

OPERATION MANUAL



DIGITAL NETWORK PUBLIC ADDRESS & VOICE ALARM SYSTEM

VA-6000BC

Thanks for using ITC Digital Network Public Address & Voice Alarm System.
For better operation, please read this manual carefully before operating the system.

1. Dear Readers

Thank you for using ITC fire voice broadcasting system, in order to facilitate your understanding and the manual's description, suggestion are as follows:

◆ The mentioned "Voice information" in the manual includes

- Built-in EVAC, ALERT voice.
- Built-in paging and PSTN voice menu prompt tone.
- Built-in BGM, line input audio and remote paging audio.

Note: The qty of voice information of EVAC / ALERT / BGM / PROMPT memory cards cannot exceed 100.

◆ The system control priority

- When configuring audio operation priority, please follow the principle that manual first, then automatic, local first, then remote.
- Recommend to make Mic PTT and EVAC voice configuration with a higher priority.

It has total 39 kinds of audio signal system, in consideration of the network bandwidth, only 24 different audio signal can be sent to the system partitions, audio priority can be configured through software (when configured with backup host, the priority of the audio signals come from one host can be the same, the priority of the audio signals come from different hosts must be different).

◆ Some icons are described as belows



—Loop playback.



—Single cycle.



—Order play.



—Single player.



—Random Play.



—Click to adjust the output level of the current partition (It is invalid for EVAC voice and zone paging broadcasting).



—Represent the current partition output muted (volume output is 0).



—Click for monitoring audio signal of current partition.



—It means audio signal of current partition is monitored.



—Equipment or module fault appears in the system.



—It indicates that the system is currently operating in an emergency mode.



—It represents that the host is offline.



—It indicates that the network is connected.



—It represents the host starts the PSTN calling function.



—It indicates that MIC is calling.



—Green indicates that the module is working.



—Yellow indicates module failure.



—Grey indicates that the module is normal.

◆ **LED Status Description of the Equipment**

Yellow —Fault, system detect that some equipment is lost comparing to the current configuration, the normal operation of the system may be affected.

Off - indicates that the system according to the user's current configuration does not detect the equipment, or equipments work abnormally, everything runs smoothly (in the case that module is not configured, it is also off).

Green – 1. On ---- works normally; 2. Flashing ----- current partitions which are called are all switched to playing the audio with the higher priority.

Red – 1. On ---- warning; 2. Flashing ----- waiting.

◆ **The system partition status descriptions**

Partition status means that the real-time job status of local speaker loop bus, which includes the loop bus open, short-circuit, ground, normal and currently working audio. When system diagnostics speakers' partition bus that has short circuit, in order to protect the power amplifier, it will immediately stop outputting audio signal of the current partition; when system diagnostics speakers' partition bus that has grounded and open, it does not stop outputting audio signal of the current partition, but it will beep and fault indication to alert the user and record the time point of failure and failure of the partition, for the specific view, please refer to the following sections.

◆ **Attention**

1) Do not let the system equipment install in the sunlight or near a heater, because the device may become deformed or fade into the protected status due to high temperature and stop working.

2) Do not install the system device or store in a dusty, humid place, otherwise it will affect stability or cause intermittent fault when the system is working.

3) System equipment should be as far away from the strong magnetic field generated by the device, in case of high electromagnetic interferences system equipment normal operation.

- 4) System equipment VA-6000MA / MS / BC, VA-P8500S are designed specifically for cabinet installation, if you install two or more units on a cabinet, between the device and the device you should set aside the corresponding space for ventilation to maintain good heat dissipation.
- 5) In order to make the system work stably, please ensure the reliability of ground connection of the equipment.
- 6) The system does not allow parallel amplifier, which may cause permanent failure.
- 7) Remote Microphone (VA-6000FM / RM) provides phantom power, real-time testing, please do not turn off the switch at work to avoid system to report failures misjudgment.
- 8) The main equipment lines of the system all have back-up, please allocate according to the actual needs. If any serious fault happens and lead to system disorder, please contact the staff for after-sales service. Do not attempt to disassemble the internal portion for personal maintenance treatment , in order to prevent permanent damage to the device or module and avoid electrical shock.
- 9) The product is the Class I device that must be connected to a power outlet with a grounding power outlet to ensure adequate grounding device.
- 10) The equipment used the power plug is disconnected from the grid power supplies, to ensure security, please pull out the power plug after using the equipment, and make sure complete loss of the power.
- 11) Because the appearance and functions of this system will continue to upgrade, but are backward compatible, any discrepancy in kind, please in kind prevail.

