

MAIN CATALOG

PLC Automation

PLCs, Control Panels, Engineering Suite
AC500, CP600, Automation Builder



PLC Automation product family

ABB solutions for various applications



Variable speed drives

Widest selection with scalable possibilities.

- Boosts productivity and energy efficiency, and cuts maintenance costs
- Scalable drives portfolio from micro, machinery and general purpose drives, to industrial drives and industry-specific drives
- Available directly from stock or can be built to order to meet more complex requirements
- Life cycle services to ensure exact operation of the processes, year after year

Performance



Motors

For optimal application control.

- Wide range of low voltage and medium voltage motors
- Reaches efficiency and energy saving levels even under the most demanding conditions
- Designed to operate reliably with low life cycle costs

Efficiency



ACS880 for speed, torque or position control

For almost any power and application.

- High accuracy and advanced functionality for wide power range and several variants. Ideal solution for almost any application from positioning applications like stacker cranes, metal presses, rotary tables and cutting systems to demanding open loop applications like winches
- Same user interface and hardware for the positioning controlled and the speed/torque controlled drives simplifying the engineering and use
- Ready made, embedded motion control functions eliminating the need for external position controllers

Accuracy

Discover our drives, motors and PLCs



new.abb.com/drives



new.abb.com/motors-generators





Scalability

Programmable Logic Controllers PLCs

For high performance and flexibility.

- The AC500 PLC platform provides solutions for small, medium and high-end applications
- ABB's AC500 PLC and control panel portfolio provides a high number of scalable products, communication protocols and connectivity options, from the field layer right through to the management and visualization layers



Usability

HMI (human-machine interface)

Clear in touch with productivity.

- The CP600 control panel platform is harmonized with AC500 PLCs and Automation Builder software
- Scalable solutions from basic CP600-eCo functionalities to premium CP600-Pro
- Easy programming with predefined customizable widgets



Engineering

Automation Builder

Next level engineering efficiency.

- Automation Builder integrates engineering tools for PLCs, safety, drives, motion and control panels
- Manage complexity and realize connectivity easily
- One common intuitive interface for configuring, programming, debugging and maintaining automation projects



Productivity

Machinery drives

Persistent and adaptable performance.

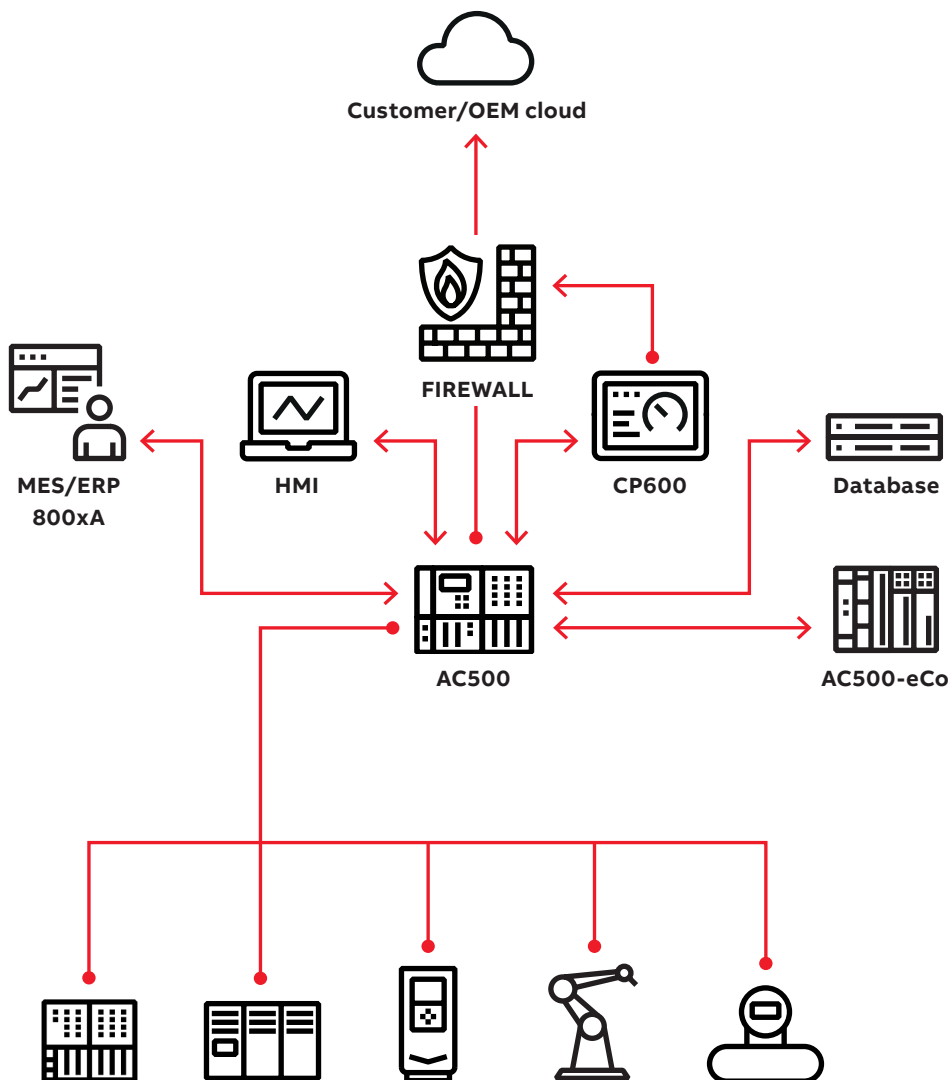
- Designed to offer high performance, adaptability and reliable operation
- The units can be configured and optimized to match exactly the customer's needs with a great motor control accuracy and performance
- Part of all-compatible product family
- Designed specifically for machine builders and system integrators



PLC Automation product family

Connectivity

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



IT network/Internet

- FTP(S)
- HTTP(S)
- MQTT
- NTP/SNTP
- OPC UA
- SMTP(S)

Factory/site network

- BACnet
- DNP3
- FTP(S)
- HTTP(S)
- IEC 60870-5-104
- IEC 61850
- KNX
- MySQL/MSSQL
- NTP/SNTP
- OPC DA/AE
- OPC UA
- SNMP
- TCP/IP
- UDP

Control network

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

AC500-eCo

Ordering data

AC500-eCo V3 CPUs

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

Total user program memory	Onboard I/Os	Relay / Transistor outputs	Integrated communication	Option board slots for extension	Power supply	Type	Order code	Weight (1 pce)
kB	DI/DO/DC							kg
Basic CPU PM5012-x-ETH: 1MB CPU, Ethernet interface, onboard digital I/O, not extendable, 1 slot for option board								
1 MB (thereof 256 kB Program code and Data) (2)(3)	6 / 4 / –	Transistor	1x Ethernet	1	24 V DC	PM5012-T-ETH	1SAP122600R0172	0.225
	6 / 4 / –	Relay	1x Ethernet	1	24 V DC	PM5012-R-ETH	1SAP122700R0172	0.235
Standard CPU PM5032-x-ETH: 2MB CPU, Ethernet interface, RTC and micro memory card, onboard digital I/O, extendable, 2 slots for option board								
2 MB (thereof 512 kB Program code and Data + 1.5 MB Web max.) (2)(3)	12 / 8 / 2	Transistor	1x Ethernet	2	24 V DC	PM5032-T-ETH	1SAP123400R0172	0.253
	12 / 6 / 2	Relay	1x Ethernet	2	24 V DC	PM5032-R-ETH	1SAP123500R0172	0.268
Standard CPU PM5052-x-ETH: 4MB CPU, Ethernet interface, RTC and micro memory card, onboard digital I/O, extendable, 3 slots for option board								
4 MB (thereof 768 kB Program code and Data + about 3 MB Web max.) (2)(3)	12 / 8 / 2	Transistor	1x Ethernet	3	24 V DC	PM5052-T-ETH	1SAP124000R0172	0.257
	12 / 6 / 2	Relay	1x Ethernet	3	24 V DC	PM5052-R-ETH	1SAP124100R0172	0.273
Pro CPU PM50x2-T-2ETH: 8MB CPU with two Ethernet interface, RTC and micro memory card, onboard digital I/O, extendable, 3 slots for option board								
8 MB (thereof 1 MB Program code and Data + 7 MB Web max.) (2)(3)	12 / 8 / 2	Transistor	2x independent Ethernet with switch	3	24 V DC	PM5072-T-2ETH	1SAP124500R0173	0.265
8 MB (thereof 1 MB Program code and Data + 7 MB Web max.) extended wide temperature (2)(3)	12 / 8 / 2	Transistor	2x independent Ethernet with switch	3	24 V DC	PM5072-T-2ETHW (1)	1SAP124400R0173	0.265
18 MB (thereof 1 MB Program code and Data + 16 MB Web max.) (2)(3)	12 / 8 / 2	Transistor	2x independent Ethernet with switch	3	24 V DC	PM5082-T-2ETH	1SAP124600R0173	0.265
24 MB (thereof 3 MB Program code and Data + 21 MB Web max.) (2)(3)	12 / 8 / 2	Transistor	2x independent Ethernet with switch	3	24 V DC	PM5092-T-2ETH	1SAP124700R0173	0.265

