AW Series User Manual

Catalogue

1 Safety information

WARNING!
Please read the **Safety Measures** listed in this section carefully before installing, switching on, operating and maintaining this product.

The following marks on the product and in this manual indicate important safety measures.

WARNING!
Risk!
Might cause equipment damage or risk!

WARNING!
Please read the manual before operating!

WARNING!
Dangerous Voltage!
Might cause equipment damage or electric shock!

WARNING!
Hot Surface!
Do not touch!

WARNING!
Flammable!

WARNING!
Possible damage to eyes

Warning: Be sure to learn and follow all safety guidelines, safety instructions, warnings and precautions listed in this manual.
The use/operation of this product should be limited to professional technicians only! This product may result in serious injury or death due to fire hazard, electric shock or hitting by falling items.

Please read this manual carefully before installing, powering, operating and maintaining this product.
Follow safety instructions in this manual and on the product. If you have any questions, please seek help from Absen.

Beware of Electric Shock!

- To prevent electric shock the device must be properly grounded during installation. Do not ignore using the grounding plug, or else there is a risk of electric shock.
- During a lightning and thundering, please disconnect the device's power supply, or provide other suitable lightning protection. If the equipment is not in use for a long time, please unplug the power cable.
- When performing any installation or maintenance work (e.g. removing the fuses, etc.,) make sure you turn off the master/main switch.
- Disconnect AC power supply when the product is not in use, or before disassembling, or installing the product.
- The AC power supply used in this product must comply with local building and electrical codes, and should be equipped with overload and ground fault protection.
- The main power switch should be installed near the product and should be visible and easily accessed. This way in case of any failure the power can be promptly disconnected.
- Before using this product check all electrical distribution equipment, cables and all connected devices, and make sure all meet current requirements.
- Use appropriate power cables. Please select the appropriate power cables according to the required power consumption and current capacity, and ensure the power cables are not damaged, aged or wet. If any overheating occurs, replace power cables immediately.
- For any other questions, please consult professionals.

Beware of Fire!

- Use a circuit breaker or fuse protection to avoid fire caused by overloading of power supply cables.
- Ensure good ventilation around the display, controller, power supply and other devices, and keep a minimum 0.1meter gap between these devices/objects.
- Do not stick or hang anything on the screen.
- Do not modify the product, do not add or remove parts.
- Do not use the product when the ambient temperature is over 50 ℃.

Beware of Injury!

- **Warning**: Wear a helmet to avoid injury.
- Ensure any structures used to support, fix and connect the display can withstand at least 10 times the weight of all the equipment.
- When stacking products, please hold products firmly to prevent tipping or falling.

- Ensure all components and steel frames are securely and solidly installed.
- When installing, maintaining, or moving the product, ensure the working area is isolated from other area, and ensure the working platform is securely and stably fixed.

- In the absence of proper eye protection, please do not look directly at the lit screen from within 1 meter.
- Do not use any optical devices that have converging functions to look at the screen to avoid burning the eyes.

Warning: Beware of loads when hanging.

LED lamps used on the modules are sensitive and can be damaged by ESD (electrostatic discharge). To prevent damage to LED lamps, do not touch them when the device is running or switched off.

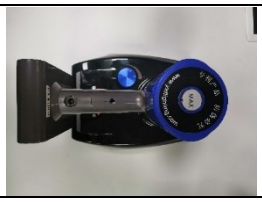
Warning: The manufacturer shall not bear any responsibility for any incorrect, inappropriate, irresponsible or unsafe installation.