2. Introduction

- Nowadays the building is higher and higher and the area need to be controlled at the same time is becoming wider and wider. If EVAC System also is designed based on the traditional analog technology, there are problems about signal attenuation from the long-distance, electromagnetic interference between different space, the cost of construction and maintain, the system centralized control and monitor, the data backup, the more redundancy and so on.
- VA-6000 is designed for solving all the above problems. It is a perfect PA system solution that meets the demands of fire alarm, public address and BGM. It is controlled by effective MPU Module without linkage problem between different systems. The system contains our Independent developed ASD technology which system automatically detect fault, SID technology which speakers circuit detect automatically, DLB technology which for data lines Automatic redundancy. It is a more stable system with low maintenance cost in the future. If you are looking for a perfect PA system, VA-6000 is your best choice. It is widely used for five-star hotel, office building, super market and stadium. Compared to VA-2000 System, it is more stable with better audio output which could bring you perfect feeling.

3. System Features

1. Conform to GB16806-2006 fire linkage system requirements and the European voice alarm control and indicating equipment standards EN54-16 requirements.
2. The system meets the various requirement including voice alarm broadcasting, business broadcasting and background music playing services, etc.
3. Automatic fault diagnosis system, data backup, line redundancy and fault state record (≤ 1000), safe, stable and reliable.
4. Compatible 3-wire and 4-wire standard wiring.
5. System built-in independent emergency voice message, prompt tone information, background music, the user can replace according to the site environment, language and love freedom.
6. The system integration can reach 592 pcs input programmable event contacts and 592 pcs programmable event output controlling points maximum, which is easy to realize the complementary with the third-party system.
7. Integrated intelligent voice telephone interface, easy operation and fire fighting network online remote control, also supports event-triggered phone call, the number of dial times is configurable.
8. Between system devices there are only one CAT5 cable, it can simultaneously transmit multichannel high-quality digital audio signals, control signals, support hand in hand mode and star wiring, wiring is simple, easy and low cost.
9. The system supports power and sources partition.
10. System programming to a partition, support shortcut key function definition, support manual, automatic, selection, grouping operations.
11. The system supports user-defined of host name, partition name, group name, intuitive, clear, easy to manage.
12. The system supports visual embedded human-machine interface operation and control, supports simultaneous operation and control of multiple windows human-machine interface, can be configured to work offline.

3. DC Power Supply and Battery Charger—VA-6000BC

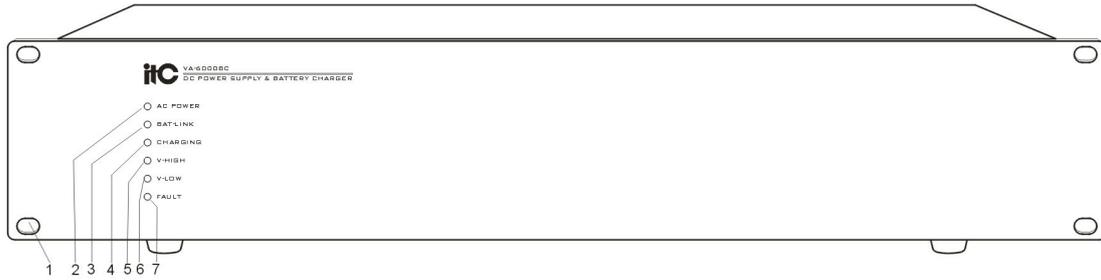
VA-6000BC is mainly used in VA-6000 system to provide stable and reliable spare DC power when there is no AC power supply. Electrical is in Storage battery with maintenance –free which adopts two DC 24V lead-acid batteries or one DC 24V lead-acid battery, Build-in battery charge management and monitoring circuit. When connected to AC power, DC 24V will be off automatically.



