

System 800xA Operator Effectiveness

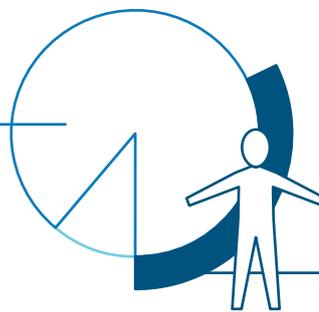
It's all about smooth operations

Focused operations and operators for increased performance



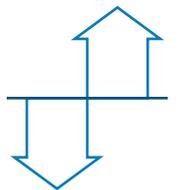
On average **5%** of global annual productivity is lost, due to unscheduled downtime.

80% of unscheduled shutdowns are preventable...



...of which **40%** are caused by humans

How do we tackle this opportunity to maximize production and quality, while minimizing the risks of accidents and unscheduled downtime?



Process plants and control systems are becoming increasingly complex. Production flexibility is key to performance and the market is trending toward using larger process areas with less people to do the job. The result is additional data to interpret and more alarms to process.

Improving Operator Effectiveness is all about empowering plant operators to do their job better and make more accurate, timely decisions.

Process operators live under constant challenge. The operator's actions have a direct impact on uptime, production output, quality, and safety. However, operators are often hindered

by a lack of attention to human factors like: operator interface design, information flow and preparation on how to handle abnormal situations.

System 800xA and its use of Aspect Object™ technology provides a unified environment for operations that helps to increase operator effectiveness and thus, production performance. It accomplishes this by integrating information regardless of its source and filtering out irrelevant data with features like personalized workplaces, advanced alarm management, and multi-system integration. In addition, extended operator workplace console keeps the 'operator in focus' by providing unparalleled operator ergonomics, control room consolidation and a pre-integrated large screen operator view display for clear and concise plant-wide visualization.

Integrating operations opens up a new world of efficiency – processes flow as never before while operators gain fresh insights, work smarter and can make better informed decisions.

The four pillars of Operator Effectiveness



Integrated Operations

Intuitive access to actionable information and dynamic views allow management to seamlessly consolidate and rationalize data from various sources.



High performance HMI

Clear process graphics and great support for implementation of high performance alarm management strategies.



Human Factors

Ergonomic operator environment built to reduce stress and operator fatigue.



Operator Competence

Simulation mimics environment for active and intuitive decision-making.

ABB is at the forefront of operator effectiveness. To help customers reach the optimal goal we have brought together the necessary technology and business practices as four essential pillars:

Integrated operations and embedded functionality

Raw data and other input must be transformed into actionable information in context with plant equipment to promote better decision making. The challenge is to provide seamless access to multiple sources of information while being careful not to overload the operator with irrelevant data.

High performance HMI

The user interface must be intuitive and allow operators to manage views dynamically and efficiently. A high performance interface supports situation awareness with how the information is displayed. It supports abnormal situation handling through efficient navigation and the application of best practices in alarm management.

Attention to human factors

Just as manufacturing processes are designed to be carefully controlled and manipulated to achieve desired outcomes, high-performance control rooms and operator stations must be designed with operator performance in mind.

Operator competence and confidence

Operator training simulators ensure process operator competence and confidence when dealing with normal production as well as un-planned events. In today's business climate simulators make even more sense due to the lack of experienced resources to instruct new, inexperienced operators.

Operator Effectiveness is about the operators' ability to supervise and control processes in the most efficient, safe and profitable way.

Integrated operations enabled with embedded functionality

Enable timely and intuitive decision-making using actionable information with ready-made embedded functionality.

One common Interface

800xA operator interface can be put on top of all ABB control systems. Likewise, it can be put on top of any other vendor's PLC or DCS system. This enables safe and cost-efficient system evolution. One common and consistent operator environment, regardless of the underlying control system, lets operators supervise and control larger parts of their process with an improved insight and visualization.

Early alerts of deviations

Recent performance visualization is yet another 800xA feature that improves operator insight and overview. This built-in HMI function displays the recent performance data of an object right next to the object graphic and its current status. Having recent operating values side-by-side with real-time status alerts operators to deviations before they develop into something more serious. Recent performance graphics can be shown at all times and for all objects – operators no longer have to call up dedicated trend display windows.

Alarm philosophy fully integrated in System 800xA

ABB's alarm management is fully integrated in System 800xA, which improves navigation, analysis and handling, and reduces the cost associated with running and maintaining a non-integrated system. Without a separate system to distract them, operators can devote more time to running a safe and efficient process

Safety Automation

800xA High Integrity integrates safety automation into process automation in ways unmatched by any other vendor. Operators enjoy a familiar all-in-one process overview with full visualization and common alarm lists that improve the understanding of process events and thus, reduce risk.

Electrical control

Effectively balance availability and consumption of energy. Include load-shedding to enable fast and safe automated shutdown of selected process sections in case of a power shortage or soaring energy prices.

Multi-system integration promotes enterprise collaboration and control center consolidation

Multi-system integration makes it possible to supervise and operate several 800xA systems from one central control room in a safe and effective way. The systems can be located in the same plant or distributed, i.e. geographically separated from each other. They can still be engineered separately, and be in different life cycles or versions.

“ABB's 800xA Multisystem Integration (MSI) functionality provided a great solution for integrating the remote stations provider systems into the Genesis Hydro Main Control Centre for monitoring and control.”

Robert Woods, Senior Project Engineer, Genesis Energy, New Zealand

Point of Control clearly defines responsibilities

Point of Control is a recent 800xA addition. It means that control responsibilities automatically follow a pre-determined system set up. The interface shows everyone involved who is responsible for what, which eliminates costly misunderstandings. It's also worth noting that when a pre-designated operator assumes control responsibility, the alarm list automatically transfers to him at the same moment.

CMMS reduces process disturbance and downtime

With CMMS (Computerized Maintenance Management System) fully integrated with 800xA, process operators can issue equipment fault reports to plant maintenance with only a few mouse clicks. This increases the rate of reporting malfunctioning objects. Furthermore, since the equipment information is automatically filled in, manual errors are drastically reduced, saving time. The fault report is available for the maintenance department as soon as the operator clicks submit, thus enhancing collaboration and allowing ample opportunity to tend to anomalies before they negatively affect operation.

Documentation ensures correct action

Process operators need continuous access to CAD drawings, user-instructions and more. The worse-case scenario involves frantic searches for pieces of paper or hard-to-find binders. Once located, there's always the risk that the information is old or incorrect. The 800xA scenario is different. Calmly right-clicking a context menu immediately gives operators the correct documentation for whatever task they want to perform, e.g. instructions and drawings for a planned shutdown. It's all directly linked to the specific process object on the screen. Furthermore, it's fast, safe – and always the latest version.



Live video resolves problems faster

Live videos play a key role in today's plant operations, a modern facility may have hundreds of cameras in use simultaneously. 800xA lets operators make full use of each and every one without having to know where all are physically located. With an integrated approach, live video images are available on an object level via just two mouse clicks. Operators are quickly presented with a visual overview and can take fast actions, the savings in time is obvious. Operators can also have embedded camera views in process displays, access to group displays, share images with anyone in the plant or outside, and control any camera (or several) directly from the screen in front of them. As several people can view at the same time, problem-solving and recovery are more efficient.

Telecom improves operator collaboration

A wide array of telecommunication possibilities, such as voice communication, public address or TMS enable effective collaboration with other operators, field technicians, shift supervisors, or maintenance staff, resulting in improved stability, productivity and safety. In their daily work, control room operators communicate extensively with other people in a variety of ways. Instead of having the different communication tools lying on workstation desks, 800xA operators can rely on the

system to connect them to the right person. Preconfigured messages (translated into several languages if needed) can be sent out as voice messages over the PA system according to the specific alarm situation. Equivalent typed messages can also be sent out at the push of a button.

”Thanks to video integration, we are able to monitor and control vital processes and integrate images with process graphics on the operator monitors”

Stein Holse, Process Control Engineer, Statoil Hydro, Norway

Snapshot reports improve process stability and safety

Snapshot reporting is driven by an 800xA search engine and report tool extension that searches and presents information from the object database. Its findings increase engineering efficiency and system quality, and provides early warnings. Benefits include reduced time for shift handovers and shorter maintenance cycles.

High Performance HMI for personalized and intuitive workplaces



Improving operator effectiveness through high-performance HMI is all about improving the operator's situation awareness and their effective situation handling.

System 800xA offers a high-performance HMI that provides operators with an easy-to-use, optimized interface that supports fast operator-process interaction and reduces the risk of disturbances and unplanned downtime.