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

(1) Wide extended temperature -20 °C ... +70 °C. From production Index B0, the CPU PM5072-T-2ETHW will be usable from -40 °C ... + 70 °C.

(2) The maximum downloadable application size which is shown in Automation Builder contains all the user program code+user data+web server and infrastructure data. The size is depending on the CPU Type (see the value in the technical data pages).

(3) Memory size of V2 versus V3 CPUs is not comparable. Projects have a different and separate user program code and data memory calculation in Automation Builder 2.4.0 version or later: System, configuration and web server parts are not counted anymore. This results in typically about 50 % lower memory usage compared to V2, and even lower memory usage compared to V3 projects compiled in Automation Builder 2.3.0 or before.

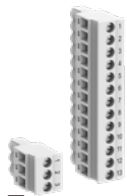
AC500-eCo

Ordering data

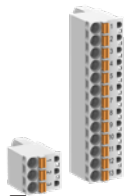
Terminal block sets for AC500-eCo V3 CPU

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

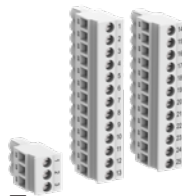
Only ABB terminal blocks must be used with AC500-eCo V3.



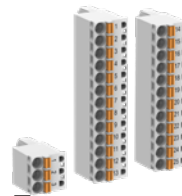
TA5211-TSCL-B



TA5211-TSPF-B



TA5212-TSCL



TA5212-TSPF

Accessories for AC500-eCo V3 CPUs

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

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



TA5301-CFA



TA543



TA5300-CVR



MC5102 and adapter



Input simulator

AC500-eCo

Ordering data

AC500-eCo V3 option boards

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

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

(1) In preparation



TA5101-4DI(W)



TA5105-4DOT(W)



TA5110-2DI2DOT(W)



TA5120-2AI-UI(W)



TA5126-2AO-UI(W)



TA5128-2AI1AO(W)

AC500-eCo

Ordering data

Description	Communication type	Type	Order code	Weight (1 pce) kg
Option board for serial communication extension				
RS232 serial adapter isolated, 5 pole spring/cable front terminal 3.50 mm pitch	RS232 isolated	TA5141-RS232I	1SAP187300R0001	0.015
		TA5141-RS232W	1SAP187300R0201	0.015
RS485 serial adapter isolated, 5 pole spring/cable front terminal 3.50 mm pitch	RS485 isolated	TA5142-RS485I	1SAP187300R0002	0.016
		TA5142-RS485IW	1SAP187300R0202	0.016
RS485 serial adapter non-isolated, 5 pole spring/cable front terminal 3.50 mm pitch	RS485 non-isolated	TA5142-RS485	1SAP187300R0003	0.015
		TA5142-RS485W	1SAP187300R0203	0.015
CAN interface serial adapter isolated, 6 pole spring/cable front terminal 3.50 mm pitch	CAN interface isolated	TA5146-CN	1SAP187300R0005	0.016
		TA5146-CNW	1SAP187300R0205	0.016
Option board for communication address setting or real time clock				
KNX address switch option board, 1 push button	–	TA5130-KNXPB	1SAP187200R0001	0.014
		TA5130-KNXPBW	1SAP187200R0201	0.014
Real Time Clock without battery, option board for AC500-eCo Basic CPU only	–	TA5131-RTC	1SAP187200R0002	0.016

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



TA5141-RS232I(W)



TA5142-RS485I(W)



TA5142-RS485(W)



TA5146-CN(W)



TA5130-KNXPB(W)

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

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



TA5220-SPF5



TA5220-SPF6



TA5220-SPF7



TA5220-SPF8

AC500-eCo

Ordering data

S500-eCo I/O modules

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

Digital I/O

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

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

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

AC500-eCo

Ordering data

Analog I/O

- Each channel can be configured individually
- Resolution:
 - AI561, AI568, AO561, AO562, AO568, AX561: 13 bits including sign
 - AI562, AI563, AI564, AI565: 16 bits including sign

Number of AI/AO	Input signal	Output signal	Terminal block required		Type	Order code	Weight (1 pce) kg
			9 poles	11 poles			
4 / 0	± 2.5 V, ± 5 V, 0...5 V, 0...10 V, 0...20 mA, 4...20 mA	–	1	1	AI561	1TNE968902R1101	0.120
2 / 0	PT100, PT1000, Ni100, Ni1000, Resistance: 150 Ω , 300 Ω	–	–	1	AI562	1TNE968902R1102	0.121
4 / 0	S, T, R, E, N, K, J, Voltage range: ± 80 mV	–	1	1	AI563	1TNE968902R1103	0.123
8 / 0	S, T, R, E, N, K, J, Voltage range: ± 80 mV	–	1	1	AI564 (1)	1SAP235000R0000	0.126
4 / 0	PT100, PT1000, Ni100, Ni1000, Resistance: 150 Ω , 300 Ω , NTC sensor	–	1	1	AI565 (1)	1SAP235600R0000	0.126
8 / 0	± 2.5 V, ± 5 V, 0...5 V, 0...10 V, ± 10 V, 0...20 mA, 4...20 mA, NTC sensor	–	1	1	AI568	1SAP235200R0000	0.125
0 / 2	–	± 10 V, 0...20 mA, 4...20 mA	–	1	AO561	1TNE968902R1201	0.118
0 / 4	–	0...10 V, ± 10 V, 0...20 mA, 4...20 mA	–	1	AO562	1SAP235300R0000	0.125
0 / 8	–	0...10 V, ± 10 V, 0...20 mA, 4...20 mA	1	1	AO568	1SAP235500R0000	0.125
4 / 2	± 2.5 V, ± 5 V, 0...5 V, 0...10 V, 0...20 mA, 4...20 mA	± 10 V, 0...20 mA, 4...20 mA	1	1	AX561	1TNE968902R1301	0.122

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

(1) In preparation



DI561



AI562



AX561



AI568



AO562



AO568

AC500

Ordering data

AC500 V3 CPUs

- 1x internal serial interface, RS232 / RS485 configurable (ACSII or Modbus RTU Master/Slave)
- 2x independent Ethernet interfaces which can also be used as switch and software configurable protocols like Modbus TCP, IEC 60870-5-104, DNP3 (2), Ethernet/IP (2), IEC 61850 (2), BACnet-BC (2) or KNX IP (2) controller
- Web server with Web Visu HTML5 with CP600 with web interface
- 1x internal CAN interface, with CANopen Master, CAN 2A/2B and J1939 protocols
- Display and 8 function keys for diagnosis and status
- Can be centrally extended with up to 10 I/O modules, 320 I/Os (S500 and/or S500-eCo modules allowed)
- Simultaneous operation of several external communication modules in any desired combination
- To be used exclusively with new TB56xx-2ETH
- Optional memory card for data storage and program backup
- To be used only with Automation Builder 2.1 and later
- Support of AC500-S safety PLC