3.1 Features

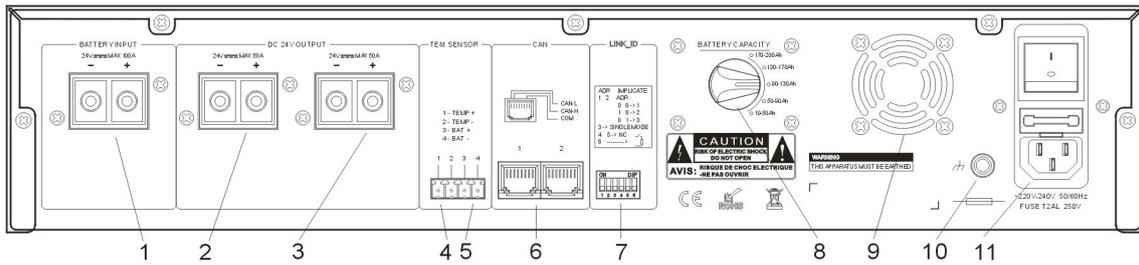
- The charging process is fully automatic. The scientific charging modes: Pre-charging →constant current →constant voltage →trickle charging.
- It has the warning functions of accumulator failure, over-high/over-low voltage, as well as the detection functions of over-high/over-low temperature and charging overtime.
- It is applicable for various accumulators, with the capacity range from 10Ah-200Ah.
- Automatic temperature-controlled fan.

3.2 Front Panel



1. Location hole and undercarriage of 19" equipment cabinet.
2. AC power indicator light:
 - Off - Charger is not connected to the main power supply.
 - Green - AC supply normal.
3. Storage battery connection status indicator light:
 - Off - Storage battery connection normal.
 - Yellow - Storage battery connection off or battery failure.
4. Charging status indicator light:
 - Off - Battery has been filled.
 - Green - Charger is charging the storage battery.
5. Charging status indicator light:
 - Off - Voltage normal.
 - Yellow - Over voltage, charging will be stopped automatically to protect the storage battery. (When the voltage reaches for 30V in the charging process, the charger will stop to work and the V-high lights up.)
6. Storage battery output under voltage indicator light:
 - Off - Voltage normal.
 - Yellow - Under voltage. This case happens when using dead storage battery for the first time, user need to change a new storage battery. (When the voltage reaches for 14V, V-low lights up and the charger will give an under-voltage warning. The charger will change the electric current to a lower level to activate the battery, until it returns to normal work.)
7. General working status indicator light of charger:
 - Off - Charger working normal.
 - Yellow - Charger fault, other failure state will happen at the same time, such as, storage battery is not connected, temperature sensor is not connected and etc. (Temperature measurement: the charger can conduct real-time detection of the temperature of the external battery. The charger can work normally in the default temperature range from 0°C to +80°C. If higher than this, the charger will fail to work. The default temperature can be changed with PC software, ranging from -25°C to +80°C.)