A perfect process overview for everyone

Different users require access to different information depending on their needs. With System 800xA you can personalize workplaces with easy access to the right information in the right place to speed up decision-making and corrective action. Users can create role-focused work environments with information arranged according to user workflow. Furthermore, creating specific workplaces for specific users is simple; the correct workplace appears automatically according to logging information.

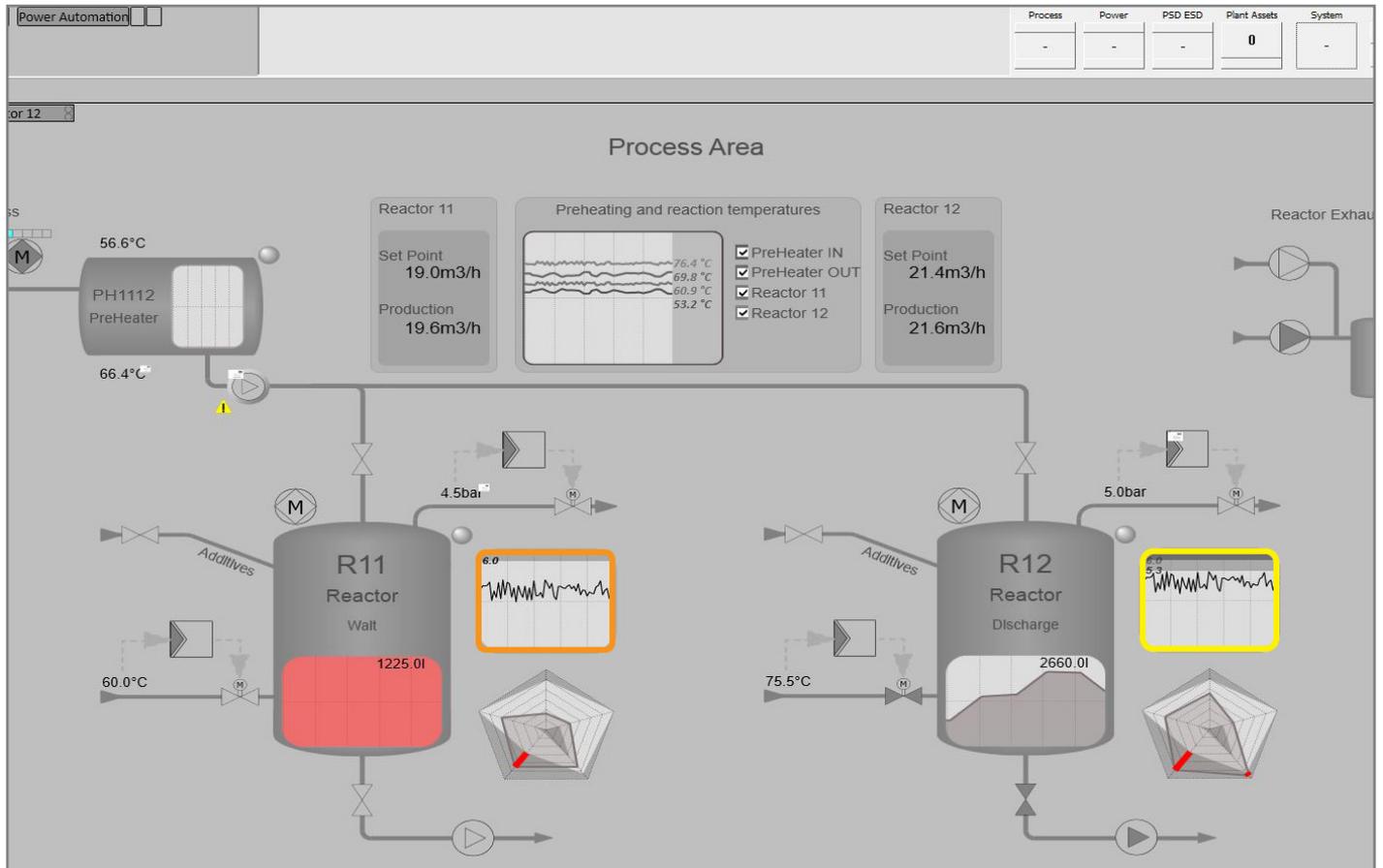
High performance graphics for consistent environment

Together with the object-orientated architecture of System 800xA, process graphics play a key role in helping plant operators work efficiently, act quickly and make correct decisions. System 800xA high performance graphics convey a representative illustration of the process flow. Their design supports pattern recognition and highlights the most important information for the operator. This results in an easy-to-understand environment where reduced stress and distraction contribute to confident decision-making.

Intuitive navigation allows time for collaboration and enhanced decision-making

Since all relevant and up-to-date information is connected to a specific object, it can be accessed in real time by clicking on that object. Consistently, one-click navigation gives process operators more time to act.

Instead of spending time and energy looking for information, they can concentrate on applying it. They can also share data with colleagues and field operators. Collaboration like this is the key to running and maintaining an optimized process.



Simplify view-handling and eliminate overload

A multitude of time-saving navigation tools is at each operator's disposal, many designed to simplify view-handling, eliminate 'window-overload', and make the most of the multiple-screens increasingly found in modern control environments.

In System 800xA, a trend display always opens in the same window as the previous, and an alarm list is never covered by another view. As well as saving time and minimizing stress, this no-surprises view-handling simplifies the use of multiple monitors so that operators can supervise and control larger process areas with the same efficiency and safety.

Built-in process graphics support across whole interface

System 800xA has built-in process graphics support that reaches across the complete operator interface, including fast and effective creation:

- Full-vector graphics enable distortion-free scaling with maintained resolution
- Fast, cost-effective graphics builder
- Solution library allows graphics reuse via drag-and-drop
- Display Documentation takes a snapshot of any engineered

graphic and converts all details to a standard Excel file for record keeping

- User-friendly expression editor with simple and intuitive syntax
- Built-in animation support speeds up creation while simplifying the build process

Better image quality for process operators

System 800xA process graphics not only provide graphics builders with better engineering tools, they give process operators a much-improved image to view. True vector graphics enable scaling with maintained resolution. This effect is especially appreciated when operators need to scale-down graphic image windows to fit several onto one screen.

Easy-to-learn and use full-vector process graphics

With information designed and presented for human interpretation, operators can see what is going on and act promptly. Key tasks like monitoring the process, solving problems and creating the conditions for uninterrupted, cost-effective production become much easier. Graphics are becoming more and more intuitive and the tendency is towards reducing elements and colors instead of overloading process overviews, helping operations flow more smoothly.

Increased situation awareness with the latest research in Human Factors

The control room is the most important room in your facility – it's where daily decision-making affects corporate goals and return on plant assets.

ABB's dedication to human factors and ergonomic research ensures the most efficient control room environment for System 800xA.

ABB provides complete control room solutions with a clear focus on operator performance, health and job satisfaction. Our solutions often exceed current ISO/EEMUA requirements. Get ABB involved early in your next project, and we'll provide layout proposals that include the latest and most advanced environments and solutions – for the control room as well as adjacent areas.

Reduce operator stress and increase focus

Good workstation ergonomics and a well-designed control room layout reduce operator stress and increase focus.

System 800xA with Extended Operator Workplace (EOW) offers unparalleled ergonomics, visualization and communication solutions for operators. Everything is designed to support effective interaction and collaboration:

- Plant visualization and information all in one view
- Process overviews on close-by large interactive panels
- One fast-acting functional keyboard for controlling the complete operator environment
- Control room space reduced by around 30% or more
- Improved plant-wide collaboration and optimization
- Increased applicant appeal and job satisfaction

Large-screen interactive overview boosts control and collaboration

Operators have close-by, large-screen overview displays and several personal screens. The EOW workstation is customized with either two or three large overview displays. Operators can arrange graphics to give an optimal view of the process under their control. The EOW's interactive nature means that it can immediately show any information relevant to any situation to anyone they choose – either in the control room or elsewhere. This facilitates collaborative problem solving by ensuring that key personnel groups always have a clear view of what is happening, and can see what needs to be done.



“The environment in the control room reflects how the plant is feeling.”

Morgan Wännlund, operations manager at Gärstadsverket, Tekniska Verken, Linköping, Sweden

More effective operations from a much reduced working space

Since operators always have personalized, interactive displays close at hand, the need for huge ‘full-wall, cinema-like’ screens is eliminated, which naturally saves space in all directions. Floor space requirements can be cut by a third or more using modular design and integrating information into one operator environment. Additional features such as directed ‘sound showers’ (where only the operator at a specific console will hear a conversation) mean that they can sit closer to one another yet still enjoy a quiet workplace free from distraction.

