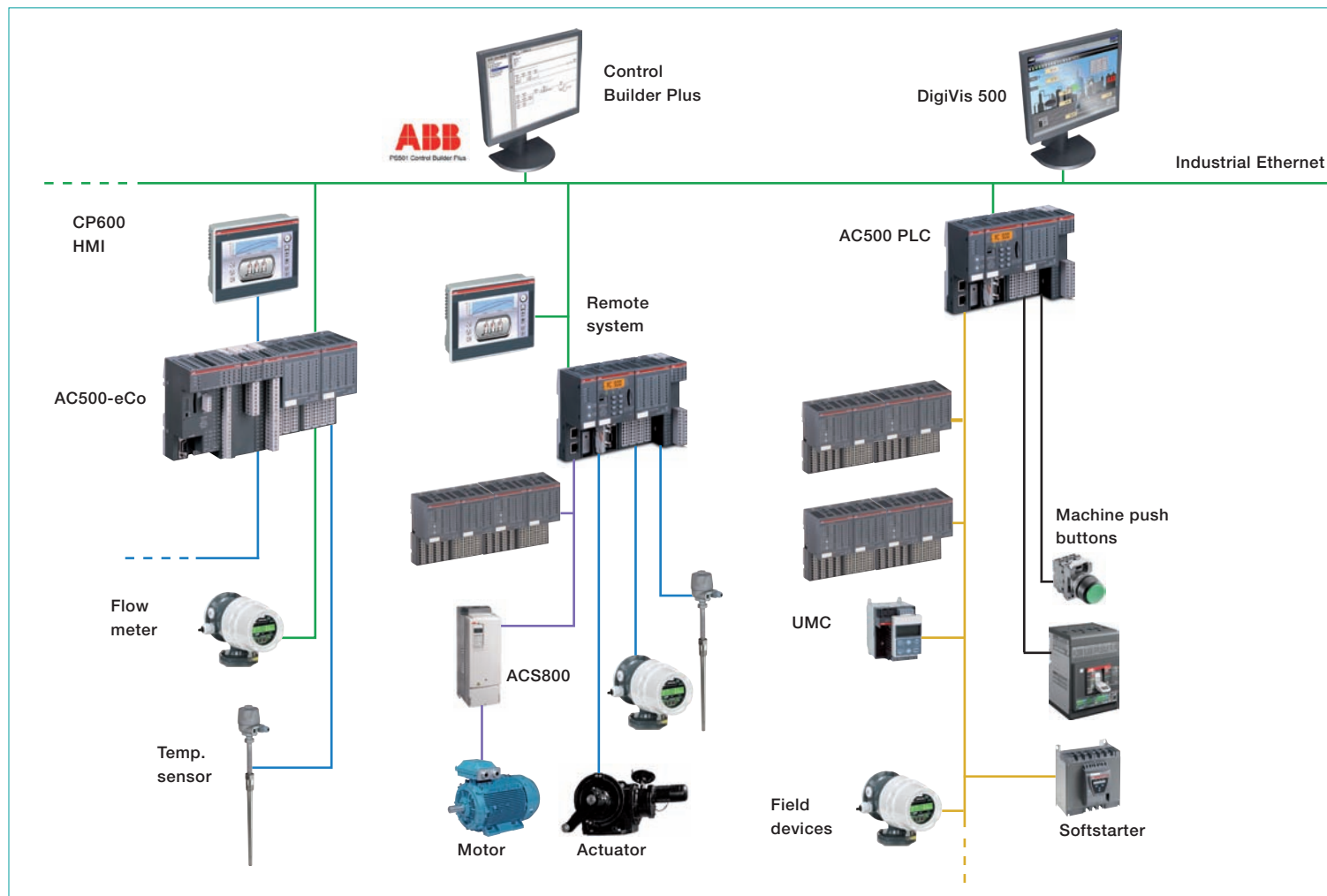
PROFIBUS DP enables flexible configuration by means of a mono and multi-master systems structure. Data rates of up to 12 Mbit/s on twisted pair cables and/or optical fibre, as well as the option to connect up to 126 devices (master/slave) to one bus segment enable simple and robust communication solutions.

CANopen

CANopen offers fast data transmission and high immunity in Master/Slave network topologies, with up to 127 participants and transmission speeds of 10 kbit/s up to 1 Mbit/s depending on bus length.

CS31-Bus

CS31-Bus is a high-performance, proprietary ABB communication standard enabling transmission speeds of up to 187.5 kbit/s. Up to 31 bus participants can communicate via RS485, simple telephone cable or optical fibre lines.



Modbus TCP & RTU

Modbus RTU is an open serial data protocol for the implementation of master/slave network configurations with up to 31 network partners. Different bus lengths depending on the serial communication interface enable data transmission speeds of up to 115,2 Kbit/s. Modbus TCP is a common Ethernet based networking protocol.

RCOM

RCOM is a proprietary ABB bus protocol for master/slave communication via RS232/485. Based on expandability up to 254 RCOM Slaves and the most varied diagnostic options, this protocol is ideal for applications in the water and waste water industry.

Ethernet and Internet

Integrated communications, high data transmission rates and the use of existing data networks enable simple, customer specific solutions. Supported protocols are:

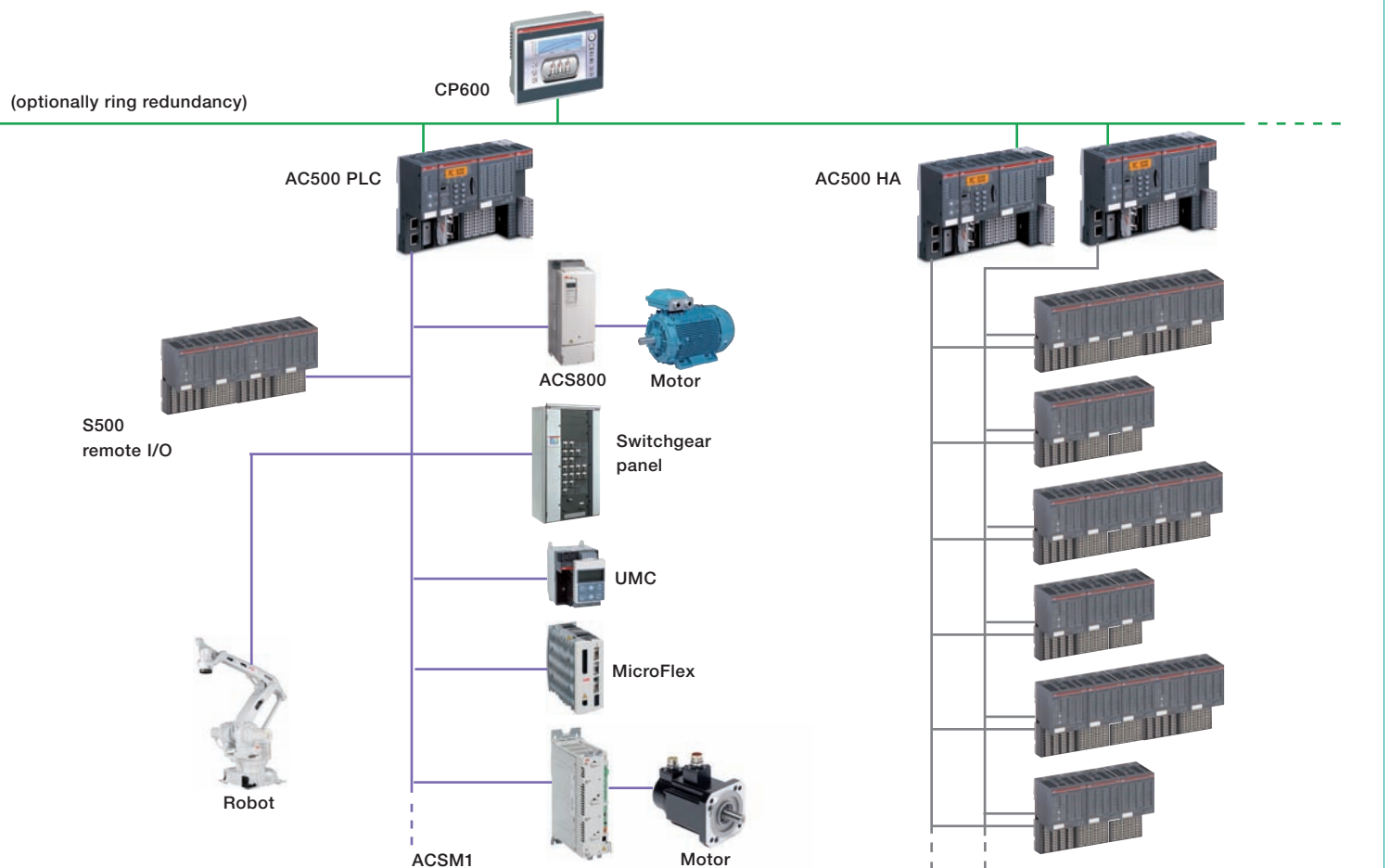
- HTTP for web server. Visualization for remote operations

and maintenance

- FTP for file data-transfer
- SNTP, simple network time protocol. The PLC time can be synchronized using internet-hosted time services
- SMTP, to send e-mails with attachments
- TCP and UDP sockets can be programmed for project specific protocols. Library functions are available
- IEC60870-5-104 Telecontrol, mainly used for long distances as like pipe-lines, water and waste-water. The configuration of protocols is done with the engineering tool PS501 Control Builder Plus.

EtherCAT

EtherCAT is an open Industrial Ethernet standard regulated in the international standards IEC 61158 and IEC 61784 as well as in ISO 15745-4. Because of its extremely high data transmission speeds, EtherCAT is suitable as a real time Ethernet protocol for time critical applications within the area of motion control technology. Whether in "cam switch" functionalities or the most varied master / slave network configurations, AC500 delivers the right solution for your application.



Scalable PLC AC500

Technical examples - AC500 high availability

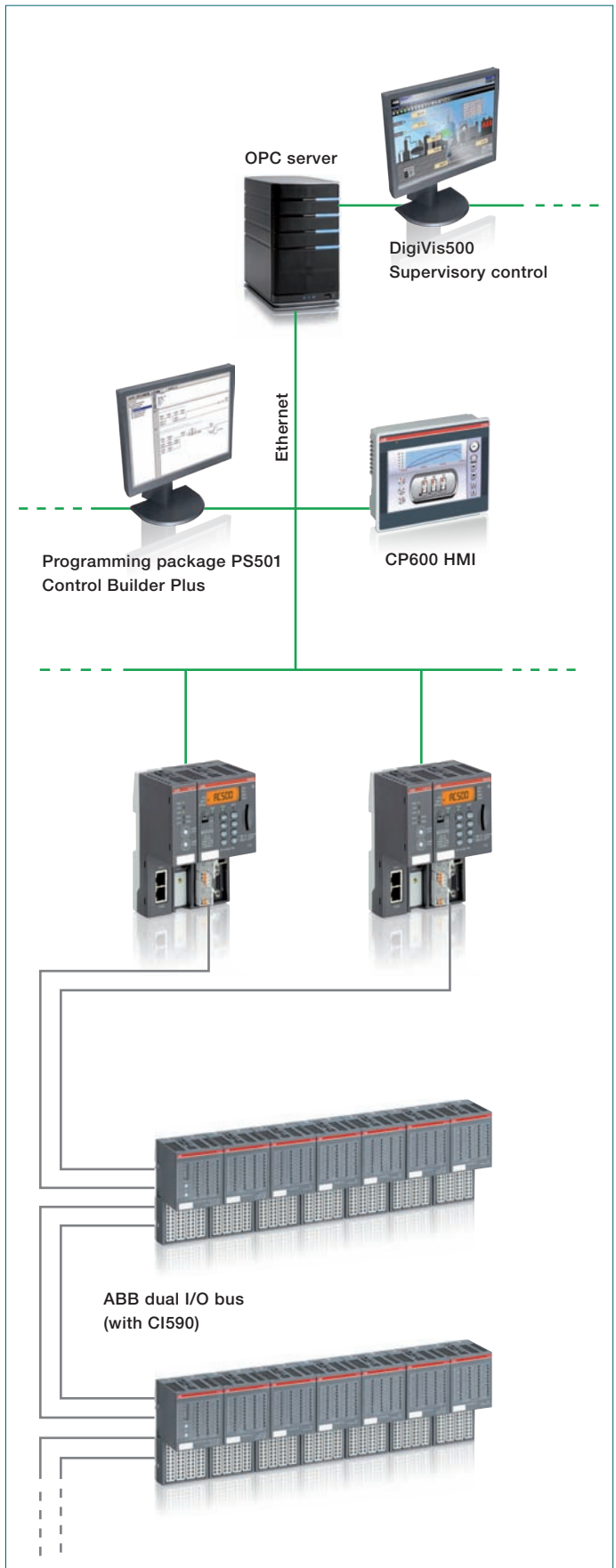
Performance is the key

Most downtime is caused by either human error or device malfunction which could be avoided with the AC500 high availability. Utilizing dual CPUs and dual distributed I/O Bus help reduce any risk of total system failure thus enhancing system availability.

If the retention of critical data and the avoidance of downtime are important to your application then ABB AC500 high availability with dedicated large data storage solution is the ideal solution.

What benefits can you expect from our AC500 high availability solution?

- Greater resource usage with no downtime in hardware/software failure with the dual CPUs and dual communication fieldbus CS31-Bus
- Cost efficiency and easy system maintenance through the use of standard hardware
- Only standard CPUs required, choose from PM573-ETH to PM592-ETH to achieve high availability
- 3 cycles or 50 ms changeover time (no cycle synchronized Hot-Standby).



Scalable PLC AC500

Technical examples – real-time Ethernet products

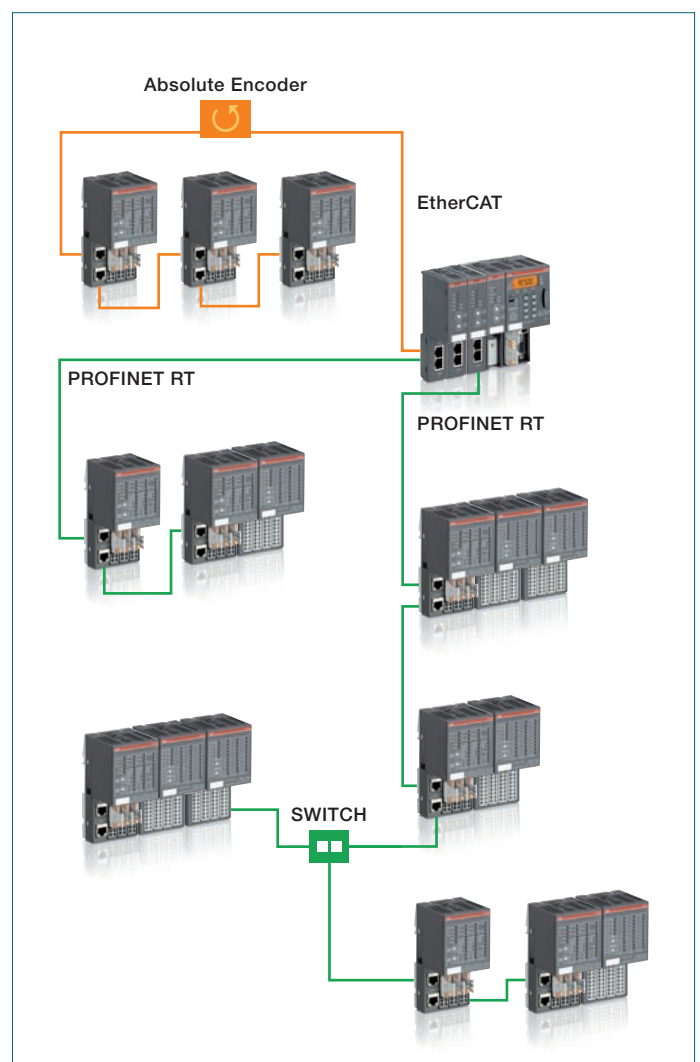


RT-Ethernet modules

The modules are available on two different communication protocols on Ethernet basis (PROFINET I/O, EtherCAT). Master couplers provide the connection of the AC500 CPUs to the remote I/O modules. Various interface modules offer the possibility to connect I/O modules decentralized to the real-time Ethernet networks.

Cam-switch functionality

Modules based on decentralized real-time EtherCAT interface technology extended with integrated I/Os and programmed thanks to PLCopen function blocks.



AC500 products family

Technical example – motion control

Motion control feature for AC500 and drives

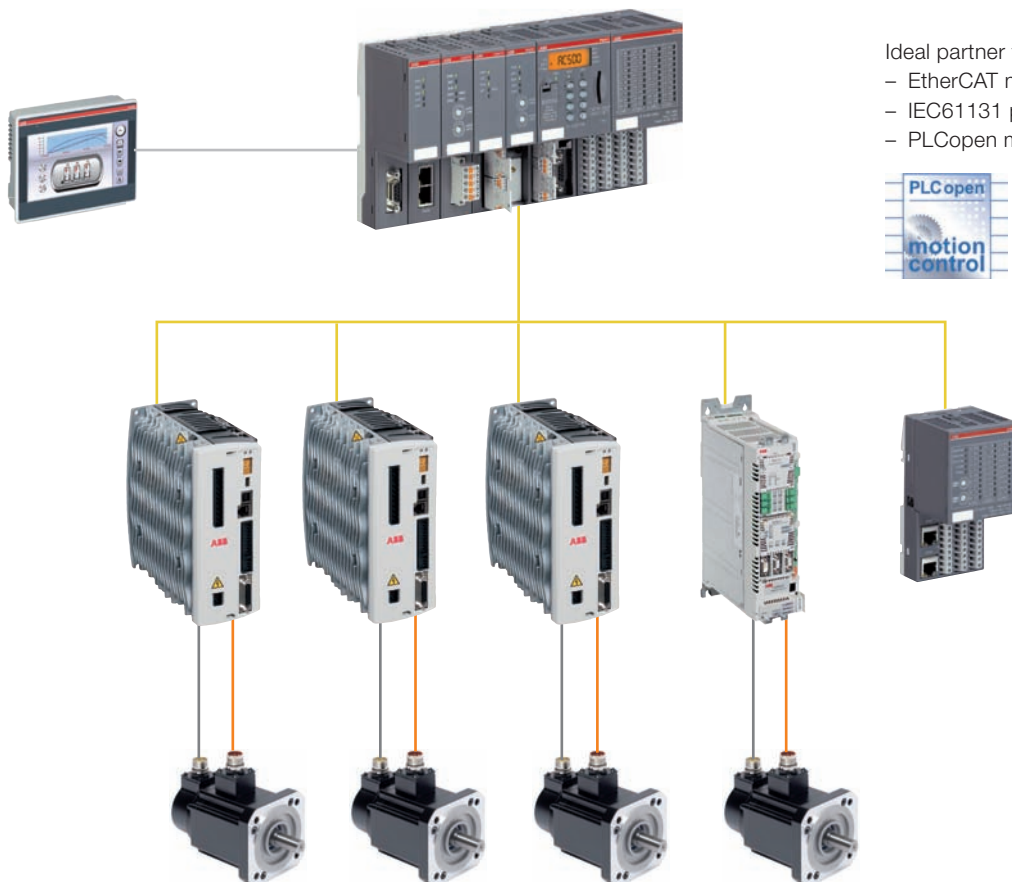
AC500 is capable of highly flexible multi-axis control such as electronic gearing such as electronic line shaft and cam motion, with synchronization between virtual or physical axes. For example cam tables can be selected dynamically and motion can transition from cam to gearing during operation.

Motion profiles are updated on a flexible time base synchronised to the EtherCAT bus cycle time (1 msec as a default) and precision guaranteed by EtherCAT with virtually no jitter ($< 1 \mu\text{s}$). A new set-point per axis is transmitted to the drives every cycle where a faster control loop is executed based on linear interpolation between two set points. These powerful capabilities together with sophisticated real-time control algorithms provide very smooth motion with minimal position (following) error.

AC500 can be combined with products such as our CP600 HMI's, I/O devices, motion drives, AC motors, servo motors and linear motors to provide solutions for practically any application.

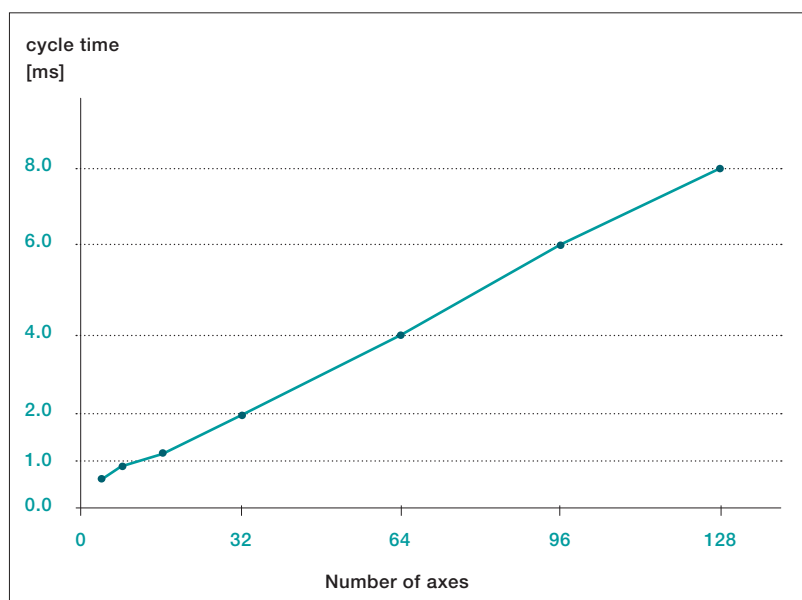
Advantages:

- Easy implementation of any required synchronization or relation between axes
- Several independent EtherCAT-Bus lines could be used from the same PLC
- Analog axes could be combined and synchronized with the digital EtherCAT axes
- External master axis information could be received.
- Engineer can program motion functionality with IEC61131-3 languages
- Position control loops can be closed in the PLC or the drive with synchronised EtherCAT
- Flexibility to perform many different functions, such as Cam, Gearing, Profiles, coordinated motion.
- Interpolation modes for CAM and Profiles such as Spline and polynomial interpolations
- High number of axis without licensing
- Capability to use customer kinematics
- Integrate conveyor tracking.





- Most comprehensive PLCopen motion function block libraries
- Convenient interface functions for ABB drives are available
- Display and manipulation of variables simplifies development and testing
- Scalable CPU range adapts from small to large axis count applications.



Motion Control performance of AC500's PM590-ETH

Administrative

MC_Power
MC_ReadStatus
MC_ReadAxisError
MC_ReadParameter
MC_ReadBoolParameter
MC_WriteParameter
MC_WriteBoolParameter
MC_ReadActualPosition
MC_Reset
MC_ReadActualVelocity
MC_SetOverride
MC_SetPosition
MC_CamTableSelect

Single Axis

MC_MoveAbsolute
MC_MoveRelative
MC_MoveAdditive
MC_MoveSuperimposed
MC_MoveVelocity
MC_Stop
MC_PositionProfile
MC_VelocityProfile
MC_AccelerationProfile
MC_MoveContinuousAbsolute
MC_MoveContinuousRelative
MC_Halt

Multiple Axis

MC_CamIn
MC_CamOut
MC_GearIn
MC_GearInPos
MC_GearOut
MC_PhasingAbsolute
MC_PhasingRelative

Homing

MC_Home
MC_StepAbsSwitch
MC_StepLimitSwitch
MC_StepRefPulse
MC_StepDirect

ABB specific

MCA_Home
MCA_Indexing
MCA_JogAxis
MCA_MoveByExternalReference
MCA_MoveVelocityContinuous
MCA_Power
MCA_ReadParameterList
MCA_WriteParameterList

Overview of implemented blocks for Motion Control

Scalable PLC AC500

Overview of AC500-eCo CPUs

AC500-eCo CPUs

												
Type	PM554				PM564							
	PM554-T	PM554-R	PM554-R-AC	PM554-T-ETH	PM564-T	PM564-R	PM564-R-AC	PM564-T-ETH	PM564-R-ETH	PM564-R-ETH-AC		
	Transistor	Relay	Relay	Transistor	Transistor	Relay	Relay	Transistor	Relay	Relay		
Order code	1TNE668900R0100	1TNE668900R0200	1TNE668900R0220	1TNE668900R0110	1TNE668900R1100	1TNE668900R1200	1TNE668900R1220	1TNE668900R1110	1TNE668900R1210	1TNE668900R1211		
Version available for Extreme Conditions	No											
Supply voltage	24 V DC		100-240 V AC		24 V DC		100-240 V AC		24 V DC		100-240 V AC	
Current consumption on :	24 V DC		100 V AC 240 V AC		24 V DC		100 V AC 240 V AC		24 V DC		100 V AC 240 V AC	
Min. typ. (module alone)	0.06 A	0.08 A	0.02 A	0.012 A	0.07 A	0.095 A	0.11 A	0.02 A	0.011 A	0.10 A	0.12 A	0.023 A 0.014 A
Max. typ. (I/Os)	0.18 A	0.21 A	0.21 A	0.12 A	0.19 A	0.21 A	0.24 A	0.22 A	0.13 A	0.23 A	0.25 A	0.23 A 0.14 A
Program memory	128 kB											
Integrated data memory	14 kB thereof 2 kB saved											
Web server's data for user RAM disk	–				512 kB		–		512 kB			
Cycle time for 1 instruction (minimum)												
Binary	0.08 µs											
Word	0.1 µs											
Floating	1.2 µs											
Onboard I/Os												
Max. digital inputs/outputs	8/6				6/6							
Max. analog inputs/outputs	–				2/1							
Max. number of centralized inputs/outputs												
Max. number of extension modules on I/O bus	up to max. 10 (S500 and/or S500-eCo modules allowed)											
Digital inputs	320 + 8											
Digital outputs	240 + 6											
Analog inputs	160					160 + 2						
Analog outputs	160					160 + 1						
Max. number of decentralized inputs/outputs (with CS31-System Bus: up to 31 stations with 120 DI/120 DO or up to 32 AI/ 32 AO per station)												
Centralized I/O modules	up to max. 10 (S500 and/or S500-eCo modules allowed)											
Decentralized I/O modules	on CS31 bus: up to 31 stations with up to 120 DI / 120 DO each											
Data buffering	flash memory											
Real-time clock (option with battery back-up)	✓											
Program execution												
Cyclical	✓											
Time controlled	✓											
Multi tasking	no, 1 task + 1 interrupt task max.											
Interruption	✓											
User program protection by password	✓											
Internal interfaces												
COM1												
RS485	✓											
Sub-D connection	✓											
Programming, Modbus, ASCII, CS31	✓											
COM2 (option)												
RS485	✓											
Terminal block	✓											
Programming, Modbus, ASCII	✓											
Ethernet												
RJ45	–			✓	–			✓				
Ethernet functions: Programming Modbus TCP/IP, UDP/IP, integrated Web server with Firmware 2.0.6 or above, DHCP, FTP server with Firmware 2.1.3 or above	–			✓	–			✓				
RUN/STOP switch	✓											
LED display for power, status and error	✓											
Approvals	see detailed overview page 62 or www.abb.com/plc											

