



Powerinverter

Líderes en transformaciones de energía



1. Chapter 1 24/48/110/220VDC Power Supply System

A. Outline of 24/48/110/220VDC Power Supply System

Picture	Picture
2*Rectifier module	3*Rectifier module
<p>Shelf type</p>	
6*Rectifier module	10*Rectifier module

Rectifier system in Cabinet	24/48/110/220Vdc Rectifier module for option 48VDC 50A 2400W/24VDC 70A 1680W 110VDC 20A 2200W/220VDC 10A 2200W
-----------------------------	--

B. Standard Full Configuration

- 24V/48V/110V/220Vdc rectifier module for option: 1-10pcs
- M30 monitoring modules: 1pc
- AC/DC distribution frame: 1pc

C. technical Properties of 48VDC Power Supply System

48V embedded power supply system is suitable for small scale program controlled exchanges .access networks, transmission equipment, mobile Communications, satellite communication ground stations, microwave communications and other communication equipment.

2. Chapter 2 Rectifier Modules

A. Rectifier Modules indicators

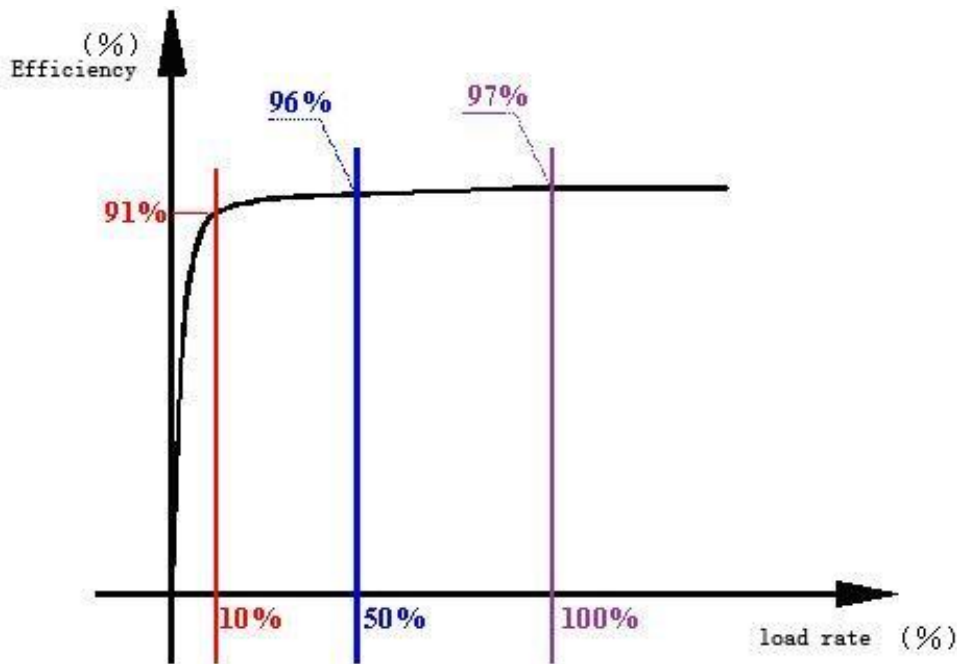
The fronts of each rectifier modules have three Led indicators, power supply indicator, communication indicator, failure indicator



Indicators	Normal state	Abnormal states	Reasons
Power supply Indicators	On	Off	No AC input or input fuse is damaged
Communication Indicators	Off	Flash	Communication damage
Failure indicators	Off	On	There is a damage inside the module

B. Soft switch

Circuit of the Rectifier modules have two parts, one is PFC adjustment; the other is DC/DC transformation. All technically make the wide input voltage range (90V-290V) and high efficiency (above 96%)



C. Forced wind cooling

Advanced design of Circuit makes for low-heating.

D. Hot swappable

The monitoring module is hot-pluggable. The damaged modules can be replaced without stopping the system operation.