2 Preparation before installation

2.1 Site installation environment preparation

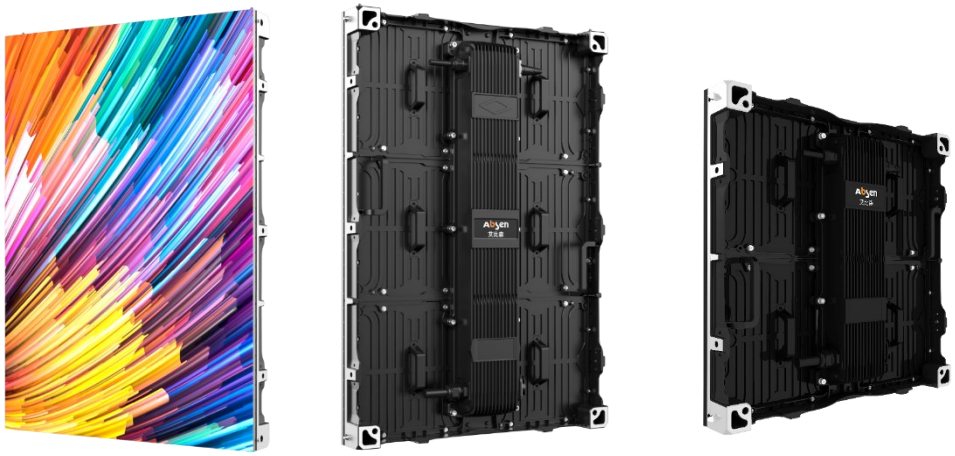
1. Conventional panels cannot be installed on the seashore, and panels with special anti-salt-alkali materials can be installed on the seashore
2. The humidity at the installation site must not exceed 85RH;
3. The installation site temperature should be -20 ℃ ~ 50 ℃, and the panels with special low temperature materials can be installed at -30 ℃ ~ 20 ℃.

2.2 Preparation of maintenance tools

	Type	Acting on	picture
List	Adjustable wrench	Fix the connecting piece of the box and tighten the M10 * 60 bolt	
	Phillips screwdriver	Disassembly module & power supply & receiving card & adaptor plate	
	T-type wrenches	Remove module	
	multimeter	Measuring power lines and distribution boxes	
	Small Phillips screwdriver	Installing and removing mask	
	laser spirit level	Measuring structure	
	front maintenance tool	Remove module	

3 Product description

3.1 AW series overview



AW series products are positioned in the global outdoor high-definition small-pitch mid-to-high-end fixed-installation market, with flexible product portfolio, multi-scenario applications on one screen, and a wide coverage.

AW series products have fine-pitch high-definition picture quality, fully waterproof panel, fin-shaped design, good heat dissipation, high refresh rate, good camera effect, outdoor light and thin die-cast aluminum panel, high precision, saving installation space and steel structure costs, free assembled, convenient and flexible, convenient maintenance.

AW series products are mainly used in fixed application fields such as digital sign, street furniture, light poles, light boxes, etc., as a carrier for video playback and information release applications.

3.2 Product main features

- One screen with multi-purpose and wide scene coverage.
- Fine-pitch high-definition picture quality, outdoor ultra-close range display without graininess, suitable for 2~3m street furniture occasions.
- Outdoor thin and light panel, high precision die-cast aluminum, saving transportation and steel structure costs, wall installation, saving space, just 200mm away from the wall.
- Fin-shaped heat dissipation design, increase surface area, fast heat dissipation by convection, and good heat dissipation effect.
- Fully waterproof panel, supporting outdoor naked installation, saving the cost of edging materials.
- Free assembly, convenient and flexible, the panel can be rotated and installed to meet the needs of various splicing sizes.

3.3 Product specification

AW2.8-Product specifications

Parameter		Specifications	
Physical parameters	LED type	SMD 3in1 1515	
	Pixel pitch (mm)	2.84	
	Panel size (width × height × thickness) / (mm)	500*500	500*750
	Panel resolution	176*176	176*264
	panel weight(kg)	6.4	9.6
	Panel material	Die-cast aluminum	
	Module size (width × height) / (mm)	250*250	
Optical parameters	Brightness (nit)	5000	
	Refresh frequency (Hz)	4800(rear)、7620(front)	
	Gray level (Bit)	15	
	Contrast	3600:1	
	Color temperature (K)	6500	
	Viewing angle (horizontal / vertical) (°)	160/120	
	Driving method	1/22(rear)、1/11(front)	
	AC working voltage (V)	100~240	
	Power (Max / Average) (W / m2)	660/220	
Application parameters	Storage temperature (℃)	- 40 ~ + 60	
	Operating temperature (℃)	-20 ~ + 50	
	Storage humidity (RH)	10% ~ 85%	
	Operating humidity (RH)	10% ~ 90%	
	Protection grade (front / rear)	IP65/IP54	
	LED life (H)	100000	
	Module maintenance method	front/rear	
	Maintenance methods of power supply & others	front/rear	
	Installation method	Fixed installation (front/rear)	