Scalable PLC AC500

Overview of AC500 CPUs

AC500 CPUs



2

Type	PM572	PM573-ETH	PM582	PM583-ETH	PM590-ETH	PM591-ETH	PM592-ETH
Order code	1SAP130200R0200	1SAP130300R0271	1SAP140200R0201	1SAP140300R0271	1SAP150000R0271	1SAP150100R0271	1SAP150200R0271
Version available for Extreme Conditions (-XC)	No	1SAP330300R0271	1SAP340200R0201	1SAP340300R0271	No	1SAP350100R0271	1SAP350200R0271
Supply voltage	24 V DC						
Current consumption on 24 V DC							
Min. typ. (module alone)	0.050 A	0.110 A	0.050 A	0.110 A	0.150 A		
Max. typ. (all couplers and I/Os)	0.750 A	0.810 A	0.750 A	0.810 A	0.850 A		
User program memory - Flash EPROM and RAM	128 kB	512 kB	512 kB	1024 kB	2048 kB	4096 kB	
Integrated user data memory	128 kB thereof 12 kB saved	512 kB thereof 288 kB saved	416 kB thereof 288 kB saved	1024 kB thereof 288 kB saved	3072 kB thereof 1536 kB saved	5632 kB thereof	1536 kB saved
User Flashdisk (Data-storage, programm access or also external with FTP)	–						Yes, 4GB Flash non removable
Plug-in memory card (depending on SD-Card used)	at least 512 MB						
Web server's data for user RAM disk	–	1 024 kB	–	4 096 kB	8 MB		
Cycle time per instruction (minimum)							
Binary	0.06 µs		0.05 µs		0.002 µs		
Word	0.09 µs		0.06 µs		0.004 µs		
Floating-point	0.7 µs		0.5 µs		0.004 µs		
Max. number of centralized inputs/outputs							
Max. number of extension modules on I/O bus	up to max. 10 (S500 and/or S500-eCo modules allowed)						
Digital inputs	320						
Digital outputs	240						
Analog inputs	160						
Analog outputs	160						
Max. number of decentralized inputs/outputs							
depends on the used standard Fieldbus e.g. CS31 Fieldbus: up to 31 stations with up to 120 DIs/120 Dos or up to 32 AIs/32 AOs per station							
Data buffering	battery						
Real-time clock (with battery back-up)	✓						
Program execution							
Cyclical	✓						
Time controlled	✓						
Multi tasking	✓						
User program protection by password	✓						
Internal interfaces							
COM1							
RS232/RS485 configurable	✓						
Connection (on TBs)	pluggable spring terminal block						
Programming, Modbus RTU, ASCII, CS31 master	✓						
COM2							
RS232/RS485 configurable	✓						
Connection (on TBs)	SUB-D female 9 poles						
Programming, Modbus RTU, ASCII	✓						
FieldBusPlug							
Serial neutral interface	✓						
Connection (on TBs)	M12 male, 5 poles						
Functions	programming cable UTF-21-FBP, slave communication depending on FieldBusPlug used (PROFIBUS DP, CANopen, DeviceNet)						
On-board Ethernet	–	✓	–	✓			
Ethernet connection (on TBs)	–	RJ45	–	RJ45			
Ethernet functions: Programming, TCP/IP, UDP/IP, Modbus TCP, integrated Web server, IEC60870-5-104 remote control protocol, SNTP (simple Network Time Protocol), DHCP, FTP server	–	✓	–	✓			
LCD display and 8 function keys	✓						
Function	RUN/STOP status, diagnosis						
Timers	unlimited						
Counters	unlimited						
Approvals	see detailed overview page 62 or www.abb.com/plc						

Scalable PLC AC500

Overview of digital S500-eCo I/O modules

Digital S500-eCo I/O modules

				
Type	DI561	DI562	DI571	DO561
Order code	1TNE968902R2101	1TNE968902R2102	1TNE968902R2103	1TNE968902R2201
Version available for Extreme Conditions	no			
Supply voltage	–	–	–	24 V DC
Current consumption on UP	–	–	–	0.005 A
Max. typ. (without load current)	–	–	–	
Number of Channels per Module				
Digital Inputs	8	16	8 (AC)	–
Digital Outputs	–	–	–	8
Configurable as Input or Output DC	–	–	–	–
Relays (R) / Transistor (T)	–	–	–	T
Additional configuration of channels as:				
Fast Counter	no			
Digital inputs				
Input signal voltage	24 V DC		110-240 V AC	–
Input time delay	typically 4...8 ms		typically 15 ms / 30 ms	–
Input current per channel				
At Input voltage	+24 V DC	typically 5 mA	–	–
	+5 V DC	typically 1 mA	–	–
	+15 V DC	> 2.5 mA	–	–
	+30 V DC	< 8 mA	–	–
	40 V AC	–	< 3 mA	–
	159 V AC	–	> 6 mA	–
Output current				
Nominal current per channel	–	–	–	0.5 A at UP=24 V
Maximum (total current of all channels)	–	–	–	4 A
Residual current at signal state 0	–	–	–	< 0.5 mA
Demagnetization when switching off inductive loads	–	–	–	must be provided externally
Switching frequency				
For inductive load	–	–	–	max. 0.5 Hz
For lamp load	–	–	–	max. 11 Hz at max. 5 W
Short circuit / overload proofness	–	–	–	no
Overload indication (I > 0.7 A)	–	–	–	no
Output current limiting	–	–	–	no
Proofness against reverse feeding of 24 V signals	–	–	–	no
Contact rating				
For resistive load, max.	–	–	–	–
For inductive load, max.	–	–	–	–
For lamp load	–	–	–	–
Lifetime (switching cycles)				
Mechanical lifetime	–	–	–	–
Lifetime under load	–	–	–	–
Spark suppression for inductive AC load	–	–	–	–
Demagnetization for inductive DC load	–	–	–	–
Maximum cable length for connected process signals				
Shielded cable	500 m			
Unshielded cable	300 m			150 m
Potential isolation				
Per module	✓	✓	✓	✓
Between the input channels	–	per group of 8	✓	–
Between the output channels	–	–	–	per group of 8
Voltage supply for the module	internal via I/O bus			
Fieldbus connection	CI501-PNIO, CI502-PNIO, CI506-PNIO, CI541-DP, CI542-DP, CI581-CN, CI582-CN DC551-CS31, CI592-CS31			
Address setting	automatically (internal)			

Scalable PLC AC500

Overview of digital S500-eCo I/O modules

Digital S500-eCo I/O modules



Type	DO571		DO572	DX561	DX571	DC561
Order code	1TNE968902R2202		1TNE968902R2203	1TNE968902R2301	1TNE968902R2302	1TNE968902R2001
Version available for Extreme Conditions	No					
Supply voltage	24 V DC					
Current consumption on UP Max. typ. (without load current)	0.050 A	–	0.005 A	0.050 A	0.010 A	
Number of Channels per Module						
Digital Inputs	–	–	8	8	–	
Digital Outputs	8	8	8	8	–	
Configurable as Input or Output DC	–	–	–	–	16	
Relays (R) / Transistor (T)	R	triac (AC)	T	R	T	
Process voltage						
DC	24 V	–	24 V	24 V	24 V	
Digital inputs						
Input signal voltage	–	–	24 V DC	24 V DC	24 V DC	
Input time delay	–	–	typically 4...8 ms			
Input current per channel						
At Input voltage	+24 V DC	–	–	typically 5 mA	typically 5 mA	typically 4 mA
	+5 V DC	–	–	< 1 mA	< 1 mA	< 1 mA
	+15 V DC	–	–	> 2.5 mA	> 2.5 mA	> 2.5 mA
	+30 V DC	–	–	< 6.5 mA	< 6.5 mA	< 6 mA
Output current						
Nominal current per channel	2 A (24 V DC/120 V AC/ 240 V AC, resistive load)		0.3 A at 100...240 V AC	0.5 A at UP=24 V DC	2 A (24 V DC/120 V AC/ 240 V AC, resistive load)	0.1 A at UP=24 V DC
Maximum (total current of all channels)	2 X 8 A		2.4 A / 8 X 0.3 A	4 A	2 X 8 A	1.6 A
Residual current at signal state 0	–		1.1 mA rms at 132 V AC and 1.8 mA rms at 264 V AC	< 0.5 mA	–	< 0.5 mA
Demagnetization when switching off inductive loads	must be performed externally					
Switching frequency						
For inductive load	–	–	0.5 Hz max.	–	0.5 Hz max.	
For lamp load	1 Hz max.	10 Hz max.	11 Hz max. at max. 5 W	1 Hz max.	–	
Short circuit / overload proofness	no					
Overload indication (I > 0.7 A)	no					
Output current limiting	no					
Proofness against reverse feeding of 24 V signals	yes	–	no	–	no	
Contact rating						
For resistive load, max.	2 A	–	–	2 A	–	
For inductive load, max.	–	–	–	–	–	
For lamp load	200 W at 230 V AC 30 W at 24 V DC	–	–	200 W at 230 V AC 30 W at 24 V DC	–	
Lifetime (switching cycles)						
Mechanical lifetime	100 000	–	–	100 000	–	
Lifetime under load	100 000	–	–	100 000	–	
Spark suppression for inductive AC load	must be performed externally	–	must be performed externally	must be performed externally	must be performed externally	
Demagnetization for inductive DC load	must be performed externally	–	must be performed externally	must be performed externally	must be performed externally	
Maximum cable length for connected process signals						
Shielded cable	500 m					
Unshielded cable	150 m					
Potential isolation						
Per module	–	✓	✓	–	✓	
Between the input channels	–	–	–	–	–	
Between the output channels	per group of 4	✓	–	per group of 4	–	
Voltage supply for the module's logic	internal via I/O bus					
Fieldbus connection	Ci501-PNIO, Ci502-PNIO, Ci504-PNIO, Ci506-PNIO, Ci541-DP, Ci542-DP, Ci581-CN, Ci582-CN DC551-CS31, Ci592-CS31					
Address setting	automatically (internal)					

Scalable PLC AC500

Overview of digital S500 I/O modules

Digital S500 I/O modules



Type	DI524	DC522	DC523	DC532	DX522	DX531
Order code	1SAP240000R0001	1SAP240600R0001	1SAP240500R0001	1SAP240100R0001	1SAP245200R0001	1SAP245000R0001
Version available for Extreme Conditions (-XC)	1SAP440000R0001	1SAP440600R0001	1SAP440500R0001	1SAP440100R0001	1SAP445200R0001	no
Number of channels per module						
Digital inputs DI	32	–	–	16	8	
Digital outputs DO	–	–	–	–	8 relays	8 relays
Configurable channels DC (configurable as inputs or outputs)	–	16	24	16	–	–
Additional configuration of channels as						
Fast counter	configuration of max. 2 channels per module, operating modes see table on page 36					–
Occupies max. 1 DO or DC when used as counter	–	✓	✓	✓	–	–
Connection via terminal unit	✓	✓	✓	✓	✓	✓
Digital inputs						
Input signal voltage	24 V DC					230 V AC or 120 V AC
Frequency range	–					47 ... 63 Hz
Input characteristic acc. to EN 61132-2	Type 1					Type 2
0 signal	– 3 V DC ... + 5 V DC					0 ... 40 V AC
Undefined signal state	+ 5 V DC ... + 15 V DC					> 40 V AC ... < 74 V AC
1 signal	+ 15 V DC ... + 30 V DC					74 ... 265 V AC
Input time delay (0 -> 1 or 1 -> 0)	8 ms typically, configurable from 0.1 up to 32 ms					20 ms typically
Input current per channel						
At input voltage	+ 24 V DC	5 mA typically				–
	+ 5 V DC	> 1 mA				–
	+ 15 V DC	> 5 mA				–
	+ 30 V DC	< 8 mA				–
	159 V AC	–				> 7 mA
	40 V AC	–				< 5 mA
Digital outputs						
Transistor outputs 24 V DC, 0.5 A	–	✓	✓	✓	–	–
Readback of output	–	✓	✓	✓	–	–
Relay outputs, supplied via process voltage UP, changeover contacts	–	–	–	–	✓	✓
Switching of 24 V load	–	✓	✓	✓	✓	✓
Switching of 230 V load	–	–	–	–	✓	✓
Output voltage at signal state 1	–	process voltage UP minus 0.8 V			–	–
Output current						
Nominal current per channel	–	500 mA at UP = 24 V			–	–
Maximum (total current of all channels)	–	8 A			–	–
Residual current at signal state 0	–	< 0.5 mA			–	–
Demagnetization when switching off inductive loads	–	by internal varistors			–	–
Switching frequency						
For inductive load	–	0.5 Hz max.			2 Hz max.	
For lamp load	–	11 Hz max. at max. 5 W			11 Hz max. at max. 5 W	
Short-circuit / overload proofness	–	✓	✓	✓	by external fuse / circuit breaker. 6 A gL/gG per channel	
Overload indication (I > 0.7 A)	–	after approx. 100 ms			–	–
Output current limiting	–	yes, with automatic reclosure			–	–
Proofness against reverse feeding of 24 V signals	–	✓	✓	✓	–	–

Scalable PLC AC500

Overview of digital S500 I/O modules

Type	DI524	DC522	DC523	DC532	DX522	DX531
Contact rating						
For resistive load, max.	–	–	–	–	3 A at 230 V AC 2 A at 24 V DC	
For inductive load, max.	–	–	–	–	1.5 A at 230 V AC 1.5 A at 24 V DC	
For lamp load	–	–	–	–	60 W at 230 V AC 10 W at 24 V DC	
Lifetime (switching cycles)						
Mechanical lifetime	–	–	–	–	300 000	
Lifetime under load	–	–	–	–	300 000 at 24 V DC/ 2 A 200 000 at 120 V AC/ 2 A 100 000 at 230 V AC/ 3 A	
Spark suppression for inductive AC load	–	–	–	–	external measure depending on the switched load	
Demagnetization for inductive DC load	–	–	–	–	external measure: free-wheeling diode connected in parallel to the load	
Process voltage UP						
Nominal voltage	24 V DC					
Maximum ripple	5 %					
Current consumption on UP						
Min. typ. (module alone)	0.150 A	0.100 A	0.150 A		0.050 A	0.150 A
Max. typ. (min. + loads)	0.150 A	0.100 A + load	0.150 A + load		0.050 A + load	0.150 A + load
Reverse polarity protection	✓	✓	✓	✓	✓	✓
Fuse for process voltage UP	10 A miniature fuse					
Connections for sensor voltage supply. Terminal + 24 V and 0 V for each connection. Permitted load for each group of 4 or 8 connections: 0.5 A	–	8	4	–	–	–
Short-circuit and overload proof	–	✓	✓	–	–	–
24 VDC sensor supply voltage						
Maximum cable length for connected process signals						
Shielded cable	1000 m					
Unshielded cable	600 m					
Potential isolation						
Per module	✓	✓	✓	✓	✓	✓
Between the input channels	–	–	–	–	–	✓ (per 2)
Between the output channels	–	–	–	–	✓	✓
Voltage supply for the module	internally via extension bus interface (I/O bus)					
Fieldbus connection	via AC500 CPU or all communication interface modules					
Address setting	automatically (internal)					

Scalable PLC AC500

Overview of digital S500 I/O modules

Digital I/O modules, "Fast Counter" operating modes. Not applicable for DC541 or eCo-I/O modules (see technical documentation for details)

Operating mode, configured in the user program of the AC500		Occupied inputs DI or DC	Occupied outputs DO or DC	Maximum counting frequency kHz	Notes
0	No counter	0	0	–	–
1	One count-up counter with "end value reached" indication	1	1	50	Note for input module DI524: It is not possible to set an output directly. As an alternative, the status byte should be evaluated and applied to another output in the system.
2	One count-up counter with "enable" input and "end value reached" indication	2	1	50	"End value" interrogation via status byte
3	Two up/down counters	2	0	50	"End value" interrogation via status byte
4	Two up/down counters with 1 counting input inverted	2	0	50	
5	One up/down counter with "dynamic set" input	2	0	50	Acts to the rising signal edge (0->1) "End value" interrogation via status byte
6	One up/down counter with "dynamic set" input	2	0	50	Acts to the falling signal edge (1->0) "End value" interrogation via status byte
7	One up/down counter with directional discriminator For synchro transmitters using two counting pulses with an offset of 90° (track A and B)	2	0	50	For synchro transmitters with 24 V signals. In case of 5 V synchro transmitters, the signal has to be increased to 24 V. The zero track of the synchro transmitter is not processed. Interrogation of the "end value" indication via the status byte. Single evaluation.
8	–	0	0	–	–
9	One up/down counter with directional discriminator and double evaluation For synchro transmitters using two counting pulses with an offset of 90° towards each other (track A and B)	2	0	30	See operating mode 7 Difference: double evaluation, i.e. evaluation of the rising edge and the falling edge of track A -> higher accuracy due to the double number of counting pulses
10	One up/down counter with directional discriminator and fourfold evaluation For synchro transmitters using two counting pulses with an offset of 90° towards each other (track A and B)	2	0	15	See operating mode 7 Difference: fourfold evaluation, i.e. evaluation of the rising edge and the falling edge of track A and track B -> higher accuracy due to the fourfold number of counting pulses.

Scalable PLC AC500

Overview of analog S500-eCo I/O modules

Analog S500-eCo I/O modules

					
Type	AI561	AO561	AX561	AI562	AI563
Order code	1TNE968902R1101	1TNE968902R1201	1TNE968902R1301	1TNE968902R1102	1TNE968902R1103
Version available for Extreme Conditions	no				
Supply voltage	24 V DC				
Current consumption on UP					
Max. typ. (without load current)	0.100 A	0.100 A	0.140 A	0.040 A	0.100 A
Number of Channels per Module					
Analog Inputs	4	–	4	2	4
Analog Outputs	–	2	2	–	–
Inputs, single configurable as					
-2.5 V...+2.5 V	11 bits + sign	✓	–	✓	–
-5 V...+5 V	11 bits + sign	✓	–	✓	–
-10 V...+10 V	11 bits + sign	✓	–	✓	–
0...5 V	12 bits	✓	–	✓	–
0...10 V	12 bits	✓	–	✓	–
0...20 mA, 4...20 mA	12 bits	✓	–	✓	–
Temperature resolution	0.1 °C	–	–	✓	✓
Analog Inputs Signal configuration per AI					
RTD	–	–	–	2	–
Thermocouple	–	–	–	–	4
Outputs, single configurable as					
0...5 V; 0...10 V	–	✓	✓	–	–
0...20 mA	–	✓	✓	–	–
4...20 mA	–	✓	✓	–	–
Pt100	–	–	–	–	–
-50 °C...+400 °C (2/3-wire)	–	–	–	✓	–
Pt1000	–	–	–	✓	–
-50 °C...+400 °C (2/3-wire)	–	–	–	✓	–
Ni100/Ni1000	–	–	–	✓	–
-50 °C...+150 °C (2/3-wire)	–	–	–	✓	–
0... 150 Ω/ 0... 300 Ω	–	–	–	✓	–
Thermocouples of types J, K, T, N, S, E, R	–	–	–	–	✓
-80 mV... +80 mV	–	–	–	–	✓
Potential isolation					
Per module	–	–	–	✓	✓
Fieldbus connection	CI501-PNIO, CI502-PNIO, CI504-PNIO, CI506-PNIO, CI541-DP, CI542-DP, CI581-CN, CI582-CN DC551-CS31, CI592-CS31				
Address setting	automatically (internal)				

Scalable PLC AC500

Overview of analog S500 I/O modules

Analog S500 I/O devices

					
Type	AX521	AX522	AI523	AO523	AI531
Order code	1SAP250100R0001	1SAP250000R0001	1SAP250300R0001	1SAP250200R0001	1SAP250600R0001
Version available for Extreme Conditions (-XC)	1SAP450100R0001	1SAP450000R0001	1SAP450300R0001	1SAP450200R0001	1SAP450600R0001
Number of channels per module					
Analog inputs AI, individual configuration	4	8	16	–	8
Analog outputs AO, individual configuration	4	8	–	16	–
Signal resolution for channel configuration					
-10 ... +10 V	12 bits + sign				15 bits + sign
0 ... 10 V	12 bits				15 bits
0 ... 20 mA, 4 ... 20 mA	12 bits				15 bits
Temperature: 0.1 °C	✓	✓	✓	✓	✓
Monitoring configuration per channel					
Plausibility monitoring	✓	✓	✓	✓	✓
Wire break & short-circuit monitoring	✓	✓	✓	✓	✓
Analog Inputs AI					
Signal configuration per AI	max. number per module and with regard to the configuration: AIs / Measuring points (depending on the use of 2/3-wire connection or differential input)				
0 ... 10 V	4 / 4	8 / 8	16 / 16	–	8 / 8
-10 ... +10 V	4 / 4	8 / 8	16 / 16	–	8 / 8
0 ... 20 mA	4 / 4	8 / 8	16 / 16	–	8 / 8
4 ... 20 mA	4 / 4	8 / 8	16 / 16	–	8 / 8
Pt100					
-50 °C ... +400 °C (2-wire)	4 / 4	8 / 8	16 / 16	–	8 / 8
-50 °C ... +400 °C (3-wire), 2 channels	4 / 2	8 / 4	16 / 8	–	8 / 8
-50 °C ... +400 °C (4-wire)	–	–	–	–	8 / 8
-50 °C ... +70 °C (2-wire)	4 / 4	8 / 8	16 / 16	–	8 / 8
-50 °C ... +70 °C (3-wire), 2 channels	4 / 2	8 / 4	16 / 8	–	8 / 8
-50 °C ... +70 °C (4-wire)	–	–	–	–	8 / 8
Pt1000					
-50 °C ... +400 °C (2-wire)	4 / 4	8 / 8	16 / 16	–	8 / 8
-50 °C ... +400 °C (3-wire), 2 channels	4 / 2	8 / 4	16 / 8	–	8 / 8
-50 °C ... +400 °C (4-wire)	–	–	–	–	8 / 8
Ni1000					
-50 °C ... +150 °C (2-wire)	4 / 4	8 / 8	16 / 16	–	8 / 8
-50 °C ... +150 °C (3-wire), 2 channels	4 / 2	8 / 4	16 / 8	–	8 / 8
-50 °C ... +150 °C (4-wire)	–	–	–	–	8 / 8
Thermocouples of types J, K, T, N, S	–	–	–	–	✓
0 ... 10 V using differential inputs, 2 channels	4 / 2	8 / 4	16 / 8	–	8 / 8
-10 V ... +10 V using differential inputs, 2 channels	4 / 2	8 / 4	16 / 8	–	8 / 8
Digital signals (digital input)	4 / 4	8 / 8	16 / 16	–	8 / 8
Input resistance per channel	voltage: > 100 kΩ current: approx. 330 Ω			–	voltage: > 100 kΩ current: approx. 330 Ω
Time constant of the input filter	voltage: 100 µs current: 100 µs			–	voltage: 100 µs current: 100 µs
Conversion cycle	2 ms (for 8 AI + 8 AO), 1 s for Pt/Ni...			–	1 ms (for 8 AI + 8 AO), 1 s for Pt/Ni...
Overvoltage protection	✓	✓	✓	–	✓
Data when using the AI as digital input					
Input time delay	8 ms typically, configurable from 0.1 up to 32 ms			–	8 ms typically, configurable from 0.1 up to 32 ms
Input signal voltage	24 V DC			–	24 V DC
0 signal	-30 V ... +5 V			–	-30 V ... +5 V
1 signal	+13 V ... +30 V			–	+13 V ... +30 V

Scalable PLC AC500

Overview of analog S500 I/O modules

Type	AX521	AX522	AI523	AO523	AI531
Analog outputs AO					
Possible configuration per AO	Max. number of AOs per module and with regard to the configuration:				
-10 ... +10 V	4	8 (1)	–	16 (1)	–
0 ... 20 mA	4		–	8	–
4 ... 20 mA	4		–	8	–
Output resistance (burden) when used as current output	0 ... 500 Ω		–	0 ... 500 Ω	–
Output loading capability when used as voltage output	Max. ± 10 mA		–	Max. ± 10 mA	–
Process voltage UP					
Nominal voltage	24 V DC				
Maximum ripple	5 %				
Current consumption on UP					0.130 A
Min. typ. (module alone)	0.150 A				
Max. typ. (min. + loads)	0.150 A + load	0.150 A + load	–	0.150 A + load	
Reverse polarity protection	✓	✓	✓	✓	✓
Max. line length of the analog lines, conductor cross section > 0.14 mm²	100 m				
Conversion error of analog values caused by non- linearity, calibration errors ex works and the resolution in the nominal range	0.5 % typically, 1 % max.				
Potential isolation					
Per module	✓	✓	✓	✓	–
Fieldbus connection	Via AC500 CPU or all communication interface modules				
Voltage supply for the module	Internally via extension bus interface (I/O bus)				–

(1) Half can be used on current (the other half remains available)

CD522 encoder module

Technical data

CD522 encoder module

The CD522 module offers accuracy and dynamic flexibility for a customized solution. It has two independent encoder inputs onboard and is easily configured using the Control Builder software for 10 different operation modes and for frequencies up to 300 kHz. The CD522 module also integrates outputs for pulses and for PWM as well as normal inputs and outputs, depending on selected encoder mode.

									
Type	CD522								
Order code	1SAP260300R0001								
Version available for Extreme Conditions	1SAP460300R0001								
Functionality									
Digital inputs/outputs	24 V DC, dedicated inputs/outputs can be used for specific counting functions: - Catch/touch operation, counter value stored in separate variable on external event (rising or falling edge) - Set input to preset counter register with predefined value - Set input to reset counter register - End value output; the output is set when predefined value is reached - Reference point initialization (RPI) input for relative encoder initialization All unused inputs/outputs can be used with the specification of standard input/output range.								
High-speed counter/encoder	Integrated, 2 counters (hardware interface with +24 V DC, +5 V DC, differential and 1 Vpp sinus input): - 32 bits one counter mode - 16 bits two counter mode - Relative position encoder (X1, X2, X4) - Absolute SSI encoder - Time frequency meter - Frequency input up to 300 kHz								
PWM/pulse outputs	2 pulse-width-modulators or pulse outputs Output mode specification: - Push-pull output: 24 V DC, 100 mA max. - Current limitation (thermal and over current) PWM mode specification: - Frequency from 1 Hz to 100 kHz - Value from 0 to 100 % Pulse mode specification: - Frequency from 1 Hz to 15 kHz - Pulse emission from 1 to 65535 pulses - Number of pulses emitted indicator (0 to 100 %) Frequency mode specification: - Frequency output = 100 kHz - Duty cycle set to 50 %								
Number of channels per module									
Digital Inputs DI	2								
Digital outputs DO	2								
Configurable channels DC (configurable as inputs or outputs)	8								
Additional configuration of channels as									
Fast counter	Integrated 2 counter encoders								
Connection via terminal unit	✓								
Digital Inputs									
Input signal voltage	24 V DC								
Input time delay	8 ms typically configurable from 0.1 up to 32 ms								
Input current per channel									
At input voltage	<table> <tr> <td>+24 V DC</td><td>Typically 5 mA</td></tr> <tr> <td>+5 V DC</td><td>> 1 mA</td></tr> <tr> <td>+15 V DC</td><td>> 5 mA</td></tr> <tr> <td>+30 V DC</td><td>< 8 mA</td></tr> </table>	+24 V DC	Typically 5 mA	+5 V DC	> 1 mA	+15 V DC	> 5 mA	+30 V DC	< 8 mA
+24 V DC	Typically 5 mA								
+5 V DC	> 1 mA								
+15 V DC	> 5 mA								
+30 V DC	< 8 mA								
Digital outputs									
Output voltage at signal state 1	UP – 0.8 V								
Output current									
Nominal current per channel	0.5 A at UP = 24 V								
Maximum (total current of all channels)	8 A								
Residual current at signal state 0	< 0.5 mA								
Demagnetization when switching off inductive loads	By internal varistors								

CD522 encoder module

Technical data

Type	CD522	
Switching frequency		
For inductive load	Max. 0.5 Hz	
For lamp load	Max. 11 Hz with max. 5 W	
Short-circuit / Overload proofness	✓	
Overload indication (I > 0.7 A)	After approx. 100 ms	
Output current limiting	✓	
Proofness against reverse feeding of 24 V signals	✓	
Maximum cable length for connected process signals		
Shielded cable	1000 m	
Unshielded cable	600 m	
Potential isolation		
Per module	✓	
Technical data of the high-speed inputs		
Number of channels per module	6	
Input Type	24 V DC	
Frequency	300 kHz	
Technical data of the fast outputs		
Number of channels	2	
Indication of the output signals	Brightness of the LED depends on the number of pulses emitted (0 % to 100 %) (pulse output mode only)	
Output current		
Rated value, per channel	100 mA at UP = 24 V	
Maximum value (all channels together, configurable outputs included)	8 A	
Leakage current with signal 0	< 0.5 mA	
Rated protection fuse on UP	10 A fast	
De-magnetization when inductive loads are switched off	with varistors integrated in the module (see figure below)	
Overload message (I > 0.1x A)	Yes, after ca. 100 ms	
Output current limitation	Yes, automatic reactivation after short-circuit/overload	
Resistance to feedback against 24 V signals	Yes	
Process voltage UP		
Nominal voltage	24 V DC	
Maximum ripple	5 %	
Current consumption on UP		
Min. typ. (module alone)	0.070 A	
Max. typ. (min. + loads)	0.070 A + load	
Reverse polarity protection	✓	
Fuse for process voltage UP	10 A miniature fuse	

DA501 analog / digital mixed I/O module

Technical data

Expansion module

For all modules: max cable length for connected process signals is 1000 m for shielded cable and 600 m for unshielded ones.