E. Protection & failure indicator

F. Auto equalize output in low-gap voltage of modules

G. Set limited-current value step less

H. Monitor

The monitoring module provides communication ports for communication with the host. The communication functions that can be carried out include:

- 1) Sending real time analog data from the monitoring unit to the host
- 2) Sending real time digital data from the monitoring unit to the host
- 3) Sending alarm and status messages to the host
- 4) Receiving control commands from the host such as on/off of rectifier modules
- 5) Receiving system configuration parameters set by the host and giving feedback of the system configuration parameters to the host.

1. 48Vdc Rectifier module Technical Properties

AC Input properties	
Input	185~300VAC normal output (220Vac)
	85~185VAC reduce output(110Vac)
DC Output properties	
48VDC output	maximum output power 3000W(220Vac)
	Max output power (1500W)(110V ac)
DC output voltage range	42-v-59v

DC output current	50A
DC output maximum current	50A
Voltage regulation precision	≤ 0.6%
Load regulation	≤ 0.5%
Voltage regulation	≤ 0.13%
limited-current output properties	
Range:	0~110%
Power factor	0.99(input and out being rated)
Efficiency	≥ 93%
Equalized-current imbalance	≤ 3%
DC output noise	
Weighted psophometric noise	≤2mv
Wide frequency noise voltage	≤100mv (3.4 kHz~150 kHz)
	≤30mv (150 kHz~30 MHz)
	≤200mv (within 20 MHz)
Noise	≤45dB (A)
Protection	
Over-current protection	Over-current protection of input (use fuse) Over-current protection of output (use fuse) Over-current protection of PFC (use diverter)
Alarm & Protection	Yes
Short circuit protection (reduce input current to protect)	Yes
Over-voltage & low-voltage protection	Input low-voltage protection: 85+5V Input over-voltage protection: 290 ± 5V Output over-voltage protection: 58.5±1V
Over-voltage protection	Yes
Low-voltage protection	Yes
Over- temperature protection	(default value 80°C)
Environment	
Work tem	-25°C ~ 65°C
Storage tem	-40°C ~85°C
Relative humidity	≤97%RH
Height above sea level	≤2000m
Size of the module	
Size	88mm (H)×103mm (W)×261mm (L)
Weight	≤2.4 kg

J. 24Vdc Rectifier module Technical Properties

AC Input properties	
Input voltage (Vac)	220Vac
Input voltage range (Vac)	290V-185Vac ($\pm 10V$)
Enter the frequency	Rated input frequency: 50 / 60HZ, fluctuation range: 45Hz ~ 66Hz
DC Output properties	
Rated output current (A)	70A
Rated output power (W)	2000W
Rated output voltage (V)	24V
Output voltage range (V)	20-30Vdc
All charge voltage (V)	28.2V
Float voltage (V)	26.7V
Output voltage accuracy (V)	$\leq 0.6\%$
Output ripple voltage	$\leq 200mV < 0-20mHZ >$
Power Factor	0.99
Dielectric strength	Output- chassis: 500Vdc
Leakage current	$\leq 1.5mA$
Effectiveness	93%
Environment	
Dielectric strength	1500Vac, 1min
Noise (1 meter)	$\leq 40dB$
Use the ambient temperature	$-20^{\circ}C \sim +50^{\circ}C$
Humidity	0~90%, No condensation
Use altitude (m)	≤ 2000
Indicator	
LCD display	Input and output voltage, frequency, output current, temperature, percentage and so on
Power status	Mains normal, the output is normal, the battery voltage, output overload
Dimension & Weight	
Size	260*103*88mm (D*H*W)
Weight	≤ 2.4 kg

K. 110Vdc Rectifier module Technical Properties

AC Input properties	
Input voltage (Vac)	220Vac
Input voltage range (Vac)	290V-185Vac ($\pm 10V$)
Enter the frequency	Rated input frequency: 50 / 60HZ, fluctuation range: 45Hz ~ 66Hz
DC Output properties	
Rated output current (A)	20A
Rated output power (W)	2000W
Rated output voltage (V)	110V
Output voltage range (V)	90-130Vdc
All charge voltage (V)	121V

