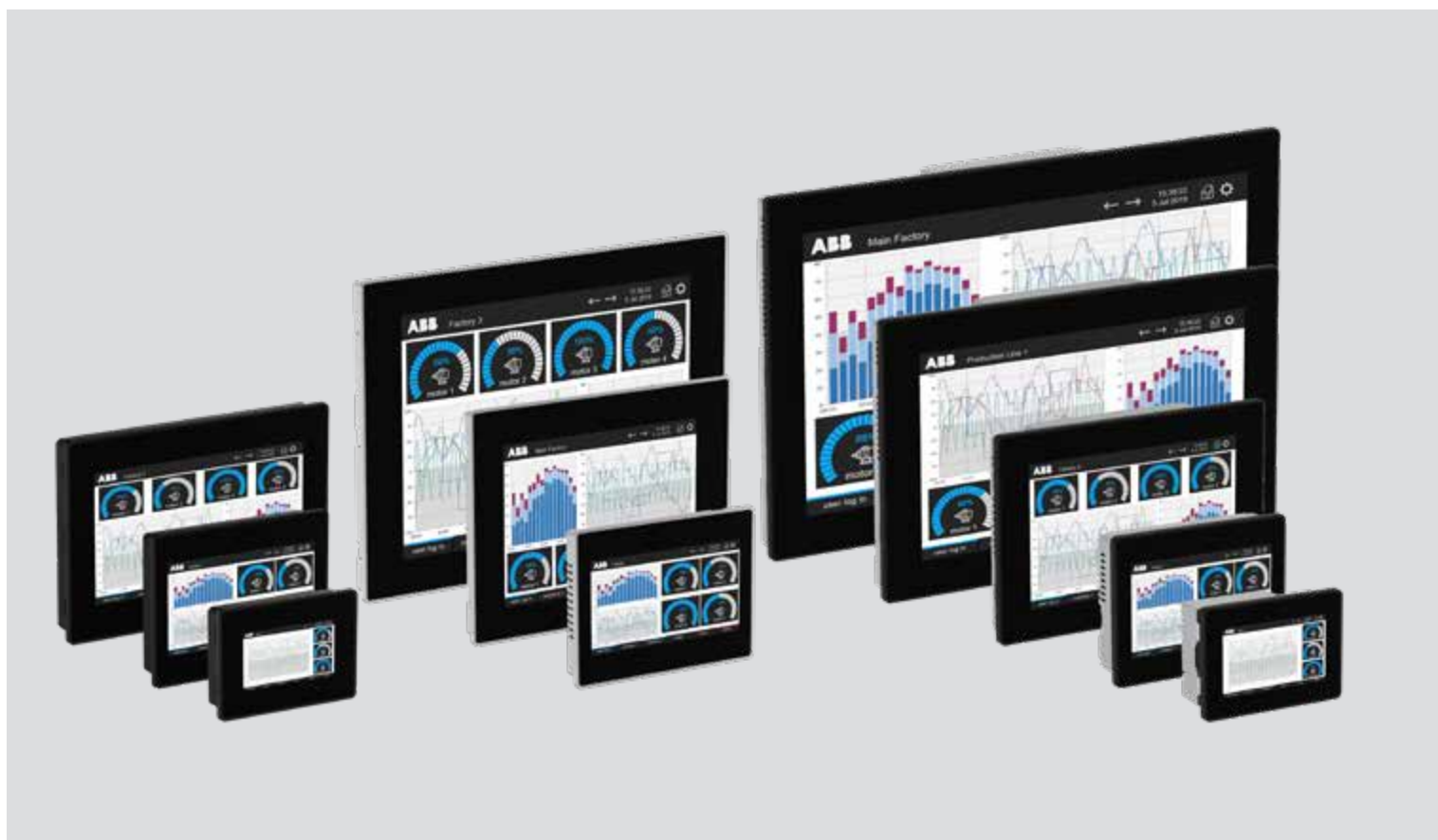PLC AUTOMATION

# CP600-eCo, CP600 and CP600-Pro
## Control panels

15:38:22
10 Jul 2022

00
75
50
25
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15:00　15:05　15:10　15:15　15:20　15:25　15:30