Going beyond the control room walls

In our view of plant operations, the whole control infrastructure should enhance operator performance via improved information flow and collaboration. Our attention to operator well-being and efficiency thus extends beyond the control room walls to encompass the entire operations center.

ABB offers 800xA Control Room Pre-studies as part of the 800xA portfolio for control room design with special attention to human factors.

By tackling not only the control room but the entire operations center, we ensure that all who work there enjoy an effective operating environment that inspires them to greater productivity and new levels of collaboration.

Effective alarm management for fast corrective action



An effective alarm system lets operators focus on important events and act accordingly. They must always know what a particular alarm means, and what they should do to address it. Acknowledging or silencing it without investigating is not an option.

To help operators see and react correctly to an alarm, the system itself must be proactive and user-friendly, especially with fewer operators controlling larger process areas.

Operators focus on key events and correct actions

With every relevant fact and event in a single system, operators get consolidated time-stamped alarm lists that include power automation safety and all controllers irrespective of brand or supplier. This leads to an improved overview of what has happened in the process (and in exactly what order) in addition to what is happening right now. Trouble-shooting becomes faster and more effective through enhanced collaboration with other key functions.

Operators know instantly what each alarm means and have both the time and the information to deal with it correctly.

Several alarm system functions help promote safe plant operation. Consistent right-click navigation to and from the alarm list makes alarm-related information instantly available. In addition, alarm shelving temporarily moves an alarm from the list to a special shelved list for a defined period of time or a certain occurrence.

“Instead of constantly reacting to alarms, operators can now address alarm situations before they occur”

**Thomas Elfving, System Engineer,
AkzoNobel Functional Chemicals, Sweden.**

Many embedded alarm management features

Numerous alarm management features come with the 800xA base system such as Alarm and Events Lists, Alarm Hiding or Alarm Response Navigation. Other popular additions are ready-made in the system and can easily be implemented. Please see our 800xA Alarm Management brochure for further information.

Simulator training boosts competence that brings safety

While control systems automate large sections of most plants, human error remains a critical aspect in most accidents. 800xA Simulator provides a safe and realistic environment where operators can learn to master the process, thereby reducing risks and the number of unplanned shutdowns.

Effective operations with confident and focused operators

Better trained operators can help increase overall plant safety, reduce start-up time as well as the number of unplanned shutdowns. Simulation gives process operators a safe and realistic environment where they can learn to master the process and improve their operator skills. A simulator is also a powerful tool for engineering testing and optimization studies to improve productivity and energy savings. Trained operators and tested process control result in higher returns as both product quality and productivity are improved.

Behavior identical to the real system

The 800xA Simulator, uses the same engineering data, visualization and control logic as the System 800xA environment, but connected to a dynamic process model. This provides the most realistic simulator solution with behavior identical to the real system, and is much easier to maintain as changes are made. Skills acquired are 100% transferable from simulator to plant.

In addition to being able to simulate the various functions of the control system, it supports essential simulator functions for training purposes, including the ability to set initial conditions, capture snap shots and freeze/resume process dynamics.

From simulation to production

For a new plant, use of an operator training simulator can contribute to shorter initial start-up, better operator performance and help to prevent trips and incidents. It allows the testing of operational procedures and the tweaking of display and control strategies before initial start-up, when changes are always easier and less risky to make.

“Our documented experience from the Ormen Lange project provides evidence that the use of the simulator facility has provided us with good safety routines in the process, as well as significant savings in the startup period of the facility.”

Geir Fillip Håseth, Operations engineer, Shell



Smooth and intuitive information handling, with the right tools at the right time - embedded in System 800xA.

To keep your plant running safely and at its optimum level, your operators need to be equipped to recognize abnormal situations and handle them through effective decision making.

During every shift there are hundreds of vital decisions made by operators. The actions they take are vital to your process and to your enterprise. Raising productivity, increasing energy efficiency, achieving goals. It's all in their hands – and the more focused, alert and in touch they are, the better they perform. This state of operator enlightenment is far from easy to achieve – if it wasn't for System 800xA.

System 800xA offers everything needed to improve an operators' performance in one common interface: Advanced alarm management, easy navigation, actionable information, high performance HMI, training simulation and ergonomics. The whole control room environment is delivered in one integrated system with a vast number of ready-made embedded functionalities.

ABB consistently deepens research and development in these areas. New software and hardware such as the EOW-i, the next generation of operator environment with intelligent ergonomics, are some of the numerous examples of near-future advancements. User experience and interaction design for ever-better human machine interfaces and implementation into control room design for the optimal operation environment are and will be key focus areas.

The potential benefits of an integrated approach to operator effectiveness are basically the opposite of all the problems already attributed to less well equipped operators. The key is improved decision-making. When operator effectiveness improves, so do productivity, efficiency, asset utilization, safety environmental compliance and profits.



Contact us

www.abb.com/800xA
www.abb.com/controlsystems

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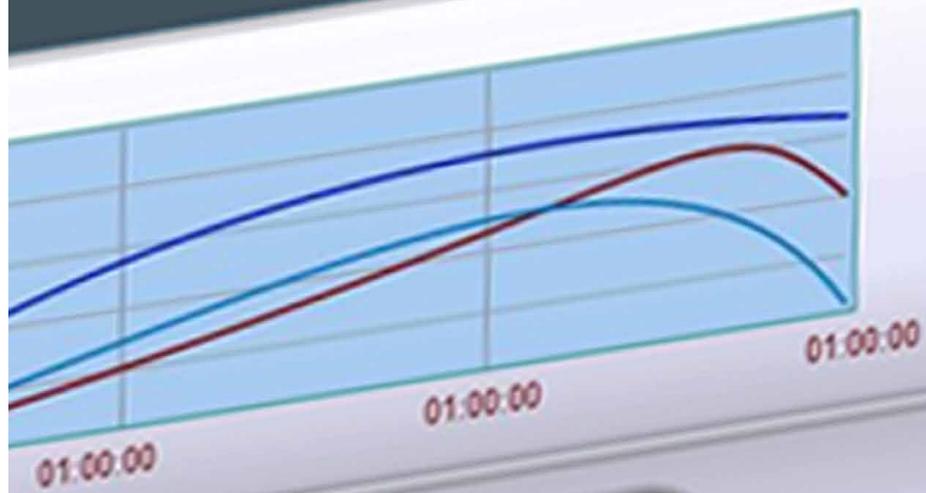
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CP635

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Back



Forth



Alarms



CP600 and CP400 series HMI and control panels

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CP600 series and CP400 series

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HMI and control panels

Key features CP600

- Aluminium housing
- Front protection IP66
- Engineering software Panel Builder 600 integrated in Automation Builder



- Brilliant colored display
- Free reusable 3D graphic elements (Widgets)
- Import tags from PLC, drives, motion controller and robots configuration within Automation Builder

- Improved flexibility and integration
- Two versions available:
 - CP600: Configuration with PB610 Panel Builder 600 for clear tailor made visualization.
 - CP600-WEB: visualization of AC500 web server with Automation Builder visualization. The Automation Builder debugging and diagnostics screens can be converted effortlessly for use with CP600-WEB control panels.

CP600 series and CP400 series HMI panels and control panels



CP651

HMI panels

| 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" | CP651 | 1SAP551100R0001 | | 2.100 |
| 800 x 600 | 12.1" | CP661 | 1SAP561100R0001 | | 2.800 |
| 1280 x 800 | 13.3" | CP665 | 1SAP565100R0001 | | 2.600 |
| 1024 x 768 | 15" | CP676 | 1SAP576100R0001 | | 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" | CP651-WEB | 1SAP551200R0001 | | 2.100 |
| 800 x 600 | 12.1" | CP661-WEB | 1SAP561200R0001 | | 2.800 |
| 1280 x 800 | 13.3" | CP665-WEB | 1SAP565200R0001 | | 2.600 |
| 1024 x 768 | 15" | CP676-WEB | 1SAP576200R0001 | | 3.800 |

Communication cables (connection control panel <-> PLC)

| 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 |

Programming software

| Description | Type | Order code | Price | Weight (1 pce) kg |
|--|-------|-----------------|-------|----------------------|
| Panel Builder 600 stand-alone engineering tool (1) (also available as part of the engineering suite Automation Builder) | PB610 | 1SAP500900R0001 | | 0.150 |

(1) Delivery includes the programming software and corresponding documentation for software and control panels on USB-ROM.