Float voltage (V)	127V
Output voltage accuracy (V)	≤0.6%
Output ripple voltage	≤200mV<0-20mHZ>
Power Factor	0.99
Dielectric strength	Output- chassis: 500Vdc
Leakage current	≤1.5mA
Effectiveness	93%
Environment	
Dielectric strength	1500Vac, 1min
Noise (1 meter)	≤40dB
Use the ambient temperature	-20°C ~+50°C
Humidity	0~90%, No condensation
Use altitude (m)	≤2000
Indicator	
LCD display	Input and output voltage, frequency, output current, temperature, percentage and so on
Power status	Mains normal, the output is normal, the battery voltage, output overload
Dimension & Weight	
Size	260*103*88mm (D*H*W)
Weight	≤2.4 kg

L. 220Vdc Rectifier module Technical Properties

AC Input properties	
Input voltage (Vac)	220Vac
Input voltage range (Vac)	290V-185Vac (± 10V)
Enter the frequency	Rated input frequency: 50 / 60HZ, fluctuation range: 45Hz ~ 66Hz
DC Output properties	
Rated output current (A)	10A
Rated output power (W)	2000W
Rated output voltage (V)	220V
Output voltage range (V)	180-260Vdc
All charge voltage (V)	242V
Float voltage (V)	253V
Output voltage accuracy (V)	≤0.6%
Output ripple voltage	≤200mV<0-20mHZ>
Power Factor	0.99
Dielectric strength	Output- chassis: 500Vdc
Leakage current	≤1.5mA
Effectiveness	93%
Environment	
Dielectric strength	1500Vac, 1min
Noise (1 meter)	≤40dB

Use the ambient temperature	-20°C~+50°C
Humidity	0~90%, No condensation
Use altitude (m)	≤2000
Indicator	
LCD display	Input and output voltage, frequency, output current, temperature, percentage and so on
Power status	Mains normal, the output is normal, the battery voltage, output overload
Dimension & Weight	
Size	260*103*88mm (D*H*W)
Weight	≤2.4 kg

Chapter 3 Monitoring Modules

A. Appearances of monitoring module

Each front of M30 monitoring modules has LCD screen, keystroke, and indicators. It can display data of the system in real time; you also can change setup by keystroke.

Indicators	Normal	Abnormal	Reasons
Power supply indicator	On	Off	No AC input or input fuse is damaged
Equalized & floating charge indicator	Off	On	Equalized charge(On) Floating charge(Off)
Failure indicators	Off	On	There is a damage inside the system

B. Specifications & Functions

- Input specifications
- Rating dc input voltage: 48VDC
- Range of voltage: 40V~60VDC
- Work temperature: -25°C~ 65°C

C. Display & Setting

Monitoring module can display all information of the system Running parameter, states, warning, setting parameter, control parameters About the keystroke: “ESC” “Δ” “▽” “ENT” you can press the keys to change the value, and you also can save the change.

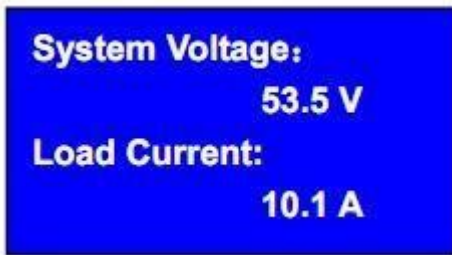
D. Operation process

1. Screen Home

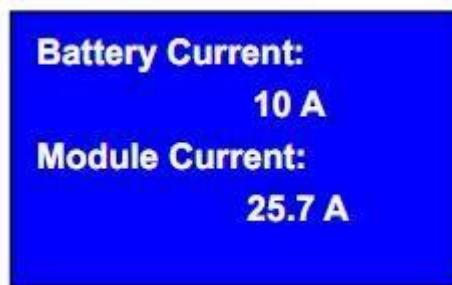


If you want Operate First page To Five page , Press “ENT” and you can check the warning message

