



Add Web connectivity to equipment displays

Link View Check processes

to a network

the readings

remotely



NEW

WHA1 Advanced model



NEW

WHS1 Standard model



Up to now
Operation panel

Display “only” for monitoring or operating equipment

Issues at the work site

A large introduction cost has been an obstacle
to introduce system visualization



Issues at the work site where system visualization is not implemented

Equipment information
visible only
at the work site



The operator has to go to the operation site every time to check the parameters.

Information displayed
on indicator
must be transcribed



The operator has to regularly transcribe the data displayed on the indicator to the ledger.

Multiple people needed
for maintenance work



When the display and equipment are away from each other, multiple people are necessary to perform maintenance.

From now on
Information panel

Check necessary information anywhere you like display
remotely “visualizes” information of the work site

The value the WH series offer

Minimizing introduction cost for equipment visualization



Easily enable visualization
at greatly reduced
introduction cost

- No need for server configuration and software specialization.
- A scalable system that can be easily linked to the existing systems.
- Charge-free setting software “xAscender Studio” enables easy creation of web screens to visually check the system.

Check equipment
screens remotely
using an office PC or
smartphone web browser

- Operators can check the equipment information via PC and smartphone without going to the work site.
- Abnormal operations, including short-time breakdown, can be detected away from the work site.
- Display real-time information on multiple web browsers. Large monitors can serve as line-process status indicator boards.

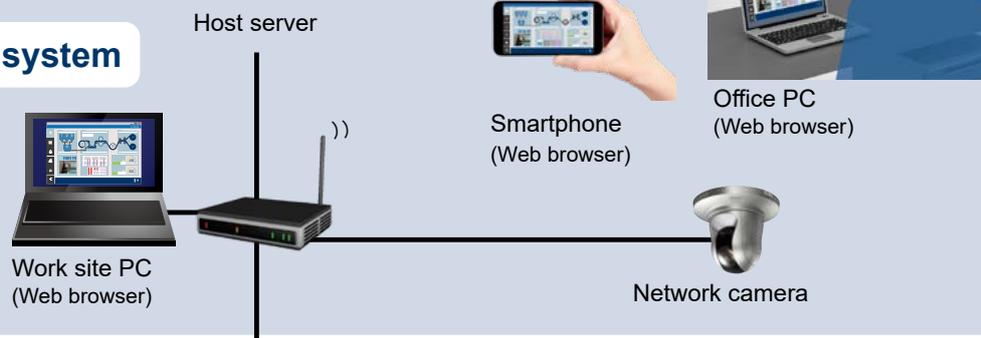
Connect with various protocols and networks

Supporting various communications protocols for linking higher-level information systems with lower-level control systems, the **WH** series acts as a network gateway.

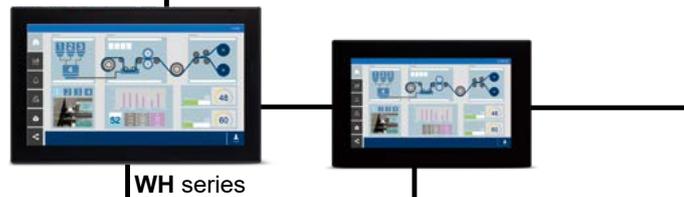
Connection with higher-level systems

The **WH** series supports OPC UA, MQTT, SQL, etc., and can connect to higher-level control systems such as MES, SCADA, and various cloud platforms. By installing the **WH** series you can monitor equipment readings by providing a gateway through which existing equipment is linked to the host system. Thus acquired, equipment data can be included in analysis.

