

# Power Supply System for BTS Site

48V600A extendable to 1000A

**FnS Power Technology Inc.**

## 48V600A(30KW) Power System Solutions and configurations

### 1 FS-Rectifier-48V50A Module parameter

Technical specification



48V50AH

#### 1.1 Input

Rated voltage	One way 220 V <sub>ac</sub>
Working voltage range	<b>175 ~295V<sub>ac</sub></b> ( 220Vac-20%~+35%) ,100% rated capacity output 85 ~ <b>185V<sub>ac</sub></b> ( 220Vac-60%~-20%) , <b>650W~2950W</b> linear limitation power output
Over voltage protection	When voltage is higher than 300± 5V <sub>ac</sub> , the module will be cutoff automatically; When voltage recovers to <b>275±5V<sub>ac</sub></b> , it recover automatically.
Low voltage protection	When voltage is lower than 80 V <sub>ac</sub> , the module stop working; it recovers when voltage returns to 120 V <sub>ac</sub> .
Current	≤18A
Frequency	45~66HZ
Watt	≥0.99(rated full load output)

#### 1.2 Output

Voltage	48V ( 43~57.6Vdc adjustable )
Current	50A@57.6V
Maximum output watt	2950W
Units in parallel and current equalizing	≤±5%
Stabilized voltage precision	≤±0.6%

Protection	Output over voltage protection, over current protection, low voltage protection, short circuit and over heat protection
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### 1.3 Other

Efficiency	≥95% (rated full load output)
	≥96% (50% load output)
Cooling method	Temperature controller fan cooling
Working temperature	-10~+50℃
Storage temperature	-40~+70℃
Relative humidity	≤95%
Altitude	≤4000m, output 100%
Protection level	IP20
Wave voltage	≤200mVp-p
Weighing noise	≤2mVrms
Reliability	MTBF>1×10 <sup>5</sup> h
Load effect	≤±0.4%
Recovery time for load effect (dynamic response)	≤200μs
Source effect( power grid adjustable rate)	≤±0.05%
Soft starting time	≥3s
Size	85.5mm( Width)×268mm( Depth)×176.5mm( Height )
Weight	3.3kg
Power density	0.77 w/cm <sup>3</sup>

### 1.4 Electromagnetic compatibility

Transmission	Comply with YD/T731, YG/T983
Radiation	Comply with YD/T731, YG/T983
Anti-interference	Comply with YD/T731, YG/T983, IEC61000-4
Safety	Comply with GB4943, IEC60950, passed CE, CB certification
Insulation characteristic	Insulation resistance >2MΩ Input to ground 3.0K V <sub>ac</sub> Input to output 3.0K V <sub>ac</sub> Output to ground 1.50Vac

## 2. FS-Monitor Module parameter



Adopting big size LCD to display system information, alarm, operation menu with Chinese / English

The user interface is simple and effective, can display system's operating parameter, operating status, alarm status, setting parameter, system setting data and control parameter.

Battery monitoring function:

Period, hand operation, automatic equalizing / floating charge convert .

Battery on line discharge test

Battery charging voltage temperature compensation function

Battery charge current limitation

Battery over discharge protection and second electricity function

With temperature monitoring function (about the ambient temperature, fog alarm and etc...)

The monitoring module can be intelligent sleeping automatically to save energy.

Alarm output: can provide eight route breakers output (the contact rated capacity is 1A/60VDC or 0.5A/125VDC).

The users can check the history and current alarm records. The history alarm record includes alarm type, occurrence time and ending time. The current alarm record includes alarm type and occurrence time, the display orders show per occurrence order time. The history alarm records can be kept 200pcs max circularly.

The monitoring module would communicate between main board at the background and sub-equipment; the communication at the background would support RS232/RS485/Ethernet and can support remote monitoring.

## 3 Rectifiers Cabinet

FS048-1500A (48V/1500A) is the modules cabinet, the upper rack is control unit, the middle is 5

rectifiers sub-rack, each sub-rack can assemble FS-Rectifier-48V50A \* 6pcs rectifier modules, The bottom is AC input unit.



Input voltage		220Vac, -20%~+35%, can insert 380Vac;
Output voltage		48V
Output current (full load)		600A(Expandable to1000A)
Rectifier module		12(Expandable to20)
DC power distribution loop voltage drop		≤500mV ( full load output )
AC anti-thunder		Compliant , In=20KA
Units in parallel and current equalizing		≤±5%
Stabilized voltage precision		≤±1%
size (Width*depth*height mm )		600×600×1600
Weight		100kg ( with including rectifier modules )
Auto-control function	Protection function	The system has over voltage, over current, low voltage, short circuit, over temperature protection function, with auto recovery function for over voltage, over current, low voltage and over temperature function.
	Battery auto-charging function	The battery begins to discharge after power cut of the system, the control module keep the discharge record automatically. And then system restart after electricity power recovery, and it will tell from battery discharging capacity/discharge time to determine equalizing charge or floating charge,, after equalizing charge finished and turns to floating charge automatically. The whole charging process

		controlled automatically.
	Temperature auto-compensation function	Along with the change of battery ambient temperature, the system's floating charge voltage adjust by 1 ~ 5mV/cell/ °C , the temperature of battery is higher than floating charge voltage is lower, or the battery temperature is lower than floating charge voltage is higher.
	Battery charging current limitation function	The system has battery charging current limitation function, the current limitation value would adjusted by battery capacity and it doesn't influenced by change of load.
	Battery cutoff function	The system can be settled twice cutoff protection value per battery's setting, according to battery discharge voltage to cut different load at different time-phased to avoid battery over discharge. At the same time, to make sure the transmission equipment to maintain the longest power supply.
	Battery capacity on-line test	The system is controlled by main monitoring module, it makes battery capacity on-line test under normal load and well-known battery capacity.

### 4 DC distribution cabinet

Load Circuit Breaker	2×80A , 18 x 63 A
Load Fuse	5×355A, 10×500A
Battery Fuse	3×1250A
size (Width*depth*height mm )	600×600×1600
Weight	80kg ( with including rectifier modules )