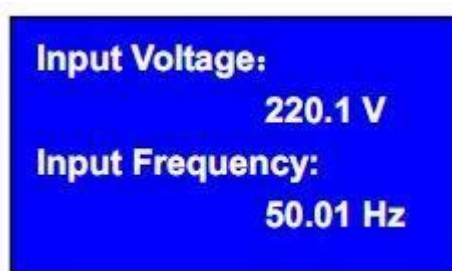
2. *The first page of menu:*



The second page of menu



3. The third page of menu:



4. The four page of menu



5. The five page of menu



6. Modules info:



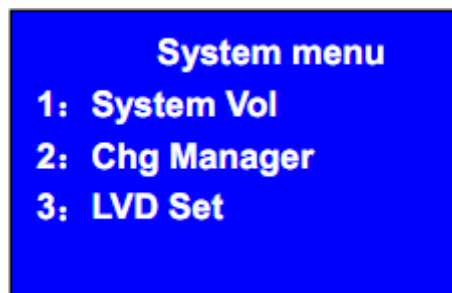
Display module 1-N info

7. Input password:



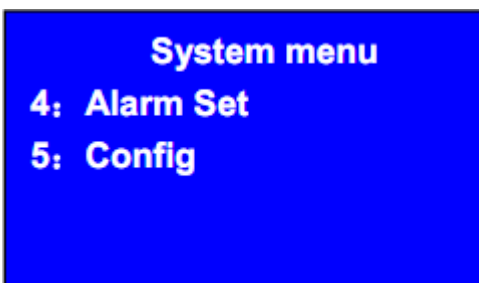
Input correct password, then you can change system setting

8. The first page of main menu

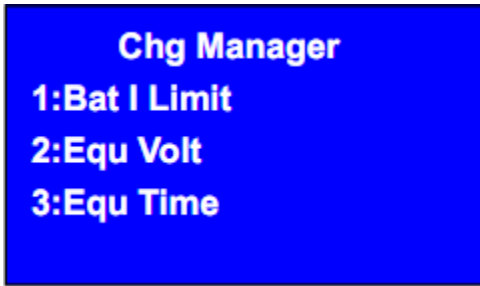


System main menu, you can press Δ ∇ do your choice

9. The second page of main menu



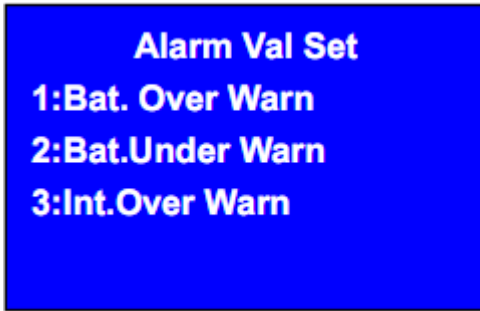
10. The first page of charge



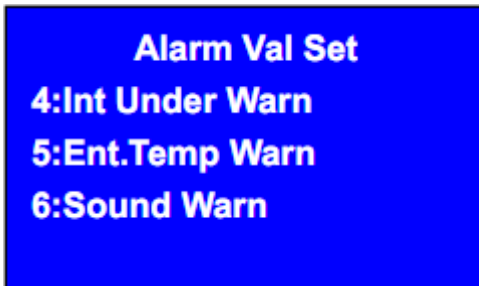
Charge management, you can press Δ ∇ do your choice