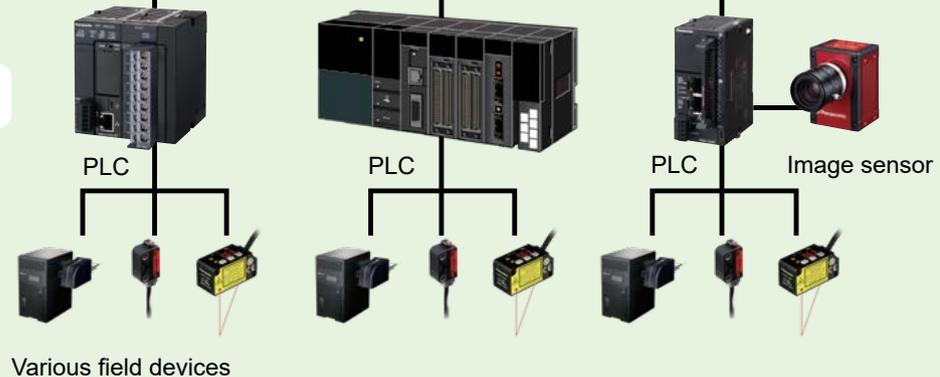
Information system



Display as a gateway



Control system



Programming-free connection to PLCs of different companies

Able to handle communications protocols used by various PLCs. Naturally, the gateway can be implemented when you install new equipment, but it can also be used to connect existing equipment. By simply replacing the display on newly installed equipment and, even, legacy equipment you can remotely visualize the status of field devices.

Simultaneous connection to different communication protocols

Via Ethernet, **WHA1** (advanced model) can connect using a total of 8 different communication protocols. **WHS1** (standard model) enables connection using as many as 4 different protocols.

Advanced model WHA1

16,770,000 colors

Max. 21.5 inch

SD memory card

Capacitive type

Front pure glass

Large screen memory

Equipped with 3 Ethernet ports* and a capacitive type, the large, high end model enables gesture control.

*AWHA1C050 is equipped with two Ethernet ports.



	AWHA1C215	AWHA1C156	AWHA1C101	AWHA1C070	AWHA1C050
Screen size	21.5 inch wide	15.6 inch wide	10.1 inch wide	7 inch wide	5 inch wide
Resolution	Full HD	HD	WXGA	WVGA	WVGA
	1920 × 1080	1366 × 768	1280 × 800	800 × 480	800 × 480
Memory (RAM)	2 GB	2 GB	1 GB	1 GB	512 MB

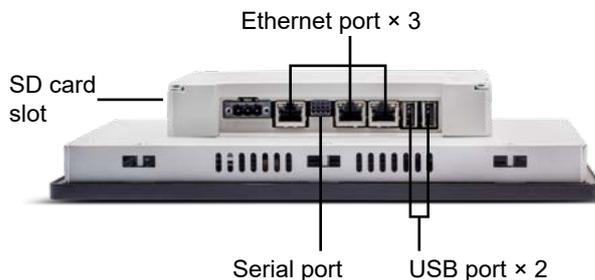
Support for control gestures

Just like a smartphone or tablet, support for operation by multi-touch gestures. Smooth screen zooms and sliding operations are possible.



Equipped with 3 Ethernet ports*

*AWHA1C050 has only two Ethernet ports.



Standard model WHS1

65,536 colors

Resistive film type

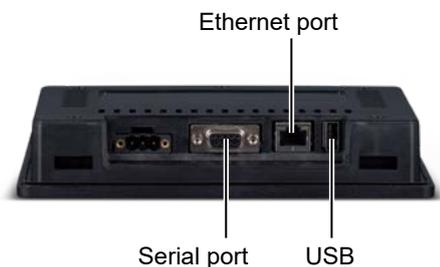
Large screen memory

Standard model with mid-sized, wide resistive film type for users with focused needs.