Total user program memory MB (4)(5)	Cycle time in μ s per instruction min. Bit/Word/Float. point	Integrated communication	Type	Order code	Weight (1 pce) kg
8 (thereof 2 for User Prog. code + Data)	0.020 / 0.020 / 0.120	2 x Ethernet with configurable protocol Ethernet/IP (2), 1 x serial, 1x CAN interface	PM5630-2ETH (1) (3)	1SAP131000R0378	0.133
80 (thereof 8 for User Prog. code + Data)	0.010 / 0.010 / 0.010	2 x Ethernet with configurable protocols Ethernet/IP (2), 1 x serial, 1x CAN interface	PM5650-2ETH (1) (3)	1SAP141000R0378	0.133
160 (thereof 32 for User Prog. code + Data)	0.002 / 0.002 / 0.002	2 x Ethernet with configurable protocol Ethernet/IP (2), 1 x serial, 1x CAN interface	PM5670-2ETH (1) (3)	1SAP151000R0378	0.133
160 (thereof 32 for Prog. code + Data) / 8GB Flash disk	0.002 / 0.002 / 0.002	2 x Ethernet with configurable protocol Ethernet/IP (2), 1 x serial, 1x CAN interface	PM5675-2ETH (1) (3)	1SAP151500R0378	0.135

(1) Ethernet communication provides integrated web server, IEC 60870-5-104 remote control protocol and OPC UA server on each interface independently.

(2) Some communication protocols are licensed see following lines. (3) Only to be used with dedicated terminal base TB56xx-2ETH.

(4) Memory size of V2 versus V3 CPUs is not comparable. Projects have a different and separate User Program code and Data memory calculation in Automation Builder 2.4.0 version or later. System, configuration and web server parts are not counted anymore. This results in typically about 50% lower memory usage compared to V2, and even lower memory usage compared to V3 projects compiled in Automation Builder 2.3.0 or before.

(5) Total user program memory: Defines the CPU type and the size of User part but the most relevant and real information is given by the maximum downloadable application size of each CPU (see technical data).



PM5630-2ETH



PM5650-2ETH



PM5670-2ETH



PM5675-2ETH

AC500

Ordering data

AC500 V3 CPUs infrastructure and machinery controllers

- 1x internal serial interface, RS232 / RS485 configurable (ACSII or Modbus RTU Master/Slave)
- 2x independent Ethernet interfaces which can also be used as switch and software configurable
- protocols like Modbus TCP, IEC 60870-5-104, DNP3 (2), Ethernet/IP (2), IEC 61850 (2), BACnet-BC (2) or KNX IP (2) controller
- Web server with Web Visu HTML5 with CP600 with web interface
- 1x internal CAN interface, with CANopen Master, CAN 2A/2B and J1939 protocols
- Display and 8 function keys for diagnosis and status
- Can be centrally extended with up to 10 I/O modules, 320 I/Os (S500 and/or S500-eCo modules allowed)
- Simultaneous operation of several external communication modules in any desired combination
- To be used exclusively with new TB56xx-2ETH
- Optional memory card for data storage and program backup
- Support of AC500-S safety PLC

Program memory min. MB (4), (5)	Cycle time in μ s per instruction min.	Integrated communication	Type	Order code	Weight (1 pce)
MB	Bit/Word/Float. point				kg
160 (thereof 32 for User Prog. code + Data)	0.002 / 0.002 / 0.002	2 x Ethernet with configurable protocol Ethernet/IP (2), EtherCAT (2)(6), 1 x serial, 1x CAN interface	PM5680-2ETH (1)(3)	1SAP152000R0378	0.135
320 (thereof 64 for User Prog. code + Data)	0.002 / 0.002 / 0.002	3 x Ethernet with configurable protocol Ethernet/IP (2), 1 x serial, 1x CAN interface	PM5685-2ETH (1)(3)	1SAP152500R0378	0.135

(1) Ethernet communication provides integrated web server, IEC 60870-5-104 remote control protocol and OPC UA server on each interface independently.

(2) Some communication protocols are licensed see following lines. (3) Only to be used with dedicated terminal base TB56xx-2ETH.

(4) Memory size of V2 versus V3 CPUs is not comparable. Projects have a different and separate User Program code and Data memory calculation in Automation Builder 2.4.0 version or later. System, configuration and web server parts are not counted anymore. This results in typically about 50% lower memory usage compared to V2, and even lower memory usage compared to V3 projects compiled in Automation Builder 2.3.0 or before.

(5) Total user program memory: Defines the CPU type and the size of User part but the most relevant and real information is given by the maximum downloadable application size of each CPU (see technical data).

(6) EtherCAT protocol onboard in preparation.

AC500 V3 Machine controller kits

- One single order code for a complete product bundle providing all needed devices for a machine controller.

Program memory	Cycle time in μ s per instruction min.	Features	Axis limits EtherCAT axis per ms cycle time (2)	Max. axis at 2 ms EtherCAT cycle time	Type	Order code	Weight (1 pce)
kB	Bit/Word/Float. point						kg
8 MB	0.020 / 0.020 / 0.120	PM5630-2ETH, CM579-ETHCAT, TB5610-2ETH, PS5611-MC	2	4	PM5630-MC-KIT	1SAP131000R0379	0.363
80 MB	0.010 / 0.010 / 0.010	PM5650-2ETH, CM579-ETHCAT, TB5610-2ETH, PS5611-MC	8	16	PM5650-MC-KIT	1SAP141000R0379	0.363
80 MB	0.010 / 0.010 / 0.010	PM5650-2ETH, CM579-ETHCAT, TB5610-2ETH, PS5611-MC-EIP (1)	8	16	PM5650-MC-KIT-EIP	1SAP141000R8379	0.363
160 MB	0.002 / 0.002 / 0.002	PM5670-2ETH, CM579-ETHCAT, TB5610-2ETH, PS5611-MC-EIP (1)	16	32	PM5670-MC-KIT-EIP	1SAP151000R8379	0.363
160 MB	0.002 / 0.002 / 0.002	PM5670-2ETH, CM579-ETHCAT, TB5610-2ETH, PS5611-MC	16	32	PM5670-MC-KIT	1SAP151000R0379	0.363
160 MB	0.002 / 0.002 / 0.002	PM5680-2ETH, CM579-ETHCAT, TB5610-2ETH, PS5611-MC	16	32	PM5680-MC-KIT	1SAP152000R0379	0.363

(1) Bundled license: Motion Control including Ethernet/IP S+A.

(2) Including virtual, simulated and encoder axis, depending on application code - might be lower @1ms cycle time for EtherCAT axis only.



PM56x0-MC-KIT-X



PM5680-2ETH



PM5685-2ETH

AC500

Ordering data

AC500 V3 Terminal base

- For mounting and connection of the AC500 V3 CPUs only and communication modules
- 0, 1, 2, 4 or up to 6 plug-in communication modules
- Connection for communication coupler integrated in the CPU
- I/O interface for direct connection of up to 10 extension modules
- Connection COM1: 9-pole pluggable spring terminal block
- Connection CAN: 2x 5-pole pluggable spring terminal block
- 2x RJ45 Ethernet interfaces with configurable switch functionality

Number of coupler slots	Connection for coupler integrated in the CPU	Type	Order code	Weight (1 pce) kg
0	2x RJ45 for Ethernet, 1x serial COM1 with pluggable spring connector and 1x2x5 poles pluggable spring connector for CAN/CANopen interface	TB5600-2ETH	1SAP110300R0278	0.129
1		TB5610-2ETH	1SAP111300R0278	0.157
2		TB5620-2ETH	1SAP112300R0278	0.185
4		TB5640-2ETH	1SAP114300R0278	0.236
6		TB5660-2ETH	1SAP116300R0278	0.310