For all Input modules, the signal resolution for channel configuration is: -10 V...+10 V: 12 bit + sign; 0...10 V, 0...20 mA, 4...20 mA: 12 bits

	
Type	DA501
Order code	1SAP250700R0001
Version available for Extreme Conditions (-XC)	1SAP450700R0001
Number of Channels per Module	
Digital inputs DI	16
Digital outputs DO	-
Analog inputs AI	4
Analog outputs AO	2
Digital configurable channels DC (configurable as inputs or outputs)	8
Additional configuration of channels as:	
Fast counter	No
Occupies max. 1 DO or DC when used as counter	Configuration of max. 2 channels per module. Operating modes see table on page 36
Connection via terminal unit TU 5xx	✓
Digital inputs	
Input signal voltage	24 V DC
Input characteristic acc. to EN 61 132-2	Type 1
0 signal	-3 V DC... +5 V DC
Undefined signal state	+5 V DC... +15 V DC
1 signal	+15 V DC... +30 V DC
Residual ripple, range for 0 signal	-3 V DC... +5 V DC
Residual ripple, range for 1 signal	+15 V DC... +30 V DC
Input time delay (0 -> 1 or 1 -> 0)	8 ms typically, configurable from 0.1 up to 32 ms
Digital outputs	
Transistor outputs 24 V DC, 0.5 A	✓
Readback of output	✓
Outputs, supplied via process voltage UP	✓
Switching of 24 V load	✓
Output voltage at signal state 1	Process voltage UP - 0.8 V
Output current	
Nominal current per channel	500 mA at UP = 24 V DC
Maximum (total current of all channels)	8 A
Residual current at signal state 0	< 0.5 mA
Demagnetization when switching off inductive loads	By internal varistors
Analog inputs AI	Max. number per module and with regard to the configuration: AIs / Measuring points
Signal configuration per AI	✓
0...10 V / -10 V ... +10 V	4/4
0...20 mA / 4...20 mA	4/4
RTD using 2/3 wire needs 1/2 channel(s)	4/2
0...10 V using differential inputs, needs 2 channels	4/2
-10 V...+10 V using differential inputs, needs 2 channels	4/2
Digital signals (digital input)	4/4
Data when using the AI as digital input	
Input time delay	8 ms typically, configurable from 0.1 up to 32 ms
Input signal voltage	24 V DC
Outputs, single configurable as	
Possible configuration per AO	✓
-10...+10 V	✓
0...20 mA / 4...20 mA	✓
Output resistance (load) when used as current output	0...500 Ω
Output loading capability when used as voltage output	±10 mA max.
Potential isolation	
Per module	✓
Process voltage UP	
Nominal voltage	24 V DC
Maximum ripple	5 %
Current consumption on UP	
Min. typ. (module alone)	0.070 A
Max. typ. (min. + loads)	0.070 A + load
Reverse polarity protection	✓
Fuse for process voltage UP	10 A miniature fuse
Approvals	See detailed overview page 74 or www.abb.com/plc

DC541-CM interrupt I/O and fast counter module

Technical data

DC541-CM interrupt I/O and fast counter module

In the operating mode Counter, the channels can be configured as follows:

Input, Output, 32-bit up/down counter (uses C0...C3) as a 32-bit counter without limit, 32-bit periodic counter as a 32-bit counter with a limit, limiter for a 32-bit counter (limit channel 0), 32-bit up counter (forward counter) with the frequencies 50 kHz, 5 kHz and 2.5 kHz, pulse-width modulation (PWM) with a resolution of 10 kHz, time and frequency measurement, frequency output.



Type	DC541-CM	
Order code	1SAP270000R0001	
Version available for Extreme Conditions (-XC)	1SAP470000R0001	
Number of Channels per Module		
Configurable channels DC (configurable as inputs or outputs)	8	
Additional configuration of channels as		
Fast counter	Yes	
Connection via CPU terminal base. Occupies one communication module slot	✓	
Digital inputs		
Input signal voltage	24 V DC	
Input characteristic acc. to EN61132-2	Type 1	
0 signal	-3 V DC ... +5 V DC	
Undefined signal state	+5 V DC ... +15 V DC	
1 signal	+15 V DC ... +30 V DC	
Input time delay (0 -> 1 or 1 -> 0)	20uS	
	Clamp to clamp - 300uS with interrupt task	
Input current per channel		
At input voltage	+24 V DC	5 mA typically
	+5 V DC	> 1 mA
	+15 V DC	> 5 mA
	+30 V DC	< 8 mA
Digital outputs		
Transistor outputs 24 V DC, 0.5 A	✓	
Readback of output	✓	
Switching of 24 V load	✓	
Output voltage at signal state 1	Process voltage UP minus 0.8 V	
Output current		
Nominal current per channel	500 mA at UP = 24 V	
Maximum (total current of all channels)	8 A	
Residual current at signal state 0	< 0.5 mA	
Demagnetization when switching off inductive loads	by internal varistors	
Potential isolation		
Per module	✓	
Voltage supply for the module	Internally via backplane bus	
Fieldbus connection	Via AC500 CPU	
Address setting	Automatically (internal)	

Interrupt I/O table

Configuration as		Configuration for channel no.					Max. no. of channels for this function	Remarks and notes regarding possible alternative combinations of the remaining channels (a and b)
		Chan. 0	Chan. 1	Chan. 2	Chan. 3	Chan. 4-7		
Mode 1: Interrupt functionality								
Interrupt	Digital input	1	1	1	1	4	8	Each channel can be configured individually as interrupt input or output.
	Digital output	1	1	1	1	4	8	
Mode 2: Counting functionality								
Digital I/Os PWM*	Digital input	1	1	1	1	4	8	Usual input
	Digital output	1	1	1	1	4	8	Usual output
	PWM, resolution 10 kHz	1	1	1	1	4	8	Outputs and pulsed signal with and adjustable on-off ratio

* Counter and fast counter data available on technical documentation

Communication interface modules

Technical data

Communication interface modules

For all modules: max cable length for connected process signals is 1000 m for shielded cable and 600 m for unshielded ones.

For all Input modules, the signal resolution for channel configuration is: -10 V...+10 V: 12 bits + sign; 0...10 V, 0...20 mA, 4...20 mA: 12 bits
Temperature: 0.1°C

				
Type	DC505-FBP	DC551-CS31	CI590-CS31-HA Dedicated to High Availability	CI592-CS31
Order code	1SAP220000R0001	1SAP220500R0001	1SAP221100R0001	1SAP221200R0001
Version available for Extreme Conditions (-XC)	No	1SAP420500R0001	1SAP421100R0001	1SAP421200R0001
Communication Interface				
Protocol	According to FieldBusPlug used (Fieldbus neutral on module itself)	Proprietary CS31 bus protocol on RS485 interface		
ID configuration	Per rotary switches on front face from 00d to 99d			
Field bus connection on TUs	M12 on FieldBusPlug	CS31 field bus, via terminal / redundant for CI590-CS31-HA on TU551-CS31 or TU552-CS31		
Number of Channels per Module				
Digital Inputs DI	8	8	–	8
Digital outputs DO	–	–	–	–
Analog inputs AI	–	–	–	4
Analog outputs AO	–	–	–	2
Digital configurable channels DC (configurable as inputs or outputs)	8	16	16	8
Additional configuration of channels as:				
Fast counter	–	Configuration of max. 2 channels per module		
Occupies max. 1 DO or DC when used as counter	–	✓	✓	✓
Connection via terminal base TU 5xx	✓	✓	✓	✓
Local I/O extension				
Max. number of extension modules	max. 7x S500 extension modules, nb and type (dig./analog) dep. On FBP and protocol used. Note: eCo I/O modules are not allowed to be used	max. 7x S500 extension modules (standard or eCo), up to 31 stations with up to 120 DIs/120 DOs or up to 32 AIs/ 32AOs per station		
			not for S500-eCo I/O modules	
Digital inputs				
Input signal voltage	24 V DC			
Input characteristic acc. to EN 61 132-2	Type 1			
0 signal	-3 V DC... +5 V DC			
Undefined signal state	+5 V DC... +15 V DC			
1 signal	+15 V DC... +30 V DC			
Residual ripple, range for 0 signal	-3 V DC... +5 V DC			
Residual ripple, range for 1 signal	+15 V DC...+30 V DC			
Input time delay (0 -> 1 or 1 -> 0)	8 ms typically, configurable from 0.1 up to 32 ms			
Digital outputs				
Transistor outputs 24 V DC, 0.5 A	✓			
Readback of output	✓			
Outputs, supplied via process voltage UP	✓			
Switching of 24 V load	✓			
Output voltage at signal state 1	Process voltage UP - 0.8 V			
Output current				
Nominal current per channel	500 mA at UP = 24 V DC			
Maximum (total current of all channels)	4 A	8 A	8 A	4 A
Residual current at signal state 0	< 0.5 mA			
Demagnetization when switching off inductive loads	By internal varistors			
Analog inputs AI	Max. number per module and with regard to the configuration: AIs / Measuring points			
Signal configuration per AI	–	–	–	✓
0...10 V / -10 V ... +10 V	–	–	–	4/4
0...20 mA / 4...20 mA	–	–	–	4/4
RTD using 2/3 wire needs 1/2 channel(s)	–	–	–	4/2
0...10 V using differential inputs, needs 2 channels	–	–	–	4/2
-10 V...+10 V using differential inputs, needs 2 channels	–	–	–	4/2
Digital signals (digital input)	–	–	–	4/4

Communication interface modules

Technical data

Type	DC505-FBP	DC551-CS31	CI590-CS31-HA Dedicated to High Availability	CI592-CS31
Data when using the AI as digital input				
Input time delay	–			8 ms typically, configurable from 0.1 up to 32 ms
Input signal voltage	–			24 V DC
Outputs, single configurable as				
Possible configuration per AO	–			✓
–10...+10 V	–			✓
0...20 mA / 4...20 mA	–			✓
Output resistance (load) when used as current output	–			0...500 Ω
Output loading capability when used as voltage output	–			±10 mA max.
Potential isolation				
Per module	✓	✓	✓	✓
Between fieldbus interface against the rest of the module	✓	✓	✓	✓
Voltage supply for the module	Via FBP	By external 24 V DC voltage via terminal UP		
Process voltage UP				
Nominal voltage	24 V DC			
Maximum ripple	5 %			
Current consumption on UP				
Min. typ. (module alone)	0.005 A	0.100 A	0.100 A	0.070 A
Max. typ. (min. + loads)	0.005 A + load	0.100 A + load	0.100 A + load	0.070 A + load
Reverse polarity protection	✓			
Fuse for process voltage UP	10 A miniature fuse			
Approvals	See detailed overview page 62 or www.abb.com/plc			

Communication interface modules for fieldbus applications

Technical data

Protocol	PROFIBUS-DP	
		
Type	CI541-DP	CI542-DP
Order code	1SAP224100R0001	1SAP224200R0001
Version available for Extreme Conditions (-XC)	1SAP424100R0001	1SAP424200R0001
Communication Interface		
Protocol	PROFIBUS DP (DP-V0 and DP-V1)	
ID configuration	Per rotary switches on front face from 00h to FFh	
Field bus connection on TUs	D-Sub 9 poles on TU509, TU510	
Number of Channels per Module		
Digital Inputs DI	8	8
Digital outputs DO	8	8
Analog Inputs AI	4	–
Analog Outputs AO	2	–
Digital configurable channels DC (configurable as inputs or outputs)	–	8
Additional configuration of channels as:		
Fast counter (onboard I/O)	Configuration of max. 2 DI channels per module	
Occupies max 1 DO or DC when used as counter	✓	✓
Local I/O extension	Yes	
Max. number of extension modules	max. 10 x S500 extension modules (standard or eCo modules are allowed), fast counter from digital I/O modules can be also used	
Connection via terminal unit TU5xx	✓	✓
Digital inputs		
Input signal voltage	24 V DC	
Input characteristic acc. to EN61132-2	Type 1	
0 signal	– 3 V DC... + 5 V DC	
Undefined signal state	+ 5 V DC... + 15 V DC	
1 signal	+ 15 V DC... + 30 V DC	
Residual ripple, range for 0 signal	– 3 V DC... + 5 V DC	
Residual ripple, range for 1 signal	+ 15 V DC... + 30 V DC	
Input time delay (0 -> 1 or 1 -> 0)	8 ms typically, configurable from 0.1 up to 32 ms	
Digital outputs		
Transistor outputs 24 V DC, 0.5 A	✓	
Readback of output	✓	
Outputs, supplied via process voltage UP	✓	
Switching of 24 V load	✓	
Output voltage at signal state 1	Process voltage UP - 0.8 V	
Output current		
Nominal current per channel	500 mA at UP = 24 V DC	
Maximum (total current of all channels)	8 A	
Residual current at signal state 0	< 0.5 mA	
Demagnetization when switching off inductive loads	By internal varistors	
Analog Inputs AI	Max. number per module and with regard to the configuration: AIs / Measuring points	
Signal configuration per AI	4	–
0...10V / -10V ... +10V	4/4	–
0...20mA / 4...20mA	4/4	–
RTD using 2/3 wire needs 1/2 channel(s)	4/2	–
0...10V using differential inputs, needs 2 channels	4/2	–
-10V...+10V using differential inputs, needs 2 channels	4/2	–
Digital signals (digital input)	4/4	–
Data when using the AI as digital input		
Input time delay	8 ms typically, configurable from 0.1 up to 32 ms	–
Input signal voltage	24 V DC	–
Outputs, single configurable as		
Possible configuration per AO	✓	–
-10...+10V	✓	–
0...20mA / 4...20mA	✓	–
Output resistance (load) when used as current output	0...500 Ω	–
Output loading capability when used as voltage output	±10 mA max.	–

Communication interface modules for fieldbus applications

Technical data

Type	CI541-DP	CI542-DP
Potential isolation		
Per module	✓	✓
Between fieldbus interface against the rest of the module	✓	✓
Between the input channels	–	–
Between the output channels	–	–
Voltage supply for the module	By external 24 V DC voltage via terminal UP	
Process voltage UP		
Nominal voltage	24 V DC	
Maximum ripple	5 %	
Current consumption on UP		
Min. typ. (module alone)	0.260 A	
Max. typ. (min. + loads)	0.260 A + load	
Reverse polarity protection	✓	
Fuse for process voltage UP	10 A miniature fuse	
Approvals	See detailed overview page 62 or www.abb.com/plc	

Communication interface modules for fieldbus applications

Technical data

Protocol	CANopen	
		
Type	CI581-CN	CI582-CN
Order code	1SAP228100R0001	1SAP228200R0001
Version available for Extreme Conditions (-XC)	1SAP428100R0001	1SAP428200R0001
Communication Interface		
Protocol	CANopen, DS401 profile selectable using rotary switches	
ID configuration	Per rotary switches on front face for CANopen ID node from 00h to 7Fh and 80h to FFh for CANopen DS401 profile	
Field bus connection on TUs	Terminal blocks on TU517 or TU518	
Number of Channels per Module		
Digital Inputs DI	8	8
Digital outputs DO	8	8
Analog Inputs AI	4	-
Analog Outputs AO	2	-
Digital configurable channels DC (configurable as inputs or outputs)	-	8
Additional configuration of channels as:		
Fast counter (onboard I/O)	Configuration of max. 2 DI channels per module	
Occupies max 1 DO or DC when used as counter	✓	✓
Local I/O extension		
Max. number of extension modules	max. 10 x S500 extension modules (standard or eCo modules are allowed)	
Connection via terminal unit TU5xx	✓	✓
Digital inputs		
Input signal voltage	24 V DC	
Input characteristic acc. to EN61132-2	Type 1	
0 signal	- 3 V DC... + 5 V DC	
Undefined signal state	+ 5 V DC... + 15 V DC	
1 signal	+ 15 V DC... + 30 V DC	
Residual ripple, range for 0 signal	- 3 V DC... + 5 V DC	
Residual ripple, range for 1 signal	+ 15 V DC... + 30 V DC	
Input time delay (0 -> 1 or 1 -> 0)	8 ms typically, configurable from 0.1 up to 32 ms	
Digital outputs		
Transistor outputs 24 V DC, 0.5 A	✓	
Readback of output	✓	
Outputs, supplied via process voltage UP	✓	
Switching of 24 V load	✓	
Output voltage at signal state 1	Process voltage UP - 0.8 V	
Output current		
Nominal current per channel	500 mA at UP = 24 V DC	
Maximum (total current of all channels)	8 A	
Residual current at signal state 0	< 0.5 mA	
Demagnetization when switching off inductive loads	By internal varistors	
Analog Inputs AI	Max. number per module and with regard to the configuration: AIs / Measuring points	
Signal configuration per AI	4	-
0...10V / -10V ... +10V	4/4	-
0...20mA / 4...20mA	4/4	-
RTD using 2/3 wire needs 1/2 channel(s)	4/2	-
0...10V using differential inputs, needs 2 channels	4/2	-
-10V...+10V using differential inputs, needs 2 channels	4/2	-
Digital signals (digital input)	4/4	-
Data when using the AI as digital input		
Input time delay	8 ms typically, configurable from 0.1 up to 32 ms	-
Input signal voltage	24 V DC	-
Outputs, single configurable as		
Possible configuration per AO	✓	-
-10...+10V	✓	-
0...20mA / 4...20mA	✓	-
Output resistance (load) when used as current output	0...500 Ω	-
Output loading capability when used as voltage output	±10 mA max.	-

Communication interface modules for fieldbus applications

Technical data

Type	CI581-CN	CI582-CN
Potential isolation		
Per module	✓	✓
Between fieldbus interface against the rest of the module	✓	✓
Between the input channels	–	–
Between the output channels	–	–
Voltage supply for the module	By external 24 V DC voltage via terminal UP	
Process voltage UP		
Nominal voltage	24 V DC	
Maximum ripple	5 %	
Current consumption on UP		
Min. typ. (module alone)	0.260 A	
Max. typ. (min. + loads)	0.260 A + load	
Reverse polarity protection	✓	
Fuse for process voltage UP	10 A miniature fuse	
Approvals	See detailed overview page 62 or www.abb.com/plc	

Communication interface modules (Gateway PROFINET I/O to CAN or serial)

Technical data

Protocol	PROFINET I/O			
				
Type	CI501-PNIO	CI502-PNIO	CI504-PNIO	CI506-PNIO
Order code	1SAP220600R0001	1SAP220700R0001	1SAP221300R0001	1SAP221500R0001
Version available for Extreme Conditions	1SAP420600R0001	1SAP420700R0001	1SAP421300R0001	1SAP421500R0001
Communication Interface				
Ethernet Interface				
Main protocol	PROFINET I/O RT			
ID Device configuration	By rotary switch on the front side, from 00h to FFh			
Ethernet connection on TUs	2 x RJ45 with switch functionality for simple daisy chain on TU507-ETH or TU508-ETH or TU520-ETH			
Gateway Interface				
Gateway to	–	–	3 x RS232/RS422/RS485 ASCII serial interfaces	CAN / CANopen Master + 2x RS232/RS422/RS485 ASCII serial interfaces
Fieldbus Protocol used	–	–	–	CAN 2A/2B Master - CAN-open Master *
CAN physical interface	–	–	–	1 x 10 poles pluggable spring connector
Baudrate	–	–	–	Baudrate up to 1 MBit/s, Support for up to 126 CANopen Slaves
Serial interface	–	–	3 x RS232 / RS422 or RS485	2 x RS232 / RS422 or RS485
Protocol used	–	–	ASCII	ASCII
Baudrate	–	–	Configurable from 300 bit/s to 115200 bit/s	
Fieldbus or serial connection on TUs	–	–	3 x pluggable terminal blocks with spring on TU520-ETH	
Number of Channels per Module				
Digital Inputs DI	8	8	–	–
Digital outputs DO	8	8	–	–
Analog Inputs AI	4	–	–	–
Analog outputs AO	2	–	–	–
Digital configurable channels DC (configurable as inputs or outputs)	–	8	–	–
Additional configuration of channels as:				
Connection via terminal unit TU5xx	–	–	✓	✓
Fast counter (onboard I/O)	Configuration of max. 2 DI channels per module		–	–
Occupies max. 1 DO or DC when used as counter	✓		–	–
Local I/O extension	Yes		–	–
Max. number of extension modules	max. 10 x S500 extension modules (standard or eCo modules allowed). Fast counter from digital IO modules can be also used.		Valid for CI501, 502, 504 and 506! All modules can have extension up to 10 modules	
Digital inputs				
Input signal voltage	24 V DC	–	–	–
Input characteristic acc. to EN 61 132-2	Type 1	–	–	–
0 signal	-3 V DC... +5 V DC	–	–	–
Undefined signal state	+5 V DC... +15 V DC	–	–	–
1 signal	+15 V DC...+30 V DC	–	–	–
Residual ripple, range for 0 signal	-3 V DC...+5 V DC	–	–	–
Residual ripple, range for 1 signal	+15 V DC...+30 V DC	–	–	–
Input time delay (0 -> 1 or 1 -> 0)	8 ms typically, configurable from 0.1 up to 32 ms	–	–	–
Digital outputs				
Transistor outputs 24 V DC, 0.5 A	✓	–	–	–
Readback of output	✓	–	–	–
Outputs, supplied via process voltage UP	✓	–	–	–
Switching of 24 V load	✓	–	–	–
Output voltage at signal state 1	Process voltage UP - 0.8 V	–	–	–
Output current				
Nominal current per channel	500 mA at UP = 24 V DC	–	–	–
Maximum (total current of all channels)	8 A	–	–	–

Type	CI501-PNIO	CI502-PNIO	CI504-PNIO	CI506-PNIO
Residual current at signal state 0	< 0.5 mA	–	–	–
Demagnetization when switching off inductive loads	By internal varistors	–	–	–
Analog inputs AI	Max. number per module and with regard to the configuration: AIs / Measuring points			
Signal configuration per AI	4	–	–	–
0...10 V / -10 V... +10 V	4/4	–	–	–
0...20 mA / 4...20 mA	4/4	–	–	–
RTD using 2/3 wire needs 1/2 channel(s)	4/2	–	–	–
0...10 V using differential inputs, needs 2 channels	4/2	–	–	–
-10 V...+10 V using differential inputs, needs 2 channels	4/2	–	–	–
Digital signals (digital input)	4/4	–	–	–
Data when using the AI as digital input				
Input time delay	8 ms typically, configurable from 0.1 up to 32 ms	–	–	–
Input signal voltage	24 V DC	–	–	–
Outputs, single configurable as:				
Possible configuration per AO	✓	–	–	–
-10...+10 V	✓	–	–	–
0...20 mA / 4...20 mA	✓	–	–	–
Output resistance (load) when used as current output	0...500 Ω	–	–	–
Output loading capability when used as voltage output	±10 mA max.	–	–	–
Potential isolation				
Per module	✓	✓	✓	✓
Between Ethernet interface against the rest of the module	✓	✓	✓	✓
Voltage supply for the module	By external 24 V DC voltage via terminal UP			
Process voltage UP				
Nominal voltage	24 V DC			
Maximum ripple	5 %			
Current consumption on UP				
min. typ. (module alone)	0.260 A		0.150 A	
max. typ. (min. + loads)	0.260 A + load		0.150 A	
Reverse polarity protection	✓			
Fuse for process voltage UP	10 A miniature fuse			
Approvals	See detailed overview page 62 or www.abb.com/plc			

* Not simultaneously

Communication interface modules for real-time Ethernet

Technical data

Protocol	EtherCAT	
		
Type	CI511-ETHCAT	CI512-ETHCAT
Order code	1SAP220900R0001	1SAP221000R0001
Version available for Extreme Conditions	No	No
Communication Interface		
Protocol	EtherCAT	
ID Device configuration	Address is defined by position	
Field bus connection on TUs	2 x RJ45 with switch functionality for simple daisy chain on TU507-ETH or TU508-ETH	
Number of Channels per Module		
Digital Inputs DI	8	8
Digital outputs DO	8	8
Analog Inputs AI	4	–
Analog outputs AO	2	–
Digital configurable channels DC (configurable as inputs or outputs)	–	8
Additional configuration of channels as:		
Fast counter (onboard I/O)	–	
Occupies max. 1 DO or DC when used as counter	–	
Local I/O extension	No extension modules allowed	
Max. number of extension modules	–	
Digital inputs		
Input signal voltage	24 V DC	
Input characteristic acc. to EN 61 132-2	Type 1	
0 signal	-3 V DC... +5 V DC	
Undefined signal state	+5 V DC... +15 V DC	
1 signal	+15 V DC...+30 V DC	
Residual ripple, range for 0 signal	-3 V DC...+5 V DC	
Residual ripple, range for 1 signal	+15 V DC...+30 V DC	
Input time delay (0 -> 1 or 1 -> 0)	8 ms typically, configurable from 0.1 up to 32 ms	
Digital outputs		
Transistor outputs 24 V DC, 0.5 A	✓	
Readback of output	✓	
Outputs, supplied via process voltage UP	✓	
Switching of 24 V load	✓	
Output voltage at signal state 1	Process voltage UP - 0.8 V	
Output current		
Nominal current per channel	500 mA at UP = 24 V DC	
Maximum (total current of all channels)	8 A	
Residual current at signal state 0	< 0.5 mA	
Demagnetization when switching off inductive loads	By internal varistors	
Analog inputs AI	Max. number per module and with regard to the configuration: AIs / Measuring points	
Signal configuration per AI	4	–
0...10 V / -10 V... +10 V	4/4	–
0...20 mA / 4...20 mA	4/4	–
RTD using 2/3 wire needs 1/2 channel(s)	4/2	–
0...10 V using differential inputs, needs 2 channels	4/2	–
-10 V...+10 V using differential inputs, needs 2 channels	4/2	–
Digital signals (digital input)	4/4	–
Data when using the AI as digital input		
Input time delay	8 ms typically, configurable from 0.1 up to 32 ms	–
Input signal voltage	24 V DC	–
Outputs, single configurable as:		
Possible configuration per AO	✓	–
-10...+10 V	✓	–
0...20 mA / 4...20 mA	✓	–
Output resistance (load) when used as current output	0...500 Ω	–
Output loading capability when used as voltage output	±10 mA max.	–

Communication interface modules for real-time Ethernet

Technical data

Type	CI511-ETHCAT	CI512-ETHCAT
Potential isolation		
Per module	✓	✓
Between Ethernet interface against the rest of the module	✓	✓
Between the input channels	–	–
Between the output channels	–	–
Voltage supply for the module	By external 24 V DC voltage via terminal UP	
Process voltage UP		
Nominal voltage	24 V DC	
Maximum ripple	5 %	
Current consumption on UP		
min. typ. (module alone)	0.260 A	
max. typ. (min. + loads)	0.260 A + load	
Reverse polarity protection	✓	
Fuse for process voltage UP	10 A miniature fuse	
Approvals	See detailed overview page 62 or www.abb.com/plc	

AC500 system data

Technical data

Operating and ambient conditions

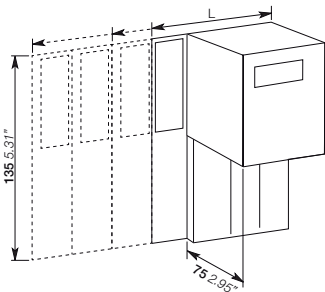
Voltages according to EN 61131-2		
24 V DC	Process and supply voltage	24 V DC (-15 %, +20 % without ripple)
	Absolute limits	19.2 V...30 V inclusive ripple
	Ripple	< 5 %
	Protection against reverse polarity	10 s
120 V AC	Line voltage	120 V AC (-15 %, +10 %)
	Frequency	47 Hz..62.4 Hz / 50...60 Hz (-6 %, +4 %)
230 V AC	Line voltage	230 V AC (-15 %, +10 %)
	Frequency	47 Hz..62.4 Hz / 50...60 Hz (-6 %, +4 %)
120-240 V AC	Wide-range supply	–
	Line voltage	102 V...264 V / 120 V...240 V (-15 %, +10 %)
	Frequency	47 Hz..62.4 Hz / 50...60 Hz (-6 %, +4 %)
Allowed interruptions of power supply acc. to EN 61131-2	DC supply	Interruption < 10 ms, time between 2 interruptions > 1 s, PS2
	AC supply	Interruption < 0.5 periods, time between 2 interruptions > 1 s
Important: Exceeding the maximum power supply voltage (>30 V DC) for process or supply voltages could lead to unrecoverable damage of the system. The system could be destroyed.		
Temperature	Operation	0 °C...+60 °C (horizontal mounting of modules)
		0 °C...+40 °C (vertical mounting of modules and output load reduced to 50 % per group)
	Storage	-40 °C...+70 °C
Humidity	Transport	-40 °C...+70 °C
		Max. 95 %, without condensation
Air pressure	Operation	> 800 hPa / < 2000 m
	Storage	> 660 hPa / < 3500 m

Creepage distances and clearances

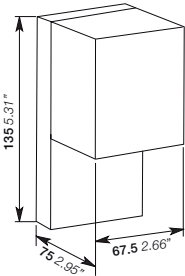
The creepage distances and clearances meet the requirements of the overvoltage category II, pollution degree 2

Insulation test voltages, routine test, according to EN 61131-2		
230 V circuits against other circuitry	2500 V	1.2/50 µs
120 V circuits against other circuitry	1500 V	1.2/50 µs
120 V to 240 V circuits against other circuitry	2500 V	1.2/50 µs
24 V circuits (supply, 24 V inputs/outputs), if they are electrically isolated against other circuitry	500 V	1.2/50 µs
COM interfaces, electrically isolated	500 V	1.2/50 µs
COM interfaces, electrically not isolated	not applicable	not applicable
FBP interface	500 V	1.2/50 µs
Ethernet	500 V	1.2/50 µs
230 V circuits against other circuitry	1350 V	AC 2 s
120 V circuits against other circuitry	820 V	AC 2 s
120 V to 240 V circuits against other circuitry	1350 V	AC 2 s
24 V circuits (supply, 24 V inputs/outputs), if they are electrically isolated against other circuitry	350 V	AC 2 s
COM interfaces, electrically isolated	350 V	AC 2 s
COM interfaces, electrically not isolated	not applicable	not applicable
FBP interface	350 V	AC 2 s
Ethernet	350 V	AC 2 s

Main dimensions mm, inches



Type	Nr communication modules	Length L	
		mm	inches
TB511-ETH	1	95.5	3.76
TB521-ETH	2	123.5	4.86
TB541-ETH	4	179.5	7.07



AC500 system data

Technical data

Power supply units

For the supply of the modules, power supply units according to PELV specifications must be used.