	AWHS1R101	AWHS1R070	AWHS1R043
Screen size	10.1 inch wide	7 inch wide	4.3 inch wide
Resolution	—————	WVGA	WQVGA
	1024 × 600	800 × 480	480 × 272
Memory (RAM)	512 MB	512 MB	512 MB

Simple interface



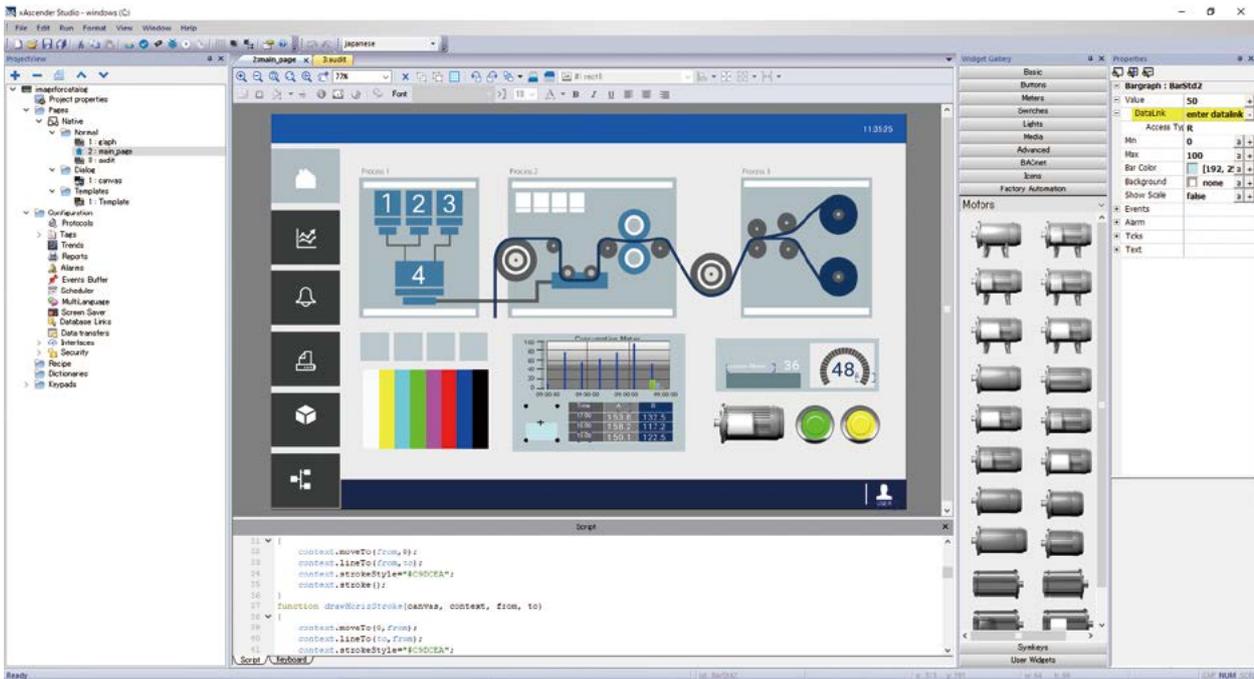
Configuration software xAscender Studio

Intuitively drag and drop widgets to create display screens. After the screen is created on the display screen, the web screen is automatically configured. On smartphones and other linked devices, users can view the same screens that are displayed at units of equipment. Customized visualization screens can also be created.

Panasonic

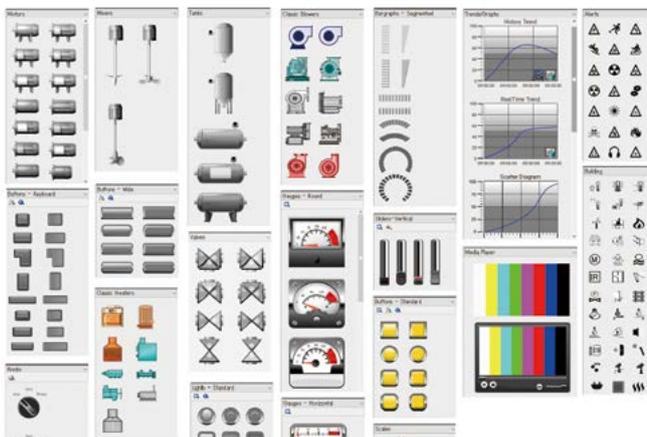
Let's Visualize!