TB5600-2ETH



TB5610-2ETH



TB5620-2ETH

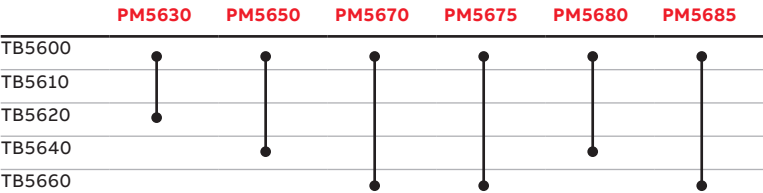


TB5640-2ETH



TB5660-2ETH

Terminal base compatibility



AC500

Ordering data

Communication modules

Protocol	Connections	Type	Order code	Weight (1 pce) kg
PROFIBUS DP V0/V1 master	D-Sub 9	CM592-DP	1SAP173200R0001	0.092
PROFIBUS DP V0/V1 slave	D-Sub 9	CM582-DP	1SAP172200R0001	0.094
Ethernet interface extender (1) (TCP/IP, Modbus TCP, OPC UA)	2 x RJ45 - 2 independent channels	CM5640-2ETH	1SAP176000R0080	0.100
CANopen master	Terminal block 2 x 5 poles spring	CM598-CN	1SAP173800R0001	0.088
PROFINET IO RT controller	2 x RJ45 - integrated switch	CM579-PNIO	1SAP170901R0101	0.100
PROFINET IO RT device	2 x RJ45 - integrated switch	CM589-PNIO	1SAP172900R0011	0.100
PROFINET IO RT with 4 devices	2 x RJ45 - integrated switch	CM589-PNIO-4	1SAP172900R0111	0.100
EtherCAT master	2 x RJ45	CM579-ETHCAT	1SAP170902R0101	0.101
Serial interface extender (2) (ASCII, Modbus RTU)	2 x RS-232/485 on spring terminals	CM5610-2RS	1SAP176000R0020	0.100

(1) This communication module is a port extender for the used V3 CPU only, it adds 2 independent Ethernet channels driven by the CPU. That means the Ethernet limits of the CPU used apply for all onboard interfaces and added external interfaces (e.g. number of Modbus TCP clients of a CPU) will not be increased using the CM5640-2ETH but can then be splitted between onboard and external interfaces.

(2) This communication module is a port extender for the used V3 CPU only, it adds 2 independent serial interfaces driven by the CPU. That means the limits of the CPU used apply for all onboard interfaces and added external interfaces and can then be splitted between onboard and external interfaces.



CM592-DP



CM598-CN



CM579-PNIO



CM5640-2ETH



CM5610-2RS

Protocol	Communication module	Communication interface module	I/O extension module			Applications
			S500	S500-eCo	S500-S	
Modbus TCP	Onboard Ethernet interface	CI521-MODTCP / CI522-MODTCP	●	● (1)	—	HA, remote I/O, hot-swap I/O
	CM5640-2ETH		●	● (1)	—	HA, remote I/O, hot-swap I/O
PROFIBUS DP	CM592-DP master	CI541-DP / CI542-DP	●	●	—	remote I/O
PROFINET IO RT	CM579-PNIO controller	CI501-PNIO / CI502-PNIO	●	—	—	hot-swap I/O
			●	●	●	remote I/O, safety I/O
		CI504-PNIO	●	—	—	hot-swap I/O
			●	●	●	remote I/O, safety I/O
CANopen	Onboard CAN interface	CI581-CN / CI582-CN	●	●	—	remote I/O
	CM598-CN master		●	●	—	remote I/O
EtherCAT	CM579-ETHCAT master	CI511-ETHCAT / CI512-ETHCAT	●	●	—	remote I/O
CS31 bus	Onboard COM1 interface	DC505-CS31 / CI592-CS31	●	●	—	remote I/O

(1) Hot-swap I/O only for S500 I/O not S500-eCo.

AC500

Ordering data

I/O modules

- Hot swap capable when mounted on hot swap terminal unit
- For central extension of the AC500 or AC500-eCo CPUs
- For decentralized extension in combination with communication interface modules on CS31, PROFINET IO, EtherCAT, Modbus TCP, PROFIBUS DP, CANopen modules
- DC and AC: Channels can be configured individually as inputs or outputs
- Plug-in electronic modules, terminal unit required (refer to table below).

Digital I/O

Number of	Input signal	Output type	Output signal	Terminal units Screw / Spring	Type	Order code	Weight (1 pce) kg
DI/DO/DC							
32 / – / –	24 V DC	–	–	TU515 / TU516	DI524	1SAP240000R0001	0.100
– / – / 16	24 V DC	Transistor	24 V DC, 0.5 A	TU515 / TU516	DC522	1SAP240600R0001	0.102
– / – / 24	24 V DC	Transistor	24 V DC, 0.5 A	TU515 / TU516	DC523	1SAP240500R0001	0.115
16 / – / 16	24 V DC	Transistor	24 V DC, 0.5 A	TU515 / TU516	DC532	1SAP240100R0001	0.114
8 / 8 / –	24 V DC	Relay	230 V AC, 3 A (1)	TU531 / TU532	DX522	1SAP245200R0001	0.177
8 / 4 / –	230 V AC	Relay	230 V AC, 3 A (1)	TU531 / TU532	DX531	1SAP245000R0001	0.151
– / 32 / –	–	Transistor	24 V DC, 0.5 A	TU515 / TU516	DO524	1SAP240700R0001	0.106
– / 8 / –	–	Transistor	24 V DC, 2 A	TU541 / TU542	DO526	1SAP240800R0001	0.132

(1) Relay outputs, changeover contacts.



DO524

AC500

Ordering data

Analog I/O

Number of	Input signal	Output signal	Terminal units Screw / Spring	Type	Order code	Weight (1 pce) kg
AI/AO/AC						
16 / 0 / 0	0...10 V, ±10 V	–	TU515 / TU516	AI523	1SAP250300R0001	0.125
4 / 4 / 0	0/4...20 mA, PT100, PT1000, Ni1000	±10 V	TU515 / TU516	AX521	1SAP250100R0001	0.129
0 / 0 / 8 (max. 4 current outputs)		0/4...20 mA	TU515 / TU516	AC522	1SAP250500R0001	0.152
8 / 8 / 0 (max. 4 current outputs)			TU515 / TU516	AX522	1SAP250000R0001	0.151
0 / 8 / 0	–		TU515 / TU516	AO522	1SAP250900R0001	0.100
0 / 16 / 0 (max. 8 current outputs)	–		TU515 / TU516	AO523	1SAP250200R0001	0.127
8 / 0 / 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	0.128

Analog/digital mixed I/O

Number of	Input signal	Output type	Output signal	Terminal unit Screw / Spring	Type	Order code	Weight (1 pce) kg
AI/AO/DI/DO/DC							
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	0.121
4 / 2 / – / 16 / 8				TU515 / TU516	DA502	1SAP250800R0001	0.124

Function module

- Not hot swap capable

Functionality	Number of	Input signal	Output type	Output signal	Terminal units Screw / Spring	Type	Order code	Weight (1 pce) kg
DI/DO/DC								
Encoder and PWM module	2 / – / 8	24 V DC and 2 encoder inputs A/B/C differential	2 PWM outputs	24 V DC, 0.1 A	TU515 / TU516	CD522	1SAP260300R0001	0.124