Electromagnetic Compatibility

Immunity

Against electrostatic discharge (ESD)	According to EN 61000-4-2, zone B, criterion B
Electrostatic voltage in case of air discharge	8 kV
Electrostatic voltage in case of contact discharge	4 kV, in a closed switch-gear cabinet 6 kV (1)
ESD with communication connectors	In order to prevent operating malfunctions, it is recommended, that the operating personnel discharge themselves prior to touching communication connectors or perform other suitable measures to reduce effects of electrostatic discharges.
ESD with connectors of Terminal Bases	The connectors between the Terminal Bases and CPUs or Communication Modules must not be touched during operation. The same is valid for the I/O-Bus with all modules involved.

Immunity

Against the influence of radiated (CW radiated)	According to EN 61000-4-3, zone B, criterion A
Test field strength	10 V/m
Against transient interference voltages (burst)	According to EN 61000-4-4, zone B, criterion B
Supply voltage units (AC, DC)	2 kV
Digital inputs/outputs (24 V DC)	2 kV
Digital inputs/outputs (120/230 V AC)	2 kV
Analog inputs/outputs	1 kV
CS31 system bus	2 kV
Serial RS-485 interfaces (COM)	2 kV
Serial RS-232 interfaces (COM, not for PM55x and PM56x)	1 kV
ARCNET	1 kV
FBP	1 kV
Ethernet	1 kV
I/O supply, DC-out	1 kV
Against the influence of line-conducted interferences (CW conducted)	According to EN 61000-4-6, zone B, criterion A
Test voltage	3 V zone B, 10 V is also met
High energy surges	According to EN 61000-4-5, zone B, criterion B
Power supply DC	1 kV CM* / 0.5 kV DM*
DC I/O supply	0.5 kV CM* / 0.5 kV DM*
Buses, shielded	1 kV CM*
AC I/O unshielded	2 kV CM* / 1 kV DM*
I/O analog, I/O DC unshielded	1 kV CM* / 0.5 kV DM*
Radiation (radio disturbance)	According to EN 55011, group 1, class A

(1) High requirement for shipping classes are achieved with additional specific measures (see specific documentation)

* CM = Common Mode - DM = Differential Mode

Mechanical Data

Wiring method / terminals

Mounting	Horizontal
Degree of protection	IP20 (if all terminal screws are tightened)
Housing	According to UL 94
Vibration resistance acc. to EN 61131-2	all three axes 2 Hz...15 Hz, continuous 3.5 mm 15 Hz...150 Hz, continuous 1 g (higher values on request)
Vibration resistance with SD Memory Card inserted	15 Hz...150 Hz, continuous 1 g
Shock resistance	All three axes 15 g, 11 ms, half-sinusoidal
Shipping specific requirements	-

Mounting of the modules

DIN rail according to DIN EN 50022	35 mm, depth 7.5 mm or 15 mm
Mounting with screws	Screws with a diameter of 4 mm
Fastening torque	1.2 Nm

AC500-eCo system data

Technical data

Operating and ambient conditions

Voltages according to EN 61131-2		
24 V DC	Process and supply voltage	24 V DC (-15 %, +20 % without ripple)
	Absolute limits	19.2 V...30 V inclusive ripple
	Ripple	< 5 %
	Protection against reverse polarity	10 s
120 V AC	Line voltage	120 V AC (-15 %, +10 %)
	Frequency	47 Hz...62.4 Hz / 50...60 Hz (-6 %, +4 %)
230 V AC	Line voltage	230 V AC (-15 %, +10 %)
	Frequency	47 Hz...62.4 Hz / 50...60 Hz (-6 %, +4 %)
120–240 V AC	Wide-range supply	
	Line voltage	102 V...264 V / 120 V...240 V (-15 %, +10 %)
	Frequency	47 Hz...62.4 Hz / 50...60 Hz (-6 %, +4 %)
Allowed interruptions of power supply acc. to EN 61131-2	DC supply	Interruption < 10 ms, time between 2 interruptions > 1 s, PS2
	AC supply	Interruption < 0.5 periods, time between 2 interruptions > 1 s
Important: Exceeding the maximum power supply voltage (>30 V DC) for process or supply voltages could lead to unrecoverable damage of the system. The system could be destroyed.		
Temperature	Operation	0 °C...+60 °C (horizontal mounting of modules)
		0 °C...+40 °C (vertical mounting of modules and output load reduced to 50 % per group)
	Storage	-40 °C...+70 °C
Humidity	Transport	-40 °C...+70 °C
		Max. 95 %, without condensation
Air pressure	Operation	> 800 hPa / < 2000 m
	Storage	> 660 hPa / < 3500 m

Creepage distances and clearances

The creepage distances and clearances meet the requirements of the overvoltage category II, pollution degree 2

Insulation Test Voltages, Routine Test, according to EN 61131-2		
230 V circuits against other circuitry	2500 V	1.2/50 µs
120 V circuits against other circuitry	1500 V	1.2/50 µs
120 V to 240 V circuits against other circuitry	2500 V	1.2/50 µs
24 V circuits (supply, 24 V inputs/outputs), if they are electrically isolated against other circuitry	500 V	1.2/50 µs
COM interfaces, electrically isolated	500 V	1.2/50 µs
COM interfaces, electrically not isolated	not applicable	not applicable
Ethernet	500 V	1.2/50 µs
230 V circuits against other circuitry	1350 V	AC 2 s
120 V circuits against other circuitry	820 V	AC 2 s
120 V to 240 V circuits against other circuitry	1350 V	AC 2 s
24 V circuits (supply, 24 V inputs/outputs), if they are electrically isolated against other circuitry	350 V	AC 2 s
COM interfaces, electrically not isolated	not applicable	not applicable
Ethernet	350 V	AC 2 s

Main dimensions mm, inches



AC500-eCo system data

Technical data

Power supply units

For the supply of the modules, power supply units according to PELV specifications must be used.

Electromagnetic Compatibility

Immunity

Against electrostatic discharge (ESD)	According to EN 61000-4-2, zone B, criterion B
Electrostatic voltage in case of air discharge	8 kV
Electrostatic voltage in case of contact discharge	4 kV, in a closed switch-gear cabinet 6 kV (1)
ESD with communication connectors	In order to prevent operating malfunctions, it is recommended, that the operating personnel discharge themselves prior to touching communication connectors or perform other suitable measures to reduce effects of electrostatic discharges.
ESD with connectors of Terminal Bases	The connectors between the Terminal Bases and CPUs or Communication Modules must not be touched during operation. The same is valid for the I/O-Bus with all modules involved.
Against the influence of radiated (CW radiated)	According to EN 61000-4-3, zone B, criterion A
Test field strength	10 V/m
Against transient interference voltages (burst)	According to EN 61000-4-4, zone B, criterion B
Supply voltage units (AC, DC)	2 kV
Digital inputs/outputs (24 V DC)	2 kV
Digital inputs/outputs (120/230 V AC)	2 kV
Analog inputs/outputs	1 kV
CS31 system bus	2 kV
Serial RS-485 interfaces (COM)	2 kV
Ethernet	1 kV
I/O supply, DC-out	1 kV
Against the influence of line-conducted interferences (CW conducted)	According to EN 61000-4-6, zone B, criterion A
Test voltage	3 V zone B, 10 V is also met.
High energy surges	According to EN 61000-4-5, zone B, criterion B
Power supply AC	2 kV CM* / 1 kV DM*
Power supply DC	1 kV CM* / 0.5 kV DM*
DC I/O supply, add. DC-supply-out	0.5 kV CM* / 0.5 kV DM*
Buses, shielded	1 kV CM*
AC-I/O unshielded	2 kV CM* / 1 kV DM*
I/O analog, I/O DC unshielded	1kV CM* / 0.5 kV DM*
Radiation (radio disturbance)	According to EN 55011, group 1, class A

(1) High requirement for shipping classes are achieved with additional specific measures (see specific documentation)

* CM = Common Mode - DM = Differential Mode

Mechanical Data

Wiring method / terminals

Mounting	Horizontal
Degree of protection	IP20
Housing	According to UL 94
Vibration resistance acc. to EN 61131-2	all three axes (DIN rail mounting) 5 Hz ... 11.9 Hz, continuous 3.5 mm 11.9 Hz ... 150 Hz, continuous 1 g
Vibration resistance with SD Memory Card inserted	15 Hz...150 Hz, continuous 1 g
Shock resistance	All three axes 15 g, 11 ms, half-sinusoidal
Shipping specific requirements	
Mounting of the modules	
DIN rail according to DIN EN 50022	35 mm, depth 7.5 mm or 15 mm
Mounting with screws	Screws with a diameter of 4 mm
Fastening torque	1.2 Nm

AC500-XC system data - XC products for Extreme Conditions

Technical data

Operating and ambient conditions

Voltages according to EN 61131-2

24 V DC	Process and supply voltage	24 V DC (-15 %, +20 % without ripple)
	Absolute limits	19.2 V...30 V inclusive ripple
	Ripple	< 5 %
	Protection against reverse polarity	10 s
Allowed interruptions of power supply acc. to EN 61131-2	DC supply	Interruption < 10 ms, time between 2 interruptions > 1 s, PS2

Important: Exceeding the maximum power supply voltage (>30 V DC) for process or supply voltages could lead to unrecoverable damage of the system. The system could be destroyed.

Temperature	Operating	-30 °C ... +70 °C (horizontal mounting of modules) (1)
		0 °C ... +40 °C (vertical mounting of modules allowed, but output load reduced to 50 % per group); no application in salt mist environment
		+60 °C ... +70 °C (2)
	Storage	-40 °C ... +85 °C
Storage	Transport	-40 °C ... +85 °C
		IEC 60068-2-1 Test Ab: cold withstand test -40 °C / 16 h IEC 60068-2-2 Test Bb: dry heat withstand test +85 °C / 16 h
Humidity	Max. 95 % with condensation	EN 60068-2-30 Test Db: Cyclic (12h / 12h) Damp-Heat Test 55 °C, 93 % / 25 °C, 95 %, 6 cycles EN 60068-2-3, Stationary Humidity Test: 40 °C, 93 % Rh, 240 h
Air pressure	Operating	> 620 hPa / < 4000 m (3)
	Storage	> 620 hPa / < 4000 m (3)
Immunity to corrosive gases	4 components hazard gas test:	
	Acc. ISA S71.04.1985 Harsh group A, G3/GX	
	Acc. DIN EN 60721-3-3 3C2 / 3C3	
	Acc. DIN EN 60068-2-60 method 4	
		H2S 100 ± 10 ppb
		NOx 1250 ± 20 ppb
		CL2 100 ± 10 ppb
		SO2/SO3 300 ± 10 ppb
	Temperature	25 ± 1 °C
	Humidity	75 ± 3 %
Immunity to salt mist	Duration	21 days
	DIN_EN_60068-2-52 (1996-10) Test Kb	
	Severity	1
	Concentration NaCl	5 ± 1 %
	PH value (20 ± 2°C)	between 6.5 - 7.2
	Temperature during test	15 °C ... 35 °C
	Duration	28 days

(1) Below 0°C the display might not be readable. Below -25 °C the proper functionality of the SD Memory Card MC502 is not guaranteed

(2) Only 2 communication modules allowed

(3) On request

Creepage distances and clearances

The creepage distances and clearances meet the requirements of the overvoltage category II, pollution degree 2

Insulation test voltages

The insulation test are performed according to EN 61131-2.

AC500-XC system data - XC products for Extreme Conditions

Technical data

Power supply units

For the supply of the modules, power supply units according to PELV specifications must be used.

Electromagnetic Compatibility

Immunity (Extended immunity on request)

Against electrostatic discharge (ESD)	According to EN 61000-4-2, zone B, criterion B
Electrostatic voltage in case of air discharge	8 kV
Electrostatic voltage in case of contact discharge with communication connectors	4 kV
with connectors of Terminal Bases	In order to prevent operating malfunctions, it is recommended, that the operating personnel discharge themselves prior to touching communication connectors or perform other suitable measures to reduce effects of electrostatic discharges.
	The connectors between the Terminal Bases and CPUs or Communication Modules must not be touched during operation. The same is valid for the I/O-Bus with all modules involved.
Against transient interference voltages (burst)	According to EN 61000-4-4, zone B, criterion B
Supply voltage units (AC, DC)	4 kV
Digital inputs/outputs (24 V DC)	2 kV
Digital inputs/outputs (120/230 V AC)	2 kV
Analog inputs/outputs	1 kV
CS31 system bus	2 kV
Serial RS-485 interfaces (COM)	2 kV
Serial RS-232 interfaces (COM)	1 kV
FBP	1 kV
Ethernet	1 kV
I/O supply, DC-out	1 kV
High energy surges	According to EN 61000-4-5, zone B, criterion B
Power supply DC	1 kV CM* / 0.5 kV DM*
DC I/O supply	0.5 kV CM* / 0.5 kV DM*
Buses, shielded	1 kV CM*
AC-I/O	2 kV CM* / 1 kV DM*
I/O analog, I/O DC unshielded	1 kV CM* / 0.5 kV DM*
Against the influence of radiated disturbances (CW radiated)	According to EN 61000-4-3, zone B, criterion A
Test field strength	10 V/m
Against the influence of line-conducted interferences (CW conducted)	According to EN 61000-4-6, zone B, criterion A
Test voltage	3 V zone B, 10 V is also met
Radiation (radio disturbance)	According to EN 55011, group 1, class A

* CM = Common Mode - DM = Differential Mode

Mechanical Data

Wiring method / terminals

Mounting	Horizontal
Degree of protection	IP20
Housing	According to UL 94
Vibration resistance acc. to EN 61131-2	2 g, 5 Hz ... 500 Hz
Vibration resistance acc. to IEC 68-2-64-B.6	5 Hz ... 500 Hz, 4 g rms, 1.5 h / axis (survival only)
Vibration resistance acc. to IEC 68-2-64	5 Hz ... 500 Hz, 1.9 g rms, 1.5h / axis
Vibration resistance with SD Memory Card inserted	15 Hz ... 150 Hz, continuous 2 g
Shock resistance	All three axes 15 g, 11 ms, half-sinusoidal
Shipping specific requirements	6 kV ESD contact Extended EMC

Mounting of the modules

DIN rail according to DIN EN 50022	35 mm, depth 7.5 mm or 15 mm
Mounting with screws	Screws with a diameter of 4 mm
Fastening torque	1.2 Nm

AC500 communication - CS31

Technical data

CS31 functionality

	AC500 CPU with integrated CS31 interface	S500 I/O with communication interface DC551-CS31 CI590-CS31-HA CI592-CS31
Version available for Extreme Conditions	No	
Master	Yes, at COM1	–
Slave	No	Yes / Redundant for CI590-CS31-HA
Protocols supported	ABB CS31 protocol	
Diagnosis		
Error indication	On LCD display of the CPU / AC500-eCo Error LED	Via module LEDs
Online diagnosis	Yes	
Error code	Errors are recorded in the diagnosis system of the CPU	
Associated function blocks	Yes	
Physical layer	RS485 / 2 x RS485 for CI590-CS31-HA for redundancy	
Connection	Plug at COM1	Screw-type or spring-type terminals
Baud rate	187.5 kbit/s	
Distance	AC500-eCo: up to 50 m and up to 500 m using the isolator TK506 / AC500: up to 500 m; up to 2000 m using a repeater	
Max. number of modules on fieldbus	31 modules max. Please note: The DC551 bus interface occupies one or two module addresses (if counters are configured onboard or if the module is a mixed digital analog module). Depending on the configuration, or if the module contains also mixed digital analog I/O, connected extension modules can occupy further module addresses.	
Configuration		
Station address configuration	No	Using rotary switches (99 max.)

Notes

3

Scalable PLC AC500

Approvals and certifications

Symbols and legends:

- Standard product certified: product sticker wears approval mark when it is obligatory
- In special model certified
- ◆ Certified with restrictions
- n.a. Not applicable
- n.n. Not needed

- Approval submitted, date of approval delivery on request
- No general approbation obligation, unless special cases
- ◇ Submission planned (no date available, details on request)
- XC Xtrem Conditions

Approvals					Shipping classification companies						
Symbol											
Abbreviation	CE	cUL	C-Tick	GOST R	ABS	BV	DNV	GL	LRS	RINA	RMRS
Approved in		USA/Canada	Australia	Russia	USA	France	Norway	Germany	Great Britain	Italy	Russia
		Class 1, Division 2, Groups A, B, C, D									
TB511-ARCNET	■	■	■	■	■	■	■	■	■	■	■
TB511-ETH (-XC)	■	■	■	■	■	■	■	■	■	■	■
TB521-ARCNET	■	■	■	■	■	■	■	■	■	■	■
TB521-ETH (-XC)	■	■	■	■	■	■	■	■	■	■	■
TB541-ETH (-XC)	■	■	■	■	■	■	■	■	■	■	■
PM571	■	■	■	■	■	■	■	■	■	■	■
PM571-ETH	■	■	■	■	■	■	■	■	■	■	■
PM572	■	■	■	■	■	■	■	■	■	■	■
PM573-ETH (-XC)	■	■	■	■	■	■	■	■	■	■	■
PM581	■	■	■	■	■	■	■	■	■	■	■
PM581-ARCNET	■	■	■	■	■	■	■	■	■	■	■
PM581-ETH	■	■	■	■	■	■	■	■	■	■	■
PM582 (-XC)	■	■	■	■	■	■	■	■	■	■	■
PM582-ARCNET	■	■	■	■	■	■	■	■	■	■	■
PM582-ETH	■	■	■	■	■	■	■	■	■	■	■
PM583-ETH (-XC)	■	■	■	■	■	■	■	■	■	■	■
PM590	■	■	■	■	■	■	■	■	■	■	■
PM590-ARCNET	■	■	■	■	■	■	■	■	■	■	■
PM590-ETH	■	■	■	■	■	■	■	■	■	■	■
PM591	■	■	■	■	■	■	■	■	■	■	■
PM591-ARCNET	■	■	■	■	■	■	■	■	■	■	■
PM591-ETH (-XC)	■	■	■	■	■	■	■	■	■	■	■
PM592-ETH (-XC)	■	■	■	■	■	■	■	■	■	■	■
CM572-DP (-XC)	■	■	■	■	■	■	■	■	■	■	■
CM574-RS	■	■	■	■	■	■	■	■	■	■	■
CM574-RCOM	■	■	■	■	■	■	■	■	■	■	■
CM575-DN	■	■	■	■	■	■	■	■	■	■	■
CM577-ETH (-XC)	■	■	■	■	■	■	■	■	■	■	■
CM578-CN (-XC)	■	■	■	■	■	■	■	■	■	■	■
CM579-ETHCAT	■	■	■	■	■	■	■	■	■	■	■
CM579-PNIO (-XC)	■	■	■	■	■	■	■	■	■	■	■
CM588-CN (-XC)	■	■	◇	■	■	■	■	■	■	◇	■
MC502	n.a.	■	n.a.	■	■	■	■	■	■	■	■
TK501	n.a.	■	n.a.	■	n.a.	n.a.	n.a.	n.a.	n.a.	■	■
TK502	n.a.	■	n.a.	■	n.a.	n.a.	n.a.	n.a.	n.a.	■	■
TA521	n.a.	■	n.a.	■	n.a.	n.a.	n.a.	n.a.	n.a.	■	■
TA523	n.a.	■	n.a.	■	n.a.	n.a.	n.a.	n.a.	n.a.	■	■
TA524	n.a.	■	n.a.	■	n.a.	n.a.	n.a.	■	n.a.	■	■
TA525	n.a.	■	n.a.	■	n.a.	n.a.	n.a.	n.a.	n.a.	■	■
TA526	n.a.	■	n.a.	■	n.a.	n.a.	n.a.	n.a.	n.a.	■	■
TA510-CASE	■	n.a.	n.a.	n.a.	n.n.	n.n.	n.n.	n.n.	n.n.	n.n.	n.n.
TA527	n.a.	n.a.	n.a.	■	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TA528	n.a.	n.a.	n.a.	■	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
PS501-PROG	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
PS541-HMI	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
PS552-MC	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
TU505-FBP	■	■	■	■	■	■	■	■	■	■	■
TU506-FBP	■	■	■	■	■	■	■	■	■	■	■
TU507-ETH	■	■	■	■	■	■	■	■	■	■	■
TU508-ETH (-XC)	■	■	■	■	■	■	■	■	■	■	■
TU509	◇	■	◇	◇	■	■	■	■	■	◇	■
TU510 (-XC)	■	■	◇	◇	■	■	■	■	■	◇	■
TU517	◇	■	◇	◇	■	■	■	■	■	◇	■
TU518 (-XC)	■	■	◇	◇	■	■	■	■	■	◇	■
TU520-ETH (-XC)	■	■	◇	■	■	■	■	■	■	◇	■
TU515	■	■	■	■	■	■	■	■	■	■	■
TU516 (-XC)	■	■	■	■	■	■	■	■	■	■	■
TU531	■	■	■	■	■	■	■	■	■	■	■
TU532 (-XC)	■	■	■	■	■	■	■	■	■	■	■
TU541	■	■	■	■	■	■	■	■	■	■	■
TU542	■	■	■	■	■	■	■	■	■	■	■
TU551-CS31	■	■	■	■	■	■	■	■	■	■	■
TU552-CS31 (-XC)	■	■	■	■	■	■	■	■	■	■	■
CI501-PNIO (-XC)	■	■	■	■	■	■	■	■	■	■	■
CI502-PNIO (-XC)	■	■	■	■	■	■	■	■	■	■	■
CI504-PNIO (-XC)	■	■	◇	■	■	◇	◇	■	■	◇	■

Scalable PLC AC500

Approvals and certifications

Symbols and legends:

Standard product certified: product sticker wears approval mark when it is obligatory
 In special model certified
 Certified with restrictions
 n.a. Not applicable n.n. Not needed

Approval submitted, date of approval delivery on request
 No general approbation obligation, unless special cases
 Submission planned (no date available, details on request)
 XC Xtrem Conditions