3.3 Back Panel



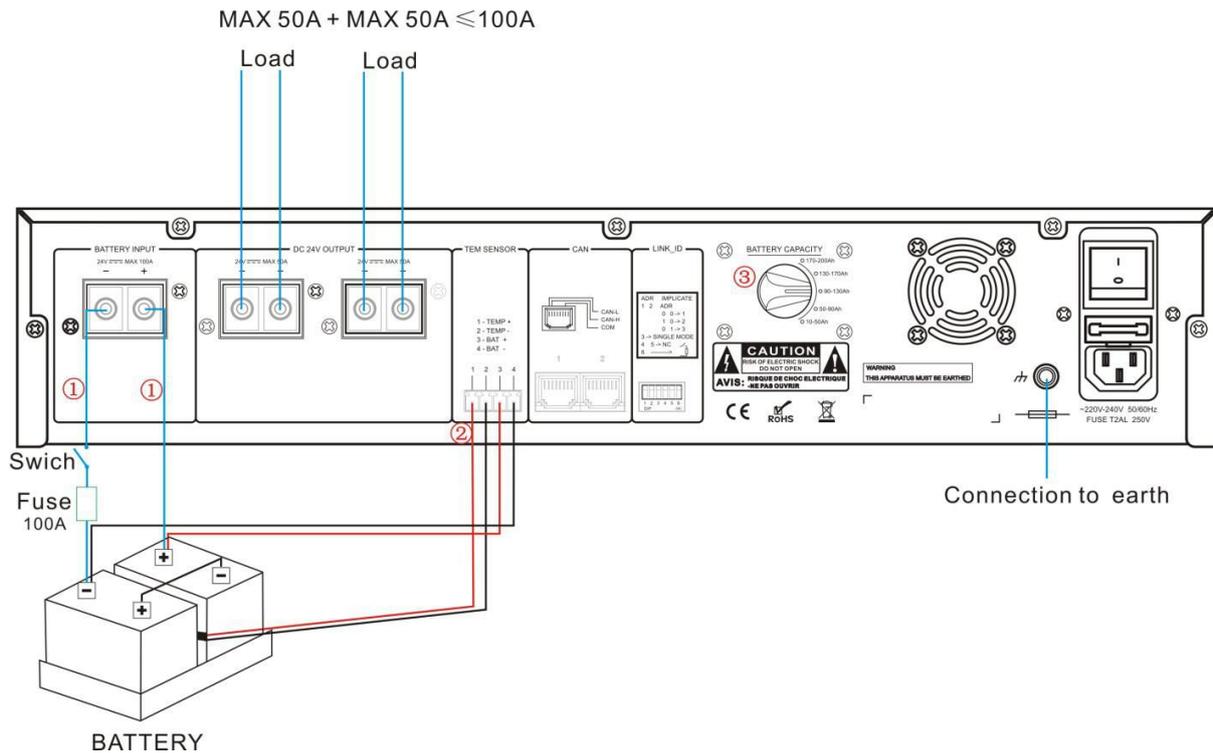
1. Storage battery connector, please note positive pole and negative pole.
- 2&3. DC24V output connector, please note positive pole and negative pole.
4. Temperature sensor input interface.
5. Storage battery voltage test input interface. Please note, it need to connect to reliable output end of storage battery, otherwise bad connection shall lead to being unable to charge, because the intelligent management basis reference input from this interface. Please note positive pole and negative pole
6. Connection interface, connect to external controller and zone amplifier.
7. Communication address, "1, 2" is communication address bit, the largest address is 3, if there is only one charger, pull off "1,2" address bit "3" means standalone working mode, please make it on when charger is not used in VA-6000 system, otherwise the charger cannot work normally; address bits "4, 5" are for reservation, no function; address bit "6" is terminal matched resistance, mainly used in abnormal communication case when many charger work online with hand in hand connection, and the "6" address bit of last charger should be on, please note only the last charger in the hand in hand connection.
8. Current accumulator capacity of tap selection switch, please select according to the current accumulator capacity.
9. Fan, when the temperature in the machine reaches some level, the fan will work automatically to lower the inner temperature of the machine. (When the temperature of the cooling fin inside the case is 35-45°C, the cooling fan come into operation. The higher the temperature is, the faster the rotate speed will be.)
10. Ground point, Please note the reliable ground connection.
11. Power switch and input socket of main power with fuse.

3.4 Specification

Electric Index	
Alternating Current power supply	
Voltage	AC ~220V, 50/60Hz
Maximum current	2A
Fuse Specification	250V/3.15A, Low speed type
Charging Parameter	
Maximum charging voltage	28.9V
Floating charge voltage	27.6V
Maximum charging current	13.7A
Rated power	400W
Heat dissipation	Temperature-controlled fan

4. Operating instructions

4.1 Connection diagram of DC electrical source & Battery charger is as following:



Remarks:

① The reference list of wire selection.

Wire Gage AWG	CSA(Cross-sect ional area) of Conductor mm ²	Max conductor resistance Ω/KM at 20°C	Environment temperature of maximum current (A) 40°C	Environment temperature of maximum current (A) 50°C	Environment temperature of maximum current (A) 60°C
12	3.332	5.31	28.4	26.2	23.7
10	5.26	3.36	37.9	34.9	31.6
8	8.37	2.11	49.8	45.9	41.5
6	13.30	1.33	66.1	60.8	55.0
4	21.15	0.84	88.4	81.3	73.5
2	33.62	0.53	121.1	111.4	100.7

② Voltage/ Temperature Sensor: The first, second, third, fourth position is representative of Temperature+ Temperature—, Voltage+, Voltage—. Pay highly attention to distinguish between positive and negative, which is can't mix connection. Otherwise the equipment is failed to charge or be damaged.