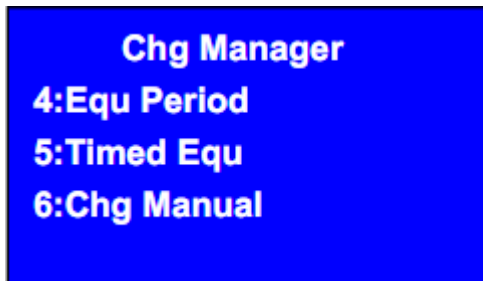
11. The second page of charge

12. The first page of alarm menu

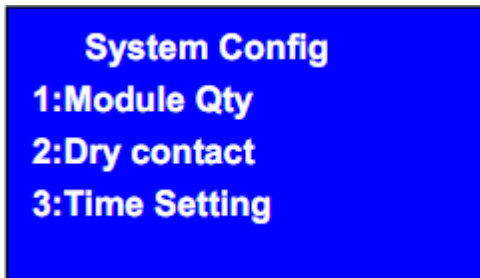


13. The second page of alarm menu





14. Setup of low-voltage break away



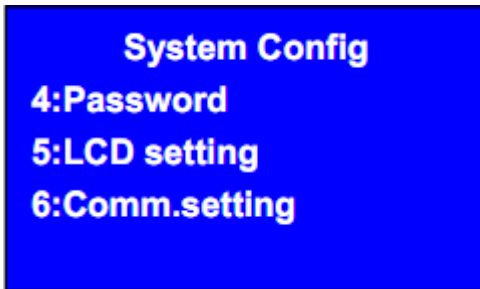
You can press Δ ∇ do your choice

Alarm menu setup

Alarm menu setup

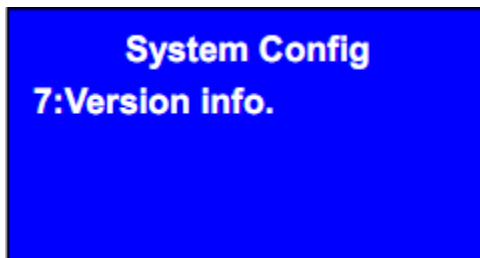
You can press Δ ∇ do your choice

15. The first page of configure



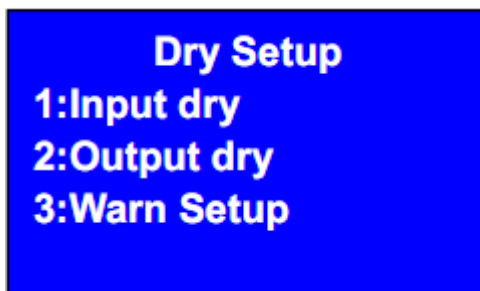
You can press Δ ∇ do your choice

16. The second page of configure



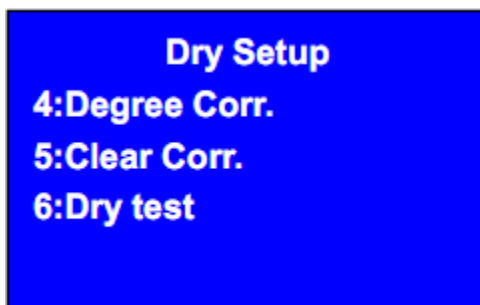
You can press Δ ∇ do your choice

17. The first page of Dry contact



You can press Δ ∇ do your choice

18. The second page of Dry contact



You can press Δ ∇ do your choice

E. Control & communications

The 48VDC System can release control signals according to certain monitored measurement result or the control commands from the host. Its control functions include:

- 1) Turning on/off the rectifier module according to the corresponding commands sent by the host.
- 2) Starting/stopping the fans according to the control mode and start/stop temperature sent by the host and the present temperature.
- 3) Turning on/off the power for loads of batteries according to the corresponding command and system parameters sent by the host
- 4) Controlling the on/off status of two digital outputs according to the control command sent by the host
- 5) Controlling the equalized /floating charge statuses according to the control command, control mode and system parameters sent by the host
- 6) Controlling audio/visible alarm according to the present alarm status of the system
- 7) Starting/stopping the test on battery discharge according to the control command, and present system status sent by host.
- 8) Controlling the battery OTP according to the control command. control mode and system parameters sent by the host

F. Protection against loss of power

In the case of power failure in monitoring module, the configured parameters can be maintained. Send through the host the command to restore the default configuration, and the default configuration and control mode can be used once the module is powered on.