100%
motor 3

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motor 4
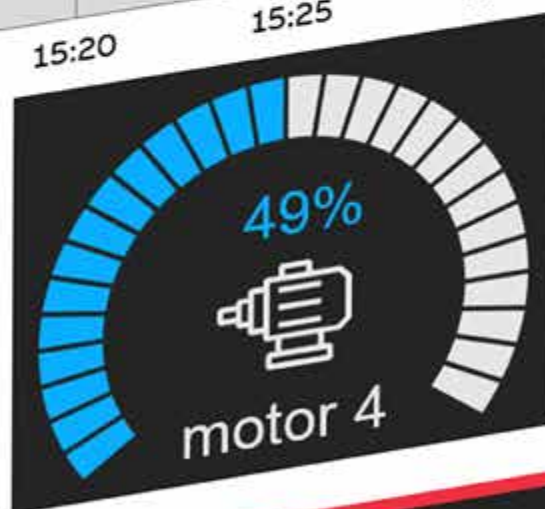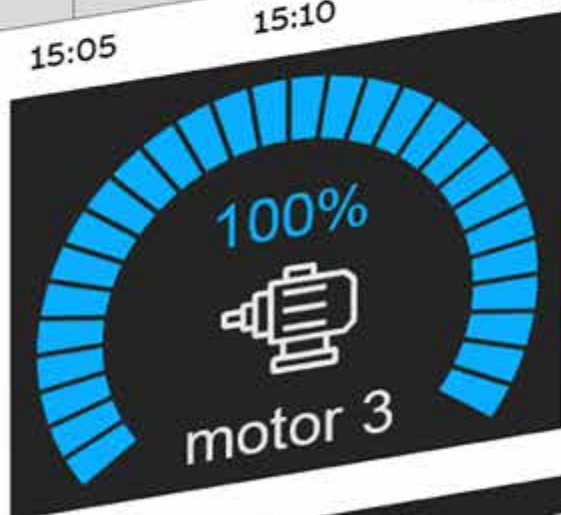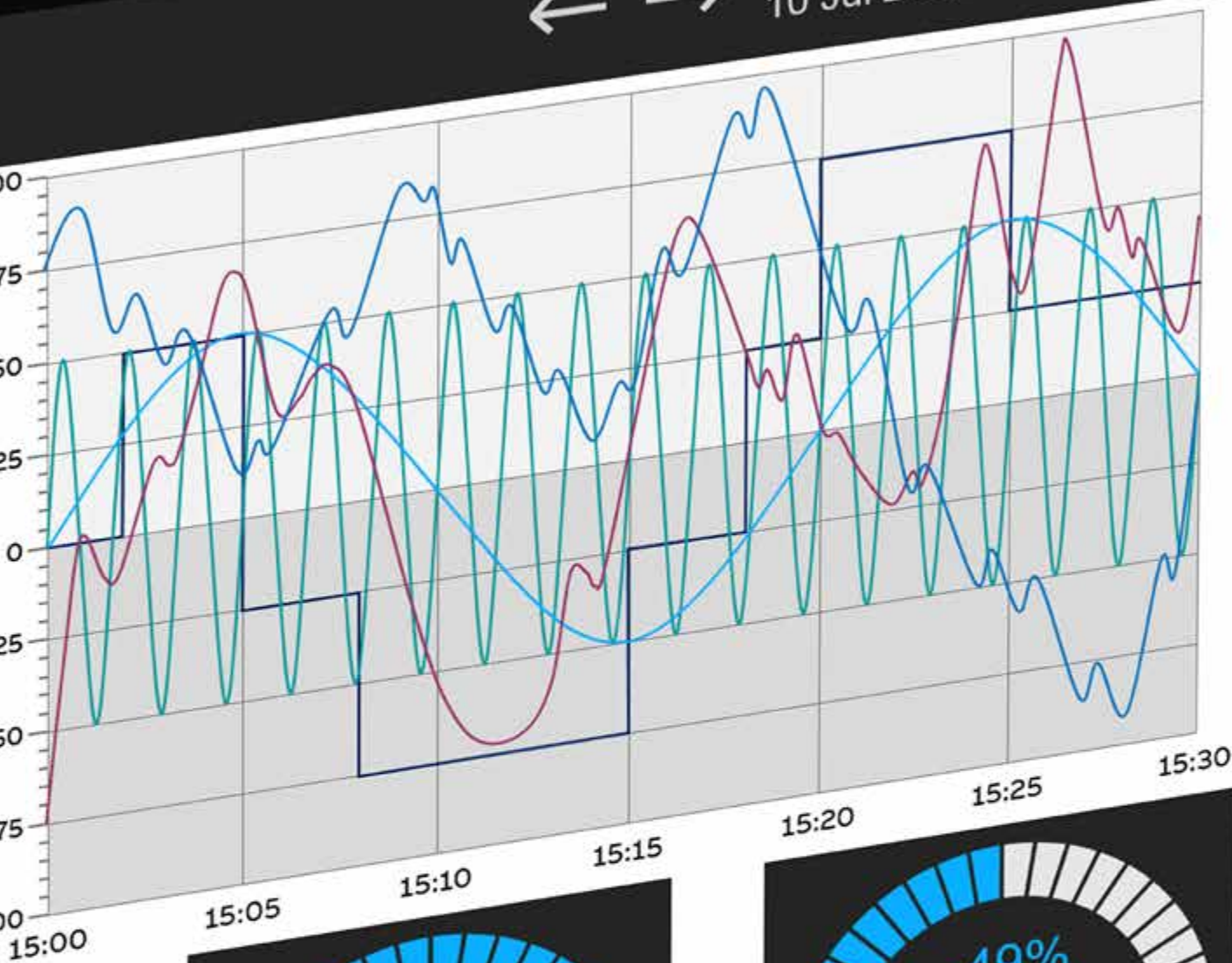
HVAC

Chiller

Alarm

e 2

# CP600 control panels

# CP600 control panel platform
Various options for your individual visualization project

With comprehensive but easy-to-use functionalities, ABB control panels stand out from competitor products. At a single touch, they intuitively provide operators with tailor-made operational information for production plants and machines. CP600-eCo, CP600 and CP600-Pro control panels make machine operation efficient, predictable and user-friendly.



**System performance**

**CP600-Pro**
CP6605
CP6607
CP6610
CP6615
CP6621

**CP600**
CP6407
CP6410
CP6415

**CP600-eCo**
CP604 (-B)
CP607 (-B)
CP610 (-B)

**PB610 Panel Builder 600: Graphical user interface design**
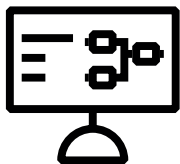
**Application complexity**
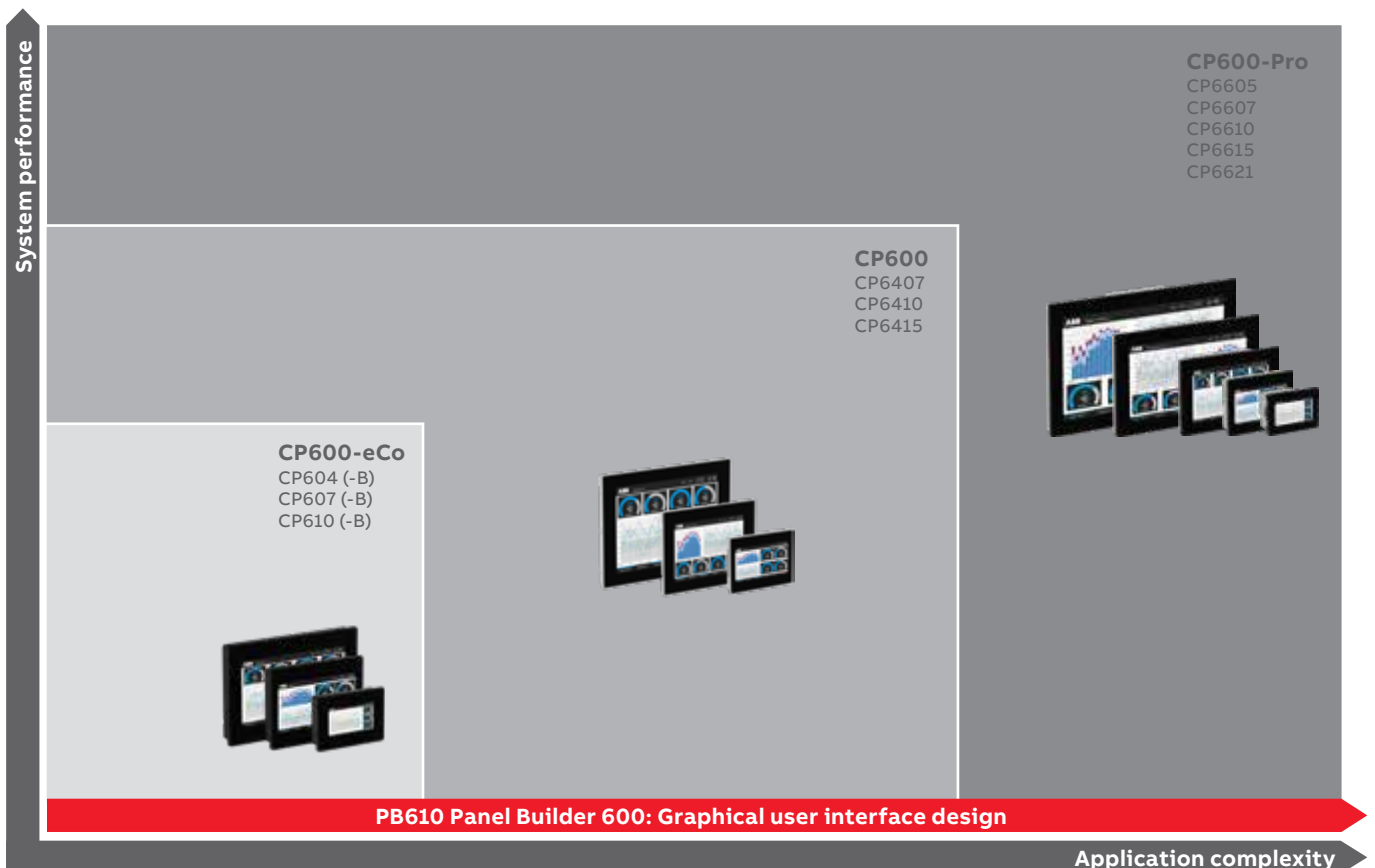
# CP600 highlights