Symbol	Approvals				Shipping classification companies						
Abbreviation	CE	cUL	C-Tick	GOST R	ABS	BV	DNV	GL	LRS	RINA	RMRS
Approved in		USA/Canada	Australia	Russia	USA	France	Norway	Germany	Great Britain	Italy	Russia
		Class 1, Division 2, Groups A, B, C, D									
CI506-PNIO (-XC)	■	■	◇	■	◇	◇	■	■	■	◇	■
CI511-ETHCAT	■	■	■	■	■	■	■	■	■	■	■
CI512-ETHCAT	■	■	■	■	■	■	■	■	■	■	■
CI541-DP (-XC)	■	■	◇	■	◇	◇	■	■	■	◇	■
CI542-DP (-XC)	■	■	◇	■	◇	◇	■	■	■	◇	■
CI581-CN (-XC)	■	■	◇	■	◇	◇	■	■	■	◇	■
CI582-CN (-XC)	■	■	◇	■	◇	◇	■	■	■	◇	■
DA501 (-XC)	■	■	■	■	■	■	■	■	■	■	■
CD522 (-XC)	■	■	■	■	■	■	■	■	■	■	■
DC522 (-XC)	■	■	■	■	■	■	■	■	■	■	■
DC523 (-XC)	■	■	■	■	■	■	■	■	■	■	■
DC532 (-XC)	■	■	■	■	■	■	■	■	■	■	■
DC551-CS31 (-XC)	■	■	■	■	■	■	■	■	■	■	■
DI524 (-XC)	■	■	■	■	■	■	■	■	■	■	■
DX522 (-XC)	■	■	■	■	■	■	■	■	■	■	■
DX531	■	■	■	■	■	■	■	■	■	■	■
AI523 (-XC)	■	■	■	■	■	■	■	■	■	■	■
AI531 (-XC)	■	■	■	■	■	■	■	■	■	■	■
AO523 (-XC)	■	■	■	■	■	■	■	■	■	■	■
AX521 (-XC)	■	■	■	■	■	■	■	■	■	■	■
AX522 (-XC)	■	■	■	■	■	■	■	■	■	■	■
DC541-CM (-XC)	■	■	■	■	■	■	■	■	■	■	■
PD501-4CH	■	■	■	■	■	■	■	■	■	■	■
PM554-R-AC	■	■	■	■	■	■	■	■	■	■	■
PM554-T	■	■	■	■	■	■	■	■	■	■	■
PM554-T-ETH	■	■	■	■	■	■	■	■	■	■	■
PM564-R	■	■	■	■	■	■	■	■	■	■	■
PM564-R-AC	■	■	■	■	■	■	■	■	■	■	■
PM564-R-ETH	■	■	■	■	■	■	■	■	■	■	■
PM564-R-ETH-AC	■	■	■	■	■	■	■	■	■	■	■
PM564-T	■	■	■	■	■	■	■	■	■	■	■
PM564-T-ETH	■	■	■	■	■	■	■	■	■	■	■
MC503	■	■	■	■	■	■	■	■	■	■	■
TK503	■	■	■	■	■	■	■	■	■	■	■
TK504	■	■	■	■	■	■	◇	◇	◇	◇	◇
TK506	■	◇	◇	■	◇	◇	◇	◇	◇	◇	◇
TA561-RTC	■	■	■	■	■	■	■	■	■	■	■
TA562-RS	■	■	■	■	■	■	■	■	■	■	■
TA562-RS-RTC	■	■	■	■	■	■	■	■	■	■	■
TA566	n.a.	n.a.	n.a.	■	■	■	■	n.a.	■	n.a.	■
TA560	n.a.	■	■	■	■	■	■	■	■	■	■
TA564-9	■	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
TA564-11	■	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
TA565-9	■	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
TA565-11	■	◇	◇	◇	◇	◇	◇	◇	◇	◇	◇
TA570	n.a.	■	◇	■	◇	◇	◇	◇	◇	■	■
AI561	■	■	■	■	■	■	■	■	■	■	■
AI562	■	■	■	■	■	■	■	■	■	■	■
AI563	■	■	■	■	■	■	■	■	■	■	■
AO561	■	■	■	■	■	■	■	■	■	■	■
AX561	■	■	■	■	■	■	■	■	■	■	■
DC561	■	■	■	■	■	■	■	■	■	■	■
DI561	■	■	■	■	■	■	■	■	■	■	■
DI562	■	■	■	■	■	■	■	■	■	■	■
DI571	■	■	■	■	■	■	■	■	■	■	■
DO561	■	■	■	■	■	■	■	■	■	■	■
DO571	■	■	■	■	■	■	■	■	■	■	■
DO572	■	■	■	■	■	■	■	■	■	■	■
DX561	■	■	■	■	■	■	■	■	■	■	■
DX571	■	■	■	■	■	■	■	■	■	■	■
L44440901501	□	■	◇	◇	■	◇	■	■	■	■	◇
L44441101501	□	■	◇	◇	■	◇	■	■	■	■	◇
L44460901501	□	■	◇	◇	■	◇	■	■	■	■	◇
L44461101501	□	■	◇	◇	■	◇	■	■	■	■	◇
L44470901501	□	■	◇	◇	■	◇	■	■	■	■	◇
L44471101501	□	■	◇	◇	■	◇	■	■	■	■	◇

Scalable PLC AC500

Software, engineering overview



Technical data	PS501 Control Builder Plus
Description	Configuration and programming tool for AC500 based on CoDeSys Automation Platform Technology.
Features	– Automation system design – PLC configuration and programming – All 5 IEC 61131-5 languages IL, LD, FBD, SFC, ST, plus CFC – Extensive programming libraries – I/O and communication module setup – Protocol settings (UDP, TCP/IP, FTP, SNTP, SMTP, HTTP, Modbus TCP, IEC 60870-5-104) – Network device scan: scan function of IP Configurator – PLC firmware update, download and online change to single or several PLCs – Recipe management – PLC simulation and debugging – Online diagnostics – Multiple watch lists – Drive Manager – remote drive configuration and diagnostics via PLC tunneling on PROFINET or PROFIBUS connection – CP600 project and Pluto safety data in same project file, engineering tools linked from Control Builder Plus – CoDeSys visualization for PC – Languages: English, German, French, Spanish, Chinese.
Minimum engineering PC requirements	– Windows XP SP3, Windows 7 SP1 32 or 64-bit, 1 GHz, 2 GB RAM, 1 GB free disk space.
Target Systems	– AC500-eCo, AC500, AC500-XC.
Supported Devices	– All I/O and fieldbus modules for AC500 family – PROFINET/PROFIBUS DP drives ACS355, ACS850, ACS880, ACSM1 – HMI CP600 (1) – Jokab pluto safety (2) – Many third party fieldbus devices can be integrated
Components and options	– PS501 Control Builder Plus – Drive manager plug-In – CoDeSys tools (OPC server and clients, service tool, PLC gateway, IP configuration)
Comments	(1) requires PB610 panel builder (2) requires pluto manager.



PB610 Panel Builder 600

Configuration and programming tool for custom HMIs on CP600, along with a variety of options in a built-in widget library

- Dynamic objects with configurable properties
- User management
- Flexible communication features (Modbus RTU, Modbus TCP, CoDeSys Ethernet and serial)
- Integration with PS501 and CoDeSys
- Scalable vector graphics (SVG)
- True type fonts
- Multi-language displays, runtime language switching
- 16 languages incl. Chinese character set
- Unicode capability
- Trend logging and presentation (real-time or buffered)
- Events, alarms, historical event lists
- Rich and stylish widget library via drag&drop, including numerical, text, analog auges and graphic image formats
- Working with recipes
- Powerful macro editor using Java script based on standard ECMA-262 to execute widgets and page events
- SMTP/sending e-mail
- SNTP/network time
- Powerful scheduler including sunrise
- Audit trails/user action logging
- Remote CP600 access from PC through Panel Builder 600 client
- Languages: English.

– Windows XP SP2, Windows vista SP1, Windows 7 SP1 32 or 64- bit, 1 GHz, 512 kB RAM, 100 MB free disk space.

– All CP6xx panels.

- PB610 Panel Builder Plus 600
- PB610 Panel Builder 600 windows client (standalone or browserbased/ActiveX).

DigiVis 500

Creation and operation of windows-based supervision of AC500- based automation systems via OPC

- User interface/system supervision design for PC without need for scripting
- Clear information hierarchy
- Optional user authorization control and security lock, up to 16 user profiles with up to 1,000 users
- Multi-monitor screens
- Rich choice of displays, images and log functions
- Graphics editor and macros
- Trending and archiving
- Acoustic alarms
- OPC configuration
- Commissioning & debugging
- Automatic code documentation
- DigiBrowse – standalone archive viewer
- Operation mode
- Report generation
- Audit trails/user action logging
- On-the-fly software updating without restarting the application
- Languages: English.

– Windows XP Professional SP3 or Windows 7 Professional SP1, 32 or 64-bit, 2 GHz, 1 GB RAM, 10 GB free disk space.

– PC with Windows XP Professional SP3 or Windows 7 Professional SP1, 32-bit, 2 GHz, 3 GB RAM, 2 GB free disk space (≥80 GB for archiving).

- DigiVis 500 graphics builder
- DigiVis 500 operations
- ABB OPC tunnel
- AC500 standard tag type library
- Web display runtime
- Dual monitor support
- DigiBrowse
- Security lock.

Scalable PLC AC500

AC500 software, Control Builder Plus libraries



PS541-HMI



PS553-DRIVES

Description	PS541-HMI	PS553-DRIVES
Features	Visualization package for CoDeSys Run time system for the execution of the CoDeSys visualizations. – Fast creation of software for operating machines and plants using the visualizations generated in CoDeSys – Uses the already existent project file for visualization – Protection of application program possible with read-only. All the other operational elements of CoDeSys like menus or the object organiser are not visible then – Seamless integration into the CoDeSys PLC programming system: - No tag list of variables needed, work directly with the CoDeSys variables - Variable values in input fields can be modified by expressions - Object-oriented masks -> build modules similar to the CoDeSys function blocks in the visualization. – Functions "Sampling trace" and "read/write recipe" are also available in CoDeSys HMI.	Industrial drives integration library Library enabling fast and simple engineering when using ABB's AC500 PLC and ABB's industrial ACS Drives. Covers all standard control needs for start, stop and speed operations. Generic drives control blocks for ABB ACS drives (using the ABB drives profile): – Simple and fast integration of standard industrial drives from ABB with one control block for all applications, usable for - PROFIBUS - PROFINET - CANopen - EtherCAT. – Modbus RTU and modbus TCP communication and control blocks, with token for modbus handling for many drives – Generic device blocks to integrate other Modbus RTU devices, e.g. a panel in some Modbus line with the drives.
How to get	– Separate license package with license code – Software is already included in PS501-engineering package. – package.	– Software is already included in PS501-engineering package or downloadable
Target systems	All AC500 CPUs	All AC500 CPUs

(1) Not available before Q2/2013.



PS552-MC

Motion control library

Library enabling fast and standardized engineering according to PLCOpen standard when using ABB's AC500 PLC for motion control, especially together with ABB's motion control ACS Drives.

Covers different motion control options for single and multi-axes motion control applications:

- Drive-Based and PLC-Based motion
- In PLC based motion, the position control loop could be closed in the PLC or drive (with synchronized network)
- Single-Axis, multi-axes and coordinated motion
- Defined Jerk limitation by polynomial interpolation
- Spline interpolation or polynomial interpolation for cam curves, position- velocity- or acceleration profiles available
- Possible to switch over between different movements and cam curves directly
- latch functionality by utilizing fast drive inputs for ACS350, ACS800, ACSM1
- Drive based motion: commands from PLC, drives perform interpolation and control loop

PLC Open functions:

- Administrative Function Blocks
- Single axis Function Blocks
- Multiple axis Function Blocks
- Homing Function Blocks
- ABB specific Function Blocks

- Separate package with self installing software on USB-stick.

All AC500 CPUs



PS562-SOLAR

Solar tracker solution library

Library for solar tracking applications enabling fast engineering, especially together with ABB's drives and motors

Covers different tracker configurations and different algorithms for accuracy needs

- Control of trackers in parabolic trough, power tower, PV and CPV applications.

Complete library package for different tracking use cases, plug and play:

Example program with detailed explanations and visualizations

- Control of the tracker adaptable to different needs and conditions, to achieve maximum efficiency of installation
- Exact positioning of different axes with the following accuracies:
 - NOAA algorithm 0.03 Grad
 - NREL algorithm 0.0003 Grad.
- Input / sensor adaptation
- Communication
- Different actuators / drives control
- All needed modes for simple commissioning and manual operation
 - Fast and simple calibration of the trackers, offering manual repositioning and fine tuning
 - Safety positions
 - Back tracking.

- Separate package with self installing software and with license code.

- NOAA: PM554 and above
- NREL: PM573 and above.



PS563-WATER

Water solution library (1)

- Library supporting the most common functions in many water applications

- Flexible data logging options
 - especially suited also for remote communication like GSM/GPRS
 - actual timestamp in logging
 - integrated variants for simple use with IEC60870
 - generic logging to files- storage depth only dependent on memory sizes at CPU
 - flexible log conditions (cyclic, event - or tolerance based)

- Support for pumping station functions with different operation modes
 - standard multidrive functions (PLC based)
 - advanced functionality together with
 - ABB ACS and ACQ810 drives
 - Detailed diagnosis
 - Energy efficiency functions
 - Multidrive functions
 - Level control
 - Flow estimation

- CP600 support for ACQ810: Fast and simple configuration for pumping stations with limited programming via visualization screens

- Complete application examples for fast engineering and startup.

- Separate package with self installing software and with license code.

All AC500 CPUs
(some logging options depend on CPU memory types)

Control panels CP600 series

Technical data

							
Type		CP620 CP620-WEB	CP630 CP630-WEB	CP635 CP635-WEB	CP650 CP650-WEB	CP660 CP660-WEB	CP675 CP675-WEB
Order code		1SAP520100R0001 1SAP520200R0001	1SAP530100R0001 1SAP530200R0001	1SAP535100R0001 1SAP535200R0001	1SAP550100R0001 1SAP550200R0001	1SAP560100R0001 1SAP560200R0001	1SAP575100R0001 1SAP575200R0001
Display							
Exact display size diameter	inches	4.3 widescreen	5.7	7 widescreen	10.4	12.1	15
Resolution	pixels	480 x 272	320 x 240	800 x 480	800 x 600		1024 x 768
Display type		TFT color					
Touch screen material		glass covered by plastic film					
Touch screen type		analog resistive					
Colors		64 k					
Backlight type		LED				CCFL	
Backlight life	h	40.000 typ at 25°C			50.000 typ at 25°C		
Brightness	cd/m²	150	200	300			
Housing							
Protection class front		IP66					
Protection class rear		IP20					
Front side material		Zamak			Aluminium		
Reverse side material		Zamak	Aluminium				
System resources							
Processor type	MHz	ARM Cortex A8 - 600			MIPS+FPU - 600		
Operating system, version		Microsoft Windows CE 6.0					
HMI software		PB610 Panel Builder 600 with CP6xx					
CodeSys web visualization		yes, with CP6xx-WEB					
User memory type, capacity	MB	Flash Disk, 128					
RAM type, capacity	MB	256 DDR					
Interfaces							
Ethernet ports number, type		2 - 100 Mbit (with integrated Switch function)			1 - 10/100 Mbit		
USB ports number, type		1 - host interface, version 2.0	2 - host interface, version 2.0		1 - host interface, version 2.0		
Serial ports number, type		1 - RS-232, RS-485, RS-422, software configurable			2 - RS-232, RS-485, RS-422, software configurable		
Additional ports number, type		1 - Expansion slot for future modules	2 - Expansion slot for future modules		1 - aux port for future modules		
Card slot number, type		1 - SD card slot					
Power supply voltage nominal + tol.	V DC	24 18 to 30					
Current consumption	A	0.4	0.7		1.0	1.1	1.2
Battery type		Rechargeable Lithium battery, not user-replaceable					
Weight	kg	0.95	1.15	1.0	2.1	2.9	3.8
Faceplate (L x H)	mm	149 x 109	187 x 147		287 x 232	337 x 267	392 x 307
Cutout (L x H)	mm	136 x 96	176 x 136		276 x 221	326 x 256	381 x 296
Environmental conditions							
Operating temperature range	°C	0 to 50					
Operating humidity range	%	5 to 85 relative humidity, non-condensing					
Storage temperature range	°C	-20 to 70					
Storage humidity range	%	5 to 85 relative humidity, non-condensing					

For the entire range:

- Vector graphics
- Object dynamics (types)
- True type fonts
- Multiple driver communication: 2
- Unicode capability
- Character sets for Chinese language
- Multilanguage capability
- Runtime language switching
- Recipes (capacity): flash memory storage limited only by available memory
- Alarms

- Data acquisition + capacity: flash memory storage limited only by available memory
- Trend presentation + capacity: flash memory storage limited only by available memory
- Historical event list
- Users/passwords
- Hardware realtime clock, battery back-up
- Screen saver
- Integration within CoDeSys
- Approvals: RoHS,  (cUL),  (DNV),  (C-Tick)



Control panels CP400 series

Technical data

			
Type		CP415M	CP430B
Order code		1SBP260191R1001	1SBP260183R1001
Display size	inches	3.5	5.7
Resolution	pixels	240 x 240	320 x 240
Display type		Touch Mono FSTN 16 grey	Touch 16 blue, STN
Brightness	cd/m ²	90	110
Contrast adjustment		Via touch panel	Via touch panel
Back-light type		LED	CCFL
Back-light life	h	40 000	50 000
Touch screen (number of times)		> 1 million	> 1 million
Function keys / other keys		-	5 keys + 1 key menu
Application flash prom	MB	4	4
RTC (rechargeable lithium battery)		✓	✓
Ethernet		-	-
Alarm management		✓	✓
Recipe management		-	-
Data/Recipe	kB	-	-
Trends		✓	✓
Data storage (CF card)		-	-
Communication interface		1	2
USB 2.0		-	-
Printer port		-	-
Consumption	mA	< 330	< 840
Dimensions L x H x W (external)	mm	96 x 96 x 40.6	195 x 145 x 60
Weight	kg	0.23	0.81

For the entire range:

- 32 bit RISC CPU
- Graphics and text
- Macro and Ladder
- On-line and off-line simulation
- Real time clock
- Password protection
- 24 V DC ± 15% supply voltage
- IP65 class protection
- Conform to ROHS
- UL certified

Wireless automation devices

Overview of modules

Wireless I/O pads

		
Type	WIOP100-8DI8DC	WIOP208-8DC
Order code	1SAF960100R1000	1SAF975100R1000
Number of inputs	8, digital (type 3 in accordance with IEC 61131) per switching	
Number of configurable (as Input or Output, DC)	8, digital; 0.5 A	8, digital; 0.5 A
Module/actuator supply	Separate, 24 V each in 7/8" mini plug, loopable through to next pad	24 V DC in M12 plug
Communication band	2.4 GHz ISM band, based on standard IEEE 802.15.1	
Range of radio communication	5 m (industrial environment; typically 10 m)	
Diagnostics	Block by block for sensors, actuators; continuous radio monitoring	
Status LEDs	Status of inputs/outputs, input/output diagnostics, voltages, communication	
Addressing	By pushbutton and WDIO100-CON-FBP	
Protection category in accordance with IEC 60529	IP67	
Ambient temperature	0 ... +55 °C	0 ... +70 °C
Data transmission	Wireless automation real-time capable ABB radio standard (see WDIO100)	
Dimensions H x L x W	213 x 60 x 39.5 mm	205.5 x 30 x 40.5 mm
Accessories	- Plug, 7/8" socket ("Mini") 5-pole for power supply - M12 standard Y-splitter SZC1-YU0 for 2 sensors/actuators at one connection	-

Wireless input/output module WDIO100-CON-FBP

	
Order code	1SAF960300R2000
Configuration for 1 I/O module; max. 3 I/O modules possible	Choice of: - 13 WIOPxxx wireless I/O pads or - 56 wireless sensors + 7 WIOPxxx wireless I/O pads or - 120 wireless sensors WSIX
Number of WDIO100 per machine unit/manufacturing cell	1 ... 3 without significant loss of performance
Communication band	2.4 GHz ISM band, based on IEEE 802.15.1
Range of radio communication	5 m (industrial environment; typically 10 m)
Connection to machine control system	FieldBusPlug (FBP: PROFIBUS, DeviceNet, Modbus, CANopen...)
Operator display	- LCD display, two lines with 16 characters each - 4 membrane pushbuttons
Supply voltage	24 V DC; 15 W max.
Protection category in accordance with IEC 60529	IP20
Ambient temperature	0 ... +50 °C
Mounting	On 35 mm DIN rail in accordance with EN 60715 or screw mounting
Dimensions H x L x W	140 x 120 x 85 mm (housing: 120 x 120 x 80 mm)
Total delay (for 99.9% of signals)	7 ms for Mapping, 20 ms until the signal is available on fieldbus. Wireless cycle time is 2 ms.
Mapping function	Easy to setup, fast radio transmission of the inputs of one wireless field device (e.g. WIOP100) to the outputs of another one (field device of the WIOP type without PLC, no fieldbus required)
Accessories	For connection to the control system (PLC): ABB FieldBusPlug, available for PROFIBUS, DeviceNet, CANopen, Modbus

Antennas

Type	WAT100-R / WAT100-L	WAC100-N03 / WAC100-N05
Order code	1SAF900600R0001 / 1SAF900600R0002	1SAF900600R1030 / 1SAF900600R1050
Description	Panel antenna, 70 degree beam width x = R, L (right, left-handed circular polarisation)	Antenna cable in lengths x = 3 m or 5 m
Dimensions H x L x W	101 x 95 x 32 mm	
Accessories	-	WAM100 antenna mounting for mast mounting

Wireless automation devices

Overview of modules

Sensor heads for wireless sensor pad and communication module

Type (diameter as metric thread, pitch)	M8x1	M12x1	M18x1	M30x1.5
Designation (inductive, flush)	WSIF015-M8N	WSIF020-M12N	WSIF050-M18N	WSIF100-M30N
Order code	1SAF108911R3000	1SAF112911R3000	1SAF118911R3000	1SAF130911R3000
Designation (inductive, non-flush)	WSIN020-M8N	WSIN040-M12N	WSIN080-M18N	WSIN150-M30N
Order code	1SAF108921R3000	1SAF112921R3000	1SAF118921R3000	1SAF130921R3000
Nominal operating distance S_n (flush /non-flush)	1.5 / 2 mm	2 / 4 mm	5 / 8 mm	10 / 15 mm
Assured operating distance S_a (flush/non-flush)	0...1.21 / 0...1.62 mm	0...1.62 / 0...3.24 mm	0...4.05 / 0...6.5 mm	0...8.1 / 0...12.15
Reduction factor $r_{V2A/r_{AI}/r_{Cu}}$	flush non-flush	0.75 / 0.4 / 0.4 mm 0.8 / 0.45 / 0.4 mm	0.75 / 0.35 / 0.3 mm 0.75 / 0.45 / 0.4 mm	0.75 / 0.45 / 0.25 0.7 / 0.45 / 0.35
Overall length/thread	50 / 30 mm	60 / 50 mm	60 / 50 mm	60 / 50
Nominal signal transmission rate (1/s)	5 (min.; signal changes per second, higher in individual cases, see below)			
Ambient temperature	-25 ... +70 °C (0 ... +55 °C for wireless modules)			
Protection category in accordance with IEC 60529	IP67			

Wireless sensor pad and communication module

		
Type	WSP100-8i sensor pad	WSIX100 communication module
Order code	1SAF968100R3000	1SAF900100R4000
Number of inputs	8 for ABB sensor heads and dry contacts (limit switches)	1 for ABB sensor heads and dry contacts (limit switches)
Nominal signal transmission rate 1/s	≥ 5 Signal changes per second per input; Up to 40/s for individual input; may be higher, dependent on available power/field strength of magnetic field	≥ 5 Signal change per second
Range of radio communication	5 m (industrial environment; typically 10 m)	
Switching status indicator	LED, yellow per input	LED, yellow
Operating indicator	LED, green	
Addressing/diagnostics	By membrane pushbutton and WDIO100-CON-FBP; captive storage	
Operating temperature range	0 ... +55 °C	
Protection category in accordance with IEC 60529	IP67	
Connections	4 M12 device sockets, 2 inputs ABB pin assignment, regular 4-pin cable can be used each Sensor signals on contacts 4 and 1 (!)	1 M12 device socket
Weight	550 g	125 g
Sensor head supply	Pin 2: 2.8 VDC (1 mW max.)	
Power supply	120 kHz magnetic field	
Data transmission	real-time capable ABB radio standard (see WDIO100)	
Accessories	M12 ABB Y-splitter WSC1-YU0 for 2 sensors on a single connection	WSC100 extension cable, mounting between WSIX communication module and WSI/WSIF sensor head: 0.3/0.6/ 0.75/1 m

WPU100-24M power supply

	
Order code	1SAF960200R0001
Volume supplied by one pair WPU100	1 x 1 x 1 m³ to 3 x 3 x 3 m³ or 2.5 x 2.5 x 5 m³
Expandability	with several WPU100-24M up to 6 x 6 x 3 m
Frequency of power transmission	120 kHz
Power supply and consumption	100-264 V AC, max. 600 W (typ. 10 W/m³ supplied machine volume)
Protection category in accordance with IEC 60529	IP65
Ambient temperature	0 ... +45 °C
Distance of heart pacemaker wearers	0.8 – 2.5 m depending on cell size or current setting
Mounting	Screw mounting

WPC100-Nxx primary loop conductor

	
Order code	See page 85
Length	10 to 28 m in steps
Connection type	Lug for direct connection to WPU100

Scalable PLC AC500

Ordering data



PM554



PM592

AC500-eCo CPUs

- 1 onboard RS485 serial interface (2nd is optional)
- Centrally expandable with up to 10 I/O modules with CPU firmware version V2.0.6 or above (standard S500 and/or S500-eCo modules can be mixed)
- Optional SD card adapter for data storage and program backup
- Variants with integrated Ethernet (onboard Ethernet includes web server)
- Minimum cycle time per instruction: Bit 0.08 µs, Word 0.1 µs, Float-point 1.2 µs.

Program memory	Onboard I/Os DI/DO/ AI/AO	Relay/ Transistor outputs	Integrated communication	Power supply	Type	Order code	Price	Weight (1 pce) kg
128 kB	8 / 6 / - / -	Transistor	-	24 V DC	PM554-T	1TNE968900R0100		0.300
128 kB	8 / 6 / - / -	Relay	-	24 V DC	PM554-R	1TNE968900R0200		0.350
128 kB	8 / 6 / - / -	Relay	-	100-240 V AC	PM554-R-AC	1TNE968900R0220		0.400
128 kB	8 / 6 / - / -	Transistor	Ethernet	24 V DC	PM554-T-ETH	1TNE968900R0110		0.300
128 kB	6 / 6 / 2 / 1	Transistor	-	24 V DC	PM564-T (1)	1TNE968900R1100		0.300
128 kB	6 / 6 / 2 / 1	Relay	-	24 V DC	PM564-R (1)	1TNE968900R1200		0.350
128 kB	6 / 6 / 2 / 1	Relay	-	100-240 V AC	PM564-R-AC (1)	1TNE968900R1220		0.350
128 kB	6 / 6 / 2 / 1	Transistor	Ethernet	24 V DC	PM564-T-ETH (1)	1TNE968900R1110		0.300
128 kB	6 / 6 / 2 / 1	Relay	Ethernet	24 V DC	PM564-R-ETH (1)	1TNE968900R1210		0.350
128 kB	6 / 6 / 2 / 1	Relay	Ethernet	100-240 V AC	PM564-R-ETH-AC (1)	1TNE968900R1211		0.400

(1) All analog inputs on AC500 CPU PM564 can be configured as digital inputs.

AC500 CPUs

- 2 internal serial interfaces, RS232/RS485 configurable
- Display and 8 function keys for diagnosis and status
- Centrally expandable with up to 10 I/O modules (S500 and/or S500-eCo modules allowed)
- Simultaneous operation of up to 4 external communication modules in any desired combination
- Optional SD card for data storage and program backup
- Can also be used as slave on PROFIBUS DP, DeviceNet or CANopen via FieldBusPlug, CANopen also using CM588 slave coupler
- Onboard Ethernet version provides web server and IEC 60 870-5-104 remote control protocol.

Program memory	Cycle time in µs per instruction min. Bit/Word/Float. point	Integrated communication	Type	Order code	Price	Weight (1 pce) kg
128 kB	0.06/0.09/0.7	-	PM572	1SAP130200R0200		0.135
512 kB	0.06/0.09/0.7	Ethernet (3)	PM573-ETH (2)	1SAP130300R0271		0.150

Product for Extreme Conditions

512 kB	0.06/0.09/0.7	Ethernet (3)	PM573-ETH-XC (2)	1SAP330300R0271		0.150
512 kB	0.05/0.06/0.5	-	PM582	1SAP140200R0201		0.135
1024 kB	0.05/0.06/0.5	Ethernet (3)	PM583-ETH (2)	1SAP140300R0271		0.150

Products for Extreme Conditions

512 kB	0.05/0.06/0.5	-	PM582-XC	1SAP340200R0201		0.135
1024 kB	0.05/0.06/0.5	Ethernet (3)	PM583-ETH-XC (2)	1SAP340300R0271		0.150

2048 kB	0.002/0.004/0.004	Ethernet (3)	PM590-ETH (2)	1SAP150000R0271		0.150
4096 kB	0.002/0.004/0.004	Ethernet (3)	PM591-ETH (2)	1SAP150100R0271		0.150
4096 kB	0.002/0.004/0.004	Ethernet (3)	PM592-ETH (2)(4)	1SAP150200R0271		0.150

Products for Extreme Conditions

4096 kB	0.002/0.004/0.004	Ethernet (3)	PM591-ETH-XC (2)	1SAP350100R0271		0.150
4096 kB	0.002/0.004/0.004	Ethernet (3)	PM592-ETH-XC (2)(4)	1SAP350200R0271		0.150

(2) Onboard Ethernet communication.