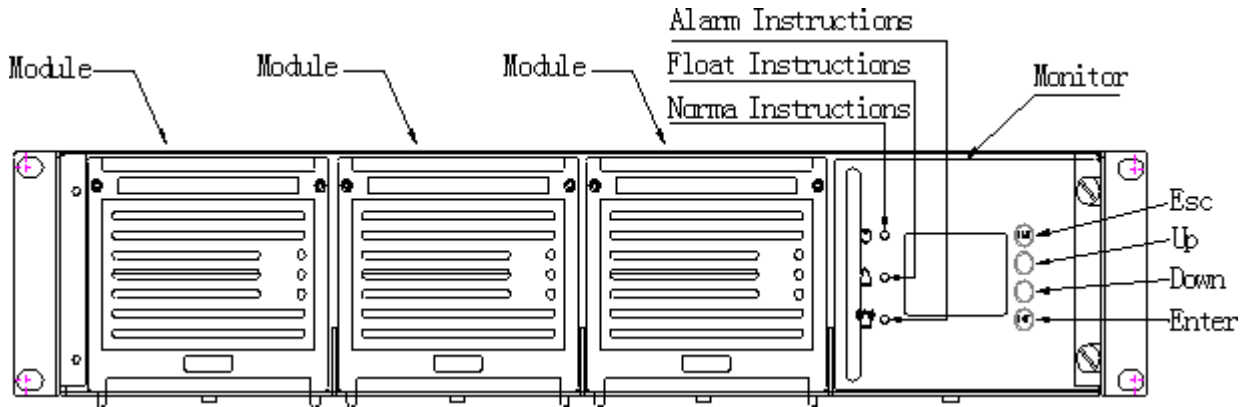
G. Automatic battery management

The 48VDC system monitoring modules have professional battery automatic management function that can ensure the desirable performance of battery groups.