Harmonized with AC500 PLCs and
ABB Ability™ Automation Builder

Various application possibilities through
a large number of protocols

Scalable solutions from basic CP600-eCo
functionalities to premium CP600-Pro

Easy programming with predefined customizable
widgets

Gateway functionality to cloud systems or
third party devices

# Visualization options
CP600 as your flexible interface
to the application
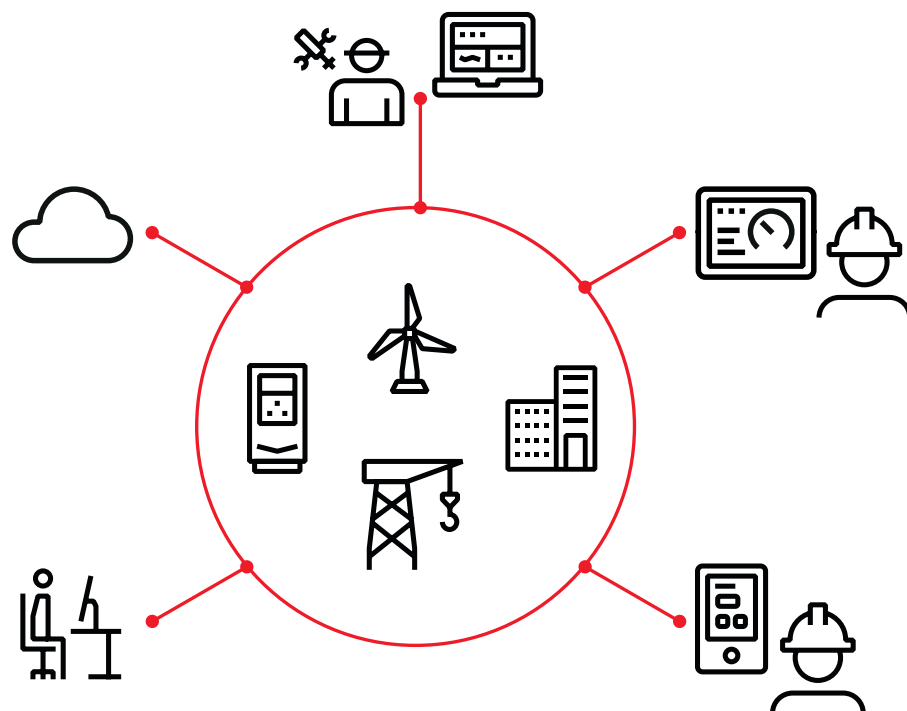


**Create your individual faceplate with
Panel Builder 600**
CP600 control panels with their common engineering tool offer functionalities for many different segments and connected devices.

Thanks to HTML5-based pages, HMI client and VNC client, it is possible to access your visualization from nearly everywhere, no matter whether you use an HMI, a PC, a tablet or a smartphone.

Connecting to the web from the panel with the preinstalled Chromium browser is very easy and allows access to AC500 V3 web visualization or other web-based information.

Functionalities like an integrated user access management and regular cyber security checks ensure that everything runs in a secure and controlled way.

# PB610 Panel Builder 600
## Efficient engineering for the entire CP600 platform

**Stay in one environment**
Integration of PB610 into ABB Ability™ Automation Builder for perfect interaction between CP600 and AC500 devices

**Reduce risk**
Reusable and scalable configuration to manage complexity and realize connectivity easily

**Increase efficiency**
Use state-of-the art widgets for programming native HMI and web visualizations

**Customize solutions**
Create your own or customize existing widgets easily to develop a tailor-made solution for your needs

**Combine the tools**
The PB610 runtime license allows you to use your Windows PC as an HMI

# PB610 Panel Builder 600
## Broad feature set for many use cases

PB610 Panel Builder 600 software is integrated in the ABB Ability™ Automation Builder engineering suite and can be downloaded via Automation Builder installer. The engineering software is intended for the efficient design of flexible HMI applications in a multiplicity of automation solutions.

It includes for instance the following features:

- Vector graphics (*.SVG) for precise, easily scalable and dynamic HMI design.
- Alpha blending for realistic transparency effects.
- Libraries including rich sets of widgets – ready-to-use graphical objects.
- Easy creation of customized widgets through the combination/modification of standard widgets.
- Customized widgets clearly arranged in user galleries.