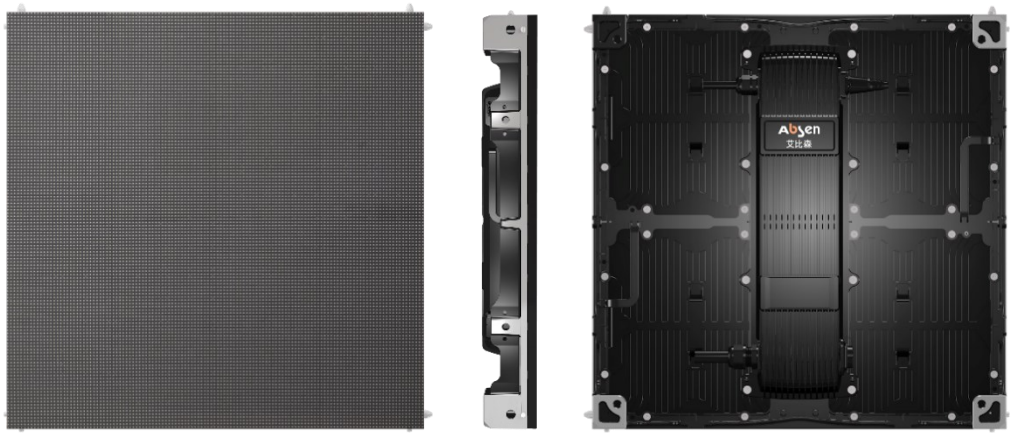
Note: The power will fluctuate within the range of ± 15%, depending on the brightness of different batches of lamps, please refer to the actual product.

AW3.9-Product specifications

Parameter		Specifications	
Physical parameters	LED type	SMD 3in1 1921	
	Pixel pitch (mm)	3.9	
	Panel size (width × height × thickness) / (mm)	500*500	500*750
	Panel resolution	128*128	128*192
	panel weight(kg)	6.4	10
	Panel material	Die-cast aluminum	
	Module size (width × height) / (mm)	250*250	
Optical parameters	Brightness (nit)	5000	
	Refresh frequency (Hz)	3840	
	Gray level (Bit)	16	
	Contrast	3600:1	
	Color temperature (K)	6500	
	Viewing angle (horizontal / vertical) (°)	160/125	
	Driving method	1/8	
	AC working voltage (V)	100～240	
	Power (Max / Average) (W / m2)	630/210	
Application parameters	Storage temperature (℃)	- 40～ + 60	
	Operating temperature (℃)	-20～ + 50	
	Storage humidity (RH)	10%～85%	
	Operating humidity (RH)	10%～90%	
	Protection grade (front / rear)	IP65/IP54	
	LED life (H)	100000	
	Module maintenance method	front/rear	
	Maintenance methods of power supply & others	front/rear	
	Installation method	Fixed installation (front/rear)	

Note: The power will fluctuate within the range of ± 15%, depending on the brightness of different batches of lamps, please refer to the actual product.

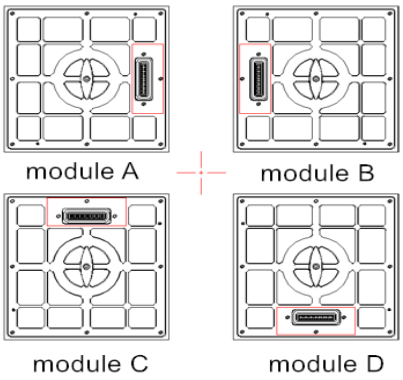
3.4 **Pictures of panels**



Panel size: 500mm*500mm

Panel size: 500mm*750mm

3.5 Pictures of module



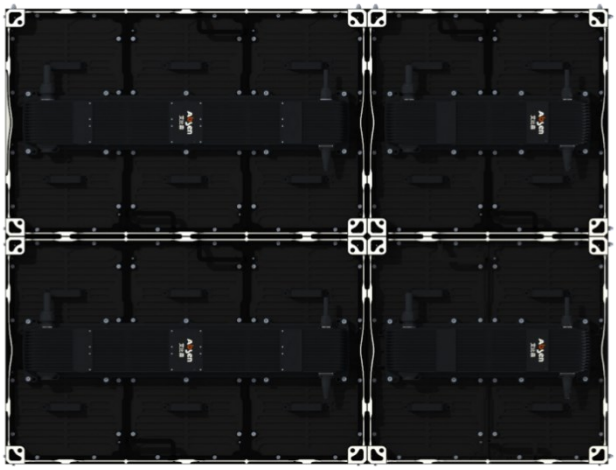
AW modules are divided into 4 types,

A module and B module, used for normal standard panel;