xAscender Studio



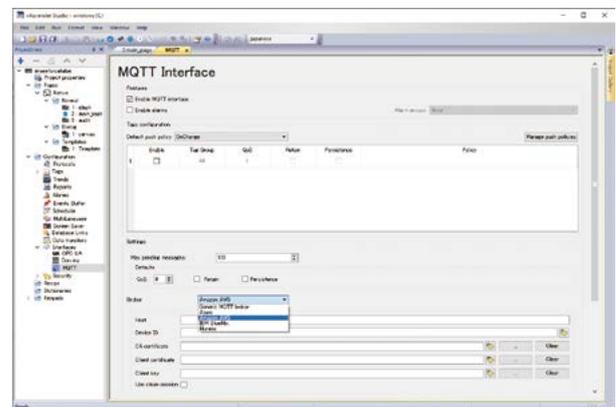
Abundant variety of widgets

Easily place screen elements: drag and drop widgets from the gallery.



Easy to connect to cloud and servers

Compatible with OPC UA, MQTT and SQL. You can also add a cloud server by selecting it in the project view screen.



ORDER GUIDE

Main unit

Type	Descriptions								Part No.
	Display	Touch switch	Front cover	Power supply	Communication		USB	SD	
					Ethernet	Serial			
Standard model	4.3 inch wide TFT	Resistive film type	Black	24 V DC	1 port	1 port RS-232C / RS-422 / RS-485 *Software configurable	1 port	—	AWHS1R043
	7.0 inch wide TFT								AWHS1R070
	10.1 inch wide TFT								AWHS1R101
Advanced model	5.0 inch wide TFT	Capacitive type	—	24 V DC	2 ports	1 port RS-232C / RS-422 / RS-485 *Software configurable	1 port	1 slot	AWHA1C050
	7.0 inch wide TFT								AWHA1C070
	10.1 inch wide TFT								AWHA1C101
	15.6 inch wide TFT								AWHA1C156
	21.5 inch wide TFT								AWHA1C215

Tool software

Product name	Descriptions	Remarks
xAscender Studio	Screen configuration tool for WH series programmable displays	You can download xAscender Suite for free from our website. (Membership registration is required.) "xAscender Suite" includes "xAscender Studio" and "xAscender Client" .
xAscender Client	Tool to enable remote viewing of WH series programmable displays	

Note: **GT** series **"Terminal GTWIN"** programmable display software cannot be used with the **WH** series. In addition, **WH** series cannot be detected with our IP address search tool, **"Configurator WD"**.

SPECIFICATIONS

Main unit specifications

Type	Standard model				Advanced model				
	4.3 inch	7 inch	10.1 inch	5 inch	7 inch	10.1 inch	15.6 inch	21.5 inch	
Item	Part No. AWHS1R043	AWHS1R070	AWHS1R101	AWHA1C050	AWHA1C070	AWHA1C101	AWHA1C156	AWHA1C215	
Regulatory compliance	EMC Directive, RoHS Directive, UL/c-UL Listing certification								
Rated Voltage	24 V DC								
Operating voltage range	10 to 32 V DC				10 to 32 V DC (Note 1)				
Current consumption (at 24 V DC)	0.25 A or less	0.3 A or less	0.38 A or less	0.6 A or less	0.7 A or less	1 A or less	1.2 A or less	1.7 A or less	
Ambient temperature	0 to +50 °C +32 to +122 °F (Note 2), Storage -20 to +70 °C -4 to +158 °F				-20 to +50 °C -4 to +122 °F (Note 2), Storage -20 to +70 °C -4 to +158 °F				
Ambient humidity	5 to 85% RH (at +25 °C +77 °F , No condensation or icing allowed, Same when storing)								
Vibration resistance	5 to 9 Hz, 3.5 mm 0.138 in single amplitude, 9 to 150 Hz, Acceleration 9.8 m/s ² (1 G)								
Shock resistance	490 m/s ² (50 G), 11 ms, 3 times in the X, Y, Z directions								
Protection	Front panel: IP66 (Initial value) (Note 3), Rear: IP20								
Pollution degree	2								
Net Weight	0.4 kg approx.	0.6 kg approx.	1 kg approx.	1 kg approx.	1.3 kg approx.	2.5 kg approx.	4.1 kg approx.	6.1 kg approx.	

