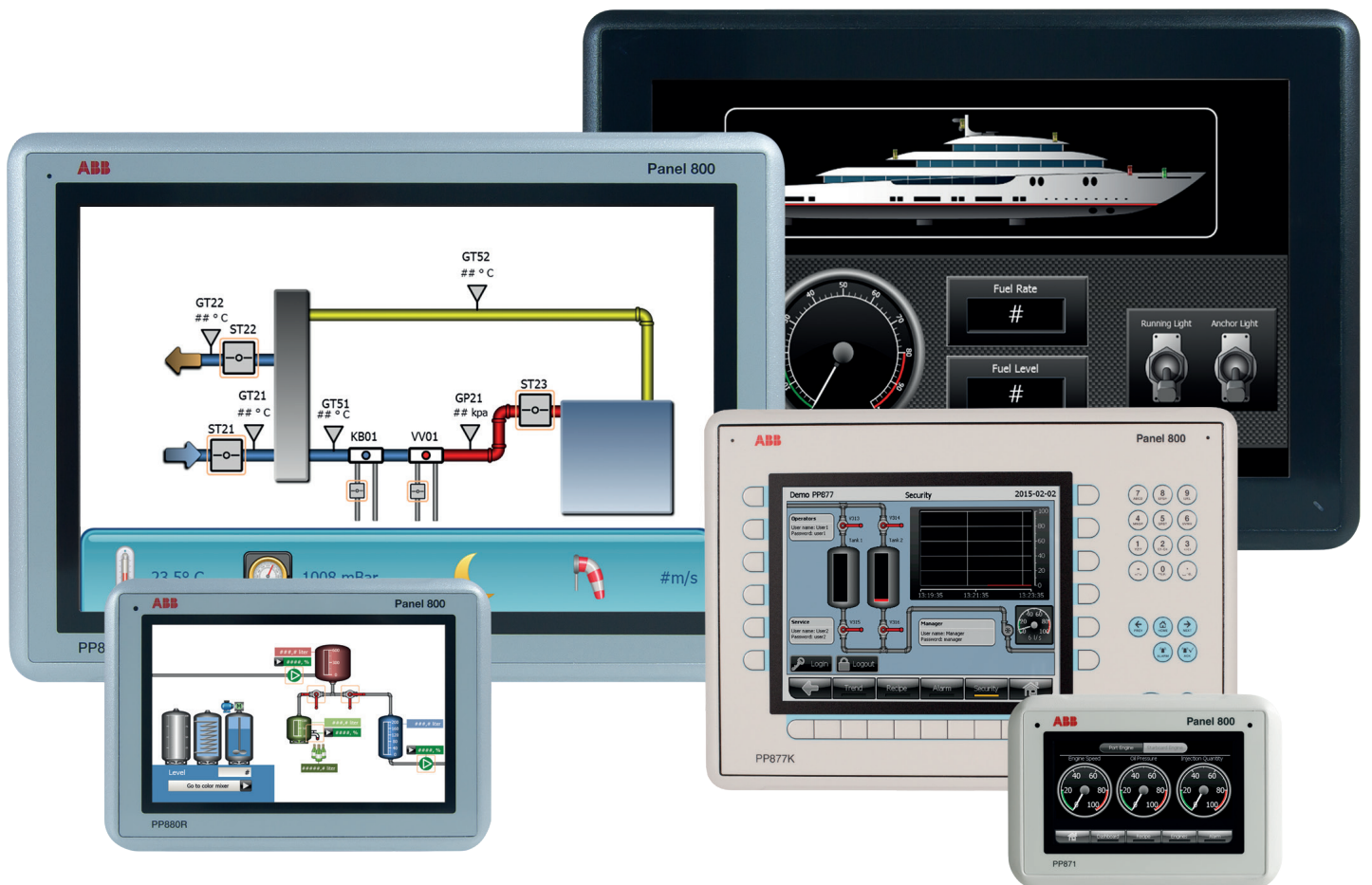# Panel 800 Version 6
The right information
at the right time, in the right place

Panel 800
version 6

A wide range of user-friendly, intuitive and ergonomic operator panels for process automation systems gives you the right information at the right time, in the right place.