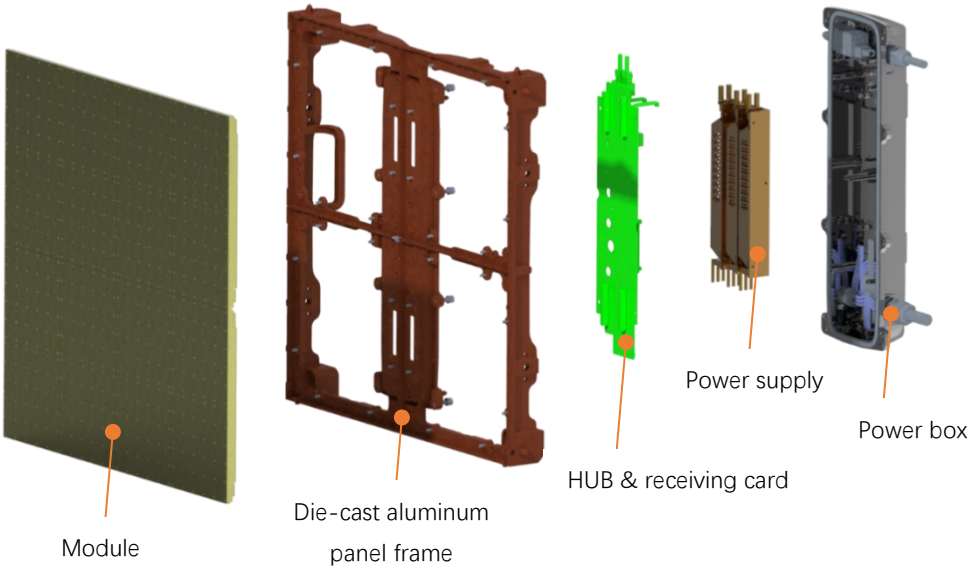
C module and D module, used for rotating installation panel;

Adopt A module and B module, can be assembled into a normal standard panel.

Adopt C module and D module, can be assembled into a rotating installation panel;



3.6 Product parts introduction

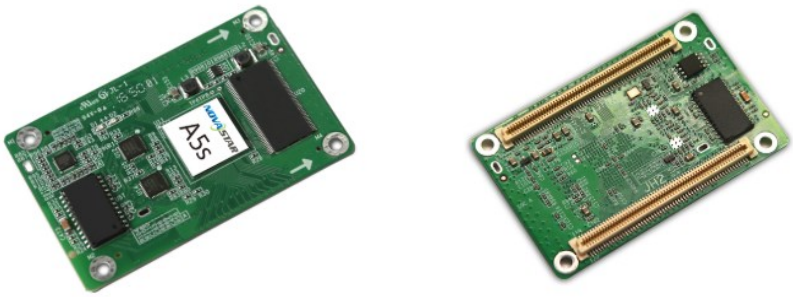


3.7 Pictures of power

Power Specifications:

Parameter	Minimum value	Typical value	Maximum value	unit
Output voltage range	4.2	4.6	4.6	VDC
Input voltage range	0		40A	A

3.8 Pictures of Receiving card



Physical picture of receiving card

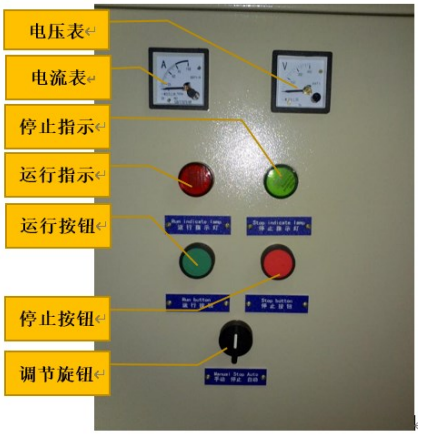
The A5S receiving card is connected to the Hub board through the card slot. Meanwhile, the Hub board is also connected to the module, power supply and data cable. The Hub board plays the role of transit.