Notes: 1) The voltage tolerance range for maintaining a 10 ms voltage dips is limited to 20.4 to 32 V DC. * Does not include connection of external devices.
 2) In vertical installation conditions
 3) The IP66 is guaranteed only if:
 • Max deviation from the plane surface to the cut-out: ≤ 0.5 mm **0.020 in**
 • Thickness of the case where is mounted the equipment: from 1.5 mm to 6 mm **0.059 in to 0.236 in**
 • Max surface roughness where the gasket is applied: ≤ 120 μm
 Also, tightening torque: 0.75 N•m (for advanced type: 1.3 N•m) or screw each fixing screw until the bezel corner gets in contact with the panel.

Function specifications

Type	Standard model				Advanced model				
	4.3 inch	7 inch	10.1 inch	5 inch	7 inch	10.1 inch	15.6 inch	21.5 inch	
Item	Part No. AWHS1R043	AWHS1R070	AWHS1R101	AWHA1C050	AWHA1C070	AWHA1C101	AWHA1C156	AWHA1C215	
Displayable fonts	Fixed font, True Type font, Fonts installed in Windows® (Note 1) (Note 2)								
Number of registerable screens (pages) (Note 3)	Max. 1,000								
Registerable screen number	Pages: 1,000 Dialog: 50 Template: 50								
Types of widget	Basic (text, numerics), Button, Meter, Switch, Light, Media, Icon, Custom, etc.								
Main functions	Trends, Reports, Alarms, Scheduler, Database, Data transfers, Recipe, Keypads, Web Server, etc.								
Through function	If a PC is connected to the LAN port of a WH series and a PLC is connected into the serial port, the PLC program can be debugged without a direct connection between the computer and the PLC. (Note 4)								

Notes: 1) Windows is a registered trademark of Microsoft Corporation in the United States and other countries.
 2) A license (permission to use) is required to add the font.
 3) Maximum allowable number varies depending on registered contents.
 4) The only supported PLC is our **FP** series.

SPECIFICATIONS

Performance specifications

Item	Type	Standard model			Advanced model					
		4.3 inch	7 inch	10.1 inch	5 inch	7 inch	10.1 inch	15.6 inch	21.5 inch	
	Part No.	AWHS1R043	AWHS1R070	AWHS1R101	AWHA1C050	AWHA1C070	AWHA1C101	AWHA1C156	AWHA1C215	
Display	Display unit	4.3 inch wide TFT	7 inch wide TFT	10.1 inch wide TFT	5.0 inch wide TFT	7.0 inch wide TFT	10.1 inch wide TFT	15.6 inch wide TFT	21.5 inch wide TFT	
	Resolution	480 × 272, WQVGA	800 × 480, WVGA	1,024 × 600	800 × 480, WVGA	800 × 480, WVGA	1,280 × 800, WXGA	1,366 × 768, HD	1,920 × 1,080, Full HD	
	Colors	65,536 colors			65,536 colors		16,770,000 colors			
	Backlight	White LED								
	Backlight brightness (Initial)	200 cd/m ² (typ.)			300 cd/m ² (typ.)		500 cd/m ² (typ.)		400 cd/m ² (typ.)	300 cd/m ² (typ.)
	Dimming	Yes (Can be adjusted on the menu screen, xAscender Studio settings. *There are some minor variations in the backlight brightness.								
Backlight life time	20,000 hours or more (Note 2)			40,000 hours or more (Note 2)						
Touch switch	Touch switch	Analog resistive film type			Capacitive type					
	Touch switch operating	1.5 N or less			—					
	Life time	1 million times or more (Note 3)			—					
Memory space	RAM	512 MB			512 MB	1 GB	1 GB	2 GB	2 GB	
	Flash memory	4 GB			4 GB	4 GB	4 GB	8 GB	8 GB	
	Project memory	240 MB								
	User memory	512 MB								
RTC / Backup	Clock function	Yes								
	Accuracy RTC	±100 ppm or less (at +25 °C +77 °F) (Note 4)								
	Backup range	Clock back up								
	Backup function / period	48h with super capacitor backup (at +25 °C +77 °F) (Note 5)			3 months with lithium batteries (secondary batteries) (at +25 °C +77 °F) (Note 5)					
Other	Buzzer									