CP415

Control panels

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

| Plug on CP400 side | Description | Type | Order code | Price | Weight (1 pce) kg |
|--------------------|------------------------------------|-------|-----------------|-------|----------------------|
| Sub-D 9 | Connection to COM1. Length: 4 m | TK401 | 1SBN260216R1001 | | 0.180 |
| Sub-D 25 | Connection to COM2. Length: 4 m | TK402 | 1SBN260217R1001 | | 0.230 |

Communication cables (connection control panel <-> PLC)

| Plug on PLC side | PLC | Type | Order code | Price | Weight (1 pce) kg |
|------------------|-----------|-------|-----------------|-------|----------------------|
| Sub-D 9 | AC500 | TK405 | 1SBN260221R1001 | | 0.130 |
| Sub-D 9 | AC500-eCo | TK406 | 1SBN260224R1001 | | 0.130 |

Programming software

| Description | Type | Order code | Price | Weight (1 pce) kg |
|------------------------------------|-----------|-----------------|-------|----------------------|
| Programming software for CP400 (1) | CP400Soft | 1SBS260284R1001 | | 0.100 |

(1) Delivery includes the programming software and corresponding documentation on CD-ROM.

CP600 series

Technical data

| Type | CP620 | CP630 | CP635 | CP651 | CP661 | CP665 | CP676 |
|--|--|---|-----------------------|----------------------|------------------|-------------------|-------------------|
| Application | control panels for PB610 Panel Builder 600 applications only Features, supported from V1.90.0.975 | | | | | | |
| Type | CP620-WEB | CP630-WEB | CP635-WEB | CP651-WEB | CP661-WEB | CP665-WEB | CP676-WEB |
| Application | control panels for visualization of AC500 web server applications, provided by AC500, AC500-eCo PLCs | | | | | | |
| Display | | | | | | | |
| Exact display size diameter | 4.3" widescreen | 5.7" | 7" widescreen | 10.4" | 12.1" | 13.3" widescreen | 15" |
| Resolution | 480 x 272 pixels | 320 x 240 pixels | 800 x 480 pixels | 800 x 600 pixels | 800 x 600 pixels | 1280 x 800 pixels | 1024 x 768 pixels |
| Display type, colors | TFT color, 64 k | | | | | | |
| Touch screen material | glass covered by plastic film | | | | | | |
| Touch screen type | analog resistive, 4 wires | | | | | | |
| Backlight type, life | LED, 40 000 h typ at 25 °C | | | | | | |
| Brightness | 150 CD/m ² | 200 CD/m ² | 300 CD/m ² | | | | |
| Housing | | | | | | | |
| Protection class front, rear | IP66, IP20 | | | | | | |
| Front side material | Zamak | | | Aluminium | | | |
| Reverse side material | Zamak | Aluminium | | | | | |
| System resources | | | | | | | |
| Processor type | ARM Cortex A8: 600 MHz | | | ARM Cortex A8: 1 GHz | | | |
| Operating system, version | Microsoft Windows CE 6.0 Core | | | | | | |
| User memory type, capacity | Flash disk, 128 MB | | | Flash disk, 256 MB | | | |
| RAM type, capacity | 256 MB DDR | | | | | | |
| Interfaces | | | | | | | |
| Ethernet ports, number, type | 2 - 10/100 Mbit (with integrated Switch function) | | | | | | |
| USB Host ports number, type | 1 - ver. 2.0 | 2 - 1 ver. 2.0, 1 ver. 2.0 and ver. 1.1 | | | | | |
| Serial ports number, type | 1 - RS-232/-485/-422 software configurable | | | | | | |
| Additional ports number, type | 1 - Expansion slot | 2 - Expansion slot for future modules for future modules | | | | | |
| Card slot number, type | 1 - SD card slot | | | | | | |
| Power supply voltage nominal, tolerance | 24 V DC, 18...30 V DC | | | | | | |
| Current consumption at nominal voltage | 0.4 A | 0.7 A | 0.7 A | 1.0 A | 1.05 A | 1.15 A | 1.4 A |
| Battery type | Rechargeable Lithium battery, not user-replaceable | | | | | | |
| Weight | 0.95 kg | 1.15 kg | 1.1 kg | 2.1 kg | 2.8 kg | 2.6 kg | 3.8 kg |
| Faceplate dimensions (L x H) | 149 mm x 109 mm | 187 mm x 147 mm | | 287 mm x 232 mm | 337 mm x 267 mm | 392 mm x 307 mm | |
| Cutout dimensions (L x H) | 136 mm x 96 mm | 176 mm x 136 mm | | 276 mm x 221 mm | 326 mm x 256 mm | 381 mm x 296 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 | | | | | | |
| Approvals | See detailed page 168 or www.abb.com/plc | | | | | | |

CP400 series

Technical data

| Type | CP415M | CP430B |
|------------------------------------|-------------------------|-----------------------|
| Display size | 3.5" | 5.7" |
| Resolution | 240 x 240 pixels | 320 x 240 pixels |
| Display type | Touch Mono FSTN 16 grey | Touch 16 blue, STN |
| Brightness | 90 cd/m ² | 110 cd/m ² |
| Contrast adjustment | Via touch panel | Via touch panel |
| Back-light type | LED | CCFL |
| Back-light life | 40 000 h | 50 000 h |
| Touch screen (number of times) | > 1 million | > 1 million |
| Function keys / other keys | - | 5 keys + 1 key menu |
| Application flash prom | 4 MB | 4 MB |
| RTC (rechargeable lithium battery) | ● | ● |
| Ethernet | - | - |
| Alarm management | ● | ● |
| Recipe management | - | - |
| Data/Recipe | - | - |
| Trends | ● | ● |
| Data storage (CF card) | - | - |
| Communication interface | 1 | 2 |
| USB 2.0 | - | - |
| Printer port | - | - |
| Consumption | < 330 mA | < 840 mA |
| Dimensions L x H x W (external) | 96 x 96 x 40.6 mm | 195 x 145 x 60 mm |
| Weight | 0.23 kg | 0.81 kg |
| For the entire range | | |
| RISC CPU | 32 bit | |
| Graphics and text | ● | |
| Macro and Ladder | ● | |
| On-line and off-line simulation | ● | |
| Real time clock | ● | |
| Password protection | ● | |
| Supply voltage | 24 V DC ±15 % | |
| Class protection | IP65 | |
| Approvals | RoHS, cUL | |

ABB

System

Boiler DEMO

Operate

Message list

View

Display

Tools

Print

Help

96.9 l/h

Medium A

17.7 l/h

Medium B

132.3 °C

0.0 l/h

20.0 °C

Sound On
Man
Auto



DigiVis 500

Supervision software

[Key features](#) 8/138

Your supervision software from ABB

[Ordering details](#) 8/139

[Technical data](#) 8/140

DigiVis 500

Key features

Interacts easily with AC500 PLC via OPC and allows High Availability (HA) ABB PLC systems management

Dual-display enhanced mode and "DigiBrowse" options offer availability and easy access to data outside the software



- Adaptable from 50 to an unlimited number of variables
- Flexible license scheme so customers can easily extend based on demand

DigiVis 500

Your supervision software from ABB



DigiVis 500 USB, software and documentation

Ordering details

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

DigiVis 500

Your supervision software from ABB

Technical data

| Type | DigiVis 500 |
|-------------------------------------|---|
| Description | Creation and operation of windows-based supervision of AC500 based automation systems via OPC |
| Features | <ul style="list-style-type: none"> - 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. |
| Minimum engineering PC requirements | Windows XP Professional SP3 or Windows 7 Professional SP1, 32 or 64-bit, 2 GHz, 1 GB RAM, 10 GB free disk space. |
| Target Systems | 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). |
| Components and options | <ul style="list-style-type: none"> - DigiVis 500 Graphics Builder - DigiVis 500 operations - ABB OPC tunnel - AC500 standard tag type library - Web display runtime - Dual monitor support - DigiBrowse - Security lock. |



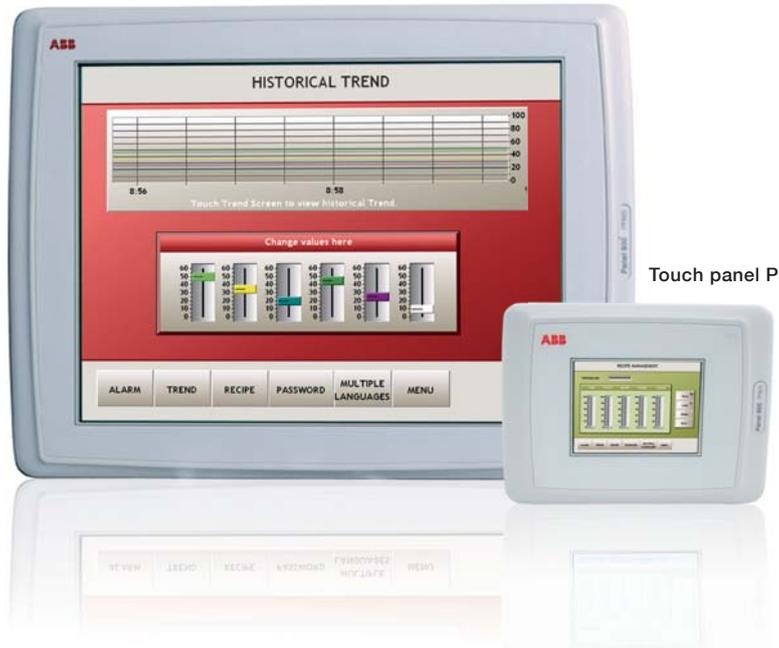
Panel 800 5.1 Overview

Powerful high-speed performance

Function key panel PP846



Touch panel PP865



Touch panel PP815

Panel 800 5.1 is one of the fastest, most powerful operator panels on the market.