Panel 800 family comprises of user-friendly, intuitive and ergonomic operator panels that combine slim, space-saving dimensions with a comprehensive range of advanced functions.

Adding to the already well established feature rich Panel 800 version 6 our new Rugged and Black panels are designed to perform in challenging harsh environments. Whether it is heavy outdoor use, usage in areas with explosion risk, or ship bridge use in marine applications, they are ready to provide you with the information needed.

Designed to make process automation easy, 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, Panel 800 erodes the line between ordinary Operator Panels and PC-based HMIs.

Panels are configured using ABB's Panel Builder tool that contains a wide range of advanced functions. The functions are tested and developed with customer needs and preferences in focus.
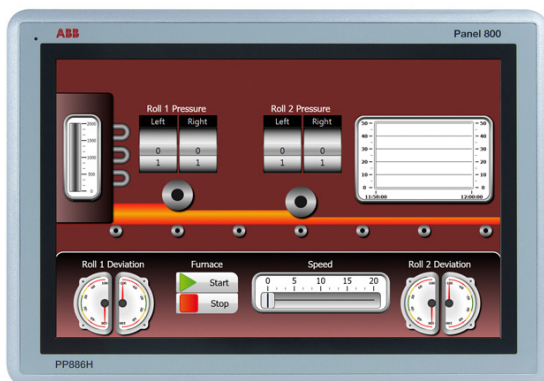
Key benefits

- **Easy to use**
  A fully deployable HMI with comprehensive and integrated templates and libraries for every conceivable process. The Panel Builder tool, with familiar Microsoft® Windows® environment along with multiple language support results in remarkably quick, easy and efficient engineering.
- **State-of-the-arts graphics**
  Vector-based, high-resolution graphics in TFL/LED display, with icon-based interface, navigation and control.
- **Robust and reliable**
  Panel 800 is constructed in a strong yet lightweight diecast, powder-coated aluminum housing. IP65/IP66 front casing withstands wet, dusty and demanding environments. Operating temperatures ranging between -30 $^\circ$C to 70 $^\circ$C with maximum 85% humidity.
- **Truly open platform**
  Built on open architecture and technologies that accompany the .NET framework, these panels are capable of multi-brand controller connectivity. A multitude of connection options are available for local communication, expansion, remote access and more.
- **Try your application before you use it**
  Nice possibility to simulate and run the application directly from the Panel Builder 800 before you use it.