- Notes: 1) On the LCD panel, bright spots (points always lit) or black spots (points always unlit) may appear, or the uneven brightness, flickers or crosstalk (appearance of unintended shades in the area no graphic or part is arranged) may occur depending on the operating conditions. Note that these phenomena are resulted from the basic characteristics of LCD panel not defects or failures of the product.
- 2) Time of continuous operation until the brightness of the backlight reaches 50% of the rated value when the surrounding air temperature is +25 °C +77 °F
- 3) The touch position may shift due to aging variation. If the touch position has shifted greatly, please adjust it.
- 4) At +25 °C +77 °F: less than 260 seconds per month. On systems prone to clock error, set the correct time on a regular basis.
- 5) Must be charged for 48 hours. When the battery is fully charged, it ensures a period of 48 hours of data backup.

Interface specifications

Ethernet port communication specifications

Item	Type	Standard model			Advanced model				
		4.3 inch	7 inch	10.1 inch	5 inch	7 inch	10.1 inch	15.6 inch	21.5 inch
	Part No.	AWHS1R043	AWHS1R070	AWHS1R101	AWHA1C050	AWHA1C070	AWHA1C101	AWHA1C156	AWHA1C215
Number of communication ports		1 port			2 ports		3 ports		
Interface		100BASE-TX / 10BASE-T							
Baud rate		100 Mbps / 10 Mbps, Auto negotiation (Note 2)							
Connector shape		RJ-45 (Note 3)							
Cable total length		100 m 328.084 ft (500 m 1,640.42 ft when using a repeater) (Note 4)							
Communication cable		UTP cable (Category 5 or higher)							
Number of simultaneous connections		Max. 4							
communication method		Full-duplex / Half-duplex							
communication protocol		TCP/IP, UDP/IP							
DNS		Name server support							
DHCP		Correspondence of automatic IP address acquisition							
FTP server / client		Server function: Transfer file / Client function: Transfer data and file							
HTTP server / client		Server function: Customer web / Client function: Web browser							
SNTP		Correspondence of time setting function							

- Notes: 1) Ethernet is a registered trademark of Fuji Xerox Co., Ltd. and Xerox Corp.
- 2) Switching between different speeds is done automatically by auto negotiation function.
- 3) Be careful not to apply excessive static electricity to the metal parts of the connector.
- 4) The maximum length of the cable is 100 m [328.084 ft](#) in accordance with the standards, but depending on the operating environment, a ferrite core may be installed to reduce noise. May be required. It is also recommended that the hub be installed near the control panel and that it be used at 10 m [32.808 ft](#) or less.

SPECIFICATIONS

Interface specifications

Serial port communication specifications (Same for both standard and advanced models)

Item \ Type	RS-232C	RS-422 / RS-485
Communication standard	Conforms to RS-232C (Non insulation type)	Conforms to RS-422 / RS-485 (Non insulation type)
Number of communication ports	1 port *Can be switched with xAscender Studio	
Conditions for communication with external devices	Baud rate	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bit/s (Note 1)
	Data bits	7 bits / 8 bits
	Parity	none / even / odd
	Stop bit	1 bit / 2 bit
Transmission distance (Total length)	Max. 15 m 49.213 ft (for advanced model: Max. 15 m 49.213 ft) (Baud rate: 19,200 bps)	Max. 500 m 1,640.42 ft (Baud rate: 115.2 kbps)
Terminal resistance	—	No termination (Note 2)
Connector	D-Sub 9 pins (Note 3) (Connector supplied with advanced model)	