- Page templates for professional design.
- Numerous configuration options for all HMI elements.
- Realization of customized functions and individual dynamic manipulation via the Java Script with debugger.
- Easy data acquisition and trend presentation.
- Reliable user management and secure access control.
- Rich set of configurable features: dynamic objects, data acquisition, alarm handling, multi-language applications, recipes, …
- HMI simulation for efficient commissioning.
- Numerous drivers for easy connection to e.g. PLCs, drives, robots.
- OPC UA and MQTT for future-oriented cloud connectivity and IoT.
- Gateway function for easy data exchange between different protocols and systems.
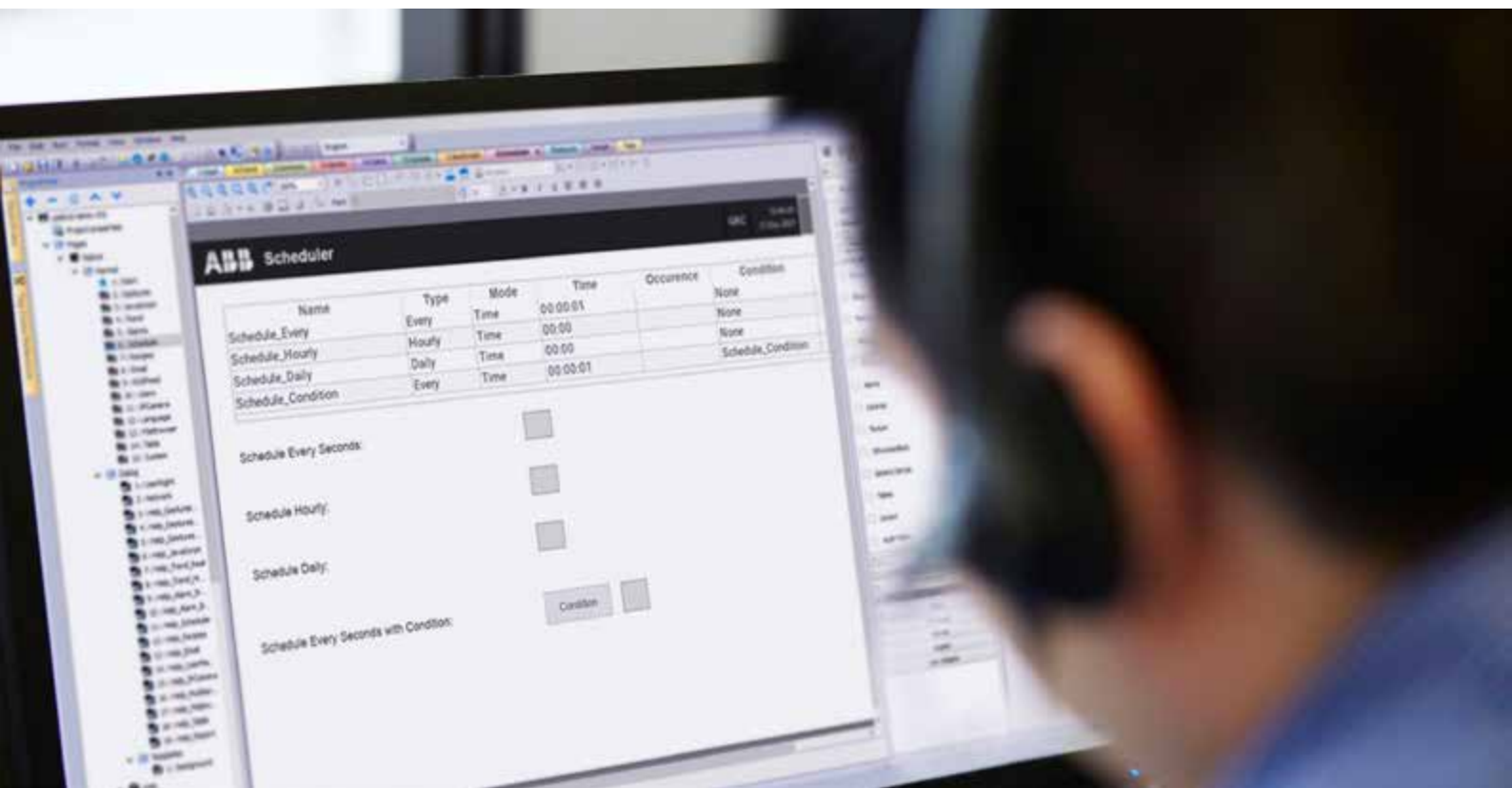
# CP600 connectivity
## Many supported protocols for easy connection in different applications

**Cloud**

**IT network/internet**
- MQTT
- OPC UA
- HTTP(S) server
- FTP client and server
- SNTP client and server

**AC500**

**Factory/site network**
- OPC UA
- BACnet
- MySQL/MSSQL
- HTTP(S)
- FTP
- SNTP
- SNMP

**Robots**

**Drives**

**Control network**
- Modbus TCP
- Modbus RTU
- CODESYS ETH V3
- Ethernet IP
- IRC5
- Simatic S7ETH
- Mitsubishi iQ/Q/L ETH
- Mitsubishi FX ETH
- ABB Pluto
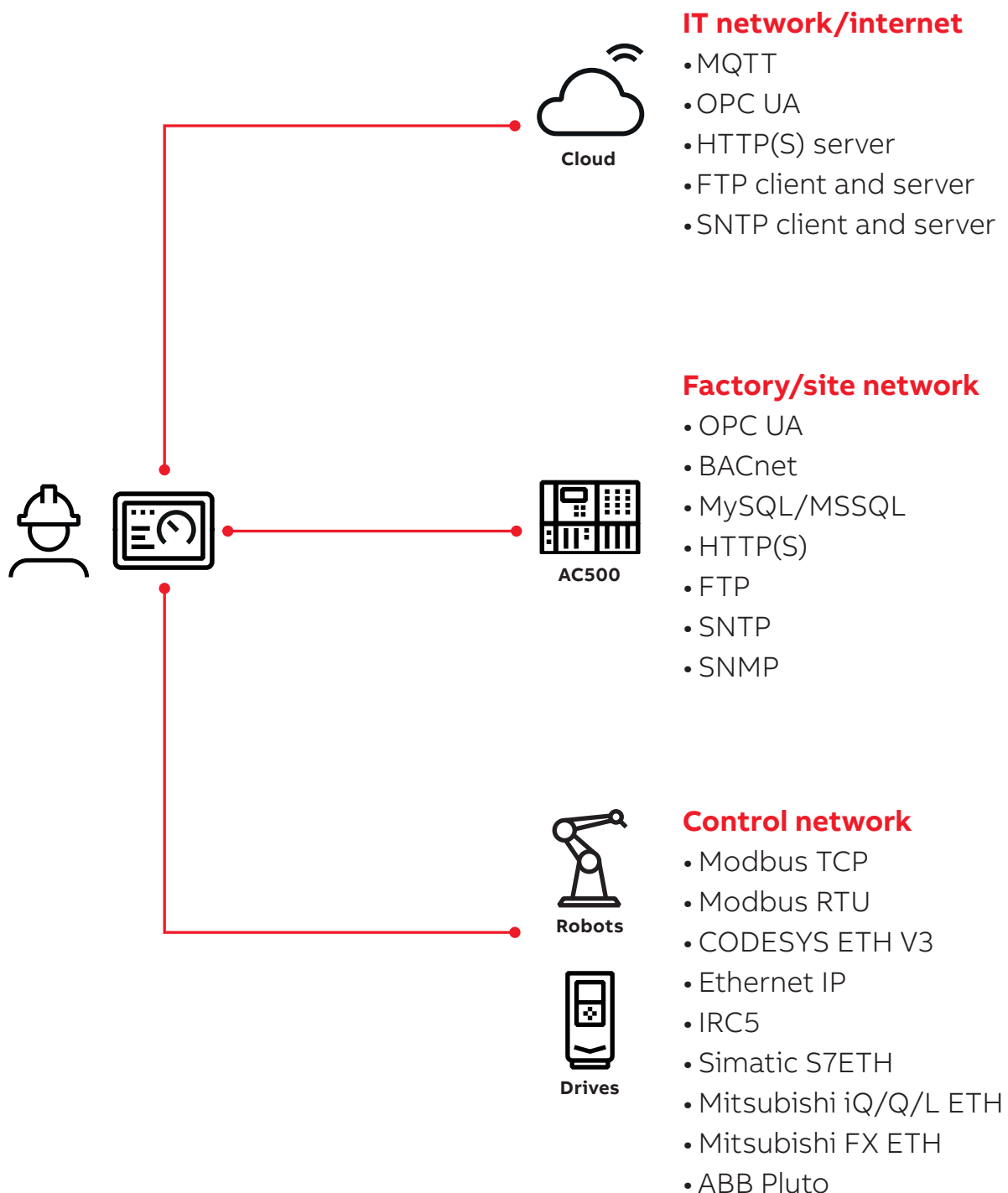
# CP600-eCo, CP600 and CP600-Pro
## Key features