(3) Provides integrated web server and IEC 60 870-5-104 remote control protocol.

(4) Provides integrated 4GB Flashdisk for User Data Storage



PM583 + terminal base
+ CM574



PM592 + terminal base
+ CM579

Scalable PLC AC500

Ordering data



TB511

Terminal base

- For mounting and connection of the CPUs and communication modules
- 1 to 4 plug-in communication modules
- Connection for communication coupler integrated in the CPU
- I/O interface for direct connection of up to 10 expansion modules
- Fieldbus-neutral FieldBusPlug-Slave interface
- Connection COM1: 9-pole pluggable terminal block
- Connection COM2: 9-pole SUB-D (socket)

Number of coupler slots	Connection for coupler integrated in the CPU	Type	Order code	Price	Weight (1 pce) kg
1	Ethernet RJ45	TB511-ETH	1SAP111100R0270		0.215
2	Ethernet RJ45	TB521-ETH	1SAP112100R0270		0.215
4	Ethernet RJ45	TB541-ETH	1SAP114100R0270		0.215

Product for Extreme Conditions

1	Ethernet RJ45	TB511-ETH-XC	1SAP311100R0270		0.215
2	Ethernet RJ45	TB521-ETH-XC	1SAP312100R0270		0.215
4	Ethernet RJ45	TB421-ETH-XC	1SAP314100R0270		0.215

 These TBs are compatible with previous AC500 CPU versions (R01xx) and new ones (R02xx).



CM572-DP

PROFIBUS DP communication module

- For PROFIBUS DP master V0/V1. Multi master functionality
- Transfer rate: 9.6 kbit/s up to 12 Mbit/s
- Max. no. of subscribers: 126 (V0) or 32 (V1)
- CPU interface: 8 kB dual-port memory
- Contains a separate communication processor and 256 kB RAM memory
- No external power supply required

Interface	Type	Order code	Price	Weight (1 pce) kg
Sub-D socket	CM572-DP	1SAP170200R0001		0.115

Product for Extreme Conditions

Sub-D socket	CM572-DP-XC	1SAP370200R0001		0.135
--------------	-------------	-----------------	--	-------



CM577

Ethernet communication module

- 10/100 Mbit/s, full/half duplex with auto-sensing. 2-port switch integrated.
- Transport protocols TCP/IP, UDP/IP, Modbus TCP.
- CPU interface: 8 kB dual-port memory.
- Contains a separate communication processor, 256 kB RAM memory and 512 kB flash memory.
- No external power supply required.

Protocol	Interfaces	Type	Order code	Price	Weight (1 pce) kg
TCP/IP, UDP/IP, Modbus TCP	2 X RJ45	CM577-ETH	1SAP170700R0001		0.115

Product for Extreme Conditions

TCP/IP, UDP/IP, Modbus TCP	2 x RJ45	CM577-ETH-XC	1SAP370700R0001		0.115
----------------------------	----------	--------------	-----------------	--	-------

Scalable PLC AC500

Ordering data



CM588-CN

CANopen communication module

- For CANopen master
- Transfer rate: 10 kbit/s up to 1 Mbit/s
- CPU interface: 8 kB dual-port memory
- Contains a separate communication processor, 256 kB RAM memory and 512 kB flash memory
- No external power supply required
- Plug in terminal block included.

Interface	Type	Order code	Price	Weight (1 pce) kg
Plug-in 5 poles terminal block, spring type terminals	CM578-CN	1SAP170800R0001		0.115
Product for Extreme Conditions				
Plug-in 5 poles terminal block, spring type terminals	CM578-CN-XC	1SAP370800R0001		0.115

- For CANopen slave communication
- Transfer rate: 10 kbit/s up to 1 Mbit/s
- CPU interface: 8 kB dual-port memory
- Contains a separate communication processor, 256 kB RAM memory and 512 kB flash memory.
- No external power supply required.

Interface	Type	Order code	Price	Weight (1 pce) kg
Plug-in 2x5 poles terminal block, spring type terminals	CM588-CN	1SAP172800R0001		0.115
Product for Extreme Conditions				
Plug-in 2x5 poles terminal block, spring type terminals	CM588-CN-XC	1SAP372800R0001		0.115



CM579-PNIO

PROFINET I/O RT master communication module

- Controller protocol, integrated 2 ports switch.
- Interface to the CPU using Dual Port Memory coupler bus,
- Up to 4 communication modules can be used on an AC500 CPU.

Interface	Type	Order code	Price	Weight (1 pce) kg
2 X RJ45 with integrated switch	CM579-PNIO	1SAP170901R0001		0.115
Product for Extreme Conditions				
2 x RJ45 with integrated switch	CM579-PNIO-XC	1SAP370901R0001		0.115



CM579-ETHCAT

EtherCAT master protocol communication module

- Interface to the CPU using Dual Port Memory coupler bus,
- Up to 4 communication modules can be used on an AC500 CPU.

Interface	Type	Order code	Price	Weight (1 pce) kg
2 X RJ45	CM579-ETHCAT	1SAP170902R0001		0.115



CM574

Serial communication module and CPU coprocessor

- Stand alone CPU in coupler module housing allowing to be used as standard serial interface or as free programmable serial interface coupler. 2 x serial RS-232/485 interfaces COM1 / COM2
- CPU interface: dual-port memory
- Program memory: 256 kB / Data memory 384 KB not saved
- Protocols ASCII / free configurable / 2xCS31 master COM1/COM2 / 2x Modbus Master/Slave, independent internal CPU which can be programmed by the PS501 for own communication protocol or data processing. Interface to the CPU using Dual Port Memory coupler bus. Connection with 2 x 9 pole pluggable spring terminals. Up to 4 communication modules can be used on an AC500 CPU
- Plug in terminal block included

Interface	Type	Order code	Price	Weight (1 pce) kg
Serial 2 x RS-232/485	CM574-RS	1SAP170400R0201		0.115

Scalable PLC AC500

Ordering data



CM574-RCOM

Serial protocol RCOM communication module

- 2x serial RS-232/485 interfaces with 1x RCOM / 1x Console,
- Interface to the CPU using Dual Port Memory coupler bus.
- Connection with 2x 9 pole pluggable spring terminals.
- Up to 4 communication modules can be used on an AC500 CPU
- Plug in terminal block included.

Interface	Type	Order code	Price	Weight (1 pce) kg
Serial 2x RS-232/485 (1x RCOM / 1x Console)	CM574-RCOM	1SAP170401R0201		0.115

All communication modules are to be inserted in a slot of terminal base TB5xx. The terminal base is a separate product and mandatory for the CPU modules PM57x/58x/59x.

Digital input/output modules

- For central expansion of the AC500 or AC500-eCo CPUs
- For decentralized expansion in combination with interface module DC551-CS31, PROFINET CI50x modules, or DC505-FBP for S500 I/Os
- DC: Channels can be configured individually as inputs or outputs
- S500-eCo digital I/O modules:
 - Not usable with DC505-FBP module
 - Usable with all CI5xx modules except CI590-CS31-HA.



DO572 and terminal blocks

Number of DI/DO/DC	Input signal	Output type	Output signal	Terminal block 9 poles	Terminal block 11 poles	Type	Order code	Price	Weight (1 pce) kg
8 / - / -	24 V DC	-	-	1	-	DI561	1TNE968902R2101		
16 / - / -	24 V DC	-	-	1	1	DI562	1TNE968902R2102		
8 / - / -	100-240 V AC	-	-	1	1	DI571	1TNE968902R2103		
- / 8 / -	-	Transistor	24 V DC, 0.5 A	-	1	DO561	1TNE968902R2201		
- / 8 / -	-	Relay	24 V DC, 120/240 V AC, 2 A	-	1	DO571	1TNE968902R2202		
- / 8 / -	-	Triac	100-240 V AC, 0.3 A	1	1	DO572	1TNE968902R2203		
8 / 8 / -	24 V DC	Transistor	24 V DC, 0.5 A	1	1	DX561	1TNE968902R2301		
8 / 8 / -	24 V DC	Relay	24 V DC, 120/240 V AC, 2 A	1	1	DX571	1TNE968902R2302		
- / - / 16	24 V DC	Transistor	24 V DC, 0.1A	HE10-20	-	DC561	1TNE968902R2001		

Terminal block (9 or 11 poles) is necessary for each S500-eCo I/O. They are delivered separately.

- S500 digital input modules:
 - Plug-in electronic modules, terminal unit required (refer to table below)
 - Usable with DC505-FBP and all CI5xx modules



DC532

Number of DI/DO/DC	Input signal	Output type	Output signal	Terminal units	Type	Order code	Price	Weight (1 pce) kg
32 / - / -	24 V DC	-	-	TU515 / TU516	DI524	1SAP240000R0001		0.200
- / - / 16	24 V DC	Transistor	24 V DC, 0.5 A	TU515 / TU516	DC522	1SAP240600R0001		0.200
- / - / 24	24 V DC	Transistor	24 V DC, 0.5 A	TU515 / TU516	DC523	1SAP240500R0001		0.200
16 / - / 16	24 V DC	Transistor	24 V DC, 0.5 A	TU515 / TU516	DC532	1SAP240100R0001		0.200
8 / 8 / -	24 V DC	Relay	230 V AC, 3 A (1)	TU531 / TU532	DX522	1SAP245200R0001		0.300
8 / 4 / -	230 V AC	Relay	230 V AC, 3 A (1)	TU531 / TU532	DX531	1SAP245000R0001		0.300

Product for Extreme Conditions

32 / - / -	24 V DC	-	-	TU516-XC	DI524-XC	1SAP440000R0001		0.200
- / - / 16	24 V DC	Transistor	24 V DC, 0.5 A	TU516-XC	DC522-XC	1SAP440600R0001		0.200
- / - / 24	24 V DC	Transistor	24 V DC, 0.5 A	TU516-XC	DC523-XC	1SAP440500R0001		0.200
16 / - / 16	24 V DC	Transistor	24 V DC, 0.5 A	TU516-XC	DC532-XC	1SAP440100R0001		0.200
8 / 8 / -	24 V DC	Relay	230 V AC, 3 A (1)	TU532-XC	DX522-XC	1SAP445200R0001		0.200

(1) Relay outputs, changeover contacts

Scope of delivery	Terminal units	Type	Order code	Price	Weight (1 pce) kg
CD522, encoder & PWM module, 2 encoder inputs, 2 PWM outputs, 2 digital inputs 24 V DC, 8 digital configurable inputs/outputs 24 V DC	TU515 / TU516	CD522	1SAP260300R0001		0.125

Product for Extreme Conditions

CD522, encoder & PWM module, 2 encoder inputs, 2 PWM outputs, 2 digital inputs 24 V DC, 8 digital outputs 24 V DC	TU516-XC	CD522-XC	1SAP460300R0001		0.125
---	----------	----------	-----------------	--	-------

Scalable PLC AC500

Ordering data



AI562 and terminal block

- DC541 occupies one communication module slot on the AC500 CPU terminal base, no terminal block required
- Not usable with DC505-FBP or all CI5xx modules

Number of DI/DO/DC	Input signal	Output type	Output signal	Type	Order code	Price	Weight (1 pce) kg
-/-/8	24 V DC	Transistor	24 V DC, 0.5 A	DC541-CM (1)	1SAP270000R0001		0.100

Product for Extreme Conditions

-/-/8	24V DC	Transistor	24 V DC, 0.5 A	DC541-CM-XC (1)	1SAP470000R0001		0.200
-------	--------	------------	----------------	-----------------	-----------------	--	-------

(1) Multifunctional module, refer to table on page 43 for details.

Analog input/output modules

- For central expansion of the AC500 or AC500-eCo CPUs
- For decentralized expansion in combination with communication interface module DC551-CS31, PROFIBUS CI50x, Fieldbus CI5xx or DC505-FBP (no eCo I/O allowed) for S500 I/Os
- Each channel can be configured individually
- Resolution: 12 bits + sign (AI531: 15 bits + sign) (AI561, AO561, AX561: 12 bits/11 bits + sign) (AI562, AI563: 15 bits + sign)
- S500-eCo analog I/O modules:
 - Not usable with DC505-FBP and CI550-CS31-HA
 - Usable with all other CI5xx modules

Number of AI/AO	Input signal	Output signal	Terminal block 9 poles	Terminal block 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		
2 / 0	PT100, PT1000, Ni100, Ni1000, Resistance: 150 Ω, 300 Ω	–	–	1	AI562	1TNE968902R1102		
4 / 0	S, T, R, E, N, K, J, Voltage range: ±80 mV	–	1	1	AI563	1TNE968902R1103		
0 / 2	–	-10...+10 V, 0...20 mA, 4...20 mA	–	1	AO561	1TNE968902R1201		
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		

Terminal block (9 or 11 poles) is necessary for each S500-eCo I/O. They are delivered separately.

- S500 analog I/O modules:
 - Plug-in electronic modules, terminal unit required (refer to table below)
 - Usable with DC505-FBP and all CI5xx modules

Number of AI/AO	Input signal	Output signal	Terminal units	Type	Order code	Price	Weight (1 pce) kg
16 / 0	0 ... 10 V, ± 10 V	–	TU515 / TU516	AI523	1SAP250300R0001		0.200
4 / 4	0 / 4 ... 20 mA, PT100, PT1000, Ni1000	± 10 V	TU515 / TU516	AX521	1SAP250100R0001		0.200
8 / 8 (max. 4 current outputs)	–	0 / 4 ... 20 mA	TU515 / TU516	AX522	1SAP250000R0001		0.200
0 / 16 (max. 8 current outputs)	–	–	TU515 / TU516	AO523	1SAP250200R0001		0.200
8 / 0	0...5 V, 0...10 V, ±50 mV, ±500 mV, 1 V, ±5 V, ±10 V, 0/4...20 mA, ±20 mA, PT100, PT1000, Ni1000, Cu50, 0...50 kΩ, S, T, N, K, J	–	TU515 / TU516	AI531	1SAP250600R0001		0.200

Product for Extreme Conditions

16 / 0	0...10 V, ±10 V 0/4...20 mA PT100, PT1000, Ni1000	–	TU516-XC	AI523-XC	1SAP450300R0001		0.200
4 / 4	–	±10 V	TU516-XC	AX521-XC	1SAP450100R0001		0.200
8 / 8 (max. 4 current outputs)	–	0 / 4 ... 20 mA	TU516-XC	AX522-XC	1SAP450000R0001		0.200
0 / 16 (max. 8 current outputs)	–	–	TU516-XC	AO523-XC	1SAP450200R0001		0.200
8 / 0	0...5 V, 0...10 V, ±50 mV, ±500 mV, 1 V, ±5 V, ±10 V, 0/4...20 mA, ±20 mA PT100, PT1000, Ni1000, Cu50, 0...50 kΩ, S, T, N, K, J	–	TU516-XC	AI531-XC	1SAP450600R0001		0.200

Scalable PLC AC500

Ordering data



TU515



TU520



TU510



L44460901501



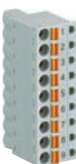
L44461101501



TA564-9



TA564-11



TA565-9



TA565-11

Analog/digital mixed I/O module

Standard I/O module with high functionality: 16 digital input channels 24 V DC with configurable input filter time, 8 configurable In/Output channels, DC as DI: 24 V DC, DC as DO: 24 V DC/0.5 A, input filter configurable from 0.1, 1, 8... 32 ms, first two inputs are also usable as high-speed counter (up to 50 kHz) together with AC500 CPU, CS31 or CI5xx communication interface. 4 independent analog input channels configurable for voltage (0...10 V, ± 10 V), current (0/4... 20 mA), 12 bit + sign, 1-2 wire connection, 24 V DC process supply voltage. Galvanic isolation per module. Usable with DC505-FBP and all CI5xx modules.

Number of AI/AO/DI/DO/DC	Input signal	Output type	Output signal	Terminal unit	Type	Order code	Price	Weight (1 pce) kg
4/2/16/-/8	24 V DC / 0...10 V, -10...+10 V, 0...20 mA, 4...20 mA, PT100, PT1000, Ni100, Ni1000	Transistor	24 V DC, 0.5 A / -10...+10 V, 0...20 mA, 4...20 mA	TU515/ TU516	DA501	1SAP250700R0001		0.200

Product for Extreme Conditions

4/2/16/-/8	24 V DC, 0...10 V, ± 10 V, 0/4...20 mA, PT100, PT1000, Ni100, Ni1000	Transistor	24 V DC, 0.5 A / ± 10 V, 0/4...20 mA	TU516-XC	DA501-XC	1SAP450700R0001		0.200
------------	--	------------	--	----------	----------	-----------------	--	-------

Terminal units

For digital and analog expansion modules and interface modules. Please note: for modules with relay outputs, terminal units for 230 V AC (TU531/TU532) are required.

For	Supply	Connection type	Type	Order code	Price	Weight (1 pce) kg
FBP interface modules	-	Screw-type terminals	TU505-FBP	1SAP210200R0001		0.300
FBP interface modules	-	Spring-type terminals	TU506-FBP	1SAP210000R0001		0.300
Ethernet interface modules	24 V DC	Screw-type terminals	TU507-ETH	1SAP214200R0001		0.300
Ethernet interface modules	24 V DC	Spring-type terminals	TU508-ETH	1SAP214000R0001		0.300
PROFIBUS/CANopen interface modules	24 V DC	Spring-type terminals	TU510	1SAP210800R0001		0.300
I/O modules	24 V DC	Screw-type terminals	TU515	1SAP212200R0001		0.300
I/O modules	24 V DC	Spring-type terminals	TU516	1SAP212000R0001		0.300
CANopen/PROFIBUS interface modules	24 V DC	Spring-type terminals	TU518	1SAP211200R0001		0.300
Ethernet gateway modules	24 V DC	Spring-type terminals	TU520-ETH	1SAP214400R0001		0.300
I/O modules AC / relay	230 V AC	Screw-type terminals	TU531	1SAP217200R0001		0.300
I/O modules AC / relay	230 V AC	Spring-type terminals	TU532	1SAP217000R0001		0.300
CS31 interface modules	24 V DC	Screw-type terminals	TU551-CS31	1SAP210600R0001		0.300
CS31 interface modules	24 V DC	Spring-type terminals	TU552-CS31	1SAP210400R0001		0.300

Product for Extreme Conditions

Ethernet interface modules	24 V DC	Spring-type terminals	TU508-ETH-XC	1SAP414000R0001		0.300
PROFIBUS interface modules	24 V DC	Spring-type terminals	TU510-XC	1SAP410800R0001		0.300
I/O modules	24 V DC	Spring-type terminals	TU516-XC	1SAP412000R0001		0.300
CANopen interface modules	24 V DC	Spring-type terminals	TU518-XC	1SAP411200R0001		0.300
Ethernet gateway modules	24 V DC	Spring-type terminals	TU520-ETH-XC	1SAP414400R0001		0.300
I/O modules AC / Relay	230 V AC	Spring-type terminals	TU532-XC	1SAP417000R0001		0.300
CS31 interface modules	24 V DC	Spring-type terminals	TU552-CS31-XC	1SAP410400R0001		0.300

Terminal blocks for AC500-eCo

Description	Type	Order code	Price	Weight (1 pce) kg
9 poles terminal block for S500 I/O eCo modules - Screw Front / Cable Side	L44460901501	1SSS444609R1100		0.017
11 poles terminal block for S500 I/O eCo modules - Screw Front / Cable Side	L44461101501	1SSS444611R1100		0.020
9 poles terminal block for S500 I/O eCo modules - Screw Front / Cable Front	TA564-9	1TNE968901R3103		0.026
11 poles terminal block for S500 I/O eCo modules - Screw Front / Cable Front	TA564-11	1TNE968901R3104		0.035
9 poles terminal block for S500 I/O eCo modules - Spring Front / Cable Front	TA565-9	1TNE968901R3105		0.016
11 poles terminal block for S500 I/O eCo modules - Spring Front / Cable Front	TA565-11	1TNE968901R3106		0.020



Only ABB connectors must be used with AC500-eCo
Sales package for these terminal blocks = 6

Scalable PLC AC500

Ordering data



CI541-DP + terminal base



CI582-CN+ terminal base

Communication interface modules

Number of AI/AO/DI/DO/DC	Input signal	Output-type	Output-signal	Terminal units	Type	Order code	Price	Weight (1 pce) kg
--------------------------	--------------	-------------	---------------	----------------	------	------------	-------	----------------------

Communication interface module for FieldBusPlug

-/-/8/-/8	24 V DC	Transistor	24 V DC, 0.5 A	TU505-FBP / TU506-FBP	DC505-FBP	1SAP220000R0001		0.200
-----------	---------	------------	----------------	-----------------------	-----------	-----------------	--	-------

Communication interface module for CS31-Bus

-/-/8/-/16	24 V DC	Transistor	24 V DC, 0.5 A	TU551-CS31 / TU552-CS31	DC551-CS31	1SAP220500R0001		0.200
-/-/8/-/16	24 V DC	Transistor	24 V DC, 0.5 A	TU551-CS31 / TU552-CS31	CI590-CS31-HA	1SAP221100R0001		0.200
4/2/8/-/8	24 V DC / 0...10 V, -10...+10 V, 0...20 mA, 4...20 mA, PT100, Ni100, Ni1000	Transistor	24 V DC, 0.5 A / -10...+10 V, 0...20 mA, 4...20 mA	TU551-CS31 / TU552-CS31	CI592-CS31	1SAP221200R0001		0.200

Communication interface module for Fieldbus or PROFIBUS-DP

4/2/8/8/-	24 V DC / 0...10 V, -10...+10 V, 0...20 mA, 4...20 mA, PT100, Ni100, Ni1000	Transistor	24 V DC, 0.5 A / -10...+10 V, 0...20 mA, 4...20 mA (1)	TU510 / TU518	CI541-DP	1SAP224100R0001		0.200
-/-/8/8/8	24 V DC	Transistor	24 V DC, 0.5 A	TU510 / TU518	CI542-DP	1SAP224200R0001		0.200

Communication interface module for CANopen

4/2/8/8/-	24 V DC / 0...10 V, -10...+10 V, 0...20 mA, 4...20 mA, PT100, Ni100, Ni1000	Transistor	24 V DC, 0.5 A / -10...+10 V, 0...20 mA, 4...20 mA	TU510 / TU518	CI581-CN	1SAP228100R0001		0.200
-/-/8/8/8	24 V DC	Transistor	24 V DC, 0.5 A	TU510 / TU518	CI582-CN	1SAP228200R0001		0.200

Products for Extreme Conditions

Communication interface module for CS31-Bus

-/-/8/-/16	24 V DC	Transistor	24 V DC, 0.5 A	TU552-CS31-XC	DC551-CS31-XC	1SAP420500R0001		0.200
-/-/8/-/16	24 V DC	Transistor	24 V DC, 0.5 A	TU552-CS31-XC	CI590-CS31-HA-XC	1SAP421100R0001		0.200
4/2/8/-/8	24 V DC / 0...10 V, -10...+10 V, 0...20 mA, 4...20 mA, PT100, Ni100, Ni1000	Transistor	24 V DC, 0.5 A / -10...+10 V, 0...20 mA, 4...20 mA	TU552-CS31-XC	CI592-CS31-XC	1SAP421200R0001		0.200

Communication interface module for Fieldbus or PROFIBUS-DP

4/2/8/8/-	24 V DC / 0...10 V, -10...+10 V, 0...20 mA, 4...20 mA, PT100, Ni100, Ni1000	Transistor	24 V DC, 0.5 A / -10...+10 V, 0...20 mA, 4...20 mA	TU510-XC / TU518-XC	CI541-DP-XC	1SAP424100R0001		0.200
-/-/8/8/8	24 V DC	Transistor	24 V DC, 0.5 A	TU510-XC / TU518-XC	CI542-DP-XC	1SAP424200R0001		0.200

Communication interface module for CANopen

4/2/8/8/-	24 V DC / 0...10 V, -10...+10 V, 0...20 mA, 4...20 mA, PT100, PT1000, Ni100, Ni1000	Transistor	24 V DC, 0.5 A / -10...+10 V, 0...20 mA, 4...20 mA	TU510-XC / TU518-XC	CI581-CN-XC	1SAP428100R0001		0.200
-/-/8/8/8	24 V DC	Transistor	24 V DC, 0.5 A	TU510-XC / TU518-XC	CI582-CN-XC	1SAP428200R0001		0.200

(1) Please refer to the FieldBusPlug catalog for information about FBP. The currently available FBP Fieldbus plugs are listed in the catalog 2CDC190022D0203.

Scalable PLC AC500

Ordering data



CI502 + terminal base



CI504-PNIO



CI506-PNIO

Communication interface modules

Number of AI/AO/DI/DO/DC	Input signal	Output-type	Output-signal	Terminal units	Type	Order code	Price	Weight (1 pce) kg
--------------------------	--------------	-------------	---------------	----------------	------	------------	-------	-------------------

Communication interface module for Ethernet based protocol - PROFINET I/O

4/2/8/8/-	24 V DC/0...10 V, -10...+10 V, 0...20 mA, 4...20 mA, PT100, PT1000, Ni100, Ni1000	Transistor	24 V DC, 0.5 A / -10...+10 V, 0...20 mA, 4...20 mA	TU507-ETH / TU508-ETH	CI501-PNIO	1SAP220600R0001		0.200
-/-/8/8/8	24 V DC	Transistor	24 V DC, 0.5 A	TU507-ETH / TU508-ETH	CI502-PNIO	1SAP220700R0001		0.200

Communication interface module for Ethernet based protocol - EtherCAT

4/2/8/8/-	24 V DC/0...10 V, -10...+10 V, 0...20 mA, 4...20 mA, PT100, PT1000, Ni100, Ni1000	Transistor	24 V DC, 0.5 A / -10...+10 V, 0...20 mA, 4...20 mA	TU507-ETH / TU508-ETH	CI511-ETHCAT	1SAP220900R0001		0.200
-/-/8/8/8	24 V DC	Transistor	24 V DC, 0.5 A	TU507-ETH / TU508-ETH	CI512-ETHCAT	1SAP221000R0001		0.200

Products for Extreme Conditions

Communication interface module for Ethernet based protocol - PROFINET I/O

4/2/8/8/-	24 V DC / 0...10 V, -10...+10 V, 0...20 mA, 4...20 mA, PT100, PT1000, Ni100, Ni1000	Transistor	24 V DC, 0.5 A / -10...+10 V, 0...20 mA, 4...20 mA	TU508-ETH-XC	CI501-PNIO-XC	1SAP420600R0001		0.200
-/-/8/8/8	24 V DC	Transistor	24 V DC, 0.5 A	TU508-ETH-XC	CI502-PNIO-XC	1SAP420700R0001		0.200

Communication interface modules

From	To	Output-signal	Terminal units	Type	Order code	Price	Weight (1 pce) kg
------	----	---------------	----------------	------	------------	-------	-------------------

Communication interface module gateway on Ethernet based protocol - PROFINET I/O

PROFINET I/O	-	3x RS232/485 ASCII serial interfaces	TU520-ETH	CI504-PNIO	1SAP221300R0001		0.200
PROFINET I/O	1x CAN 2A/2B or CANopen Master	2x RS232/485 ASCII serial interfaces	TU520-ETH	CI506-PNIO	1SAP221500R0001		0.200

Products for Extreme Conditions

Communication interface module for Ethernet based protocols - PROFINET I/O

PROFINET I/O	-	3x RS232/485 ASCII serial interfaces	TU520-ETH-XC	CI504-PNIO-XC	1SAP421300R0001		0.200
PROFINET I/O	1x CAN 2A/2B or CANopen Master	2x RS232/485 ASCII serial interfaces	TU520-ETH-XC	CI506-PNIO-XC	1SAP421500R0001		0.200

Scalable PLC AC500

Ordering data



PS501 Control Builder Plus



TK506



TA561-RTC



TA562-RS



TA562-RS-RTC



TA566



TA570

Programming software PS501 Control Builder Plus

For all AC500 CPUs, all programming languages including Continuous Function Chart according to IEC 61131-3

Contains: 6 programming languages, sampling - trace, debugging, offline simulation, integrated visualization, trace recording (multi-channel), recipe management

Languages: French, English, German, Chinese, Spanish

Scope of delivery: Software, libraries and documentation (PDF) on USB ROM

For	Description	Type	Order code	Price	Weight (1 pce) kg
all AC500 CPUs	Programming package PS501 Control Builder Plus	PS501-PROG	1SAP190100R0200		0.300
	License for runtime visualization package, For installation and visualization of images created with the programming package PS501 Control Builder Plus. Delivery includes license code and documentation.	PS541-HMI (1)	1SAP190500R0001		0.300

(1) This package allows granting the license for the software. To install the HMI software, the PS501 Control Builder Plus should be purchased separately.