- Notes: 1) Communication conditions depend on the communications state of PLCs or other slave devices. Please check with the actual devices when some commercial devices with RS485 interface are connected. The number of connected devices, transmission distance, and transmission speed may be different according to using transmission line.
 2) When connected to the termination, it is recommended that a 120Ω, 1/2W or better termination resistor be connected between the communication lines.
 3) Use standard commercially available 9-pin D-sub male connector.

USB port specifications

Item \ Type	Part No.	Standard model			Advanced model					
		4.3 inch	7 inch	10.1 inch	5 inch	7 inch	10.1 inch	15.6 inch	21.5 inch	
Number of ports		1 port			1 port	2 ports				
USB specifications		USB Host								
Electrical specifications		Complies with USB 2.0								
Connector shape		USB Type A (Note 1)								
Transmission speed		480 Mbps (High speed mode)								
Maximum current		Max. 500 mA								

- Notes: 1) Take care of handling of the connector not to add an excessive static electricity on the metal part of the connector.
 2) The format of the external memory should be in FAT32 or FAT. The max number of files inside external memory depends on the type of formatting.
 • FAT32: Max. 65,535 files • FAT: Max. 512 files

SD memory card specifications

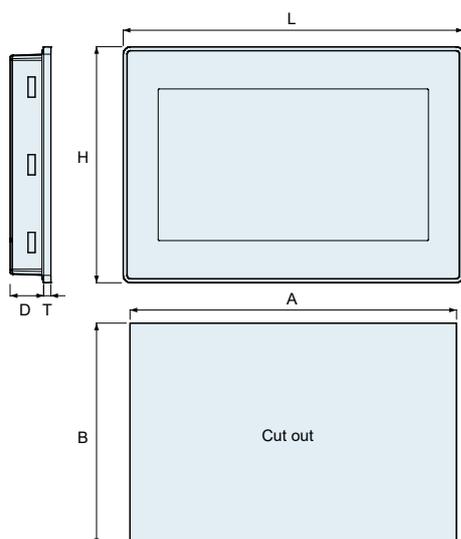
Item \ Type	Part No.	Standard model			Advanced model				
		4.3 inch	7 inch	10.1 inch	5 inch	7 inch	10.1 inch	15.6 inch	21.5 inch
Support media		SD memory card, SDHC memory card (Note 1)							
Supported format standard		Conforms to SD standard (Note 2) (Please format with a format software for SD memory cards.)							

- Notes: 1) Industrial or business use SD memory cards (SLC type) are recommended. Check the operating temperature range of the SD memory card before use.
 2) The format of the external memory should be in FAT32 or FAT. The max number of files inside external memory depends on the type of formatting.
 • FAT32: Max. 65,535 files • FAT: Max. 512 files

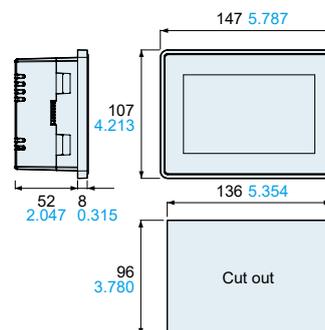
DIMENSIONS (Unit: mm in)

The CAD data can be downloaded from our website.