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Various panel 800 use cases
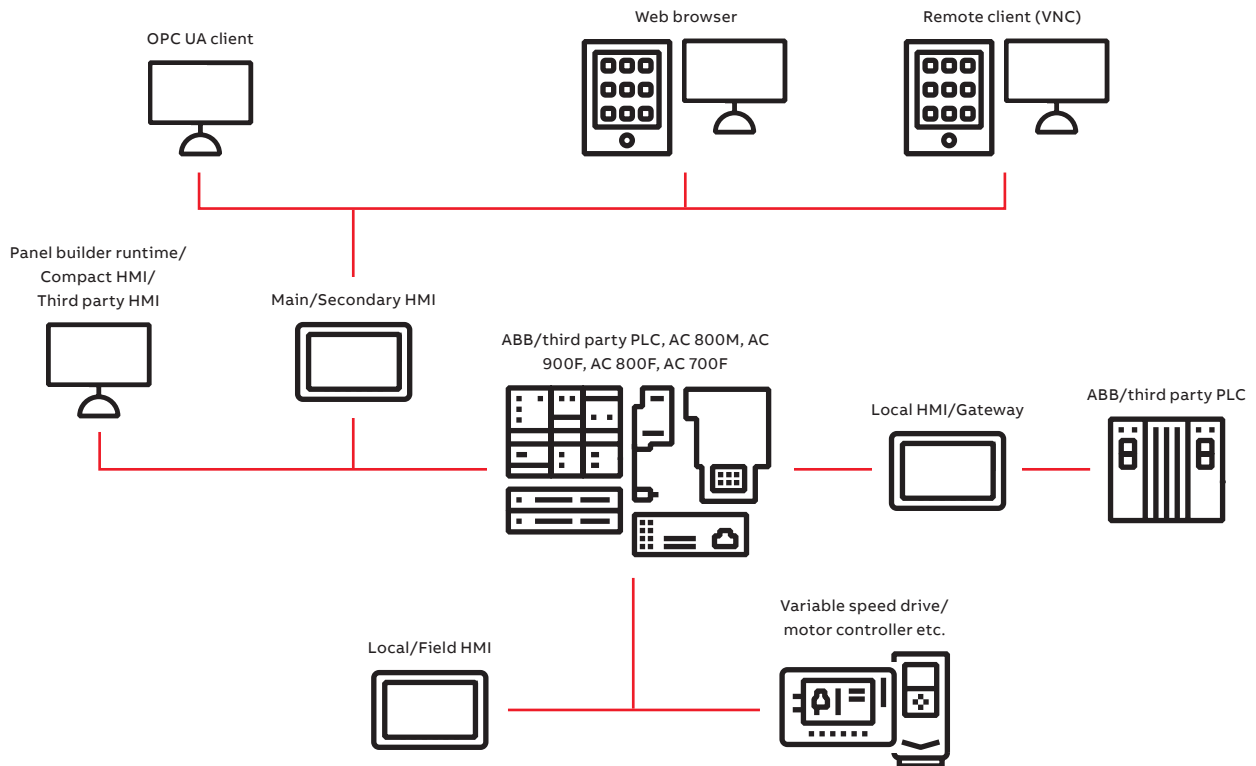
Example of Panel 800 use cases in various setups

Panel 800 as main / secondary HMI
The Panel 800 range is the perfect fit to act as the main HMI for smaller automation systems, or as a secondary complimentary HMI for mid-sized or larger systems. A standard panel is suitable to handle process information from up to 1000 signals. High performance panels can handle up to 2000 signals.

Panel 800 runtime
Using Panel 800 Runtime and dedicated license dongles, Panel 800 applications can be run on normal Windows PC. This enables engineering efficient reuse of the panels applications in situations when a PC based HMI is required in addition to process panels. Since Panel 800 Runtime can be used to visualize data from up to 4000 signals, it is also suitable for mid-sized SCADA applications even when process panels are not needed.

Panel 800 as Gateway
Many process sites has multiple brands of PLCs, and often these PLCs need to be able to share data and communicate with each other. Thanks due to the wide range of supported communication protocols, Panel 800 can act as gateways between PLCs from different vendors.

Panel 800 as local / field HMI
Panel 800 are industrial grade process panels and are well suited to be located in the field. Using the extra rugged panels the HMI can be brought even closer to the process.

Panel Builder 800

A Panel Builder 800 is a user-friendly engineering tool to configure Panel 800 operator panels. Based on the familiar Microsoft® Windows® environment with intuitive ribbon menus and Windows® media objects it provides you an interface that is easy to understand and navigate.

Animated labels increase efficiency
Animated, scrolling text and labels solve the problem of showing a large amount of important information in a very small area. The user can select the speed, direction and color of the information on process statuses, production data, instructions and alarms.

Multiple languages
Panel 800 features unlimited support for different languages. Furthermore, the selected language can be changed in runtime based on, for example, a tag value. In addition, the Panel Builder engineering tool supports eight languages.