Motion Control library

For	Description	Type	Order code	Price	Weight (1 pce) kg
all AC500 CPUs	Motion Control library single license	PS552-MC	1SAP192100R0001		0.300
all AC500 CPUs	Motion Control library multiple license	PS552-MC	1SAP192100R0101		0.300

Drives library

For	Description	Type	Order code	Price	Weight (1 pce) kg
all AC500 CPUs all ACS Drives	Drives library delivered via PS501 or download	PS553-DRIVES			

Solution libraries

For	Description	Type	Order code	Price	Weight (1 pce) kg
all AC500 CPUs	Solar library delivered on USB stick. Delivery includes licence code and documentation	PS562-SOLAR	1SAP195000R0001		0.300
all AC500 CPUs	Water library delivered on USB stick. Delivery includes licence code and documentation	PS563-WATER	1SAP195200R0001		0.300

Accessories for AC500-eCo

Description	Type	Order code	Price	Weight (1 pce) kg
SD Memory Card 2 GB needs the MC503 option	MC502	1SAP180100R0001		0.020
SD Memory Card adapter	MC503	1TNE968901R0100		0.100
Programming cable USB => RS485 SUB-D, 3 m	TK503	1TNE968901R1100		0.400
Programming cable USB => RS485 Terminal block, 3 m	TK504	1TNE968901R2100		0.400
AC500-eCo, RS485 isolator, D-Sub 9 poles/Terminal 5 poles for COM1 of the AC500-eCo CPU	TK506	1SAP186100R0001		0.100
Real time clock option board, battery CR2032 not included	TA561-RTC (2)	1TNE968901R3200		0.100
TA562-RS, RS485 serial adapter COM2 for CPU's PM554 and PM564, to be installed in right option slot of the CPU, pluggable screw terminal block included	TA562-RS	1TNE968901R4300		0.100
TA562-RS-RTC, Combined Real Time Clock option with RS485 serial adapter COM2 for CPU's PM554 and PM564, to be installed in right option slot of the CPU, pluggable screw terminal block, battery CR2032 not included	TA562-RS-RTC (2)	1SAP181500R0001		0.100
Wall Mounting Accessory for AC500-eCo CPU and S500-eCo I/O modules (100 pieces per case)	TA566	1TNE968901R3107		0.200
Set of accessories: 6 x plastic cover for option slot, 6 x 5 pole terminal block for AC500-eCo, 6 x 5 pole screw terminal block for COM2 serial interface.	TA570	1TNE968901R3203		
Digital input simulator for onboard I/O of CPU PM55x and PM56x, 6 x switch, 24 V DC	TA571-SIM	1TNE968903R0203		0.050

(2) Standard battery CR 2032 has to be purchased separately

Scalable PLC AC500

Ordering data



AC500-eCo Starter kits

Each kit comes with CPU, programming cable, digital input simulator, PS501 full functional version without update and "Getting started" handbook.

CPU module in the starter kit	Programming cable (included)	Type	Order code	Price	Weight (1 pce) kg
PM564-R-AC	TK503 (USB/Serial)	TA574-A-R-AC	1SAP186200R0001		1,400
PM564-R	TK503	TA574-A-R	1SAP186200R0002		1,400
PM564-T	TK503	TA574-A-T	1SAP186200R0003		1,400
PM554-T-ETH	Ethernet	TA574-D-T-ETH	1SAP186200R0004		1,400

Accessories for AC500

For	Description	Type	Order code	Price	Weight (1 pce) kg
AC500 CPUs COM2	Programming cable Sub-D/Sub-D, length 5 m	TK501	1SAP180200R0001		0.400
AC500 CPUs COM1	Programming cable Sub-D/terminal block, length 5 m	TK502	1SAP180200R0101		0.400
Cable for programming the AC500 via the integrated fieldbus neutral interface	Connection to PC via USB interface. Includes USB extension cable and installation CD.	UTF21-FBP	1SAJ929400R0001		
AC500 CPUs	Memory card (2 GB SD card)	MC502	1SAP180100R0001		0.020
AC500 CPUs	Lithium battery for data buffering	TA521	1SAP180300R0001		0.100
I/O modules	Pluggable marker holder for I/O modules, packing unit incl. 10 pcs	TA523	1SAP180500R0001		0.300
Terminal base	Communication module, dummy housing	TA524	1SAP180600R0001		0.120
I/O modules	White labels, packing unit incl. 10 pcs	TA525	1SAP180700R0001		0.100
CPU terminal base	Accessories for mounting, packing unit incl. 10 pcs	TA526	1SAP180800R0001		0.200
CPU terminal base	5-pole power plug for AC500. Spare part. Can be plugged to CPU terminal base TB5x1. Packing unit incl. 5 pcs	TA527	1SAP181100R0001		0.200
CPU terminal base	9-pole COM1 plug for AC500. Spare part. Can be plugged to CPU terminal base TB5x1. Packing unit incl. 5 pcs	TA528	1SAP181200R0001		0.200
AC500 Basic Training case	PM583-ETH, I/Os, DP PM583-ETH + CM572 + AX561 + DC551 + CI542 + CP635	TA512-BAS	1SAP182400R0001		7.000
AC500 Advanced Training case	PM583-ETH, CD522, Fieldbuses PM583-ETH + CM574 + CM578 + CM579 + CP635	TA513-ADV	1SAP182500R0001		8.800
Protective caps for TB and TU for XC versions	10x D-Sub plastic caps 20x RJ45 plastic caps 10x M12 plastic caps	TA535	1SAP182300R0001		0.300



MC502



Control panels

Ordering data



CP635

HMI panels CP600 series

Resolution	Display size	Type	Order code	Price	Weight (1 pce) kg
pixels					
480 x 272	4.3"	CP620	1SAP520100R0001		0.950
320 x 240	5.7"	CP630	1SAP530100R0001		1.150
800 x 480	7.0"	CP635	1SAP535100R0001		1.100
800 x 600	10.4"	CP650	1SAP550100R0001		2.100
800 x 600	12.1"	CP660	1SAP560100R0001		2.900
1024 x 768	15.0"	CP675	1SAP575100R0001		3.800
480 x 272	4.3"	CP620-WEB	1SAP520200R0001		0.950
320 x 240	5.7"	CP630-WEB	1SAP530200R0001		1.150
800 x 480	7.0"	CP635-WEB	1SAP535200R0001		1.100
800 x 600	10.4"	CP650-WEB	1SAP550200R0001		2.100
800 x 600	12.1"	CP660-WEB	1SAP560200R0001		2.900
1024 x 768	15.0"	CP675-WEB	1SAP575200R0001		3.800

Accessories for CP600 series

Description	Type	Order code	Price	Weight (1 pce) kg
Communication cable RS232: CP600-AC500	TK681	1SAP500981R0001		0.130
Communication cable RS485: CP600-AC500-eCo	TK682	1SAP500982R0001		0.130
Panel Builder 600 for CP600	PB610	1SAP500900R0001		0.150

Operator panels CP400 series

Resolution	Display	Type	Order code	Price	Weight (1 pce) kg
pixels					

Operator panels with touch display

240 x 240	3.5", 16 grey levels	CP415M	1SBP260191R1001		0.230
320 x 240	5.7", 16 blue levels	CP430B	1SBP260183R1001		0.810

Programming cables CP400

Plug on CP400 side	Description	Type	Order code	Price	Weight (1 pce) kg
SubD9	Connection to COM1 of CP400. Length: 4 m	TK401	1SBN260216R1001		0.180
SubD25	Connection to COM2 of CP400. Length: 4 m	TK402	1SBN260217R1001		0.230

Communication cables CP400 (connection operator panel <-> PLC)

Plug on PLC side	PLC	Type	Order code	Price	Weight (1 pce) kg
SubD9	AC500	TK405	1SBN260221R1001		0.130
SubD9	AC500-eCo	TK406	1SBN260224R1001		0.130

Programming software

Description	Type	Order code	Price	Weight (1 pce) kg
Programming software for CP400 operator panels. Delivery includes the programming software and corresponding documentation on CD-ROM	CP400Soft	1SBS260284R1001		0.100



CP415

DigiVis 500

Ordering data



Description	Type	Order code	Price	Weight (1 pce) kg
DigiVis 500 – Graphics Builder	DV500-GBUILDER	1SAP501800R0011		0.050
DigiVis 500 – Operations, 50 OPC signals	DV500-OP50	1SAP501800R0021		0.050
DigiVis 500 – Operations, 100 OPC signals	DV500-OP100	1SAP501800R0031		0.050
DigiVis 500 – Operations, 250 OPC signals	DV500-OP250	1SAP501800R0041		0.050
DigiVis 500 – Operations, 500 OPC signals	DV500-OP500	1SAP501800R0051		0.050
DigiVis 500 – Operations, 1000 OPC signals	DV500-OP1000	1SAP501800R0061		0.050
DigiVis 500 – Operations, 2000 OPC signals	DV500-OP2000	1SAP501800R0071		0.050
DigiVis 500 – Operations, unlimited OPC signals	DV500-OPUNL	1SAP501800R0081		0.050
DigiVis 500 – Expansion from 50 to 100 OPC signals	DV500-EXP100	1SAP501800R0091		0.050
DigiVis 500 – Expansion from 100 to 250 OPC signals	DV500-EXP250	1SAP501800R0101		0.050
DigiVis 500 – Expansion from 250 to 500 OPC signals	DV500-EXP500	1SAP501800R0111		0.050
DigiVis 500 – Expansion from 500 to 1000 OPC signals	DV500-EXP1000	1SAP501800R0121		0.050
DigiVis 500 – Expansion from 1000 to 2000 OPC signals	DV500-EXP2000	1SAP501800R0131		0.050
DigiVis 500 – Expansion to unlimited OPC signals	DV500-EXPUNL	1SAP501800R0141		0.050
DigiVis 500 – USB dongle replacement license	DV500-USB-R	1SAP501800R0151		0.050
DigiVis 500 – WEB Display runtime	DV500-WEBDIS	1SAP501800R0161		0.050
DigiVis 500 – Dual monitor Support	DV500-DUALMON	1SAP501800R0171		0.050
DigiVis 500 – DigiBrowse	DV500-DIGIB	1SAP501800R0181		0.050
DigiVis 500 – Security Lock	DV500-SLOCK	1SAP501800R0191		0.050
DigiVis 500 – USB dongle	DV500-USB	1SBN260318R1001		0.100
DigiVis 500 – Software and Documentation CD	DV500-CD	1SAP501900R0001		0.150

Wireless automation devices

Ordering data



WDIO100



WAT100



WAC100



WAM100-N



WSIX100



WIOP100

Input/output module

Description	Type	Order code	Price	Weight (1 pce) kg
Basic infrastructure for wireless. I/O module	WDIO100-CON-FBP	1SAF960300R2000		0.410

Antennas for input module

The antennas WAT100 transmit and receive the signals between an input module and the wireless proximity switches. Please order one WAT100-R and one WAT100-L per WDIO.

Description	Type	Order code	Price	Weight (1 pce) kg
Right circular polarized antenna	WAT100-R	1SAF900600R0001		0.100
Left circular polarized antenna	WAT100-L	1SAF900600R0002		0.100

Antenna cables for input module

Description	Type	Order code	Price	Weight (1 pce) kg
3 m coaxial cable	WAC100-N03	1SAF900600R1030		0.370
5 m coaxial cable	WAC100-N05	1SAF900600R1050		0.600

Antenna mounting bracket

Description	Type	Order code	Price	Weight (1 pce) kg
Antenna mounting bracket, one per antenna	WAM100-N	1SAF900900R0001		0.095

Wireless Proximity switches and wireless sensor pads - Sensor heads

Description	Type	Order code	Price	Weight (1 pce) kg
1.5 mm switching distance, M8x1 flush mounted	WSIF015-M8N	1SAF108911R3000		0.025
2 mm switching distance, M8x1 non flush mounted	WSIN020-M8N	1SAF108921R3000		0.025
2 mm switching distance, M12x1 flush mounted	WSIF020-M12N	1SAF112911R3000		0.030
4 mm switching distance, M12x1 non flush mounted	WSIN040-M12N	1SAF112921R3000		0.025
5 mm switching distance, M18x1 flush mounted	WSIF050-M18N	1SAF118911R3000		0.060
8 mm switching distance, M18x1 non flush mounted	WSIN080-M18N	1SAF118921R3000		0.055
10 mm switching distance, M30x1.5 flush mounted	WSIF100-M30N	1SAF130911R3000		0.140
15 mm switching distance, M30x1.5 non flush mounted	WSIN150-M30N	1SAF130921R3000		0.120

IP67 Input/Output Pads, Input Pad - Communication module, I/O pads, sensor pad

Description	Type	Order code	Price	Weight (1 pce) kg
Wireless Communication module	WSIX100-B50NF	1SAF900100R4000		0.125
Wireless I/O Pad, 8DI/8DC	WIOP100-8DI8DC	1SAF960100R1000		0.350
Wireless I/O Pad, 8DC	WIOP208-8DC	1SAF975100R1000		0.165
Wireless Sensor pad, 8E	WSP100-8I	1SAF968100R1000		0.550

Wireless automation devices

Ordering data



WSC100



WPU100



WPC100

Connection cables/ holder for WSIX

Description	Type	Order code	Price	Weight (1 pce) kg
Bracket f. WSIX, M12 recept., no cable	WSC100-N000	1SAF900100R1000		0.070
Bracket f. WSIX, M12 recept., 0,30 m cable	WSC100-N003	1SAF900100R1003		0.085
Bracket f. WSIX, M12 recept., 0,60 m cable	WSC100-N006	1SAF900100R1006		0.095
Bracket f. WSIX, M12 recept., 0,75 m cable	WSC100-N007	1SAF900100R1007		0.100
Bracket f. WSIX, M12 recept., 0,85 m cable	WSC100-N008	1SAF900100R1008		0.105
Bracket f. WSIX, M12 recept., 1,00 m cable	WSC100-N010	1SAF900100R1010		0.110

Optional Power supplies (only when WSIX or WSP is used)

Description	Type	Order code	Price	Weight (1 pce) kg
Power supply 24 A mod.	WPU100-24M	1SAF960200R0001		17.000

Primary loops for optional Wireless-POWER (only when WSIX or WSP is used)

The primary loops WPC100 emit a weak electromagnetic field of 120kHz with the help of the connected power supply for WPU.

Description	Type	Order code	Price	Weight (1 pce) kg
10 m preparked cable (cable shoes on both ends) for the connection to the power supply for wireless position sensors	WPC100-N10	1SAF900800R2100		1.280
12 m preparked cable (cable shoes on both ends) for the connection to the power supply for wireless position sensors	WPC100-N12	1SAF900800R2120		1.535
15 m preparked cable (cable shoes on both ends) for the connection to the power supply for wireless position sensors	WPC100-N15	1SAF900800R2150		1.920
17 m preparked cable (cable shoes on both ends) for the connection to the power supply for wireless position sensors	WPC100-N17	1SAF900800R2170		2.175
20 m preparked cable (cable shoes on both ends) for the connection to the power supply for wireless position sensors	WPC100-N20	1SAF900800R2200		2.550
22 m preparked cable (cable shoes on both ends) for the connection to the power supply for wireless position sensors	WPC100-N22	1SAF900800R2220		2.815
25 m preparked cable (cable shoes on both ends) for the connection to the power supply for wireless position sensors	WPC100-N25	1SAF900800R2250		3.200
28 m preparked cable (cable shoes on both ends) for the connection to the power supply for wireless position sensors	WPC100-N28	1SAF900800R2280		3.585

Wireless automation devices

Ordering data



SZCI-YU0

Y-connectors (Data ports - Splitters)

Description	Type	Order code	Price	Weight (1 pce) kg
Y-distributor M12-2xM12 f. 2 SA, for WIOP100	SZC1-YU0	1SAF912910R1000		0.035
Y-distributor M12-2xM8 f. 2 SA, for WIOP100	SZC8-YU0	1SAF912911R1000		0.045
Y-distributor M12-2xM12, for WSP	WSC1-YU0	1SAF912990R1000		0.035



SZCI8-YU0

7/8" connectors 5 poles (Power connectors for WIOP100)

Description	Type	Order code	Price	Weight (1 pce) kg
Power connector for WIOP100. Plug 7/8"	SZC7-5POL-P	1SAF937780R1000		0.045
Power connector for WIOP100. Socket 7/8"	SZC7-5POL-S	1SAF937781R1000		0.045



WSC1-YU0

Documentation

Description	Type	Order code	Price	Weight (1 pce) kg
English/German documentation and use-case videos	CD-ROM	2CDC171007E0406		0.020



SZC7-5POL-P

Notes:

Videos about Wireless Automation Application Reports and Use Cases

From non-ABB manufacturing sites:

FORD Motors, Inc., Detroit

<http://www.youtube.com/watch?v=cr9Lsb7WImY>

Food Packaging in USA/South Carolina

<http://www.youtube.com/watch?v=UmxLow7yzqM>



SZC7-5POL-S

Notes

PLC Trainer AC500

Training packages with didactic models, software, teachware for schools and universities

Teach IEC 61131 programming based on CoDeSys with ABB AC500 PLCs

The ABB PLC Trainer AC500 addresses learners and students starting from the basic logic programming over motivating exercises up to Ethernet communication tasks and visualization with an integrated web server.

The included exercises range from the basic logical functions to practical samples like hot water heating using solar panels, parking bay monitoring or controlling gates with IR-remote.

Expansion possibilities like Motor or Traffic Light plug-on module and the Solar Tracking module will increase the motivation of the learners.

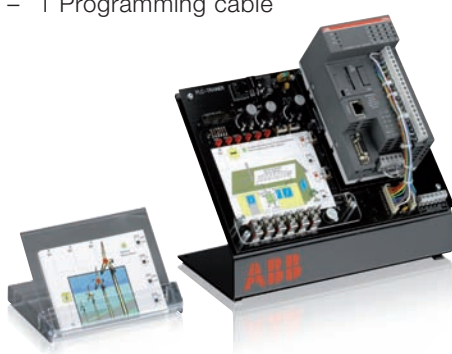
These training packages are built in cooperation with IKH Didactic Systems. For more information please visit www.ikhds.com/abb.



PLC Trainer AC500 basic package

Description:

- 1 PLC Trainer ABB AC500 with AC500-eCo CPU
- 1 Power supply 230V AC/24V DC
- 1 IR-remote control without batteries
- 45 Learning cards 110 x 81 mm laminated in transparent storage box
- Programming software and 45 practical exercises and solutions on USB stick
- 1 Programming cable



PLC-trainer ABB AC500



PLC-trainer ABB AC500 with plug-on traffic light module



PLC-trainer ABB AC500 with plug-on motor module

AC500-eCo Starter kits

Getting started is as easy as 1, 2, 3

More functionality and enhanced scalability

New AC500-eCo Starter kits

The AC500-eCo Starter kits help you to get familiar with ABB AC500 PLC offerings and the engineering tool within a very short time. Learn how to connect and setup the components provided in the starter kit and how to program the PLC by means of several simple example applications.

All starter kits come with CPU, programming cable, digital input simulator, PS501 Control Builder Plus engineering tool and

getting started handbook. The four variants differ from the CPU included – AC or DC power supply input, relay or transistor type output, with or without Ethernet interface.

Easy to use

The AC500-eCo from ABB is a range of uniquely scalable PLCs offering you unrivalled cost effectiveness for modern industrial automation applications. The AC500-eCo integrates perfectly into the AC500 family - this provides you with the option to build customized solutions based on the standard S500 and S500-eCo I/O range.

Easy to learn

Offering all of the advantages you would expect from the AC500 family of devices, the AC500-eCo delivers an impressive set of powerful programming features. In addition, thanks to the fact that ABB uses a common CoDeSys-based programming system for the entire AC500 family, it is a snap to learn and configure.

Please find ordering details on page 81.



AC500 website

Online tools

The www.abb.com/plc website is a mine of information on our products and documentation.

The screenshot shows the ABB Programmable Logic Controllers (PLCs) website page. The browser address bar displays www.abb.com/product/us/9AAC100143.aspx?country=FR. The page features the ABB logo and navigation links such as Home, About ABB, Products and services, News center, Careers, and Investor center. The main content area is titled "Programmable Logic Controllers PLCs" and includes a search bar, a "Products & Services only" checkbox, and a "Rate this page" button. The page also displays a list of products and services, including AC500-eCo PLC, AC500 Scalable and Flexible PLC, PS501 Control Builder Plus, Wireless Interface for Sensors and Actuators, S500-eCo I/O Module, S500 I/O-Module and Bus-Interface Module, CP600 and CP400 Operator Panel Series, and DigiVis 500. The page is organized into sections: "Our offering of PLCs and Systems", "Service", "Downloads", "ABB Drives", "More Info Links", and "Latest Product News". The "Service" section includes links to FAQ of PLC and Automation Products, Application Examples, Global Training Locations, Latest Success Stories, and PLC on YouTube. The "Downloads" section includes links to View related documents and downloads for Programmable Logic Controllers PLCs. The "ABB Drives" section includes a link to Welcome to ABB Drives Portal. The "More Info Links" section includes links to CAD Drawing Library, EPLAN Data, PLC's Literature Library, I/O's Literature Library, Electronic Device Descriptions, Firmware Updates, PS501 Updates, and Documentation Updates. The "Latest Product News" section includes links to DigiVis 500 HMI Software, New AC500 CPU Modules, New AC500-eCo Modules, and Latest Product News Archive.

ABB Programmable Logic Controllers PLCs

ABB offers a full range of automation products like programmable logic controllers and HMIs.

ABB is the supplier of choice for small equipment control applications to complex systems like web presses and distributed systems. ABB's PLCs are some of the fastest and most reliable available.

Highlights

Join us on YouTube

Overview of ABB's full range of Programmable Logic Controllers

Fast View PLC Product Selection Guide

Our offering of PLCs and Systems

- AC500-eCo PLC
The economical PLC for smaller systems and equipment control.
- AC500 Scalable and Flexible PLC
The ABB PLC based on a common automation platform with large communication capacity.
- PS501 Control Builder Plus
This is the new engineering tool for AC500 and AC500-eCo PLCs. It is designed for efficient PLC programming according to all languages of IEC 61131-3 and Continuous Function Chart.
- Wireless Interface for Sensors and Actuators
New freedom with wireless from ABB – the unique concept for wireless automation.
- S500-eCo I/O Module
Small I/O modules for even more scalability.
- S500 I/O-Module and Bus-Interface Module
Distributed I/Os on all main industrial protocols like PROFIBUS DP, PROFINET, DeviceNet
- CP600 and CP400 Operator Panel Series
The ABB range of HMI operator panels offers an excellent diversity of features and functionalities for maximum operator comfort.
- DigiVis 500
DigiVis 500 is the supervision software suitable for ABB's AC500 PLC series.

Service

- 2 → FAQ of PLC and Automation Products
- 3 → Latest Success Stories
- Application Examples
- 1 → PLC on YouTube
- 4 → Global Training Locations

Downloads

View related documents and downloads for:
→ Programmable Logic Controllers PLCs

ABB Drives

→ Welcome to ABB Drives Portal

More Info Links 5

- CAD Drawing Library
- EPLAN Data
- PLC's Literature Library
- I/O's Literature Library
- Electronic Device Descriptions
- Firmware Updates
- PS501 Updates
- Documentation Updates

Latest Product News

- DigiVis 500 HMI Software
- New AC500 CPU Modules
- New AC500-eCo Modules
- Latest Product News Archive

Provider information/Impressum © Copyright 2012 ABB. → Cookies and privacy policy

ABB PLC
S'abonner

118 abonnés(s)
9 369 vidéos

Sélection
Flux
Vidéos

Rechercher sur la chaîne

Les vidéos mises en ligne

1 – 10 sur 17

[Tout regarder](#)

À propos de : ABB PLC

AC500 PLC

abb abb.com/PLC

de abbplc

Dernière activité 28 juin, 2012

Date d'inscription 28 juin 2007

Pays France

Sélection de playlists

Les vidéos mises en ligne

68 ABB PLC

[tout afficher >](#)

ABB AC500 PLC - AC500-XC Vibration resi

accipic 229 vues il y a 3 semaines

The new AC500-XC series is designed to withstand various harsh conditions during operation. In this video, we can see the validation test of extended immunity to vibrations...

7:02

ABB AC500 PLC First Visualization

accipic 173 vues il y a 1 mois

Understand the integrated visualization feature of ABB AC500 PLC

3:45

External Communication and Multifunction Modules

Like to have communication modules in CPU in any configuration

ABB AC500 PLC modules

3:11

ABB PLC AC500 - Communication Capabi

accipic 202 vues il y a 2 mois

Understand and appreciate the many different powerful communication possibilities supported by the ABB AC500 PLC controllers.

ABB PLC AC500 - the voice of David Caron

accipic 178 vues il y a 2 mois

David Caron has been present in SPS/SCS/DRIVES 2012. ABB started PLC business more than 40 years ago and now it is focusing its efforts in some specific segments thanks to...

2:58

ABB AC500 PLC - Profibus Network

accipic 635 vues il y a 4 mois

Learn how to configure a Profibus network, using AC500 remote I/O in SPS/Control Builder Plus



Power and productivity
for a better world™

[Home](#)
[About ABB](#)
[Products and services](#)
[News center](#)
[Careers](#)
[Investor center](#)

Gesellschaften

- ABB AG
- Automation GmbH
- Automation Products
- Grundfos
- ABB STOTZ-KONTAKT
- ABB Bus-Kontakt /
Shedat & John
Vertriebsgesellschaft mbH
- Shedat & John GmbH &
Co. KG
- Training Center

FAQ of PLC and automation products

- [» Rate this page](#)
- [» Share this page](#)

Technical Support PL C
+49 6221 731 1444
plc.support@abb.com

- » AC800 CPU**
 Information of AC800 CPU/s
- » S800 & C800x**
 IO modules and communication couplers
- » P8001**
 Programming software of AC500
- » Special functionalities**
 Visualisation, FTP, SFTP, SFTP etc
- » Accessories**
 SO card, battery, cable
- » UMC**
 Universal Motor Controller
- » 6TK19708**
 Software and hardware of 6TK19708

» [Tips for using FAQ](#)

[illegible][illegible]

View related documents and downloads for:
→ Programmable Logic Controllers
PLCs

→ Welcome to ABB Drives Portal

- CAD Drawing Library
- EPLAN Data
- PLC's Literature Library
- I/O's Literature Library
- Electronic Device Descriptions
- Firmware Updates
- PS501 Updates
- Documentation Updates

ABB Industrial automation | 91

AC500 products family

Life cycle management for maximum return on investment

ABB's automation products business follows two main structures to ensure its customer's installations remain healthy:

1. ABB's product life cycle management model assures availability of services and support throughout the life cycle and a smooth transition to new technology at the end of the life cycle.
2. ABB's service offering follows a logical flow that spans the entire asset life cycle, from the moment a customer makes the first enquiry through to disposal and recycling of the product.