Equipped with a high-performance Intel® XScale processor, 32 MB of Intel® StrataFlash and 64 MB RAM, the Panel 800 is designed to handle large volumes of data and graphics rapidly and efficiently. Additional compact flash slots enable users to expand memory for exceptionally demanding applications.

Panel 800 uses the Windows CE.Net version operating system – a reliable and proven processing platform used in many industrial applications. File safety and data integrity are ensured by the Intel® Persistent Storage Manager, which gives rapid access to files and data and protects them from corruption even during power failures.

Features and benefits

- High performance: Exceptional processing power and memory, suitable for the most demanding HMI applications
- Advanced graphic display: High-resolution, 64,000-color TFT screen – displays advanced graphics clearly and attractively
- Robust construction: Slim, tough and elegant – designed to withstand the toughest environments
- Seamless integration: Compatible with all ABB control systems, all previous versions of Process Panel and most makes of PLC
- Easy engineering: Quick, easy and efficient engineering with Panel Builder 800
- Symbol Factory: Part of Panel Builder. More than 4000 process symbols with seamless scaling, rotate 90/180 and change color scheme

Robust design for tough environments

Panel 800 is designed for the toughest industrial environments. Made of robust, lightweight aluminum, the waterproof front casing is designed to withstand wet, dusty and demanding environments. Its unique clamp-on construction eradicates the need for screws and for drilling holes in sensitive surfaces where moisture and dirt can easily collect and penetrate.

Slim, tough and elegant, Panel 800 is available in six touch-screen and four keypad versions. Less than 60 mm in depth, it is exceptionally space-efficient and can be mounted vertically or horizontally in all types of application.

Panel 800 complies with IP 66 and NEMA 4X for front cover protection and with CE (EMC), UL, DNV, ABS and GL (depending on model).

Panel 800 has also support for Profibus DP networks (slave) with an expansion module.

User-friendly, intuitive and ergonomic

Panel 800 is a user-friendly, intuitive and ergonomic operator panel that combines slim, space-saving dimensions with a comprehensive range of advanced functions. All panels are equipped with advanced functionality for process and equipment control, either by function keys located next to the screen or by touch-screen symbols.

Function keys are logically positioned for fast intuitive use by operators. Symbols are the same as those used in PC keyboards to ensure instant familiarity. Keys and LEDs can be programmed with either global or local functionality.

Complete communication compatibility

Panel 800 is designed specifically for ABB Control Network and AC 800M controllers, giving users the advantage of a common network for controllers, HMI and engineering.

In addition to the Control Network driver, Panel 800 offers an extensive driver library, making it compatible with all ABB legacy control systems, all previous versions of Process Panel, and most makes of PLC. The dual protocol capability enables two different brands of PLC to be connected simultaneously to the panel. Critical information like alarms, text reports, trend data and recipes can be accessed by remote, and alarms transmitted to the operator by e-mail or SMS.

Efficient engineering with Panel Builder 800 5.1

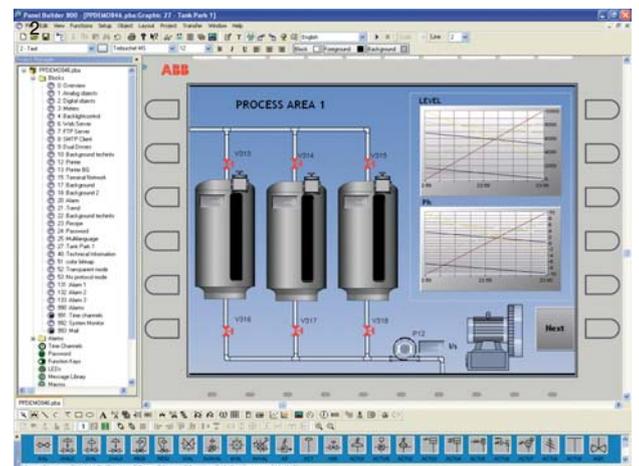
Panel Builder 800 5.1 is ABB's highly acclaimed engineering tool that makes engineering quick, easy and efficient.

Based on the familiar Windows interface (now including Windows 7), Panel Builder 800 contains features like Project Manager, Symbol Factory, and a new simulation tool to enhance engineering efficiency and provide additional programming options.

Project Manager contains all the information about each active project and enables several projects to be active at the same time. Symbol Library is the library in which all symbols, both pre-defined and user-created, are stored for easy and rapid access. The simulator opens the panel software in a separate window to enable operators to test-run settings.

Up to ten different languages are supported in the same application and Panel 800 is Unicode compatible.

| Panel 800 5.1 functions | |
|---------------------------------|------------------------------------|
| Dual drivers with data exchange | Yes |
| Passthrough / transparent mode | Yes (Dependent on driver) |
| No protocol mode | Yes (Demo driver) |
| Multiple language | Yes (Up to 10 languages / project) |
| Unicode support | Yes |
| True type fonts | Yes |
| Data logger | Yes |
| Internal variables | Yes |
| Historic trend | Yes |
| Recipe management | Yes |
| Alarm management | Yes (Up to 16 groups) |
| Time channels | Yes |
| IO time groups | Yes |
| Security passwords | Yes (Up to 8 levels) |
| Message libraries | Yes |
| Macros | Yes |
| Dynamic objects | Yes |

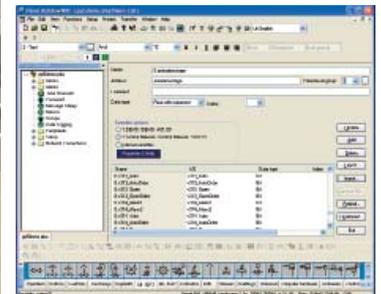


1 Slim, tough and elegant – Panel 800 is made of lightweight aluminum and is less than 60 mm in depth | 2 Panel 800 offers advanced features and functions.

MMS access variable import



| Name | Path | Data Type |
|-------------------|--------------------|-----------|
| 14 B1_Open | Application_1.Demo | bool |
| 15 B1_Opened | Application_1.Demo | bool |
| 16 B1_Close | Application_1.Demo | bool |
| 17 B1_Closed | Application_1.Demo | bool |
| 18 m1_startorder | Application_1.Demo | bool |
| 19 m1_started | Application_1.Demo | bool |
| 20 m1_rpm | Application_1.Demo | int |
| 21 m1_setrpm | Application_1.Demo | int |
| 22 m1_auto | Application_1.Demo | bool |
| 23 m1_autoOrder | Application_1.Demo | bool |
| 24 m1_fail | Application_1.Demo | bool |
| 25 p12_startorder | Application_1.Demo | bool |
| 26 p12_started | Application_1.Demo | bool |
| 27 p12_flow | Application_1.Demo | real |
| 28 p12_set_flow | Application_1.Demo | real |
| 29 p12_auto | Application_1.Demo | bool |
| 30 p12_autoOrder | Application_1.Demo | bool |
| 31 p12_fail | Application_1.Demo | bool |
| 32 T1_Volume | Application_1.Demo | real |
| 33 T1_PH | Application_1.Demo | real |
| 34 T1_Temp | Application_1.Demo | real |
| 35 T1_Pressure | Application_1.Demo | real |
| 36 T1_WasteGate | Application_1.Demo | bool |
| 37 T2_Volume | Application_1.Demo | real |



Access Variables from Control Builder can be imported into Panel Builder 800.

Instead of manually having to define all variables, a simple click on the import button will enable the engineer to browse to a controller and import the entire access variable contents to the Panel Builder 800. The import is performed in matter of seconds and does greatly enhance the engineering efficiency. The universal text file import function can still be used when working with non AC 800M controllers.