AO523



AI531



DA501



CD522

AC500

Ordering data

Communication interface modules

Number of	Input signal	Output type	Output signal	Terminal units Screw / Spring	Type	Order code	Weight (1 pce) kg
AI/AO/DI/DO/DC							
For CS31-Bus							
- / - / 8 / - / 16	24 V DC	Transistor	24 V DC, 0.5 A	TU551-CS31 / TU552-CS31	DC551-CS31	1SAP220500R0001	0.120
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	TU551-CS31 / TU552-CS31	CI592-CS31	1SAP221200R0001	0.125
For PROFIBUS-DP							
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 (1)	TU509/TU510/ TU517/TU518	CI541-DP	1SAP224100R0001	0.158
- / - / 8 / 8 / 8	24 V DC	Transistor	24 V DC, 0.5 A	TU509/TU510/ TU517/TU518	CI542-DP	1SAP224200R0001	0.154
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	TU509/TU510/ TU517/TU518	CI581-CN	1SAP228100R0001	0.137
- / - / 8 / 8 / 8	24 V DC	Transistor	24 V DC, 0.5 A	TU509/TU510/ TU517/TU518	CI582-CN	1SAP228200R0001	0.130
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	0.138
- / - / 8 / 8 / 8	24 V DC	Transistor	24 V DC, 0.5 A	TU507-ETH / TU508-ETH	CI512-ETHCAT	1SAP221000R0001	0.138
For Ethernet-based protocol - PROFINET IO RT							
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	0.136
- / - / 8 / 8 / 8	24 V DC	Transistor	24 V DC, 0.5 A	TU507-ETH / TU508-ETH	CI502-PNIO	1SAP220700R0001	0.133
For Ethernet-based protocol - Modbus TCP							
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	CI521-MODTCP	1SAP222100R0001	0.136
- / - / 8 / 8 / 8	24 V DC	Transistor	24 V DC, 0.5 A	TU507-ETH / TU508-ETH	CI522-MODTCP	1SAP222200R0001	0.133



CI541-DP



CI581-CN



CI511-ETHCAT



CI501-PNIO



CI521-MODTCP

AC500

Ordering data

Communication interface modules

From	To	Output signal	Terminal units	Type	Order code	Weight (1 pce) kg
Gateway on Ethernet-based protocol - PROFINET IO RT						
PROFINET IO	–	3 x RS232/422/485 ASCII serial interfaces	TU520-ETH	CI504-PNIO	1SAP221300R0001	0.139



CI504-PNIO

Hot swap terminal units

For loadless hot swapping of digital and analog extension modules, when used in configurations with communication interface modules or AC500 CPU supporting hot swap. Hot swapping of attached extension module mounted on hot swap terminal unit is supported by AC500 V3 CPU modules as of PM5630-2ETH. AC500-S safety I/O modules cannot be used in configurations containing hot swap terminal units. Mixed configurations of hot swap terminal units with normal terminal units for digital and analog extension modules are possible. In the installation hot swap terminal units can be identified by the word Hot Swap and a white frame around the connection terminal area.

For	Supply	Connection type	Type	Order code	Weight (1 pce) kg
I/O modules - for Hot Swap (1)	24 V DC	Spring	TU516-H	1SAP215000R0001	0.159
I/O modules AC / relay - for Hot Swap (1)	230 V AC	Spring	TU532-H	1SAP215100R0001	0.166
High current I/O module - for Hot Swap (1)	24 V DC	Spring	TU542-H	1SAP215200R0001	0.164

(1) I/O module as of index F0 needed for Hot Swap



TU516-H

AC500

Ordering data

Terminal units

For digital and analog extension 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	Weight (1 pce) kg
Ethernet communication interface modules	24 V DC	Screw	TU507-ETH	1SAP214200R0001	0.223
		Spring	TU508-ETH	1SAP214000R0001	0.168
Ethernet gateway modules	24 V DC	Spring	TU520-ETH	1SAP214400R0001	0.147
CANopen / PROFIBUS DP (1) communication interface modules	24 V DC	Screw	TU517	1SAP211400R0001	0.239
		Spring	TU518	1SAP211200R0001	0.161
PROFIBUS DP / CANopen communication interface modules	24 V DC	Screw	TU509	1SAP211000R0001	0.216
		Spring	TU510	1SAP210800R0001	0.159
I/O modules	24 V DC	Screw	TU515	1SAP212200R0001	0.232
		Spring	TU516	1SAP212000R0001	0.159
I/O modules AC / relay	230 V AC	Screw	TU531	1SAP217200R0001	0.238
		Spring	TU532	1SAP217000R0001	0.164
High current I/O module (DO526)	24 V DC	Screw	TU541	1SAP213000R0001	0.240
	24 V DC	Spring	TU542	1SAP213200R0001	0.163
CS31 interface modules	24 V DC	Screw	TU551-CS31	1SAP210600R0001	0.236
		Spring	TU552-CS31	1SAP210400R0001	0.159

(1) TU517/TU518 Terminal units can also be used with PROFIBUS DP CI54x modules up to 1 Mbit/s.



TU515



TU520-ETH



TU510



TU518



TU508-ETH

AC500

Ordering data

For	Description	Type	Order code	Weight (1 pce) kg
AC500 CPUs	Memory card for high requirements (2 GB), for long term use e.g. data logging or use in extreme conditions.	MC5141	1SAP180100R0041	0.002
	Micro memory card for standard usage. 8 GB Micro memory card with adapter.	MC5102	1SAP180100R0002	0.003
	Lithium battery for data buffering	TA521	1SAP180300R0001	0.009
	Battery adapter device for data buffering, can be used instead of TA521 accessory. CR2450 button cell not delivered with the adapter	TA522	1SAP180400R0001	0.020
I/O modules	Pluggable marker holder for I/O modules, packing unit incl. 10 pcs. Template available in the AC500 online help	TA523	1SAP180500R0001	0.157
AC500 CPU's, interface module, communication module and I/O modules	White labels, packing unit incl. 10 pcs.	TA525	1SAP180700R0001	0.003
Terminal base	Communication Module, blind cap	TA524	1SAP180600R0001	0.059
	Accessories for screw mounting, packing unit includes 10 pcs.	TA526	1SAP180800R0001	0.074
	5-pole power plug for AC500. Spare part. Can be plugged to terminal base TB56x0. Packing unit includes 5 pcs.	TA527	1SAP181100R0001	0.300
	9-pole COM1 plug for AC500. Spare part. Can be plugged to terminal base TB56x0. Packing unit includes 5 pcs.	TA528	1SAP181200R0001	0.400
Communication modules	2x5-pole spring plug for CM598-CN and TB56x0. Spare part. Packing unit includes 5 pcs.	TA534	1SAP182200R0001	0.500
AC500 V3 training case	PM5630-2ETH + TB5620-2ETH + CM579-PNIO + DA501 + CI502-PNIO + CP6607 + Case + 115-230 V AC power supply + Ethernet cables + demo program + memory card + simulation stand	TA5450-CASE	1SAP187700R0001	6.880



MC5141



MC5102 and adapter

AC500 training case
CPU, I/Os, HMI

TA527



TA528



TA521



TA522

AC500-XC

Ordering data

AC500-XC V3 CPUs

- 1x internal serial interface, RS232 / RS485 configurable (ACSII or Modbus RTU Master/Slave)
- 2x independent Ethernet interfaces which can also be used as switch and software configurable protocols like Modbus TCP, MQTT, Ethernet/IP Adapter or Scanner (2), KNX (2) and BACnet B-C (2), IEC 60870-5-104, DNP3 (2) or IEC 61850 (2)
- Web server with Web Visu HTML5 for use with CP600 with Web interface
- 1x internal CAN interface, with CANopen Master, CAN 2A/2B and J1939 protocols
- Display and 8 function keys for diagnosis and status
- Can be centrally extended with up to 10 I/O modules, 320 I/Os (S500 and/or S500-eCo modules allowed)
- Simultaneous operation of several external communication modules in any desired combination
- To be used exclusively with new TB56xx-2ETH
- Optional memory card for data storage and program backup
- To be used only with Automation Builder 2.1 and later
- Support of AC500-S safety PLC.

For improved product availability and to provide some new features, a new revision R03xx of the existing AC500-XC V3 CPUs was necessary. The existing AC500-XC V3 CPUs revision R02xx with rubric R0278 will be transferred to classic phase of life cycle and replaced by feature compatible new AC500-XC V3 CPUs revision R03xx with rubric R0378.

The CPUs AC500-XC V3 revision R03xx can be programmed with Automation Builder version 2.6.0 or higher and require at least a firmware version 3.6.0 or higher. They cannot be downgraded to lower versions than Automation Builder 2.6.0/ firmware version 3.6.0.