Pre-defined objects
More than 400 vector based symbols adding to a total of 700 symbols can be used to create complete process images, providing an overview of a complex application. You can also customize these objects or create objects of your own.
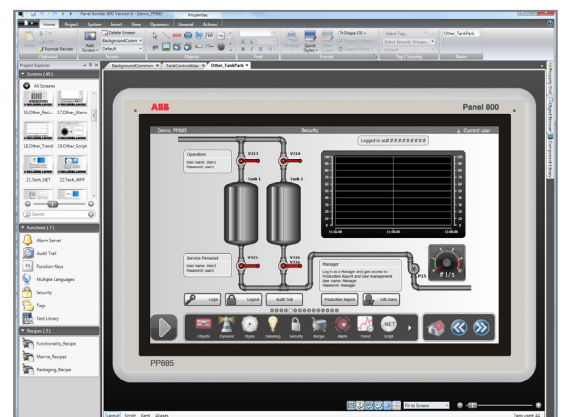
SD Card backup
Reduce downtime with project and data backup on the panel's built-in SD card. With scheduled or cyclic back-up, data is always up to date and easily restored in case of a breakdown. Additionally, the SD card can be used to transfer data from one panel to another (also possible with USB stick).

Screen built in Panel builder 800
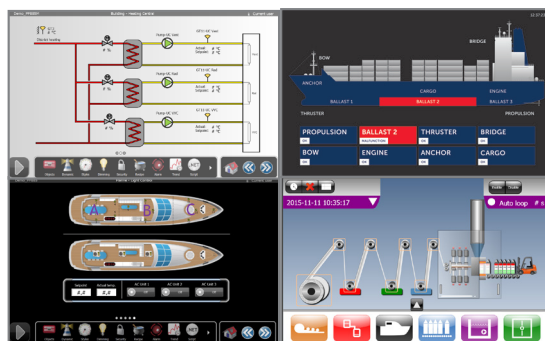
Panel 800 interface

Panel 800 overview

Standard panels

Touchscreen and keypad panels with brilliant TFT/LED display colors and multi-protocol connectivity. The standard range of Panel 800 comprises of PP871, PP874, PP877, PP874K and P877K that are easy-to use HMI with comprehensive and integrated templates and libraries for every conceivable process you need.

All standard panels are equipped with high resolution graphics in TFT/LED display. Besides the 4", 7" and 10" touchscreen panels, this range also includes 7" and 10" keypad panels with 16 and 22 function keys respectively. Most models offer wide screen, high resolution display for increased efficiency and excellent operator interaction.

High performance panels

Designed to provide intuitive, fast response rates, ready-to-use templates and libraries, multiple language support and more. The PP882 and PP885 are designed as a cost-effective, safe and efficient way of monitoring and controlling complex HMI applications.

The high performance panels provides improved process visibility through high-resolution widescreen in 12.1" and 15.4", 262,000 color TFT/LED display with quicker access to multiple applications and an easy-to-use and navigate touchscreen interface.

Black panels

The black panels are marine certified in 7" (PP874M) and 15.4" (PP885M, PP885H) sizes, with high resolution touch screen displays. Their classic black enclosure offers low light reflection and seamless integration for all onboard applications.

Dimmable backlight to suit varied ambient light conditions, and high brightness for outdoor use in bright sunlight.

Rugged panels

Designed to perform in challenging and harsh environments. The powder coated gray aluminum panels include 7" (PP880R) and 15.4" (PP885R, PP886H) panels fully certified for hazardous environments by major classification societies.

With dimmable backlight to suit varied ambient light conditions, high brightness for outdoor use in bright sunlight, works in a wide temperature range from the equator to the North Pole.