The access variable import function works with both Control Builder Professional and the Compact Control Builder AC 800M.

The import function is included in the driver for ABB Control Network for Panel 800.

Integrated alarm handling

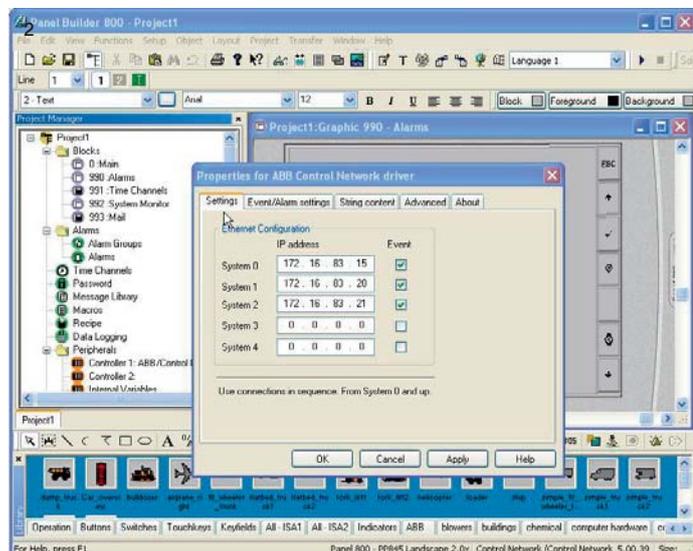
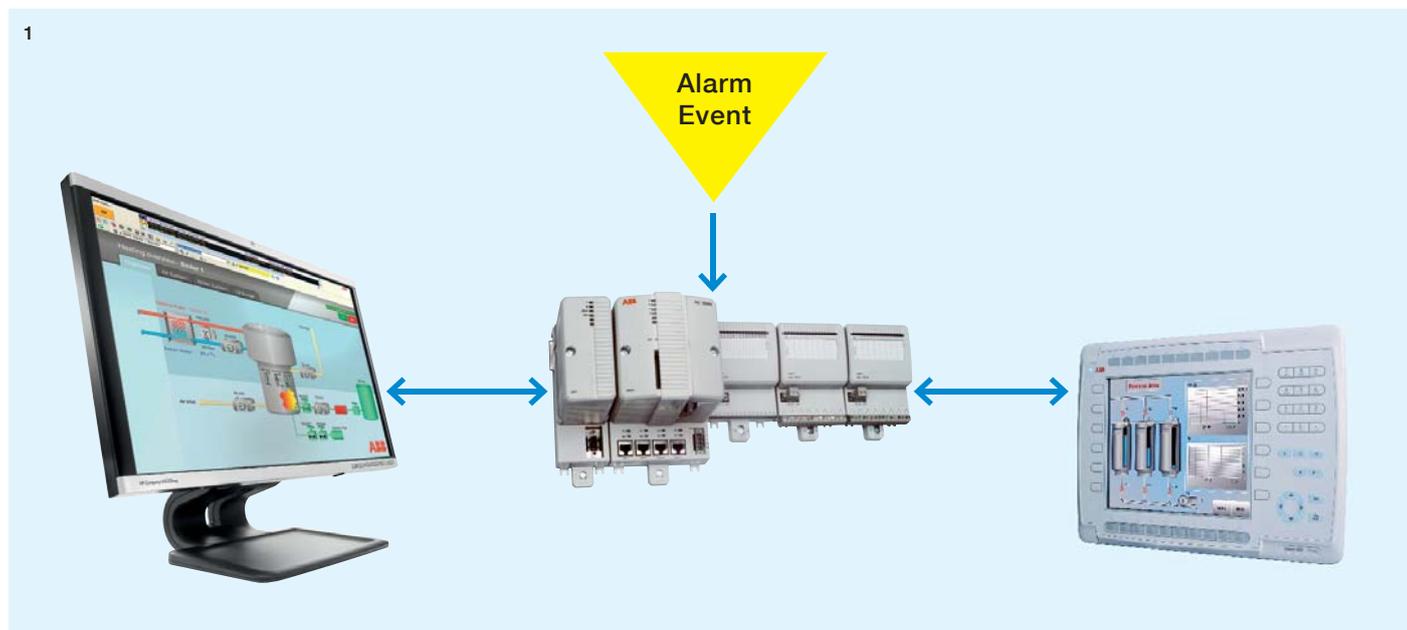
Integrated alarm/event handling with AC 800M

MMS Alarms and Events from any AC 800M controller can be displayed and managed from the Panel 800. The alarm/event will show up in the alarm list of the Panel 800 with source name, condition name, severity and class. They can also be divided into different alarm groups, which enable separation of alarms and events in the alarm list by different color schemes.

The main advantage with the integrated alarm/event handling, is that the alarms can be acknowledged from the panel just as if they would have been acknowledged from a system 800xA-

or Compact HMI node. It is still possible to define alarms in the Panel 800 and use them together with the imported AC 800M alarms.

This functionality is particularly useful when operating the Panel 800 together with another HMI, giving the operator one common alarm system showing the same status everywhere. It does also reduce engineering time as it is no longer necessary to configure alarms in the panel.



1 Alarm and event handling | 2 Panelbuilder 800 software | 3 Maneuvering a PP846 key panel

Panel 800 5.1 specifications

| | |
|---|--|
| Specifications | |
| Display backlight | CCFL/LED backlight with dimming function. Lifetime at the ambient temperature of +25 °C: >10 000 - 20 000 h. |
| CPU | 312 MHz or 416 MHz RISC CPU (Intel Xscale) |
| Memory, flash | 32 MB (Intel StrataFlash) |
| Memory, RAM | 64 MB |
| Flash memory for application | 12 MB |
| Real time clock | YES |
| Power supply | +24 V DC (20-30 V DC) |
| Ambient temperature | 0 ° to +50 °C, can be extended for limited periods |
| Relative humidity | 5 – 85 % non-condensing |
| Housing material | Powder-coated aluminium |
| Front side material | Autotex F250 / F157 (keyboard) |
| Approval and enclosure | |
| EMC | EN 61000-2-6, EN 61000-6-4 |
| UL | UL 508 |
| Marine | DNV: Location classes: Temperature A, Humidity B, Vibration A, EMC B, Enclosure C (panel front only), ABS and GL (depending on type) |
| Conformity | CE marking |
| Front panel seal | IP 66 and NEMA 4X |
| Rear panel seal | IP 20 |
| Operator temperature, horizontal mounting | 0 ° to +40 °C, can be extended for limited periods |
| Peripherals | |
| Serial Ports | RS422/RS485, female, 25-pin D-Sub, RS232C, male, 9-pin D-Sub |
| Ethernet | Shielded RJ45 10/100 Mbit/sec |
| USB | Host type A (power consumption max. 500 mA), Device type B |
| Profibus | Expansion slot for Profibus DP |
| Remote access | Via standard internet browser (mirror function). You can also program remote via Ethernet. |

Key Panels



| Specifications | PP820A | PP826A | PP836A | PP846A |
|-----------------------------|-----------------|----------------|----------------|----------------|
| Display size | 127.0 x 33.8 mm | 5.7" | 6.5" | 10.4" |
| Display type | Monochrome | TFT | TFT | TFT |
| Resolution (pixels) | 240 x 64 | 320 x 240 | 640 x 480 | 800 x 600 |
| Interaction type | Function key | Function key | Function key | Function key |
| LED | 16 (2 color) | 16 (2 color) | 16 (2 color) | 20 (2 color) |
| Power consumption (normal) | 0.15 A | 0.3 A | 0.4 A | 0.5 A |
| Dimensions | | | | |
| Front panel, W x H x D (mm) | 202 x 187 x 57 | 275 x 168 x 57 | 285 x 177 x 60 | 382 x 252 x 60 |
| Cut-out dimensions | 166 x 149 mm | 240 x 130 mm | 246 x 139 mm | 343 x 208 mm |
| Mounting depth | 57 mm | 58 mm | 55 mm | 58 mm |
| Weight | 0.875 kg | 1.11 kg | 1.3 kg | 2.3 kg |

High-resolution, deep-color display

Panel 800 displays advanced graphics clearly and attractively. The high-resolution, 64,000-color TFT display produces sharp, detailed images and attractive, user-friendly viewing from all angles.

Available in five sizes, the panels have dimmable backlights for use in light-sensitive environments like ship bridges and offshore applications.

Panel 800 is one of the fastest, most powerful operator panels on the market. User-friendly, intuitive and ergonomic, Panel 800 combines slim, space-saving dimensions with a comprehensive range of advanced functions.