3.9 Distribution box

The distribution box is a low-voltage distribution box composed of switchgear, measuring instruments, protective appliances and auxiliary devices, which are assembled in a closed or semi closed metal cabinet or screen, based on the electrical wiring requirements.
During normal operation, the circuit can be switched on or off manually or automatically. The measuring instruments show various parameters; some electrical parameters can be adjusted through the measuring instruments; and they can indicate or send signals in case there is deviation from normal working state.

The components in the power distribution box of the LED display mainly include: main switch, AC contactor, circuit breaker (air switch), arrester (optional), timer, function card, time delay unit, voltage indicator, current indicator, Thermal relay, e.tc
Classified by power capacity: Absen mainly has 15KW, 30KW, 60KW, 90KW, 120KW, 150KW, 180KW distribution boxes.
Classified by control mode: intelligent distribution box, ordinary distribution box.

Classified by application: indoor and outdoor.



Distribution box and main cable selection

Distribution box specification	15KW	30KW	45KW	60KW
International copper core cable model （mm²）	4*4+1*2.5	4*10+1*6	4*16+1*10	4*25+1*16
Distribution box specification	90KW	120 KW	150 KW	180 KW
International copper core cable model （mm²）	4*50+1*35	4*70+1*35	4*95+1*50	4*120+1*70

Remark:
In the above table, the three-phase voltage is 380V and the single-phase voltage is 220V.
The input end of the distribution box is three-phase five-wire system, with a three-phase voltage of 380V and a single-phase voltage of 220V at the output end.
4*X+1*X in the table: 4 represents L+L+L+N line, 1 represents PE line, X represents the main cable size;
If the single-phase voltage is 110V, then the international copper core cable model must be twice the size;

3.10 **Packing**

Wooden box + vacuum bag + anti-collision cotton

4 Installation procedure

4.1 Installation Notes:

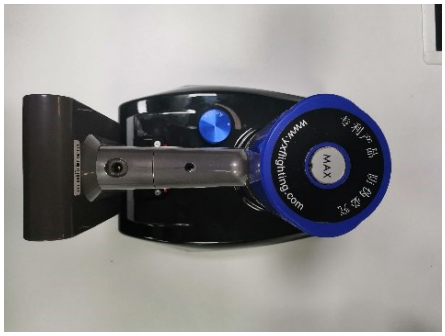
The panel is waterproof front and rear, and can be directly installed naked. It can be installed from front and rear. It cannot be installed directly against the wall.
When the panel is installed naked, there is no need for any covering on the edges or any other decorations. The back of the panel is directly exposed outside, which relies on the external environment for natural heat dissipation without other heat dissipation equipment.
When the back space of the panel is fully closed, heat dissipation equipment need to be installed inside the closed space, such as air conditioner and exhaust fan, etc. About 1 air conditioner for every 15 square meters screen.
The steel support structure of the panel must be designed and constructed in strict accordance with our company's panel drawings. At least 60cm-80cm maintenance space should be reserved for rear installation and 30-40cm for front installation.
During installation, the panel should be installed from the middle position at the bottom row of the steel structure and installed from bottom to top. Fix the panel on the structure in turn with connecting plates and M10x60mm bolts.
In order to facilitate the front maintenance of the power supply box, when the screen body is used for front installation against the wall, a rear maintenance space of at least 20 cm must be reserved in the sealed space on the back of the box.

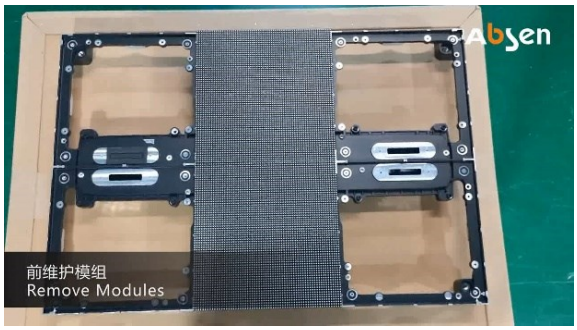
4.2 Front-installation:

4.2.1 AW2.8 front-installation

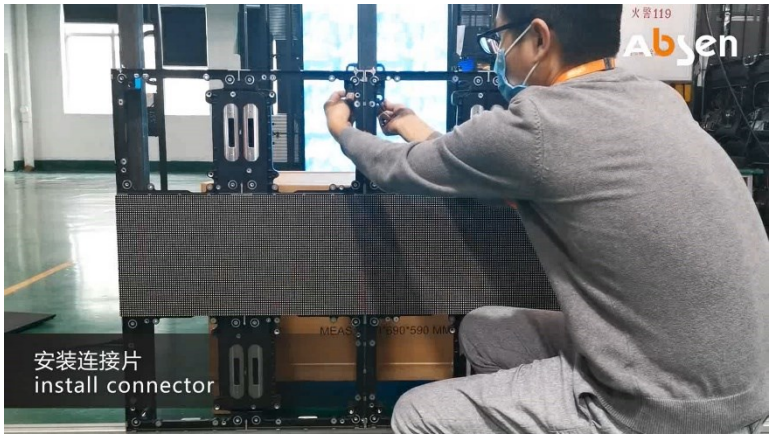
When installing the cabinet in front, reserve more than 20cm on the back of the cabinet and ensure that there is no other obstruction in the rear maintenance space to facilitate subsequent maintenance of the control cabinet.

1. Before installation, use the front maintenance tool to remove the modules at the four corners of the cabinet.



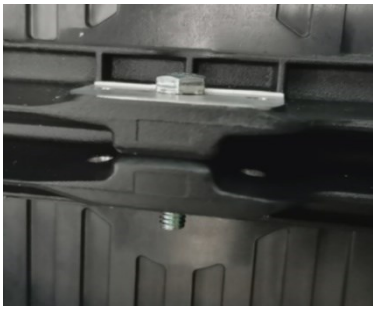


2. Place the cabinet on the bottom beam so that the connection between the cabinet and the cabinet is aligned with the middle of the 40x40mm square pass.



3. Place the connecting piece behind the square pass, pass the bolt through the connecting piece and lock and fix the cabinet body.

4. Use screws and nuts to lock the cabinet and the cabinet;
Note: Make sure that the cabinet is level and there is no misalignment before tightening the screws



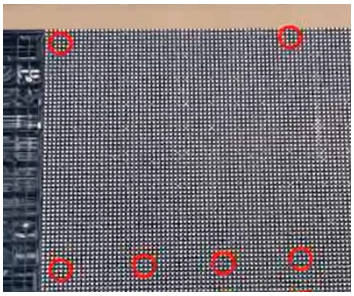
5. Connect the network cable and power cable between the cabinet;

6. Check whether the power cord and network cable of the screen are properly plugged in;
Note: The power supply needs to be tested before powering on to ensure that the power cord wiring is correct before powering on;

7. Reinstall the removed module.
Note: When installing the module, install it according to the installation direction of the module to avoid damage to the module;

4.2.1 AW3.9 front-installation

When installing before AW3.9, we need to insert the T-type wrenches into the front maintenance hole of the module, and rotate it counterclockwise to take out the module. There are 6 maintenance holes in the front of the AW3.9 module (4 screws connected to the power box), as shown in the figure below. For other installation steps, please refer to the installation before AW2.8.



4.3 Rear- installation:

Installation precautions: When placing the cabinet, it should be handled gently to avoid dead lights and deformation of the cabinet due to the collision of the cabinet. When installing the cabinets, check whether the cabinets are flat, whether the cabinets are misaligned back and forth, up and down, and whether they are squeezed. The rear maintenance channel of the screen should be reserved, 60cm-80cm.

1、 Place the two cabinets side by side on the bottom beam of the steel structure, and pass the bolts through the connecting piece and the connecting hole of the cabinet lock fixing part;


2、 Use screws to pass through the left and right connecting holes of the cabinet , and lock with nuts; pay attention to the flatness between the cabinets when installing;


3、 Install the second row of cabinets, lock the upper and lower cabinets with four screws and connecting pieces;


4、 Continue to install other cabinets; when installing, pay attention to the flatness of the cabinet and connect the fixing screws between the left and right cabinets and the upper and lower cabinets;

5、 Connect the power cord and network cable;

6、 Check whether the power cord and network cable of the screen are plugged in; check the power supply before powering on to ensure that the power cord wiring is correct before powering on

5 Cable connection

5.1 Cable connection

Plug the power and network cables on the left side of the back of the cabinet into the power socket and network cable socket of the next cabinet. To avoid electric shock, please do not power on when plugged in.