Total user program memory MB (4) (5)	Cycle time in μ s per instruction min. Bit/Word/Float. point	Integrated communication	Type	Order code	Weight (1 pce) kg
8 (thereof 1 for User Prog. code + Data)	0.020 / 0.020 / 0.120	2 x Ethernet with configurable protocol Ethernet/IP (2), 1 x serial, 1x CAN interface	PM5630-2ETH-XC (1) (3)	1SAP331000R0378	0.137
80 (thereof 4 for User Prog. code + Data)	0.010 / 0.010 / 0.010	2 x Ethernet with configurable protocol Ethernet/IP (2), 1 x serial, 1x CAN interface	PM5650-2ETH-XC (1) (3)	1SAP341000R0378	0.137
160 (thereof 16 for User Prog. code + Data)	0.002 / 0.002 / 0.002	2 x Ethernet with configurable protocol Ethernet/IP (2), 1 x serial, 1x CAN interface	PM5670-2ETH-XC (1) (3)	1SAP351000R0378	0.137
160 (thereof 16 for User Prog. code + Data) / 8GB Flash disk	0.002 / 0.002 / 0.002	2 x Ethernet with configurable protocol Ethernet/IP (2), 1 x serial, 1x CAN interface	PM5675-2ETH-XC (1) (3)	1SAP351500R0378	0.138

(1) Ethernet communication provides integrated web server, IEC 60870-5-104 remote control protocol and OPC UA server on each interface independently.

(2) Some communication protocols are licensed see following lines

(3) Only to be used with dedicated terminal base TB56xx-2ETH-XC

(4) Memory size of V2 versus V3 CPUs is not comparable. Projects have a different and separate User Program code and Data memory calculation in Automation Builder 2.4.0 version or later. System, configuration and web server parts are not counted anymore. This results in typically about 50 % lower memory usage compared to V2, and even lower memory usage compared to V3 projects compiled in Automation Builder 2.3.0 or before.

(5) Total user program memory: Defines the CPU type and the size of user part, but the most relevant and real information is given by the maximum downloadable application size of each CPU (see technical data).



PM5630-2ETH-XC



PM5650-2ETH-XC



PM5670-2ETH-XC



PM5675-2ETH-XC



Guide for easy migration
of new AC500 V3 CPUs

AC500-XC

Ordering data

AC500-XC V3 terminal base

- For mounting and connection of the AC500-XC V3 CPUs only and communication modules
- 0, 1, 2, 4 or up to 6 plug-in communication modules
- Connection for communication coupler integrated in the CPU
- I/O interface for direct connection of up to 10 extension modules
- Connection COM1: 9-pole pluggable spring terminal block
- Connection CAN: 2x 5-pole pluggable spring terminal block
- 2x RJ45 Ethernet interfaces with configurable switch functionality

Number of coupler slots	Connection for coupler integrated in the CPU	Type	Order code	Weight (1 pce) kg
0	2x RJ45 for Ethernet, 1x serial COM1 with pluggable spring connector and 1x2x5 poles pluggable spring connector for CAN/CANopen interface	TB5600-2ETH-XC	1SAP310300R0278	0.131
1		TB5610-2ETH-XC	1SAP311300R0278	0.163
2		TB5620-2ETH-XC	1SAP312300R0278	0.188
4		TB5640-2ETH-XC	1SAP314300R0278	0.242
6		TB5660-2ETH-XC	1SAP316300R0278	0.314



TB5600-2ETH-XC



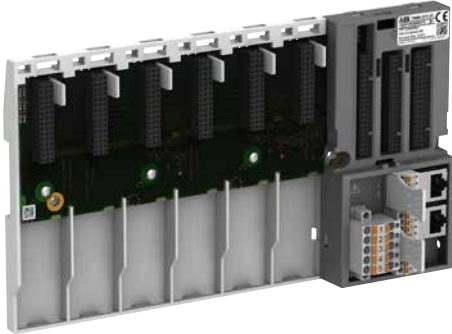
TB5610-2ETH-XC



TB5620-2ETH-XC



TB5640-2ETH-XC



TB5660-2ETH-XC

Terminal base compatibility

	PM5630	PM5650	PM5670	PM5675
TB5600	•	•	•	•
TB5610	•	•	•	•
TB5620	•	•	•	•
TB5640	•	•	•	•
TB5660	•	•	•	•

AC500-XC

Ordering data

Communication modules

Protocol	Connections	Type	Order code	Weight (1 pce) kg
PROFIBUS DP V0/V1 master	D-Sub 9	CM592-DP-XC	1SAP373200R0001	0.101
PROFIBUS DP V0/V1 slave	D-Sub 9	CM582-DP-XC	1SAP372200R0001	0.101
Serial interface extender (2) (ASCII, Modbus RTU)	2 x RS232/485 on spring terminals	CM5610-2RS-XC	1SAP376000R0020	0.100
Ethernet interface extender (1) (TCP/IP, Modbus TCP, OPC UA)	2 x RJ45 - 2 independent channels	CM5640-2ETH-XC	1SAP376000R0080	0.100
CANopen master	Terminal block 2 x 5 poles spring	CM598-CN-XC	1SAP373800R0001	0.095
PROFINET IO RT controller	2 x RJ45 - integrated switch	CM579-PNIO-XC	1SAP370901R0101	0.103
PROFINET IO RT device	2 x RJ45 - integrated switch	CM589-PNIO-XC	1SAP372900R0011	0.103
PROFINET IO RT with 4 devices	2 x RJ45 - integrated switch	CM589-PNIO-4-XC	1SAP372900R0111	0.103

(1) This communication module is a port extender for the used V3 CPU only, it adds 2 independent Ethernet channels driven by the CPU. That means the Ethernet limits of the CPU used apply for all onboard interfaces and added external interfaces (e.g. number of Modbus TCP clients of a CPU) will not be increased using the CM5640-2ETH but can then be splitted between onboard and external interfaces.

(2) This communication module is a port extender for the used V3 CPU only, it adds 2 independent serial interfaces driven by the CPU. That means the limits of the CPU used apply for all onboard interfaces and added external interfaces and can then be splitted between onboard and external interfaces.



Protocol	Communication module	Communication interface module	I/O extension module		Applications
			S500-XC	S500-S-XC	
Modbus TCP	Onboard Ethernet interface	CI521-MODTCP-XC / CI522-MODTCP-XC	●	-	HA, remote I/O, hot-swap I/O
	CM5640-2ETH-XC		●	-	HA, remote I/O, hot-swap I/O
PROFIBUS DP	CM592-DP-XC master	CI541-DP-XC / CI542-DP-XC	●	-	remote I/O
PROFINET IO RT	CM579-PNIO-XC controller	CI501-PNIO-XC / CI502-PNIO-XC	●	-	hot-swap I/O
			●	●	remote I/O, safety I/O
		CI504-PNIO-XC	●	-	hot-swap I/O
			●	●	remote I/O, safety I/O
CANopen	Onboard CAN interface	CI581-CN-XC / CI582-CN-XC	●	-	remote I/O
CS31 bus	CM598-CN-XC master		●	-	remote I/O
	Onboard COM1 interface	DC505-CS31-XC / CI592-CS31-XC	●	-	remote I/O

AC500-XC

Ordering data

I/O modules

- Hot swap capable when mounted on hot swap terminal unit
- For central extension of the AC500-XC CPU
- For decentralized extension in combination with communication interface module (not for DC505-FBP)
- DC and AC: channels can be configured individually as inputs or outputs
- Terminal unit required (refer to table below).

Digital I/O

Number of	Input signal	Output type	Output signal	Terminal units	Type	Order code	Weight (1 pce) kg
DI/DO/DC							
32 / - / -	24 V DC	-	-	TU516-XC	DI524-XC	1SAP440000R0001	0.101
- / - / 16	24 V DC	Transistor	24 V DC, 0.5 A	TU516-XC	DC522-XC	1SAP440600R0001	0.107
- / - / 24	24 V DC	Transistor	24 V DC, 0.5 A	TU516-XC	DC523-XC	1SAP440500R0001	0.118
16 / - / 16	24 V DC	Transistor	24 V DC, 0.5 A	TU516-XC	DC532-XC	1SAP440100R0001	0.114
- / 32 / -	-	Transistor	24 V DC, 0.5 A	TU516-XC	DO524-XC	1SAP440700R0001	0.110
8 / 8 / -	24 V DC	Relay	230 V AC, 3 A (1)	TU532-XC	DX522-XC	1SAP445200R0001	0.177
- / 8 / -	-	Transistor	24 V DC, 2 A	TU542-XC	DO526-XC	1SAP440800R0001	0.134

(1) Relay outputs, changeover contacts.