—

Various options for tailor-made HMI solutions:
• PB610 Panel Builder 600 HMI applications
• Visualization of AC500 web servers (V3)
• Mobile remote access to HMI applications
• PB610-R PC runtime for Windows platforms
• Drivers for integration into automation systems
• OPC UA as well as MQTT

—
CP600
• Brilliant display
• Aluminum enclosure
• Operating temperature:
  -20...+60 °C
• Three different screen sizes
• Usable as web panel

—
CP600-Pro
• Multi-touch
• Brilliant real glass screen
• Aluminum enclosure
• Fast ETH 10/100/1000
• Operating temperature:
  -20...+60 °C
• Five different screen sizes
  from 5" to 21.5"
• Usable as web panel

—
CP600-eCo
• Slim design for easy installation
  even in compact spaces
• Robust plastic enclosure
• Three different screen sizes
• CP610 usable as web panel

# CP600-eCo
## Basic feature set for basic applications

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

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

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

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

**AC500-eCo V3**

**Drives**

**Machinery**

**Pumps**

—
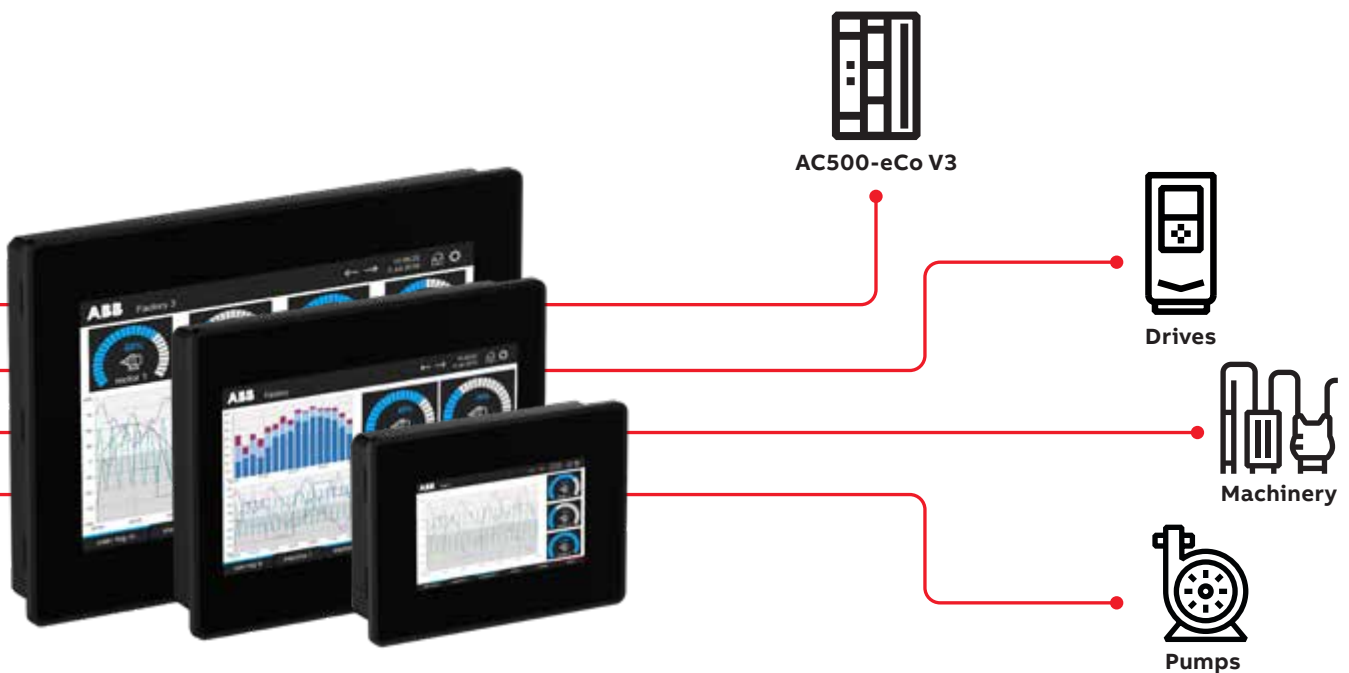
# CP600
# Future-oriented visualization

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

The CP600 control panels are ready to meet your individual needs. To support a wide range of applications they are available in screen sizes of 7", 10.4" and 15". Panel Builder 600 as part of the ABB Ability™ Automation Builder ensures efficient engineering, scalability and cyber security through regular updates.

Thanks to OPC UA and MQTT in combination with a powerful CPU, these panels are prepared for future communication trends and support cloud connectivity. The AC500 V3 web visualization can be accessed easily with the integrated Chromium browser.

Two Ethernet ports and a serial port enable connections to the web, PLCs, drives or IRC5 robots via multiple protocols to provide the right solution for your application.

**Up-to-date hardware design**

The robust aluminum enclosure has a modern, industrial look and carries all interfaces on one side, so that installation in various locations is made possible. The wide operating temperature range from -20 up to +60 °C makes these panels suitable even for challenging environments. Landscape and portrait mounting options provide installation flexibility.

2 Ethernet interfaces 10/100 Mbit with configurable bridge mode for easy connectivity with different components are available in combination with a serial interface. For updating, data storage and accessory connections, the control panels offer 2 USB hosts and a memory card slot.