Network cable connection

Power cable connection

5.2 Load quantity of main power cable and main network cable

product model	1 pc main data cable can take: (1 pc standard main data cable can carry 650,000 points; take the standard 1280*960*150 panel as an example)	1 pc standard main Power cable can take: (220V)	1 pc standard main Power cable can take: (110V)
AW2.8（500X500）	21pcs	23pcs	11pcs
AW2.8（500X750）	14pcs	15pcs	8pcs
AW3.9（500X500）	39pcs	23pcs	11pcs
AW3.9（500X750）	26pcs	16pcs	8pcs

5.3 Post-installation inspection

After the cabling between panels, use a multimeter to measure whether there is a short circuit at the AC input (L/N/PE) and DC output (VCC/GND). If you find a short circuit, please check the circuit carefully. Make sure the circuits and cables are all right before powering the display and turning it on. Pay attention to the working voltage range of the panel when turning on the display to avoid the whole screen burning out due to the wrong working voltage.

5.4 Turn on the screen and see the performance

When the screen is powered on, play high-definition content, such as video, text, images, etc. It is suggested to make sure the resolution of the content consistent with the resolution of the screen, otherwise the content will be compressed, thus affecting the overall performance.

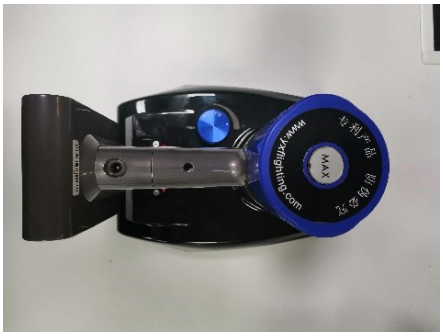
5.5 For software operation, please refer to the software instruction manual.

6 Product maintenance

6.1 Module replacement

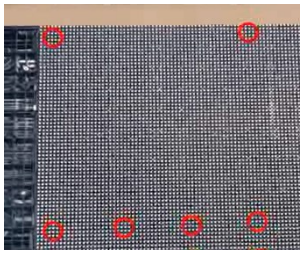
6.1.1 Front-installation module

remove AW2.8 modules： use the front maintenance tool to remove the modules, and keep the magnetic suction tool energized during the suction process to prevent the module from falling



remove AW3.9 modules： Insert the T-type wrenches into the front maintenance hole of the module (a total of 6 pieces, 4 pieces are close to the end of the power box) and turn it counterclockwise to remove, and operate in sequence to take out the module. Then reinstall the spare module.

Note: Please note the orientation of the module when installing the module. Please place the arrow facing up.



6.1.2 Rear-installation module

1、Remove power box: use an Allen wrench to unscrew the 10 Allen screws.

2、Disassembly module: unscrew the 8 hexagonal screws in order;

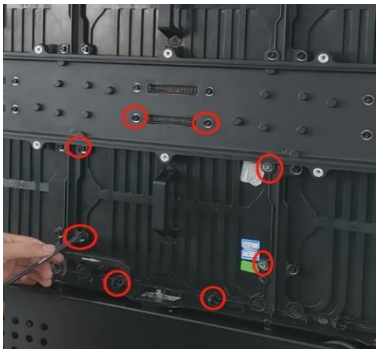
Note: Please hold the handle of the module when loosening the last screw, to prevent the module flip forward and fall down.

3、Push the front module forward and pass through the middle of the box.

4、When installing a new module, pass the module through the middle of the box, push it to the front of the screen, and then fix the module on the box.

Note: Please note the orientation of the module when installing the module. Please place the arrow facing up.

5、Tighten the screws of the module in order.