DI524-XC



DO524-XC

AC500-XC

Ordering data

Analog I/O

Number of	Input signal	Output signal	Terminal units	Type	Order code	Weight (1 pce) kg
AI/AO/AC						
16 / 0 / 0	0...10 V, ±10 V 0/4...20 mA	–	TU516-XC	AI523-XC	1SAP450300R0001	0.125
4 / 4 / 0	PT100, PT1000, Ni1000	±10 V	TU516-XC	AX521-XC	1SAP450100R0001	0.128
0 / 0 / 8 (max 4 current outputs)		0/4...20 mA	TU516-XC	AC522-XC	1SAP450500R0001	0.128
8 / 8 / 0 (max. 4 current outputs)			TU516-XC	AX522-XC	1SAP450000R0001	0.127
0 / 8 / 0	–		TU516-XC	AO522-XC	1SAP450900R0001	0.120
0 / 16 / 0 (max. 8 current outputs)	–		TU516-XC	AO523-XC	1SAP450200R0001	0.128
8 / 0 / 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	0.129

Analog/digital mixed I/O

Number of	Input signal	Output type	Output signal	Terminal unit	Type	Order code	Weight (1 pce) kg
AI/AO/DI/DO/DC							
4 / 2 / 16 / - / 8	24 V DC, 0...10 V, ±10 V, 0/4...20 mA, PT100,	Transistor	24 V DC, 0.5 A ±10 V, 0/4...20 mA	TU516-XC	DA501-XC	1SAP450700R0001	0.122
4 / 2 / - / 16 / 8	PT1000, Ni100, Ni1000			TU516-XC	DA502-XC	1SAP450800R0001	0.126

Function module

- Not hot swap capable

Functionality	Number of	Input signal	Output type	Output signal	Terminal unit	Type	Order code	Weight (1 pce) kg
DI/DO/DC								
Encoder and PWM module	2 / - / 8	24 V DC and 2 encoder inputs	2 PWM outputs	–	TU516-XC	CD522-XC	1SAP460300R0001	0.125



AI523-XC



AI531-XC



DA501-XC



CD522-XC

AC500-XC

Ordering data

Communication interface modules

Number of	Input signal	Output type	Output signal	Terminal units	Type	Order code	Weight (1 pce) kg
AI/AO/DI/DO/DC							
For CS31-Bus							
- / - / 8 / - / 16	24 V DC	Transistor	24 V DC, 0.5 A	TU552-CS31-XC	DC551-CS31-XC	1SAP420500R0001	0.125
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	TU552-CS31-XC	CI592-CS31-XC	1SAP421200R0001	0.129
For PROFIBUS-DP							
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	CI541-DP-XC	1SAP424100R0001	0.139
- / - / 8 / 8 / 8	24 V DC	Transistor	24 V DC, 0.5 A	TU510-XC / TU518-XC	CI542-DP-XC	1SAP424200R0001	0.138
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	0.139
- / - / 8 / 8 / 8	24 V DC	Transistor	24 V DC, 0.5 A	TU510-XC / TU518-XC	CI582-CN-XC	1SAP428200R0001	0.136
For Ethernet-based protocol - PROFINET IO RT							
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	0.137
- / - / 8 / 8 / 8	24 V DC	Transistor	24 V DC, 0.5 A	TU508-ETH-XC	CI502-PNIO-XC	1SAP420700R0001	0.134
For Ethernet-based protocol - Modbus TCP							
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	CI521-MODTCP-XC	1SAP422100R0001	0.138
- / - / 8 / 8 / 8	24 V DC	Transistor	24 V DC, 0.5 A	TU508-ETH-XC	CI522-MODTCP-XC	1SAP422200R0001	0.138
From	To	Output signal		Terminal units	Type	Order code	Weight (1 pce) kg
Gateway for Ethernet-based protocol - PROFINET IO RT							
PROFINET IO	–	3 x RS232/485 ASCII serial interfaces		TU520-ETH-XC	CI504-PNIO-XC	1SAP421300R0001	0.141



DC551-CS31-XC



CI541-DP-XC



CI581-CN-XC



CI502-PNIO-XC



CI506-PNIO-XC



CI521-MODTCP-XC

AC500-XC

Ordering data

Hot swap terminal units

For loadless hot swapping of digital and analog extension modules, when used in configurations with communication interface modules or AC500 CPU supporting hot swap. Hot swapping of attached extension module mounted on hot swap terminal unit is supported by AC500 V3 CPU modules as of PM5630-2ETH, AC500 V2 CPU modules as of PM585-ETH, CI501-PNIO, CI502-PNIO, CI541-DP, CI542-DP, CI521-MODTCP and CI522-MODTCP. AC500-S safety I/O modules cannot be used in configurations containing hot swap terminal units. Mixed configurations of hot swap terminal units with normal terminal units for digital and analog extension modules are possible. In the installation hot swap terminal units can be identified by the word Hot Swap and a white frame around the connection terminal area.

For	Supply	Connection type	Type	Order code	Weight (1 pce) kg
I/O modules - for Hot Swap (2)	24 V DC	Spring	TU516-H-XC	1SAP415000R0001	0.160
I/O modules AC / Relay - for Hot Swap (2)	230 V AC	Spring	TU532-H-XC	1SAP415100R0001	0.167
I/O module DO526-XC - for Hot Swap (2)	24 V DC	Spring	TU542-H-XC	1SAP415200R0001	0.165

(2) I/O module as of index F0 needed for Hot Swap

Terminal units

For digital and analog extension modules and interface modules. Please note: for modules with relay outputs, terminal units for 230 V AC (TU532-XC) is required.

For	Supply	Connection type	Type	Order code	Weight (1 pce) kg
Ethernet interface modules	24 V DC	Spring	TU508-ETH-XC	1SAP414000R0001	0.170
CANopen/PROFIBUS DP interface modules	24 V DC	Spring	TU510-XC	1SAP410800R0001	0.161
I/O modules	24 V DC	Spring	TU516-XC	1SAP412000R0001	0.160
CANopen/PROFIBUS DP interface modules	24 V DC	Spring	TU518-XC (1)	1SAP411200R0001	0.162
Ethernet gateway modules	24 V DC	Spring	TU520-ETH-XC	1SAP414400R0001	0.146
I/O modules AC / Relay	230 V AC	Spring	TU532-XC	1SAP417000R0001	0.165
I/O module DO526-XC	24 V DC	Spring	TU542-XC	1SAP413200R0001	0.164
CS31 interface modules	24 V DC	Spring	TU552-CS31-XC	1SAP410400R0001	0.160

(1) TU518-XC Terminal units can also be used with PROFIBUS DP CI modules with baud rate up to 1Mbaud.