③ Tap-position selective switch of accumulator capacity: 10-50Ah, 50-90Ah, 90-130Ah, 130-170Ah and 170-200Ah are available to selection. Please choose the tap-position according to connected accumulator capacity.

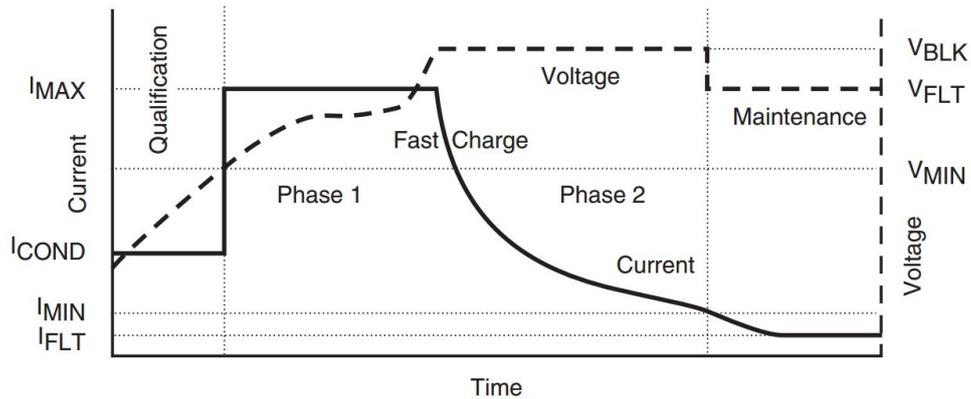
4.2 Charging graph of the charger

In order to protect the accumulator, select the appropriate electric current with the position selective switch on the rear panel, based on the capacity of the accumulator. In the pre-charging status, when the voltage reaches for 21.5V or above in 3 minutes, the charger will get into constant-current charging status. If not, the charger will get into pre-charging status, until the voltage reaches 21.5V and above. If the voltage in constant current status reaches for 28.5V±2%, the charger will get into constant-voltage charging status, and the voltage remains 28.5V± 2%;

Among them: $V_{BLK}=28.5V\pm 2\%$

$V_{FLT}=27.6V\pm 2\%$

$I_{MIN}=I_{MAX}/20$



Position and electric current are as follows:

Capacity stalls (Ah)	10-50	50-90	90-130	130-170	170-200
$I_{COND}(A)$	0.3~0.6	0.5~0.8	1.1~1.5	1.6~1.8	2.0~2.4
$I_{MAX}(A)$	1.8~2.5	3~3.7	6.9~7.8	9.8~11	13-14