High vibration tolerance to withstand mechanical vibration of machine on which it is mounted. Also certified for use in hazardous areas with flammable, poisonous and corrosive fumes and gases.
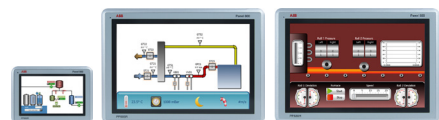

Standard panels

High performance panels

**Black panels**

Rugged panels

Outline of all Panel 800 models

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Standard panels

Panel	PP871	PP874	PP877	PP874K	PP877K
Display size	4.3"	7"	10.4"	7"	10,4"
Display resolution, ratio	480 × 272 (16:9)	800 × 480 (16:9)	640 × 480 (4:3)	840 x 480 (16:9)	640 × 480 (4:3)
Processor	ARM9 (400 MHz)				
Main memory	128 MB (DDR2)				
External storage media	1 × SD card slot (or SDHC with latest image loaded).				
Dimension WxHxD (mm)	145 × 103 × 49	204 × 143 × 49	280 × 228 × 51	280 × 228 × 51	410 × 286 × 83
Net weight (kg)	0.5	0.8	1.5	1.7	3.8
Power supply	+24 VDC (18-32 VDC)				
Operating temperature	-10 to +60 °C				
Certification					
CE	CE			CE	
UL	UL 508			UL	
Marine	DNV			DNV	
RoHS compliance	EN 50581:2012				
WEEE compliance	DIRECTIVE/2012/19/EU				
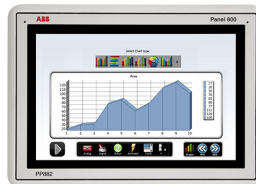
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High performance panels

Panel	PP882	PP885
Display size	12.1"	15.4"
Display resolution, ratio	1280 x 800 (16:10)	
Processor	Intel® Atom (1.1GHz)	
Main memory	1GB (DDR2)	
External storage media	1 × SD card (or SDHC with latest image loaded)	
Dimension WxHxD (mm)	340 × 242 × 79	410 × 286 × 83
Net weight (kg)	2.6	3.85
Power supply	+24 VDC (18-32 VDC)	
Operating temperature	-10 to +50 °C	
Certification		
CE	CE	CE
UL	UL 508	UL 508
RoHS compliance	EN 50581:2012	
WEEE compliance	DIRECTIVE/2012/19/EU	

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Black panels

Panel	PP874M	PP885M	PP885H
Display size	7"	15.4"	
Display resolution, ratio	800 x 480 (16:9)	1280 x 800 (16:10)	
Processor	ARM9 400MHz	1.0 GHz Intel® Atom™	
Main memory	128 MB	1 GB	
External storage media	1 × SD card slot (or SDHC with latest image loaded)		
Dimension WxHxD (mm)	204 × 143 × 52.2	410 × 286 × 83	
Net weight (kg)	0.8	4.4	
Power supply	24 VDC (18-32 VDC)		
Operating temperature	-15 to +55 °C		
Certification			
CE	EN61000-6-4, EN61000-6-2		
UL	UL/cUL 508	UL/cUL 61010-2-201 (replacement for UL 508)	
Marine	DNV, GL, ABS, LR, KR	DNV, GL, ABS, LR	
RoHS compliance	EN 50581:2012		
WEEE compliance	DIRECTIVE/2012/19/EU		
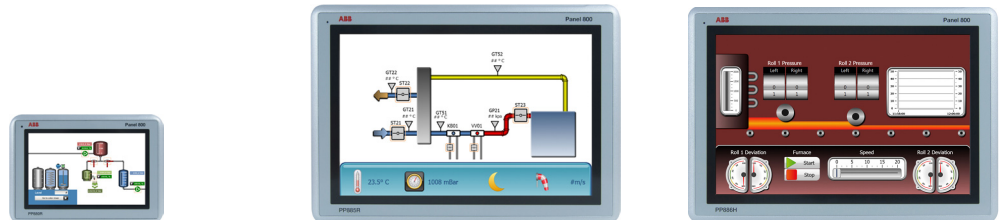
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Rugged panels