(2) I/O module as of index F0 needed for Hot Swap



TU516-XC



TU520-ETH-XC



TU510-XC



TU508-ETH-XC



TU516-H-XC

AC500-XC

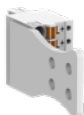
Ordering data

Accessories for AC500-XC

For	Description	Type	Order code	Weight (1 pce) kg
AC500 CPUs	Memory card for high requirements (2 GB), for long term use e.g. data logging	MC5141	1SAP180100R0041	0.002
	Lithium battery for data buffering	TA521	1SAP180300R0001	0.009
I/O modules	Pluggable marker holder for I/O modules, packing unit includes 10 pcs. Template available in the AC500 online help	TA523	1SAP180500R0001	0.157
AC500 CPU's, interface module, communication module and I/O modules	White labels, packing unit includes 10 pcs.	TA525	1SAP180700R0001	0.003
Terminal base	Communication Module, blind cap	TA524	1SAP180600R0001	0.059
	Accessories for wall mounting, packing unit includes 10 pcs.	TA526	1SAP180800R0001	0.074
	5-pole power plug for AC500. Spare part. Can be plugged to terminal base TB56x0. Packing unit includes 5 pcs.	TA527	1SAP181100R0001	0.300
	9-pole COM1 plug for AC500. Spare part. Can be plugged to terminal base TB56x0 or on TU520-ETH-XC. Packing unit includes 5 pcs.	TA528	1SAP181200R0001	0.400
Communication modules	2x5-pole spring plug for CM598-CN and TB56x0. Spare part. Packing unit includes 5 pcs.	TA534	1SAP182200R0001	0.500
Protective caps for TB, TU and CM	10 x Sub-D plastic caps 20 x RJ45 plastic caps, 3 x RJ45 female 10 x M12 plastic caps	TA535	1SAP182300R0001	0.051



MC5141



TA527



TA528

AC500-S

Ordering data

Safety CPU

Description	User program memory	Type	Order code	Weight (1 pce) kg
	MB			
Safety CPU module	1	SM560-S	1SAP280000R0001	0.087
Safety CPU module with F-Device functionality for 1 PROFI-safe network	1.3	SM560-S-FD-1	1SAP286000R0001	0.087
Safety CPU module with F-Device functionality for 4 PROFI-safe networks	1.3	SM560-S-FD-4	1SAP286100R0001	0.087

S500 Safety I/O

Description	Input signal		Output signal SIL3	Type	Order code	Weight (1 pce) kg
	SIL2	SIL3				
Safety digital input module	16	8	-	DI581-S	1SAP284000R0001	0.122
Safety digital input / output module	8	4	8	DX581-S	1SAP284100R0001	0.130
Safety analog input module	4	2	-	AI581-S	1SAP282000R0001	0.125

S500 Safety terminal unit

Description	Type	Order code	Weight (1 pce) kg
Spring terminal unit for safety I/O modules	TU582-S	1SAP281200R0001	0.162

Software

AC500-S safety PLC programming license needs to be purchased as an additional feature of Automation Builder. For details, see ordering data of Automation Builder.



SM560-S
SM560-S-FD-1
SM560-S-FD-4



DI581-S
DX581-S
AI581-S



TU582-S

Accessories for AC500-S

For	Description	Type	Order code	Weight (1 pce) kg
AC500-S safety PLC training case (1)	SM560-S, DI581-S, DX581-S, AI581-S, TU582-S with PM573-ETH and PNIO	TA514-SAFETY	1SAP182900R0001	10

(1) Any standard AC500 CPU (V2 or V3) can be used instead of PM573-ETH in TA514-SAFETY. They have to be ordered separately. In case of AC500 V3 CPUs, TB5620-2ETH shall be ordered as well.



AC500-S training case

AC500-S-XC

Ordering data

Safety XC CPU

Description	User program memory	Type	Order code	Weight (1 pce) kg
	MB			
Safety CPU module	1	SM560-S-XC	1SAP380000R0001	0.089
Safety CPU module with F-Device functionality for 1 PROFI-safe network	1.3	SM560-S-FD-1-XC	1SAP386000R0001	0.089
Safety CPU module with F-Device functionality for 4 PROFI-safe networks	1.3	SM560-S-FD-4-XC	1SAP386100R0001	0.089

S500-XC Safety I/O

Description	Input signal		Output signal SIL3	Type	Order code	Weight (1 pce) kg
	SIL2	SIL3				
Safety digital input module	16	8	-	DI581-S-XC	1SAP484000R0001	0.123
Safety digital input / output module	8	4	8	DX581-S-XC	1SAP484100R0001	0.131
Safety analog input module	4	2	-	AI581-S-XC	1SAP482000R0001	0.126

S500-XC Safety terminal unit

Description	Type	Order code	Weight (1 pce) kg
Spring terminal unit for safety I/O modules	TU582-S-XC	1SAP481200R0001	0.164



SM560-S-XC
SM560-S-FD-1-XC
SM560-S-FD-4-XC



DI581-S-XC
DX581-S-XC
AI581-S-XC



TU582-S-XC

CP600-eCo, CP600, CP600-C and CP600-Pro

Ordering data

CP600-eCo control panels

Display size	Resolution	Description	Type	Order code	Weight (1 pce)
	pixels				kg
4.3"	480 x 272	for PB610 applications	CP604	1SAP504100R0001	0.290
7.0"	800 x 480	for PB610 applications	CP607	1SAP507100R0001	0.500
10.1"	1024 x 600	for PB610 applications	CP610	1SAP510100R0001	0.820
4.3"	480 x 272	black, for PB610 applications	CP604-B	1SAP504100R2001	0.290
7.0"	800 x 480	black, for PB610 applications	CP607-B	1SAP507100R2001	0.500
10.1"	1024 x 600	black, for PB610 applications	CP610-B	1SAP510100R2001	1.300

Visualization of AC500 V3 web server is supported by products with revision index C1 or higher.

CP600 control panels

Display size	Resolution	Description	Type	Order code	Weight (1 pce)
	pixels				kg
7"	800 x 480	for PB610 applications or visualization of AC500 V3 web server	CP6407	1SAP540710R0001	0.920
10.4"	800 x 600	for PB610 applications or visualization of AC500 V3 web server	CP6410	1SAP541010R0001	1.820
15"	1024 x 768	for PB610 applications or visualization of AC500 V3 web server	CP6415	1SAP541510R0001	3.190

CP600-C control panels (1)

Display size	Resolution	Description	Type	Order code	Weight (1 pce)
	pixels				kg
5.0"	800 x 480	for PB610 applications or visualization of AC500 V3 web server	CP6505	1SAP550510R0001	
7.0"	1024 x 600	for PB610 applications or visualization of AC500 V3 web server	CP6507	1SAP550710R0001	
10.1"	1280 x 800	for PB610 applications or visualization of AC500 V3 web server	CP6510	1SAP551010R0001	
15.6"	1920 x 1080	for PB610 applications or visualization of AC500 V3 web server	CP6515	1SAP551510R0001	

(1) In preparation



CP607



CP6410



CP6415

CP600-eCo, CP600, CP600-C and CP600-Pro

Ordering data

CP600-Pro control panels

Display size	Resolution pixels	Description	Type	Order code	Weight (1 pce) kg
5.0"	800 x 480	for PB610 applications or visualization of AC500 V3 web server	CP6605	1SAP560510R0001	0.740
7.0"	800 x 480	for PB610 applications or visualization of AC500 V3 web server (1)	CP6607	1SAP560710R0001	1.000
10.1"	1280 x 800	for PB610 applications or visualization of AC500 V3 web server (1)	CP6610	1SAP561010R0001	1.700
15.6"	1366 x 768	for PB610 applications or visualization of AC500 V3 web server (1)	CP6615	1SAP561510R0001	3.330
21.5"	1920 x 1080	for PB610 applications or visualization of AC500 V3 web server	CP6621	1SAP562110R0001	5.800

(1) Can be used to trigger safety actions in combination with AC500-S.



CP6605



CP6610



CP6621

Accessories

Description	Type	Order code	Weight (1 pce) kg
Installation accessory bag for CP600-Pro	TK6028	1SAP506028R0001	0.140
Installation accessory bag for CP600-eCo, CP600	TK6031	1SAP506031R0001	0.160

Programming software licenses

Description	Type	Order code	Weight (1 pce) kg
PB610 Panel Builder 600, engineering tool license for CP600-eCo, CP600, CP600-Pro control panels and PB610-R PC-runtime, for stand-alone installation via Automation Builder installer. PB610 is included in Automation Builder Standard.	PB610	1SAP500900R0101	0.010
PB610-R Panel Builder 600 runtime license for running a PB610 application on one Windows 32-/64-Bit platform. Installation via Automation Builder installer.	PB610-R	1SAP500901R0101	0.010