**Cloud**

**AC500 V3**

**Buildings**

**Tunnels**
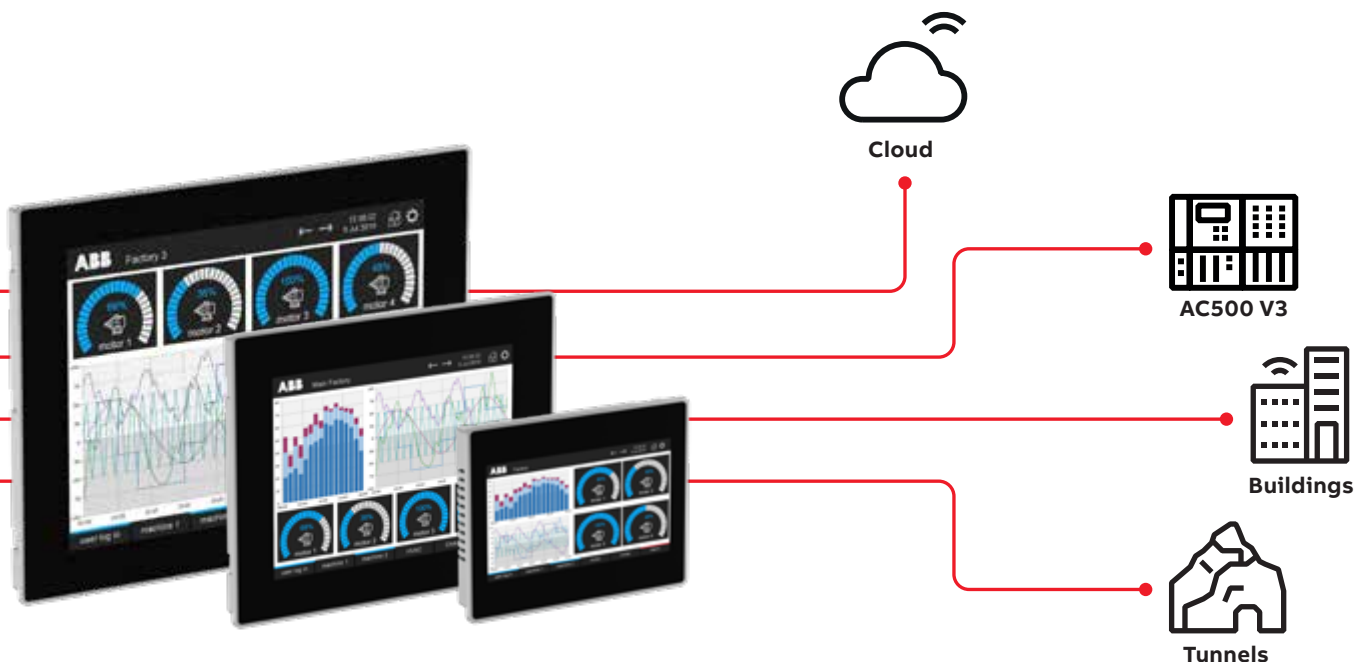
# CP600-Pro
# High-end feature set for demanding applications

**Outstanding HMI range designed for challenging applications**

The CP600-Pro series is a powerful HMI series for challenging applications and offers five different variants with multi-touch screens from 5" to 21.5". Real glass fronts, aluminum housing and an increased operating temperature range of -20…+60 °C make them the first choice even for harsh environments. They are also certified for different marine applications.

Efficient engineering of individual visualizations is ensured by PB610 Panel Builder 600, part of ABB Ability™ Automation Builder. In addition to all the functionalities in combination with AC500 PLCs provided by PB610, the CP600-Pro (7" to 15") is also able to trigger safety actions in combination with AC500-S safety PLC.

**Advanced connectivity**

A wide range of protocols enables the panels to be used as gateways, and to connect to the IoT, clouds, PLCs, drives, robots or other automation components.

To increase connectivity, the HMIs come with up to 3 Ethernet interfaces with different physical layers as well as a serial port to comply with current and future communication requirements. USB hosts and a memory card slot are available for updating, data storage and accessory connection.

The AC500 V3 web visualization can be accessed easily with the integrated Chromium browser.



Cloud

Robots

Cranes

Ships
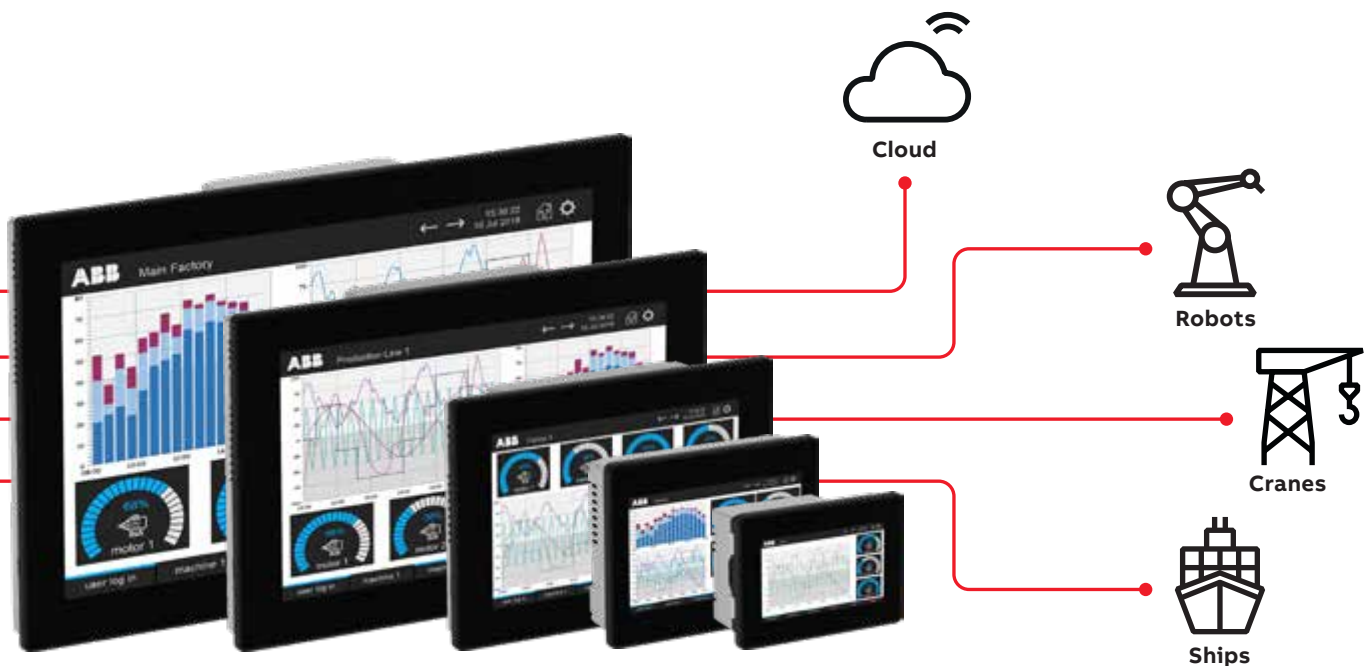
# CP600 drives faceplate
## Use CP600 together with ABB's ACSx80 drives

—

CP600 drives faceplate is an application example consisting of standard faceplates which are customizable by using Panel Builder 600.

It is an easy-to-use plug-and-play solution for connecting one 7" CP600 with up to eight ACSx80 drives via a serial connection.

Without any engineering effort, you can monitor, control, diagnose and troubleshoot from the HMI and even have a predefined user management.