AWHS1R043 / AWHS1R070 / AWHS1R101 Standard model



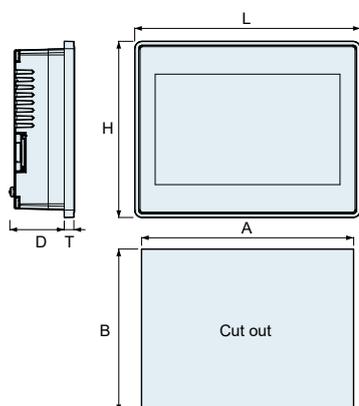
AWHA1C050 Advanced model



Part No.	A	B	H	L	D	T
AWHS1R043	136 5.354	96 3.780	107 4.213	147 5.787	29 1.142	5 0.197
AWHS1R070	176 6.929	136 5.354	147 5.787	187 7.362	29 1.142	5 0.197
AWHS1R101	271 10.669	186 7.323	197 7.756	282 11.102	28 1.102	6 0.236

(Tolerance (except T): $\pm 1 \text{ mm } \pm 0.039 \text{ in}$
 T tolerance: $\pm 0.5 \text{ mm } \pm 0.020 \text{ in}$)

AWHA1C070 / AWHA1C101 / AWHA1C156 / AWHA1C215 Advanced model



Part No.	A	B	H	L	D	T
AWHA1C070	176 6.929	136 5.354	147 5.787	187 7.362	45 1.772	8 0.315
AWHA1C101	271 10.669	186 7.323	197 7.756	282 11.102	52 2.047	8 0.315
AWHA1C156	411 16.181	256 10.079	267 10.512	422 16.614	56 2.205	8 0.315
AWHA1C215	541 21.299	336 13.228	347 13.661	552 21.732	56 2.205	8 0.315

(Tolerance (except T): $\pm 1 \text{ mm } \pm 0.039 \text{ in}$
 T tolerance: $\pm 0.5 \text{ mm } \pm 0.020 \text{ in}$)

PRECAUTIONS FOR PROPER USE

Information security precautions

When use this product you might receive damage as listed below.

- (1) Information leakage or outflow through this product
- (2) Fraudulent operation of this product by a malicious third party
- (3) Obstructing or stopping this product by a malicious third party

Sufficient measures, including the following measures, should be taken at your own risk to prevent such damages.

■Data storage

- Do not storage of personal information on this product.

■Password

- Please be sure to change the password since it is set to the default value at the time of purchase.
- Do not use the default password.
- Please be responsible for managing your password so that it is not known to any third party and do not forget it.
- If you forget your internal password, there is no way for you to reset it. You must return the product to us and we will return it to you in its factory condition.
- Please make sure that your password is at least 8 characters long and contains a combination of upper and lower case letters, numbers and symbols so that a third party cannot guess your password.
- Do not use the same password as your user name. Do not use the same password as the one you are using elsewhere.
- Please change your password on a regular basis.

■Networks

- Use this product on a network where safety is secured by using a firewall.
- When using this product on a system where a PC is connected, make sure that checking and cleaning of infection by computer virus or malicious program is performed periodically.

- It has the ability to use unencrypted communications. (FTP, HTTP, SMTP, PLC communications, etc.). Please make sure that a third party cannot easily connect to the network used by this product.
- Use HTTPS when accessing this product through a web browser. Also, be sure to close all browsers after accessing it.
- Do disable the functions of the services you don't use. (SNMP, NTP, VNC, DHCP, Corvina Cloud, etc.)
- Be sure to log out when you have completed the necessary setup operations.
- SNMP is assumed to be used for testing purposes. It should be disabled during operation. Furthermore, it is recommended that the product be used in an environment that has VPN (Virtual Private Network) or leased line network.

■Transfer / Disposal / Repair

- If the product is to be disposed of, transferred, repaired, or otherwise transferred to a third party, important information may also be recorded on the product and on the external recording media used. At customer's risk, please handle it with care, such as erasing it.

■Installation

- On the back of the unit, there are interfaces that affect its operation, such as power supply, external storage media, and communication connectors. Please make sure to install the unit in a manner that does not allow unauthorized parties to touch it.

■Exemption

- The Company shall not be responsible for any information security problems or damages that may occur to you in the event that you fail to comply with the above precautions in using this product.

Please contact

Panasonic Corporation

Industrial Device Business Division

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