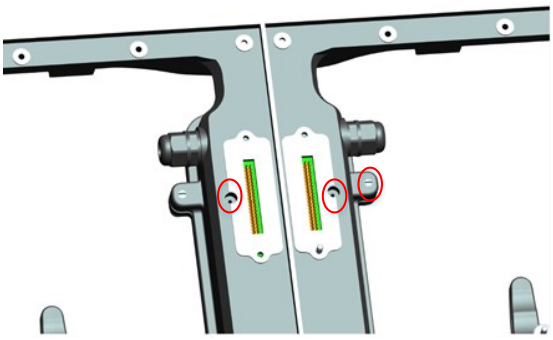
6、Tighten the hexagon socket screws of the power box in turn;

6.2 Common installation problems

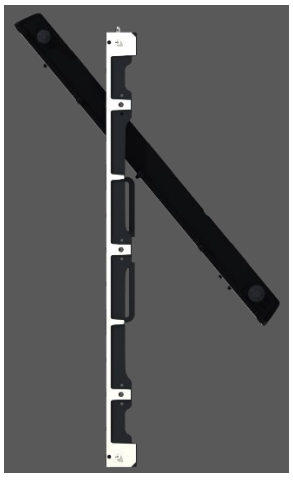
6.2.1 Front-maintenance power box

1. Remove the module of the box first, for details, please refer to the "Front-maintenance module".

2Remove the front maintenance screws of the power supply box as below:



3 Unplug the network and ground cables from the power box, and then remove the power box from the back of the screen;



Please be careful not to collide with the box when removing the power supply box, it will cause damage to the box and power box.

4、Replace a new power box.

6.2.2 Rear-maintenance power box

For rear-maintenance, no need to remove the module, just remove the 10 screws of the power

box.

For prevent electric shock and product damage: please turn off the power of the screen when removing the power supply box.

7 Common installation issues

7.1 Large gap between the panels

1. Check whether the bottom support beam of the panel is level;
2. Check whether the 40*40 square tube (frame) is vertical;
3. Check whether the M10*60 bolt is locked too tight;

7.2 The panel cannot be fixed on the square tube (frame)

1. Check whether the 40*40 square tube is vertical;
2. Check whether the distance between 40*40 square tubes is the same as the width of the panel, which should be done before installation.

7.3 Mask lifting and LED lamp knocking out

1. Handle the panel gently during transportation;
2. Avoid squeezing between panels during installation;

8 Common faults and troubleshooting

No.	Common problems	Solution
1	Some modules are black	1. Check whether the power plug of the corresponding module is tightly inserted;
		2. Check whether the power cable of the corresponding module is burnt out;
		3. Check whether the switch power supply of the corresponding module has no output;
		4. Check whether the flat cable of the corresponding module is malfunctioning;
		5. Replace the flat cable of the corresponding module;
		6. Replace the module;
		7. Replace the receiving card;
		8. Send rcfg file;
2	The whole screen is black	1. Check whether the screen power is on;
		2. Check whether the DVI cable or HDMI cable is loose;
		3. Check whether the main data cable is inserted tightly;
		4. Check whether the sending card is powered on and whether the running indicator is flashing;
		5. Replace the sending card;
		6, Connecting the computer to an LCD display, check whether there is output on video card;
		7. Update the video card driver;
		8. Replace the computer;
3	Whole screen pixelated/blurred	1. Check whether the power plug of the receiving card is tightly inserted;
		2. Check whether the power cable of the receiving card is burnt out;
		3. Check whether the power supply has no output;
		4. Check the data cable of the receiving card;
		5. Replace the data cable;
		6. Send the rcfg file;
		7. Upgrade the firmware version of the receiving card;
		8. Replace the receiving card;
4	Chromatic aberration between modules	1. Check whether the module power plug is plugged tightly;
		2. Replace the flat cable;
		3. Replace the power supply;
		4. Replace the module;
		5. Replace the receiving card;
5	All panels display the same content	1. Set the screen connection on software;
		2. Check whether the data port is wrong.
6		1. Check the USB cable;

	No control system detected	2. Check whether the computer USB port is malfunctioning;
		3. Update the USB driver;
		4. Replace the USB cable;
		5. Replace the sending card;
7	No multi-function card detected	1. Check whether the distribution box is in the automatic state;
		2. Check whether the multi-function card is powered;
		3. Replace the power supply of the multi-function card;
		4. Check whether the main data cable is inserted into the wrong data port;
		5. Check whether the sending card data port is malfunctioning;
		6. Re-add the multi-function card;
		7. Replace the multi-function card;
		8. Replace the sending card;
8	No full screen display	1. Check whether the setting of the playback window is normal;
		2. Check the output resolution of the video processor;
		3. Check the output window of the video processor;

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