Touch Panels



| Specifications | PP815A | PP825A | PP835A | PP845A | PP865A |
|-----------------------------|-------------------|-----------------|-----------------|-----------------|-----------------|
| Display size | 3.8" | 5.7" | 6.5" | 10.4" | 15" |
| Display type | TFT | TFT | TFT | TFT | TFT |
| Resolution (pixels) | 320 x 240 | 320 x 240 | 640 x 480 | 800 x 600 | 1024 x 768 |
| Interaction type | Resistive Touch | Resistive Touch | Resistive Touch | Resistive Touch | Resistive Touch |
| LED | - | - | - | - | - |
| Power consumption (normal) | 0.15 A | 0.25 A | 0.4 A | 0.5 A | 1.2 A |
| Dimensions | Dimensions | | | | |
| Front panel, W x H x D (mm) | 156 x 119 x 59 | 201 x 152 x 57 | 219 x 154 x 60 | 302 x 228 x 60 | 398 x 304 x 60 |
| Cut-out dimensions | 139 x 105 mm | 180 x 130 mm | 189 x 138 mm | 265 x 206 mm | 356 x 279 mm |
| Mounting depth | 57 mm | 57 mm | 55 mm | 58 mm | 60 mm |
| Weight | 0.56 kg | 0.87 kg | 1.1 kg | 2 kg | 3.7 kg |

System 800xA Hardware

Panel 800, version 5 and 6

Panel 800 is a user-friendly, intuitive and ergonomic operator panel that combines slim, space saving dimensions with a comprehensive range of advanced functions.

All panels are equipped with advanced functionality for process and equipment control, maneuvered either by function keys located next to the screen or by touching the LCD display. Combined with market leading performance and stunning graphical ability, the Panel 800 erodes the line between ordinary Operator Panels and PC based HMIs. Panel 800 is the successor after the Process Panels.

Panel 800 is designed specifically for ABB Control Network and AC 800M controllers, but thanks to the extensive driver library, the Panel 800 is compatible with most makes of PLC and ABB legacy control systems. When using it together with AC 800M, certain unique features become available, such as integrated alarm handling with the controller.

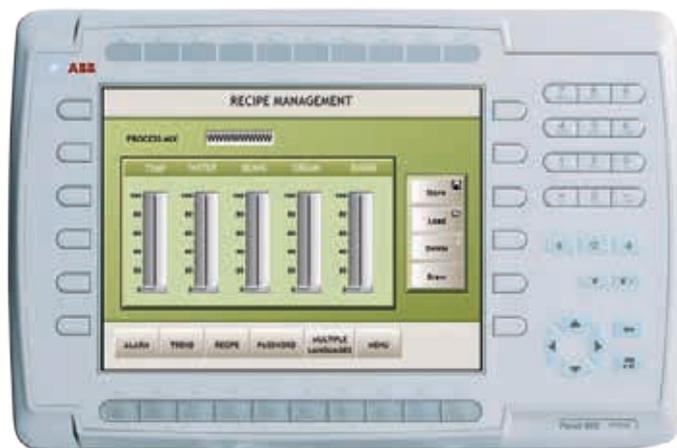
Panel 800 consists of a modern powerful hardware platform, which enables a very limited mounting depth. The frame is made of powder-coated aluminum, giving the panels a very robust look-and-feel. The front enclosure is designed to withstand demanding industrious usage according to the IP66 standard. The panels have also been certified by DNV and UL.

In December 2012, ABB launched the Panel 800 version 6 series. All Panel 800 Version 6 are developed to satisfy the demands of human-machine communication. Built-in functions such as displaying and controlling text, dynamic indication, time channels, alarm and recipe handling are included.

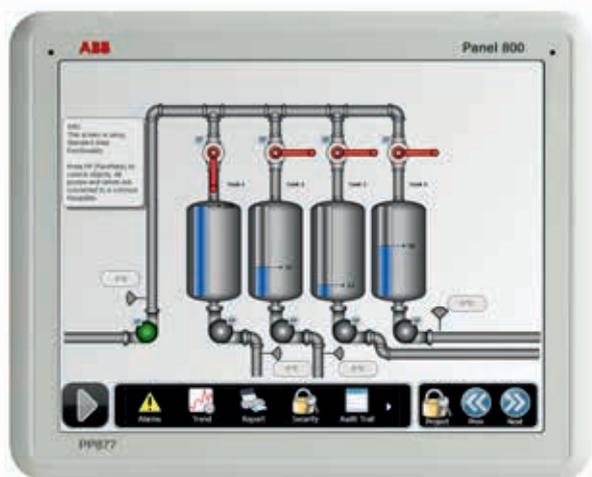
The Panel 800 Version 6 works primarily in an object-oriented way, making it easy to understand and use. Configuration is carried out on a PC using the Panel Builder configuration tool. The project can then be transferred and stored in the operator panel itself.

Various types of automation equipment such PLCs, servos or drives can be connected to the Panel 800 Version 6.

Key panel



Touch panel



Specifications Panel 800

| | |
|---|--|
| Specifications Panel 800 | |
| Display backlight | CCFL/LED backlight with dimming function |
| CPU | 316 or 416 MHz RISC CPU (Intel Xscale) |
| Memory, flash | 32 MB (Intel StrataFlash) |
| Memory, RAM | 64 MB |
| Flash memory for application | 12 MB |
| Real time clock | YES |
| Power supply | +24 C14 20-30 V |
| Ambient temperature | 0 ° to +50 °C |
| Relative humidity | 5 - 85 % non-condensing |
| Housing material | Powder-coated aluminium |
| Front side material | Autotex F250 / F157 (keyboard), (PP865S in Stainless Steel 316/1.4401) |
| Peripherals | |
| Serial Ports | RS422/RS485, female, 25-pin D-Sub, RS232C, male, 9-pin D-Sub |
| Ethernet | Shielded RJ45 10/100 Mbit/sec |
| USB | Host type A (power consumption max. 500 mA), Device type B |
| PROFIBUS | Expansion slot for PROFIBUS DP |
| Environmental Data for Panel 800 | |
| Climatic Operating Conditions | Vertical installation: 0 ° to +50 °C Horizontal installation: 0 ° to +40 °C Storage temperature -20 °C to +70 °C Relative humidity 5 - 85 % non-condensed |
| Protection class | Front panel seal IP 66 Rear panel seal IP 20 |
| Electromagnetic Compatibility and CE-mark | Meets EMC directive 2004/108/EC |
| Electromagnetic Emission | Tested according to EN61000-6-4 (2007) |
| Electromagnetic Immunity | Tested according to EN61000-6-2 (2005) |
| Electrical Safety | UL508 |
| Hazardous Classified Locations | UL 1604 Class I, Div 2 Groups A, B, C, D, T4 |
| Marine Certificates | ABS, DNV, GL, RINA |

| Specifications | PP820A | PP826A | PP836A | PP846A |
|--------------------------------|-------------------|-------------------|-------------------|-------------------|
| Display size | - | 5,7" | 6,5" | 10,4" |
| Active area of display, W x H | 127,0 x 33,8 mm | | | |
| Resolution | 240 x 64 pixels | 320 x 240 pixels | 640 x 480 pixels | 800 x 600 pixels |
| Interaction type | Function key | Function key | Function key | Function key |
| LED | 16 (2 color) | 16 (2 color) | 16 (2 color) | 20 (2 color) |
| Power consumption (normal/max) | 0,15 A | 0,3 A | 0,4 A / 0,9 A | 0,5 A / 1 A |
| Dimensions | | | | |
| Front panel, W x H x D | 202 x 187 x 57 mm | 275 x 168 x 57 mm | 285 x 177 x 60 mm | 382 x 252 x 60 mm |
| Cut-out dimensions | 166 x 149 mm | 240 x 130 mm | 246 x 139 mm | 343 x 208 mm |
| Mounting depth | 57 mm | 58 mm | 55 mm | 58 mm |
| Weight | 0,875 kg | 1,11 kg | 1,3 kg | 2,3 kg |

| Specifications | PP815A | PP825A | PP835A | PP845A | PP865A |
|--------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Display size | 3,8" | 5,7" | 6,5" | 10,4" | 15" |
| Resolution | 320 x 240 pixels | 320 x 240 pixels | 640 x 480 pixels | 800 x 600 pixels | 1024 x 768 pixels |
| Interaction type | Resistive Touch |
| LED | - | - | - | - | - |
| Power consumption (normal/max) | 0,15 A | 0,25 A | 0,4 A / 0,9 A | 0,5 A / 1 A | 1,2 A / 1,7 A |
| Dimensions | | | | | |
| Front panel, W x H x D | 156 x 119 x 59 mm | 201 x 152 x 57 mm | 219 x 154 x 60 mm | 302 x 228 x 60 mm | 398 x 304 x 60 mm |
| Cut-out dimensions | 139 x 105 mm | 180 x 130 mm | 189 x 138 mm | 265 x 206 mm | 356 x 279 mm |
| Mounting depth | 57 mm | 57 mm | 55 mm | 58 mm | 60 mm |
| Weight | 0,56 kg | 0,87 kg | 1,1 kg | 2 kg | 3,7 kg |