Panel	PP880R	PP885R	PP886H
Display size	7"	15.4"	
Display resolution, ratio	800 x 480 (16:9)	1280 x 800 (16:10)	
Processor	1.0 GHz Intel® Atom™		1.6 GHz Intel® Atom™
Main memory	1 GB		
External storage media	1 × SD card slot (or SDHC with latest image loaded)		
Dimension WxHxD (mm)	204 × 143 × 73	410 × 286 × 83	
Net weight (kg)	1.4	4.7	
Power supply	12 or 24 VDC (10-32 VDC)		
Operating temperature	-30 to +70 °C		
Certification			
CE	EN61000-6-4, EN61000-6-2		
UL	UL/cUL 61010-2-201 (replacement for UL 508), UL50E Type 4X Outdoor		
Marine	DNV, GL, ABS, LR, KR	DNV, GL, ABS, LR	
Hazardous	Ul/cUL 12.12.01 (UL1604 replacement) Class I Div 2, ATEX (Zone 2), IECEx Ex nA IIC Gc, IEC 60079-0 and IEC 60079-15		
RoHS compliance	EN 50581:2012		
WEEE compliance	DIRECTIVE/2012/19/EU		

Protocol functionality and connectivity

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Using the extra rugged panels the HMI can be brought even closer to the process.

Panel 800 large protocol functionality
Panel 800 can run several protocols simultaneously, and serve various brands of controllers at the same time. With its extensive driver library, with over 50 supported communication drivers, making it compatible with all ABB legacy control systems, all previous versions of Process Panel, and most makes of PLCs.

The multi-protocol capability enables different brands of PLCs to be connected simultaneously to the Panel 800. Critical information such as alarms, text reports, trend data and recipes can be accessed by remote, and alarms transmitted to the operator via e-mail or SMS.
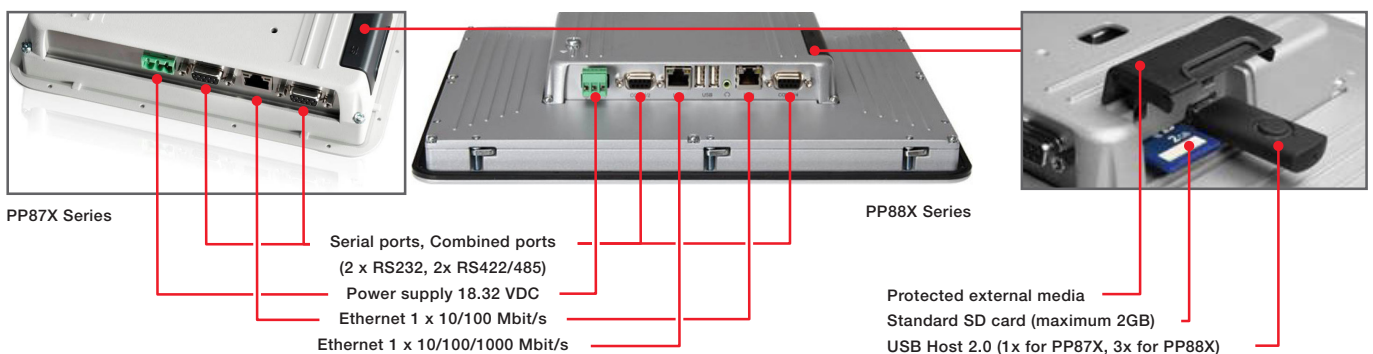
Various types of automation equipment
A wide range of automation equipment, including PLCs and servo drives, can be connected to the Panel 800. Drivers such as ABB Control Network MMS for AC 800M, ABB Freelance 2016 and Modbus AC500 give users the advantage of a common network for controllers, HMI and engineering thereby increasing accuracy, efficiency, safety, and productivity of any automation application or production plant.

Lots of connectivity possibilities
The Panel 800 series have a wide range of connections and ports on the backside for easy use in your applications and environment. Such as standard SD card port (SDHC functionality with latest image loaded), USB host ports, serial ports, ethernet ports and power supply.