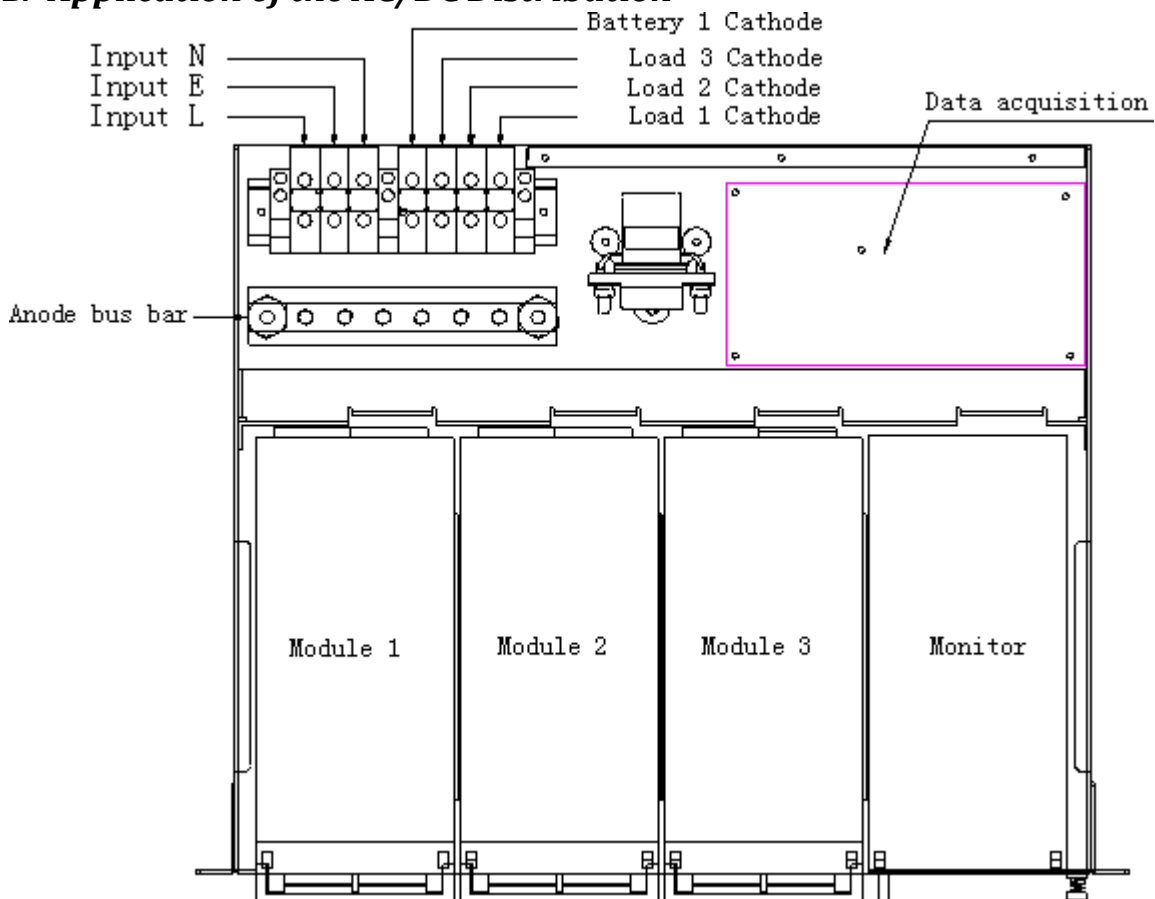
3. Chapter4 AC/DC Distribution Frame

A. Appearance of AC/DC Distribution Frame

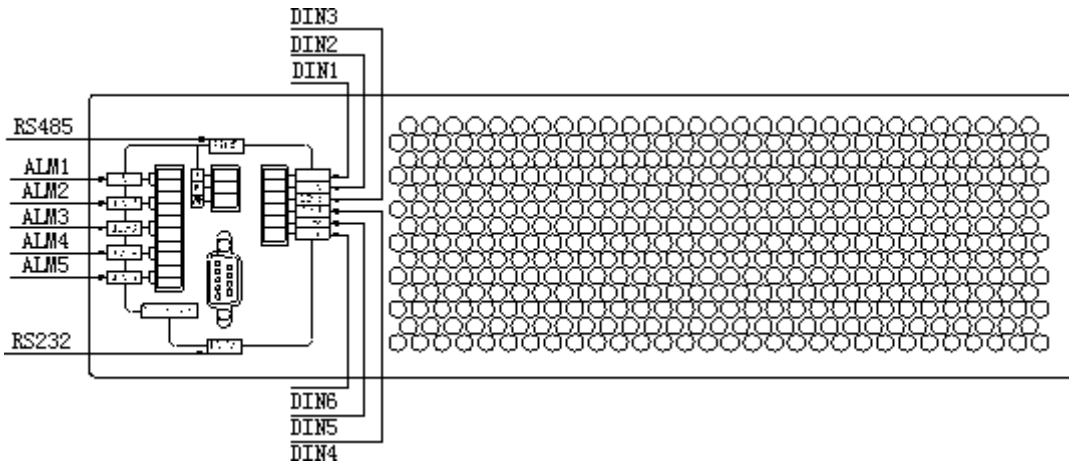
Outline of AC/DC Distribution unit



B. Application of the AC/DC Distribution



C. Communication Dry Contact



About dry contact, Refer to the Up picture

- Din 1-2 Emergency Situation
- Din 3-4 important Situation
- Din 5-6 Ordinary Situation

Emergency situation : AC City Power fail ,LVD I,LVD II break away , Modules Over Voltage ,Module failure of modules fan

Import Situation: loads switch alarm 、 batteries switch alarm

Ordinary situation: batteries over-tem, modules communications