**Monitor**
Actual status or graphical trends
of your motor parameters
and I/Os

**Control**
Start and stop the drives, change
the speed and settings

**Diagnose**
Easy access and notification of
active and most recent faults and
warnings

**Troubleshoot**
Direct response to faults and
error messages without opening
the enclosure

# Perfect match: CP600 and AC500

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

Standard industrial communication fieldbus, network and protocols supported by the 'One Platform' solution make the AC500 the perfect automation solution in even the most demanding environments. Flexible and scalable superior CPUs deliver performance whenever and wherever you need it.



Secure cloud connectivity options
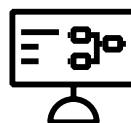
One programming tool for the entire AC500 PLC platform

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

Reliable, secure and safe with different performance levels

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

# What does your application need?

| | CP600-eCo | CP600 | CP600-Pro |
|---|---|---|---|
| Screen sizes | 4.3", 7", 10.1" | 7", 10.4", 15" | 5", 7", 10.1", 15.6", 21.5" |
| Operation | single-touch | single-touch | multi-touch |
| Communication | 1 SER, 1 ETH, 1 USB | 1 SER, 2 ETH, 2 USB, 1 SD | 1 SER, 3 ETH (1), 2 USB (2), 1 SD |
| Operating temperature | 0...50 °C | -20...+60 °C | -20...+60 °C |
| Enclosure | plastic / glass + front foil | aluminum / glass + front foil | aluminum / real glass |
| Front design | ABB or black | black | black |
| Operating system | Linux | Linux | Linux |
| PB610 application | 60 MB | 150 MB | 240 MB (3) |
| Chromium browser | CP610: preinstalled | preinstalled | preinstalled |

(1) CP6605: 2 ETH
(2) CP6605: 1 USB
(3) CP6605: 60 MB

# Ordering data

**CP600-eCo control panels**

| Display size | Resolution pixels | Description | Type | Order code | Price | Weight (1 pce) kg |
|---|---|---|---|---|---|---|
| 4.3" | 480 x 272 | for PB610 applications | CP604 | 1SAP504100R0001 | | 0.400 |
| 7.0" | 800 x 480 | for PB610 applications | CP607 | 1SAP507100R0001 | | 0.600 |
| 10.1" | 1024 x 600 | for PB610 applications or visualization of AC500 V3 web server | CP610 | 1SAP510100R0001 | | 1.000 |
| 4.3" | 480 x 272 | black, for PB610 applications | CP604-B | 1SAP504100R2001 | | 0.400 |
| 7.0" | 800 x 480 | black, for PB610 applications | CP607-B | 1SAP507100R2001 | | 0.600 |
| 10.1" | 1024 x 600 | black, for PB610 applications or visualization of AC500 V3 web server | CP610-B | 1SAP510100R2001 | | 1.000 |

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



— CP604



— CP607



— CP610



— CP607-B

**CP600 control panels**

| Display size | Resolution pixels | Description | Type | Order code | Price | Weight (1 pce) kg |
|---|---|---|---|---|---|---|
| 7" | 800 x 480 | for PB610 applications or visualization of AC500 V3 web server | CP6407 | 1SAP540710R0001 | | 1.000 |
| 10.4" | 800 x 600 | for PB610 applications or visualization of AC500 V3 web server | CP6410 | 1SAP541010R0001 | | 2.000 |
| 15" | 1024 x 768 | for PB610 applications or visualization of AC500 V3 web server | CP6415 | 1SAP541510R0001 | | 3.300 |



— CP6407



— CP6410



— CP6415

## CP600-Pro control panels

| Display size | Resolution pixels | Description | Type | Order code | Price | Weight (1 pce) kg |
|---|---|---|---|---|---|---|
| 5.0" | 800 x 480 | for PB610 applications or visualization of AC500 V3 web server | CP6605 | 1SAP560510R0001 | | 1.000 |
| 7.0" | 800 x 480 | for PB610 applications or visualization of AC500 V3 web server (1) | CP6607 | 1SAP560710R0001 | | 1.300 |
| 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 | | 4.100 |
| 21.5" | 1920 x 1080 | for PB610 applications or visualization of AC500 V3 web server | CP6621 | 1SAP562110R0001 | | 6.100 |

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



—
CP6605

—
CP6610

—
CP6621

## Accessories

| Description | Type | Order code | Price | Weight (1 pce) kg |
|---|---|---|---|---|
| Communication cable RS232: CP600-eCo, CP600 <-> AC500 | TK681 | 1SAP500981R0001 | | 0.130 |
| Communication cable RS485: CP600-eCo, CP600 <-> AC500-eCo | TK682 | 1SAP500982R0001 | | 0.130 |
| Installation accessory bag for CP600-Pro | TK6028 | 1SAP506028R0001 | | 0.150 |
| Installation accessory bag for CP600-eCo, CP600 | TK6031 | 1SAP506031R0001 | | 0.150 |

## Programming software licenses

| Description | Type | Order code | Price | 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 | | 0.005 |
| 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 | | 0.005 |

# CP600-eCo
# Technical data

| Type | CP604<br>CP604-B | CP607<br>CP607-B | CP610<br>CP610-B |
|---|---|---|---|
| Application | control panels for PB610 Panel Builder 600 applications | | |
| | - | - | visualization of AC500 V3 web server (*) |
| **Display** | | | |
| Exact display size diameter | 4.3" widescreen | 7" widescreen | 10.1" widescreen |
| Resolution | 480 x 272 pixels | 800 x 480 pixels | 1024 x 600 pixels |
| Display type, colors | TFT-LCD, 65536 colors | | |
| Touch screen material | glass covered by plastic film | | |
| Touch screen type | single-touch, analog resistive, 4 wires | | |
| Backlight type, life | LED, 20 000 h typ at 25 °C | | |
| Brightness | 150 cd/m² | 200 cd/m² | |
| **System resources** | | | |
| Processor type | ARM Cortex-A8; 300 MHz | ARM Cortex-A8; 300 MHz | ARM Cortex-A8; 1 GHz |
| Operating system, version | Linux RT | | |
| Application memory | for HMI projects of 30 MB in total plus 30 MB for fonts | | |
| **Interfaces** | | | |
| Ethernet ports, number, type | 1 - 10/100 Mbit | | |
| USB Host ports number, type | 1 - ver. 2.0 | | |
| Serial ports number, type | 1 - RS-232/-485/-422 software configurable | | |
| Card slot number, type | none | | |
| **Power supply** | | | |
| Power supply voltage nominal, tolerance | 24 V DC, 18…32 V DC | | |
| Current consumption at nominal voltage | 0.25 A | 0.3 A | 0.4 A |
| Backup power type | Supercapacitor, 72 h at 25 °C | | |
| **Enclosure** | | | |
| Degree of protection front, rear | IP66, IP20 | | |
| Front frame material | Plastic | | |
| Reverse side material | Plastic | | |
| Weight | 0.4 kg | 0.6 kg | 1.0 kg |
| Faceplate dimensions (L x H) | 147 mm x 107 mm | 187 mm x 147 mm | 282 mm x 197 mm |
| Faceplate depth | 5 mm | | 6 mm |
| Enclosure depth | 29 mm | | |
| Cutout dimensions (L x H) | 136 mm x 96 mm | 176 mm x 136 mm | 271 mm x 186 mm |
| **Environmental conditions** | | | |
| Operating temperature range | 0…50 °C | | |
| Operating humidity range | 5…85 % relative humidity, non-condensing | | |
| Storage temperature range | -20…+70 °C | | |
| Storage humidity range | 5…85 % relative humidity, non-condensing | | |