Example of the great connectivity possibilities for Panel 800 series

PP87X Series

PP88X Series

Serial ports, Combined ports
(2 x RS232, 2x RS422/485)
Power supply 18.32 VDC
Ethernet 1 x 10/100 Mbit/s
Ethernet 1 x 10/100/1000 Mbit/s

Protected external media
Standard SD card (maximum 2GB)
USB Host 2.0 (1x for PP87X, 3x for PP88X)

Supported communication drivers

Panel 800 Version 6 Communication Drivers	Type[1]
ABB COMLI Master Protocol	Master
ABB COMLI Slave Protocol	Slave
ABB Control Network MMS for AC800M	Master
ABB Freelance 2016	Master
ABB Modbus AC31	Master
ABB Modbus AC500	Master
ABB TotalFlow	Master
Allen-Bradley Ethernet/IP	Master
Allen-Bradley DF1	Point to Point
Allen-Bradley DH485	Token slave
Allen-Bradley MicroLogix Ethernet	Master
Allen-Bradley SLC/PLC5 Ethernet	Master
Altus Alnet I	Point to Point
Animatics SmartMotor[2]	Master
Beckhoff ADS	Master
Bernecker+Rainer Driver	Point to Point
Bosch Rexroth IndraDrive[2]	Master
CACTUS ASCII	Master
CoDeSys ARTI	Master
Control Techniques Unidrive[3]	Slave
CTC Serial Binary	Point to Point
Delta DVP-Series	Master
Delta Tau PMAC/UMAC	Master
EMERSON Modbus	Master
Fatek Facon	Master
Galil DMC	Master
GE Fanuc Ethernet	Master
GE Fanuc SNPX	Master
G&L Motion Control	Master
Hitachi H-series HCOMM	Point to Point
IAI X-Sel	Master

Panel 800 Version 6 Communication Drivers	Type[1]
Idec MICRO series	Point to Point
Johnson Controls	Master
KEB COMBIVERT	Master
KEYENCE KV-Series	Master
Koyo DirectNET	Master
Koyo ECOM	Master
Koyo K-Sequence	Point to Point
Lenze LECOM A/B	Master
LS Glofa	Master
LS Master-K	Master
Matsushita FP-series Mewtocol	Master
MODBUS Master ASCII/RTU/TCP	Master
MODBUS Slave RTU/TCP	Slave
Omron FINS	Master
Omron Host Link	Master
OPC DA and OPC UA Local H[4]	Remote Server
Profibus EM Profibus DP[3]	Slave
Saia Serial/Ethernet	Master
Schneider Electric TSX Uni-Telway	Master
SIMATIC S5 PG	Point to Point
SIMATIC S7 200 PPI	Master
SIMATIC S7 MPI Direct	Token
SIMATIC S7 ISO over TCP/IP	Master
SIMATIC S7 MPI EM[3]	Token
SIMATIC S7 MPI (requires HMI Adapter)	Point to Point
SIMATIC TI500	Point to Point
Vigor M/VB Series	Master
WAGO Modbus TCP	Master
Yamaha VIP[3]	Point to Point
Yaskawa Memobus Master	Master
Yokogawa FA.M3	Master

[1] Type of communication:
– Master: The panel is a master/client and asks one or many slave/servers. (Also Ethernet drivers)
– Slave: The panel is a slave/server and answers.
– Point to Point: The panel asks only one slave; there is no support for multi-drop.
– Token slave: A token network with the possibility for many panels to one PLC, the PLC is considered a slave.
– Token: Supports many panels and many PLCs at the same time on the network.
[2] Not available for PP880R, PP882, PP885, PP885M, PP885H, PP885R and PP886H.
[3] Not possible to use for PP880R, PP885H, PP885M, PP885R and PP886H.
[4] OPC communication (OPC DA and OPC UA) does not work with AC 800M and Freelance.