| Specifications | PP871 | PP874 | PP877 |
|--------------------------------|------------------------------|------------------------------|------------------------------|
| Display size | 4,3" | 7" | 10,4" |
| Resolution | 480 x 272 pixels (16:9) | 800 x 480 pixels (16:9) | 640 x 480 pixels (4:3) |
| Interaction type | Resistive Touch | Resistive Touch | Resistive Touch |
| LED | - | - | - |
| Power consumption (normal/max) | 3,6 W | 6,0 W | 9,6 W |
| Dimensions | | | |
| Front panel, W x H x D | 145 x 103 x 49 mm | 204 x 143 x 49 mm | 280 x 228 x 51 mm |
| Cut-out dimensions | 128 x 87 x 43 mm | 187 x 126 x 43 mm | 262 x 209 x 46 mm |
| Mounting | Panel mount and VESA 50 x 50 | Panel mount and VESA 75 x 75 | Panel mount and VESA 75 x 75 |
| Net weight (kg) | ca. 0,5 kg | ca. 0,8 kg | ca. 1,5 kg |

Panel Builder 800 Version 6

Panel Builder 800 Version 6



| | Article no. |
|---|--------------|
| Panel Builder 800 Version 6 Media folder with Panel Builder 800 Version 6 containing the latest version of: -Panel Builder 800 Version 6 -Firmware for panels -Manuals as pdf-files -Release Notes -License for one Panel Builder 800 Version 6 1 year Automation Sentinel Subscription included. | 3BSE069300R1 |

Panel 800

Touch Panels



| | Article no. |
|---|--------------|
| PP871 4,3" Touch panel. TFT 480x272 (16:9). Requires Panel Builder 800 Version 6 for configuration. | 3BSE069270R1 |



| | |
|---|--------------|
| PP874 7" Touch panel. TFT 800x480 (16:9). Requires Panel Builder 800 Version 6 for configuration. | 3BSE069271R1 |
|---|--------------|



| | |
|---|--------------|
| PP877 10,4" Touch panel. TFT 640x480 (4:3). Requires Panel Builder 800 Version 6 for configuration. | 3BSE069272R1 |
|---|--------------|

Communication Interface for Panel 800

| | Article no. |
|---|--------------|
| CB810 USB to Ethernet adapter for programming USB to Ethernet adapter with software. Cross over Ethernet patch cable included. | 3BSE042255R1 |

Panel Builder 800 Version 5

Panel Builder 800 Version 5



| | Article no. |
|---|--------------|
| <p>Panel Builder 800 Version 5</p> <p>Media folder with Panel Builder 800 Version 5 containing the latest version of:</p> <ul style="list-style-type: none"> -Panel Builder 800 Version 5 and Panel Tools -Firmware for panels -Manuals as pdf-files -Release Notes -License for one Panel Builder 800 Version 5 <p>1 year Automation Sentinel Subscription included.</p> | 3BSE042250R1 |

Panel 800

Functional Key Panels

Configuration of Panel 800 requires a Panel Builder 800.



| | Article no. |
|--|--------------|
| <p>PP820A</p> <p>240*64 pixels, graphics & text, black/white</p> <ul style="list-style-type: none"> - new CPU and power boards - no UL 1604 certification <p>Requires Panel Builder 800 version 5 for configuring.</p> <p>To protect the front, it's recommended to use the RX820 Key Cover.</p> | 3BSE042243R2 |
| <p>PP826A</p> <p>5,7" TFT, 320x240 pixels, graphics & text, color</p> <ul style="list-style-type: none"> - new display, CPU and power boards - no UL 1604 certification <p>Requires Panel Builder 800 version 5 for configuring.</p> <p>To protect the front, it's recommended to use the RX826 Key Cover.</p> | 3BSE042244R3 |
| <p>PP836A</p> <p>6,5" TFT, 640x480 pixels, graphics & text, color</p> <ul style="list-style-type: none"> - new display, CPU and power boards - no UL 1604 certification <p>Requires Panel Builder 800 version 5 for configuring.</p> <p>To protect the front, it's recommended to use the RX836 Key Cover.</p> | 3BSE042237R2 |
| <p>PP846A</p> <p>10,4" TFT, 800x640 pixels, graphics & text, color</p> <ul style="list-style-type: none"> - new CPU and power boards - no UL 1604 certification <p>Requires Panel Builder 800 version 5 for configuring.</p> <p>To protect the front, it's recommended to use the RX846 Key Cover</p> | 3BSE042238R1 |

Panel 800

Touch Panels

Configuration of Panel 800 requires a Panel Builder 800.

| | | Article no. |
|---|---|--------------|
|  | <p>PP815A 3,5" TFT, 320x240 pixels, graphics & text, touch, color - new display, CPU and power boards - no UL 1604 certification Requires Panel Builder 800 version 5 for configuring. To protect the touch screen, it's recommended to use the RX815 Touch Cover.</p> | 3BSE042239R2 |
|  | <p>PP825A 5,7" TFT, 320*240 pixels, graphics & text, touch, color - new display, CPU and power boards - no UL 1604 certification Requires Panel Builder 800 version 5 for configuring. To protect the touch screen, it's recommended to use the RX825 Touch Cover.</p> | 3BSE042240R3 |
|  | <p>PP835A 6,5" TFT, 640x480 pixels, graphics & text, touch, color - new display, CPU and power boards - no UL 1604 certification Requires Panel Builder 800 version 5 for configuring. To protect the touch screen, it's recommended to use the RX835 Touch Cover.</p> | 3BSE042234R2 |
|  | <p>PP845A 10,4" TFT, 800x640 pixels, graphics & text, touch, color - new CPU and power boards - no UL 1604 certification Requires Panel Builder 800 version 5 for configuring. To protect the touch screen, it's recommended to use the RX845 Touch Cover.</p> | 3BSE042235R2 |
|  | <p>PP865A 15" TFT, 1024x768 pixels, graphics & text, touch, color - new CPU and power boards - no UL 1604 certification Requires Panel Builder 800 version 5 for configuring. To protect the touch screen, it's recommended to use the RX865 Touch Cover.</p> | 3BSE042236R2 |

Connection Cables for Panel 800



| | Article no. |
|--|--------------|
| TK854V030 Programming Cable RS232 programming cable Panel 800 <--> PC. Length 3 m. | 3BSE042251R1 |
| TK212A Tool cable RJ45 (male) to Dsub-9 (female), length 3 m. RJ45 8P8C plug (with shell). Cable : UL2464 26 AWG x 8C. For serial communication between Panel 800 Version 5 panels and AC 800M. | 3BSC630197R1 |

Communication Interface for Panel 800



| | Article no. |
|--|--------------|
| CB801 PROFIBUS DP Communication Interface PROFIBUS DP slave expansion module for Panel 800. | 3BSE042245R1 |
| CB810 USB to Ethernet adapter for programming USB to Ethernet adapter with software. Cross over Ethernet patch cable included. | 3BSE042255R1 |

Miscellaneous



| | Article no. |
|--|--------------|
| RX815 Touch cover for PP815/PP815A, 1 pcs | 3BSE049366R1 |
| RX820 Key cover for PP820/PP820A, 1 pcs | 3BSE049367R1 |
| RX825 Touch cover for PP825/PP825A, 1 pcs | 3BSE042246R1 |
| RX826 Key cover for PP826/PP826A, 1 pcs | 3BSE049368R1 |
| RX835 Touch cover for PP835/PP835A, 1 pcs | 3BSE042247R1 |
| RX836 Key cover for PP836/PP836A, 1 pcs | 3BSE049369R1 |
| RX845 Touch cover for PP845/PP845A, 1 pcs | 3BSE042248R1 |
| RX846 Key cover for PP846/PP846A, 1 pcs | 3BSE049370R1 |
| RX865 Touch cover for PP865/PP865A, 1 pcs | 3BSE042249R1 |



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|---|--------------|
| MB801V512 Compact Flash card Expansion Compact Flash memory for Panel 800 Version 5 panels, 512 MB. | 3BSE042257R1 |
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