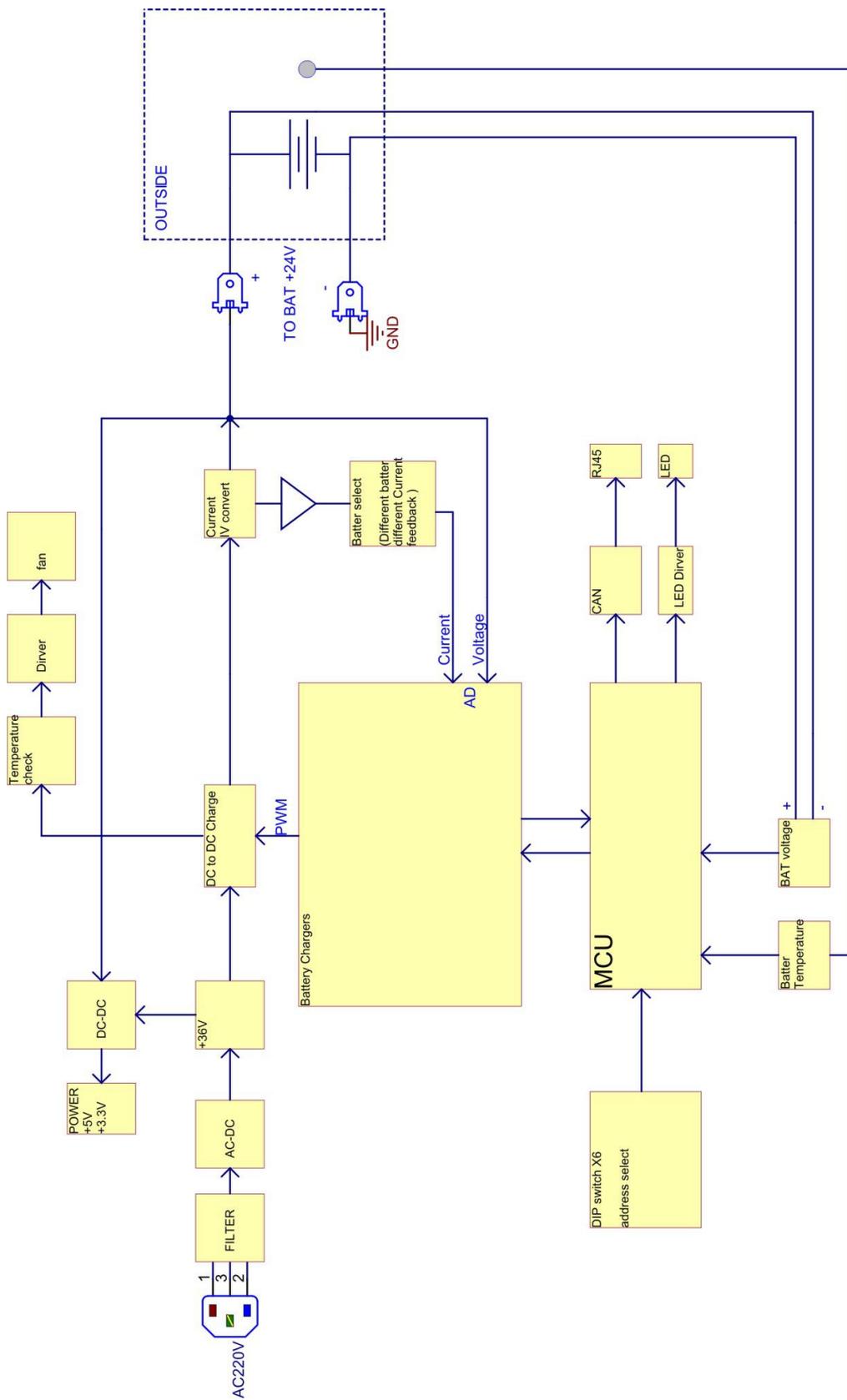
Annotation: I_{COND} for pre-charging electric current, I_{MAX} for maximum changing current.

5. Common problems and solutions

Symptom of failure	Solutions
The indicator of connection status of storage battery lights in yellow color.	①Check if the battery cable is well connected.
	②Check if the voltage detection cable linked to storage battery is well connected.
	③Check if temperature sensor cable is well connected or if the temperature sensor fails to work.
	④Check if the storage battery fails to work.
	⑤Check if the temperature range set by machine is higher or lower than the actual temperature.
The indicator of Charge Status is Off.	①Check if the storage battery is well connected.
	②Check if the storage battery fails to work.
	③Check if the AC power supply is well connected.
When the output of the battery voltage is too high,the indicator lights in Yellow color.	①Check if the voltage of storage battery is too high.
When the output of the battery voltage is too low,the indicator lights in Yellow color.	①Check if the storage battery cable is well connected.
	②Check if the storage battery fails to work.
	③Check if the storage battery voltage is too low.
The indicator of Working status of Chargers always lights in yellow color.	①Check if the storage battery cable is well connected.
	②Check if the voltage detection cable linked to storage battery is well connected.
	③Check if temperature sensor cable is well connected or if the temperature sensor fails to work.
	④Check if the battery cable is well connected.
	⑤Check if the storage battery fails to work.
	⑥Check if the AC power supply is well connected.
	⑦Check if the voltage of storage battery is too high.
	⑧Check if the temperature range set by machine is higher or lower than the actual temperature.

Note: Due to development of the product, there is no notification even the content has been changed.

6. Block Diagram



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Version: 0.2