At the heart of ABB's services is its product life cycle management model. All services and support available for ABB products are planned according to this model. Product specific life cycle plans are available for customers to help with maintenance planning and when deciding about upgrades, retrofits and replacements.

Product life cycle management model



The life cycle management model divides a product's life cycle into four phases: active, classic, limited and obsolete. Each phase has different implications for the end user in terms of services and support provided.

In the 'active' phase the end user benefits from warranty options and a full range of life cycle services, spare parts and maintenance materials. This phase ends when the volume production of a particular product ends and the 'classic' phase starts. In addition to offerings available in 'active' phase, end users may migrate to new technology by using upgrade and retrofit solutions providing improved performance and extension of the life cycle.

After the 'classic' phase products enter the 'limited' phase and end users are recommended to start planning a transfer to new technology before product support ceases.

Spare part services continue as long as components and materials are available, and throughout the course of time the use of reconditioned parts increases.

A product is transferred to the 'obsolete' phase when it is no longer possible to provide life cycle services within reasonable cost, or when ABB can no longer support the product technically, or the old technology is no longer available.

Benefits of product life cycle management

Product life cycle management maximizes the value of equipment and maintenance investments by:

- Ensuring spare part and competence availability throughout the life cycle
- Enabling efficient product support & maintenance for improved reliability

- Adding functionality to the initial product by following the upgrade path
- Providing a smooth transition to new technology at the end of a product's lifecycle
- Helping the end user to decide when an upgrade, retrofit or replacement is required.



The services offered by ABB's automation products span the entire asset lifetime, from the moment a customer makes the first enquiry to disposal and recycling of the product. Throughout the lifetime of an asset, ABB provides training, technical support and customized contracts. All of this is supported by one of the most extensive global sales and service networks.

Pre-purchase

ABB provides a range of services and support that help guide the customers to the right products for their applications.

Order and delivery

Orders can be placed through any ABB office or through ABB's channel partners. In some countries, ABB also offers a global online ordering and tracking system. ABB's sales and service network offers timely deliveries including express delivery.

Installation and commissioning

While many customers have the resource to undertake installation and commissioning on their own, ABB and its channel partners offer professional installation and start up services.

Operation and maintenance

From maintenance assessments, preventive maintenance and reconditioning to spare parts and repairs on-site or within its workshops, ABB has all the options covered to keep its customer's processes operational.

Upgrade and retrofit

ABB products can often be upgraded to the latest software or hardware to improve the performance of the application. Existing processes can be economically modernized by retrofitting the latest technology.

Replacement and recycling

ABB can advise on the best replacement products while ensuring that the products are disposed of in a way that meets all local environmental regulations.

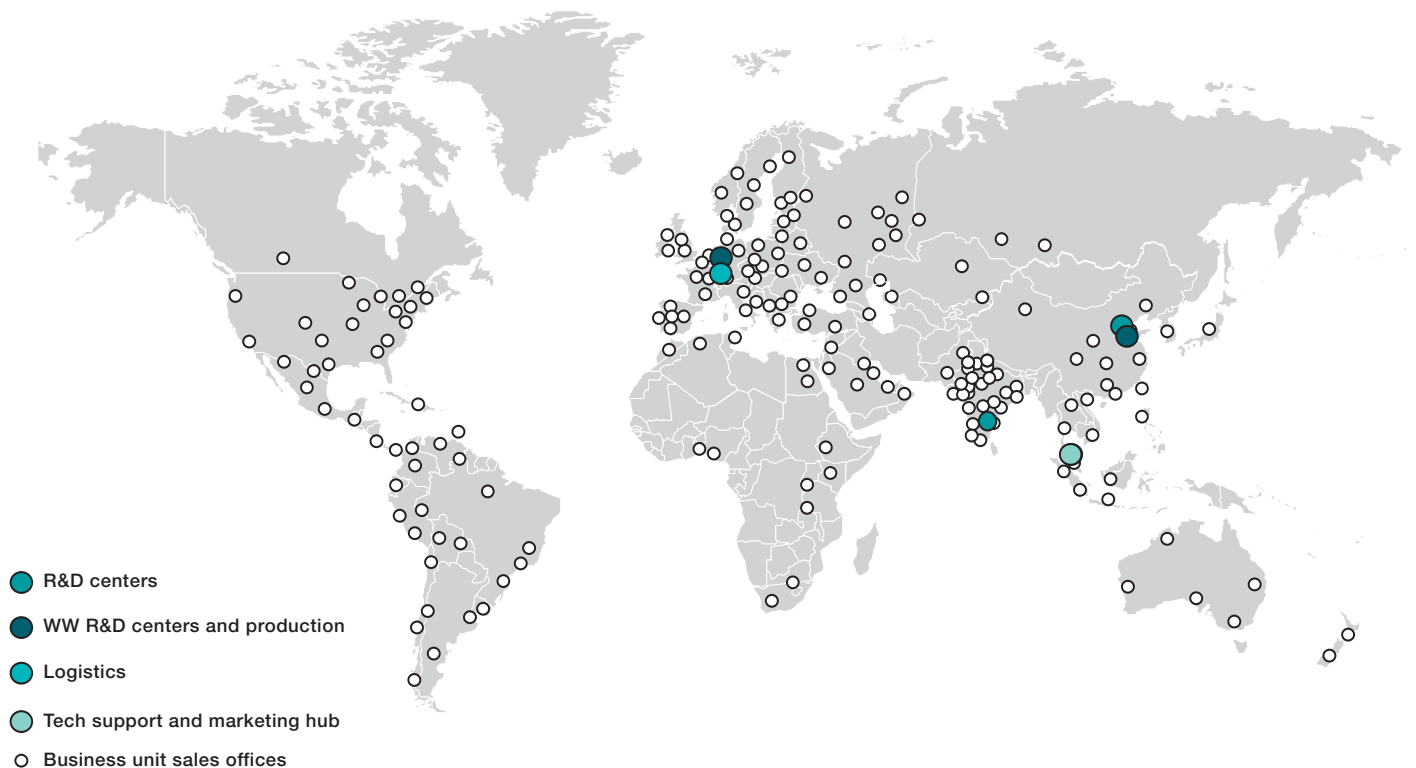
AC500 products family

Order and delivery

Automation products

With more than 100 manufacturing sites in 50 countries (see image below), the Automation Products Division of ABB is able to deliver one million products per day through sales activities in more than 200 countries. ABB often gets the reaction from its customers, "Do you really do all that?",

when they take a first glance at ABB's Automation Products catalog. With a range of more than 170,000 products, ABB supplies just about every type of electronic equipment; from standard components to the latest control technology, to meet all customer's need, whether a standalone product or a completely integrated system.



Through its global logistics network, ABB offers genuine factory certified spare parts and related services tailored to customer's needs. A wide range of parts is available within a short time, often in 24 hours direct to site. ABB spare parts and services can be purchased from more than 1400 companies located throughout the world and is able to serve customers locally, often in their own language. These companies include ABB's own offices and authorized channel partners. In many countries, ABB and its channel partners, stock products and spare parts locally, providing high availability and, often, same day delivery. To minimize its customer's costly downtime, ABB's logistics network, in many countries, operate 24 hours a day, seven days a week, using air freight and express courier services.



Notes

5

Order code classification

Order code	Type	Page
1SAF108911R3000	WSIF015-M8N	84
1SAF108921R3000	WSIN020-M8N	84
1SAF112911R3000	WSIF020-M12N	84
1SAF112921R3000	WSIN040-M12N	84
1SAF118911R3000	WSIF050-M18N	84
1SAF118921R3000	WSIN080-M18N	84
1SAF130911R3000	WSIF100-M30N	84
1SAF130921R3000	WSIN150-M30N	84
1SAF900100R1000	WSC100-N000	85
1SAF900100R1003	WSC100-N003	85
1SAF900100R1006	WSC100-N006	85
1SAF900100R1007	WSC100-N007	85
1SAF900100R1008	WSC100-N008	85
1SAF900100R1010	WSC100-N010	84
1SAF900100R4000	WSIX100-B50NF	84
1SAF900600R0001	WAT100-R	84
1SAF900600R0002	WAT100-L	84
1SAF900600R1030	WAC100-N03	84
1SAF900600R1050	WAC100-N05	84
1SAF900800R2100	WPC100-N10	85
1SAF900800R2120	WPC100-N12	85
1SAF900800R2150	WPC100-N15	85
1SAF900800R2170	WPC100-N17	85
1SAF900800R2200	WPC100-N20	85
1SAF900800R2220	WPC100-N22	85
1SAF900800R2250	WPC100-N25	85
1SAF900800R2280	WPC100-N28	85
1SAF900900R0001	WAM100-N	84
1SAF912910R1000	SZC1-YU0	86
1SAF912911R1000	SZC8-YU0	86
1SAF912990R1000	WSC1-YU0	86
1SAF937780R1000	SZC7-5POL-P	86
1SAF937781R1000	SZC7-5POL-S	86
1SAF960100R1000	WIOP100-8DI8DC	84
1SAF960200R0001	WPU100-24M	85
1SAF960300R2000	WDIO100-CON-FBP	84
1SAF968100R1000	WSP100-8I	84
1SAF975100R1000	WIOP208-8DC	84
1SAJ929400R0001	UTF21-FBP	81
1SAP111100R0270	TB511-ETH	73
1SAP112100R0270	TB521-ETH	73
1SAP114100R0270	TB541-ETH	73
1SAP130200R0200	PM572	72
1SAP130300R0271	PM573-ETH	72
1SAP140200R0201	PM582	72
1SAP140300R0271	PM583-ETH	72
1SAP150000R0271	PM590-ETH	72
1SAP150100R0271	PM591-ETH	72
1SAP150200R0271	PM592-ETH	72
1SAP170200R0001	CM572-DP	73
1SAP170400R0201	CM574-RS	74
1SAP170401R0201	CM574-ROM	75
1SAP170700R0001	CM577-ETH	73
1SAP170800R0001	CM578-CN	74
1SAP170901R0001	CM579-PNIO	74
1SAP170902R0001	CM579-ETHCAT	74
1SAP172800R0001	CM588-CN	74
1SAP180100R0001	MC502	80
1SAP180200R0001	TK501	81
1SAP180200R0101	TK502	81
1SAP180300R0001	TA521	81
1SAP180500R0001	TA523	81
1SAP180600R0001	TA524	81
1SAP180700R0001	TA525	81
1SAP180800R0001	TA526	81
1SAP181100R0001	TA527	81
1SAP181200R0001	TA528	81
1SAP181500R0001	TA562-RS-RTC	80
1SAP182300R0001	TA535	81
1SAP182400R0001	TA512-BAS	81
1SAP182500R0001	TA513-ADV	81
1SAP186100R0001	TK506	80
1SAP186200R0001	TA574-A-R-AC	81
1SAP186200R0002	TA574-A-R	81
1SAP186200R0003	TA574-A-T	81
1SAP186200R0004	TA574-D-T-ETH	81
1SAP190100R0200	PS501-PROG	80
1SAP190500R0001	PS541-HMI	80
1SAP192100R0001	PS552-MC	80
1SAP192100R0101	PS552-MC	80
1SAP195000R0001	PS562-SOLAR	80
1SAP195200R0001	PS563-WATER	80
1SAP210000R0001	TU506-FBP	77
1SAP210200R0001	TU505-FBP	77
1SAP210400R0001	TU552-CS31	77
1SAP210600R0001	TU551-CS31	77

Order code	Type	Page
1SAP210800R0001	TU510	77
1SAP211200R0001	TU518	77
1SAP212000R0001	TU516	77
1SAP212200R0001	TU515	77
1SAP214000R0001	TU508-ETH	77
1SAP214200R0001	TU507-ETH	77
1SAP214400R0001	TU520-ETH	77
1SAP217000R0001	TU532	77
1SAP217200R0001	TU531	77
1SAP220000R0001	DC505-FBP	78
1SAP220500R0001	DC551-CS31	78
1SAP220600R0001	CI501-PNIO	79
1SAP220700R0001	CI502-PNIO	79
1SAP220900R0001	CI511-ETHCAT	79
1SAP221000R0001	CI512-ETHCAT	79
1SAP221100R0001	CI590-CS31-HA	78
1SAP221200R0001	CI592-CS31	78
1SAP221300R0001	CI504-PNIO	79
1SAP221500R0001	CI506-PNIO	79
1SAP224100R0001	CI541-DP	78
1SAP224200R0001	CI542-DP	78
1SAP228100R0001	CI581-CN	78
1SAP228200R0001	CI582-CN	78
1SAP240000R0001	DI524	75
1SAP240100R0001	DC532	75
1SAP240500R0001	DC523	75
1SAP240600R0001	DC522	75
1SAP245000R0001	DX531	75
1SAP245200R0001	DX522	75
1SAP250000R0001	AX522	76
1SAP250100R0001	AX521	76
1SAP250200R0001	AO523	76
1SAP250300R0001	AI523	76
1SAP250600R0001	AI531	76
1SAP250700R0001	DA501	77
1SAP260300R0001	CD522	76
1SAP270000R0001	DC541-CM	75
1SAP311100R0270	TB511-ETH-XC	73
1SAP312100R0270	TB521-ETH-XC	73
1SAP314100R0270	TB421-ETH-XC	73
1SAP330300R0271	PM573-ETH-XC	72
1SAP340200R0201	PM582-XC	72
1SAP340300R0271	PM583-ETH-XC	72
1SAP350100R0271	PM591-ETH-XC	72
1SAP350200R0271	PM592-ETH-XC	72
1SAP370200R0001	CM572-DP-XC	73
1SAP370700R0001	CM577-ETH-XC	73
1SAP370800R0001	CM578-CN-XC	74
1SAP370901R0001	CM579-PNIO-XC	74
1SAP372800R0001	CM588-CN-XC	74
1SAP410400R0001	TU552-CS31-XC	77
1SAP410800R0001	TU510-XC	77
1SAP411200R0001	TU518-XC	77
1SAP412000R0001	TU516-XC	77
1SAP414000R0001	TU508-ETH-XC	77
1SAP414400R0001	TU520-ETH-XC	77
1SAP417000R0001	TU532-XC	77
1SAP420500R0001	DC551-CS31-XC	78
1SAP420600R0001	CI501-PNIO-XC	79
1SAP420700R0001	CI502-PNIO-XC	79
1SAP421100R0001	CI590-CS31-HA-XC	78
1SAP421200R0001	CI592-CS31-XC	78
1SAP421300R0001	CI504-PNIO-XC	79
1SAP421500R0001	CI506-PNIO-XC	79
1SAP424100R0001	CI541-DP-XC	78
1SAP424200R0001	CI542-DP-XC	78
1SAP428100R0001	CI581-CN-XC	78
1SAP428200R0001	CI582-CN-XC	78
1SAP440000R0001	DI524-XC	75
1SAP440100R0001	DC532-XC	75
1SAP440500R0001	DC523-XC	75
1SAP440600R0001	DC522-XC	75
1SAP445200R0001	DX522-XC	75
1SAP450000R0001	AX522-XC	76
1SAP450100R0001	AX521-XC	76
1SAP450200R0001	AO523-XC	76
1SAP450300R0001	AI523-XC	76
1SAP450600R0001	AI531-XC	76
1SAP450700R0001	DA501-XC	76
1SAP460300R0001	CD522-XC	75
1SAP470000R0001	DC541-CM-XC	76
1SAP500900R0001	PB610	82
1SAP500981R0001	TK681	82
1SAP500982R0001	TK682	82
1SAP501800R0011	DV500-GBUILDER	83
1SAP501800R0021	DV500-OP50	83

[illegible]

Index

Type classification

Type	Order code	Page
AI523	1SAP250300R0001	76
AI523-XC	1SAP450300R0001	76
AI531	1SAP250600R0001	76
AI531-XC	1SAP450600R0001	76
AI561	1TNE968902R1101	76
AI562	1TNE968902R1102	76
AI563	1TNE968902R1103	76
AO523	1SAP250200R0001	76
AO523-XC	1SAP450200R0001	76
AO561	1TNE968902R1201	76
AX521	1SAP250100R0001	76
AX521-XC	1SAP450100R0001	76
AX522	1SAP250000R0001	76
AX522-XC	1SAP450000R0001	76
AX561	1TNE968902R1301	76
CD522	1SAP260300R0001	75
CD522-XC	1SAP460300R0001	75
CD-ROM	2CDC171007E0406	86
CI501-PNIO	1SAP220600R0001	79
CI501-PNIO-XC	1SAP420600R0001	79
CI502-PNIO	1SAP220700R0001	79
CI502-PNIO-XC	1SAP420700R0001	79
CI504-PNIO	1SAP221300R0001	79
CI504-PNIO-XC	1SAP421300R0001	79
CI506-PNIO	1SAP221500R0001	79
CI506-PNIO-XC	1SAP421500R0001	79
CI511-ETHCAT	1SAP220900R0001	79
CI512-ETHCAT	1SAP221000R0001	79
CI541-DP	1SAP224100R0001	78
CI541-DP-XC	1SAP424100R0001	78
CI542-DP	1SAP224200R0001	78
CI542-DP-XC	1SAP424200R0001	78
CI581-CN	1SAP228100R0001	78
CI581-CN-XC	1SAP428100R0001	78
CI582-CN	1SAP228200R0001	78
CI582-CN-XC	1SAP428200R0001	78
CI590-CS31-HA	1SAP221100R0001	78
CI590-CS31-HA-XC	1SAP421100R0001	78
CI592-CS31	1SAP221200R0001	78
CI592-CS31-XC	1SAP421200R0001	78
CM572-DP	1SAP170200R0001	73
CM572-DP-XC	1SAP370200R0001	73
CM574-RCOM	1SAP170401R0201	75
CM574-RS	1SAP170400R0201	74
CM577-ETH	1SAP170700R0001	73
CM577-ETH-XC	1SAP370700R0001	73
CM578-CN	1SAP170800R0001	74
CM578-CN-XC	1SAP370800R0001	74
CM579-ETHCAT	1SAP170902R0001	74
CM579-PNIO	1SAP170901R0001	74
CM579-PNIO-XC	1SAP370901R0001	74
CM588-CN	1SAP172800R0001	74
CM588-CN-XC	1SAP372800R0001	74
CP400Soft	1SBS260284R1001	82
CP415M	1SBP260191R1001	82
CP430B	1SBP260183R1001	82
CP620	1SAP520100R0001	82
CP620-WEB	1SAP520200R0001	82
CP630	1SAP530100R0001	82
CP630-WEB	1SAP530200R0001	82
CP635	1SAP535100R0001	82
CP635-WEB	1SAP535200R0001	82
CP650	1SAP550100R0001	82
CP650-WEB	1SAP550200R0001	82
CP660	1SAP560100R0001	82
CP660-WEB	1SAP560200R0001	82
CP675	1SAP575100R0001	82
CP675-WEB	1SAP575200R0001	82
DA501	1SAP250700R0001	77
DA501-XC	1SAP450700R0001	77
DC505-FBP	1SAP220000R0001	78
DC522	1SAP240600R0001	75
DC522-XC	1SAP440600R0001	75
DC523	1SAP240500R0001	75
DC523-XC	1SAP440500R0001	75
DC532	1SAP240100R0001	75
DC532-XC	1SAP440100R0001	75
DC541-CM	1SAP270000R0001	76
DC541-CM-XC	1SAP470000R0001	76
DC551-CS31	1SAP220500R0001	78
DC551-CS31-XC	1SAP420500R0001	78
DC561	1TNE968902R2001	75
DI524	1SAP240000R0001	75
DI524-XC	1SAP440000R0001	75
DI561	1TNE968902R2101	75
DI562	1TNE968902R2102	75
DI571	1TNE968902R2103	75

Type	Order code	Page
DO561	1TNE968902R2201	75
DO571	1TNE968902R2202	75
DO572	1TNE968902R2203	75
DV500-CD	1SAP501900R0001	83
DV500-DIGIB	1SAP501800R0181	83
DV500-DUALMON	1SAP501800R0171	83
DV500-EXP100	1SAP501800R0091	83
DV500-EXP1000	1SAP501800R0121	83
DV500-EXP2000	1SAP501800R0131	83
DV500-EXP250	1SAP501800R0101	83
DV500-EXP500	1SAP501800R0111	83
DV500-EXPUNL	1SAP501800R0141	83
DV500-GBUILDER	1SAP501800R0011	83
DV500-OP100	1SAP501800R0031	83
DV500-OP1000	1SAP501800R0061	83
DV500-OP2000	1SAP501800R0071	83
DV500-OP250	1SAP501800R0041	83
DV500-OP50	1SAP501800R0021	83
DV500-OP500	1SAP501800R0051	83
DV500-OPUNL	1SAP501800R0081	83
DV500-SLOCK	1SAP501800R0191	83
DV500-USB	1SBN260318R1001	83
DV500-USB-R	1SAP501800R0151	83
DV500-WEBDIS	1SAP501800R0161	83
DX522	1SAP245200R0001	75
DX522-XC	1SAP445200R0001	75
DX531	1SAP245000R0001	75
DX561	1TNE968902R2301	75
DX571	1TNE968902R2302	75
L44460901501	1SSS444609R1100	77
L44461101501	1SSS444611R1100	77
MC502	1SAP180100R0001	80
MC503	1TNE968901R0100	80
PB610	1SAP500900R0001	82
PM554-R	1TNE968900R0200	72
PM554-R-AC	1TNE968900R0220	72
PM554-T	1TNE968900R0100	72
PM554-T-ETH	1TNE968900R0110	72
PM564-R	1TNE968900R1200	72
PM564-R-AC	1TNE968900R1220	72
PM564-R-ETH	1TNE968900R1210	72
PM564-R-ETH-AC	1TNE968900R1211	72
PM564-T	1TNE968900R1100	72
PM564-T-ETH	1TNE968900R1110	72
PM572	1SAP130200R0200	72
PM573-ETH	1SAP130300R0271	72
PM573-ETH-XC	1SAP330300R0271	72
PM582	1SAP140200R0201	72
PM582-XC	1SAP340200R0201	72
PM583-ETH	1SAP140300R0271	72
PM583-ETH-XC	1SAP340300R0271	72
PM590-ETH	1SAP150000R0271	72
PM591-ETH	1SAP150100R0271	72
PM591-ETH-XC	1SAP350100R0271	72
PM592-ETH	1SAP150200R0271	72
PM592-ETH-XC	1SAP350200R0271	72
PS501-PROG	1SAP190100R0200	80
PS541-HMI	1SAP190500R0001	80
PS552-MC	1SAP192100R0001	80
PS562-SOLAR	1SAP195000R0001	80
PS563-WATER	1SAP195200R0001	80
SZC1-YU0	1SAF912910R1000	86
SZC7-5POL-P	1SAF937780R1000	86
SZC7-5POL-S	1SAF937781R1000	86
SZC8-YU0	1SAF912911R1000	86
TA512-BAS	1SAP182400R0001	81
TA513-ADV	1SAP182500R0001	81
TA521	1SAP180300R0001	81
TA523	1SAP180500R0001	81
TA524	1SAP180600R0001	81
TA525	1SAP180700R0001	81
TA526	1SAP180800R0001	81
TA527	1SAP181100R0001	81
TA528	1SAP181200R0001	81
TA535	1SAP182300R0001	81
TA561-RTC	1TNE968901R3200	80
TA562-RS	1TNE968901R4300	80
TA562-RS-RTC	1SAP181500R0001	80
TA564-11	1TNE968901R3104	77
TA564-9	1TNE968901R3103	77
TA565-11	1TNE968901R3106	77
TA565-9	1TNE968901R3105	77
TA566	1TNE968901R3107	80
TA570	1TNE968901R3203	80
TA571-SIM	1TNE968903R0203	80
TA574-A-R	1SAP186200R0002	81
TA574-A-R-AC	1SAP186200R0001	81

Type	Order code	Page
TA574-A-T	1SAP186200R0003	81
TA574-D-T-ETH	1SAP186200R0004	81
TB421-ETH-XC	1SAP314100R0270	73
TB511-ETH	1SAP111100R0270	73
TB511-ETH-XC	1SAP311100R0270	73
TB521-ETH	1SAP112100R0270	73
TB521-ETH-XC	1SAP312100R0270	73
TB541-ETH	1SAP114100R0270	73
TK401	1SBN260216R1001	82
TK402	1SBN260217R1001	82
TK405	1SBN260221R1001	82
TK406	1SBN260224R1001	82
TK501	1SAP180200R0001	81
TK502	1SAP180200R0101	81
TK503	1TNE968901R1100	80
TK504	1TNE968901R2100	80
TK506	1SAP186100R0001	80
TK681	1SAP500981R0001	82
TK682	1SAP500982R0001	82
TU505-FBP	1SAP210200R0001	77
TU506-FBP	1SAP210000R0001	77
TU507-ETH	1SAP214200R0001	77
TU508-ETH	1SAP214000R0001	77
TU508-ETH-XC	1SAP414000R0001	77
TU510	1SAP210800R0001	77
TU510-XC	1SAP410800R0001	77
TU515	1SAP212200R0001	77
TU516	1SAP212000R0001	77
TU516-XC	1SAP412000R0001	77
TU518	1SAP211200R0001	77
TU518-XC	1SAP411200R0001	77
TU520-ETH	1SAP214400R0001	77
TU520-ETH-XC	1SAP414400R0001	77
TU531	1SAP217200R0001	77
TU532	1SAP217000R0001	77
TU532-XC	1SAP417000R0001	77
TU551-CS31	1SAP210600R0001	77
TU552-CS31	1SAP210400R0001	77
TU552-CS31-XC	1SAP410400R0001	77
UTF21-FBP	1SAJ929400R0001	81
WAC100-N03	1SAF900600R1030	84
WAC100-N05	1SAF900600R1050	84
WAM100-N	1SAF900900R0001	84
WAT100-L	1SAF900600R0002	84
WAT100-R	1SAF900600R0001	84
WDIO100-CON-FBP	1SAF960300R2000	84
WIOP100-8Di8DC	1SAF960100R1000	84
WIOP208-8DC	1SAF975100R1000	84
WPC100-N10	1SAF900800R2100	85
WPC100-N12	1SAF900800R2120	85
WPC100-N15	1SAF900800R2150	85
WPC100-N17	1SAF900800R2170	85
WPC100-N20	1SAF900800R2200	85
WPC100-N22	1SAF900800R2220	85
WPC100-N25	1SAF900800R2250	85
WPC100-N28	1SAF900800R2280	85
WPU100-24M	1SAF960200R0001	85
WSC100-N000	1SAF900100R1000	85
WSC100-N003	1SAF900100R1003	85
WSC100-N006	1SAF900100R1006	85
WSC100-N007	1SAF900100R1007	85
WSC100-N008	1SAF900100R1008	85
WSC100-N010	1SAF900100R1010	85
WSC1-YU0	1SAF912990R1000	86
WSIF015-M8N	1SAF108911R3000	84
WSIF020-M12N	1SAF112911R3000	84
WSIF050-M18N	1SAF118911R3000	84
WSIF100-M30N	1SAF130911R3000	84
WSIN020-M8N	1SAF108921R3000	84
WSIN040-M12N	1SAF112921R3000	84
WSIN080-M18N	1SAF118921R3000	84
WSIN150-M30N	1SAF130921R3000	84
WSIX100-B50NF	1SAF900100R4000	84
WSP100-8I	1SAF968100R1000	84

Contact us

ABB Automation Products GmbH

Wallstadter Str. 59

D-68526 Ladenburg

Tel: +49 62 21 701 1444

Fax: +49 62 21 701 1382

E-Mail: plc.sales@de.abb.com

www.abb.com/plc



Scan the QR code
and access:



PLC Website



CP600 brochure



PS501 Control
Builder Plus brochure



Water brochure

Note

We reserve the right to make technical changes or modify the contents of this document without prior notice.

ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB.

Copyright© 2012 ABB - All rights reserved