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

# CP600
## Technical data

| Type | CP6407 | CP6410 | CP6415 |
|------|--------|--------|--------|
| Application | control panels for PB610 Panel Builder 600 applications or visualization of AC500 V3 web server | | |
| **Display** | | | |
| Exact display size diameter | 7" widescreen | 10.4" | 15" |
| Resolution | 800 x 480 pixels | 800 x 600 pixels | 1024 x 768 pixels |
| Display type, colors | TFT-LCD, 65536 colors | | |
| Touch screen material | glass covered by plastic film | | |
| Touch screen type | single-touch, analog resistive, 4 wires | | |
| Backlight type, life | LED, 40 000 h typ at 25 °C | | |
| Brightness | 400 cd/m² | | |
| **System resources** | | | |
| Processor type | ARM Cortex-A8; 1 GHz | | |
| Operating system, version | Linux RT | | |
| Application memory | 150 MB | | |
| **Interfaces** | | | |
| Ethernet ports, number, type | 2 - 10/100 Mbit (with integrated bridge function) | | |
| USB Host ports number, type | 2 - ver. 2.0 | | |
| Serial ports number, type | 1 - RS-232/-485/-422 software configurable | | |
| Card slot number, type | 1 - Memory card slot | | |
| **Power supply** | | | |
| Power supply voltage nominal, tolerance | 24 V DC, 18…32 V DC | | |
| Current consumption at nominal voltage | 0.35 A | 0.4 A | 0.7 A |
| Backup power type, capacity | Rechargeable Lithium battery, not user-replaceable | | |
| **Enclosure** | | | |
| Degree of protection front, rear | IP66, IP20 | | |
| Front frame material | aluminum | | |
| Reverse side material | aluminum | | |
| Weight | 1 kg | 2 kg | 3.3 kg |
| Faceplate dimensions (L x H) | 187 mm x 147 mm | 287 mm x 232 mm | 392 mm x 307 mm |
| Faceplate depth | 4 mm | | |
| Enclosure depth | 40 mm | 40 mm | 45 mm |
| Cutout dimensions (L x H) | 176 mm x 136 mm | 276 mm x 221 mm | 381 mm x 296 mm |
| **Environmental conditions** | | | |
| Operating temperature range | -20...+60 °C | | |
| Operating humidity range | 5…85 % relative humidity, non-condensing | | |
| Storage temperature range | -20…+70 °C | | |
| Storage humidity range | 5… 85 % relative humidity, non-condensing | | |

# CP600-Pro
## Technical data

| Type | CP6605 | CP6607 | CP6610 | CP6615 | CP6621 |
|---|---|---|---|---|---|
| Application | control panels for PB610 Panel Builder 600 applications or visualization of AC500 V3 web server | | | | |
| **Display** | | | | | |
| Exact display size diameter | 5" widescreen | 7" widescreen | 10.1" widescreen | 15.6" widescreen | 21.5" widescreen |
| Resolution | 800 x 480 pixels | 800 x 480 pixels | 1280 x 800 pixels | 1366 x 768 pixels | 1920 x 1080 pixels |
| Display type, colors | TFT-LCD, 65536 colors | TFT-LCD, 16 Mio colors | | | |
| Touch screen material | true glass, black passepartout | | | | |
| Touch screen type | multi-touch, 2-points gestures, PCAP, projected capacitive touchscreen | | | | |
| Backlight type, life time | LED, 40 000 h typ at 25 °C | | | | |
| Brightness | 300 cd/m² | 500 cd/m² | 500 cd/m² | 300 cd/m² | 300 cd/m² |
| **System resources** | | | | | |
| Processor type | ARM Cortex-A8; 1 GHz | ARM Cortex-A9 dual core; 800 MHz | ARM Cortex-A9 dual core; 800 MHz | ARM Cortex-A9 quad core; 800 MHz | ARM Cortex-A9 quad core; 800 MHz |
| Operating system, version | Linux RT | | | | |
| Application memory | for HMI projects of up to 240 MB in total | | | | |
| **Interfaces** | | | | | |
| Ethernet ports, number, type | 2 - 10/100 Mbit (with integrated bridge function) | 2 - 10/100 Mbit (with integrated bridge function) 1 - 10/100/1000 Mbit | | | |
| USB Host ports, number, type | 1 - ver. 2.0 | 2 - ver. 2.0 | | | |
| Serial ports number, type | 1 - RS-232/-485/-422 software configurable | | | | |
| Card slot number, type | 1 - Memory card slot | | | | |
| **Power supply** | | | | | |
| Power supply voltage nominal, tolerance | 24 V DC, 18...32 V DC | | | | |
| Current consumption at nominal voltage | 1.0 A | 0.7 A | 1.0 A | 1.2 A | 1.7 A |
| Backup power type, capacity | Rechargeable Lithium battery, not user-replaceable | | | | |
| **Enclosure** | | | | | |
| Degree of protection front, rear | IP66, IP20 | | | | |
| Front frame material | aluminum, black | | | | |
| Reverse side material | aluminum | | | | |
| Weight | 1.3 kg | 1.3 kg | 1.7 kg | 4.1 kg | 6.1 kg |
| Faceplate dimensions (L x H) | 147 mm x 107 mm | 187 mm x 147 mm | 282 mm x 197 mm | 422 mm x 267 mm | 552 mm x 347 mm |
| Faceplate depth | 8.5 mm | 8.5 mm | 8.5 mm | 8.5 mm | 8.5 mm |
| Enclosure depth | 52 mm | 47 mm | 52 mm | 56 mm | 56 mm |
| Cutout dimensions (L x H) | 136 mm x 96 mm | 176 mm x 136 mm | 271 mm x 186 mm | 411 mm x 256 mm | 541 mm x 336 mm |
| **Environmental conditions** | | | | | |
| Operating temperature range | -20…+60 °C | | | | |
| Operating humidity range | 5…85 % relative humidity, non-condensing | | | | |
| Storage temperature range | -20…+70 °C | | | | |
| Storage humidity range | 5…85 % relative humidity, non-condensing | | | | |

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

**ABB**

—
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**new.abb.com/plc/automationbuilder**