ESPOWER

PRODUCT CATALOG 2022

POWER SUPPLY & POWER CONVERSION SYSTEM

ESPOWER

POWER SUPPLY & POWER CONVERSION SYSTEM

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Portable type

Rack type

Description

The "ESPOWER" Automatic Voltage Stabilizer (AVS) is electronic controlled and operated by Precision Servo Motor to distribute high precision AC voltage output. The front panel is designed for simple operation combine with LED Digital Meter which display for voltage and current output. It has excellent features, such as small waveform distortion, high efficiency, high power factor, free from the effect of frequency variation. It can be widely used in most situations where the voltage stabilization is required. The AVS series has two regulator voltage output, 110VAC and 220VAC which suitable for ;

- Resistive load such as Heater, Incandescent lamp, etc.
- Inductive load such as Electric Motor, Electric Drill, Air Conditioner, etc.

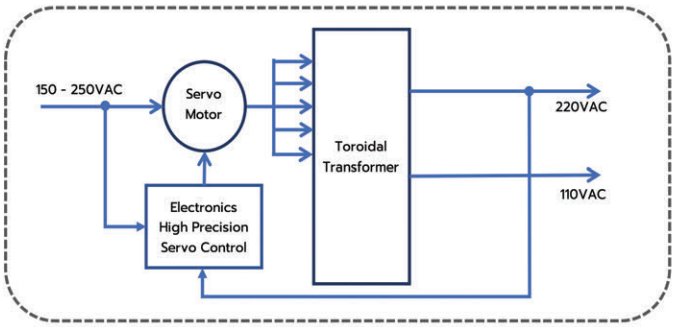
Features

- Power factor : ≥ 0.8
- Frequency : 50/60 Hz
- Pure sine wave AC output
- Response time : Less than 1 second
- Operating temperature : -10°C to 40°C
- 2 Output voltage : 110VAC and 220VAC
- Wide range of AC input voltage : 150 - 250V
- High efficiency : > 96% (from half load to full load)
- LED front display output for voltage & current output

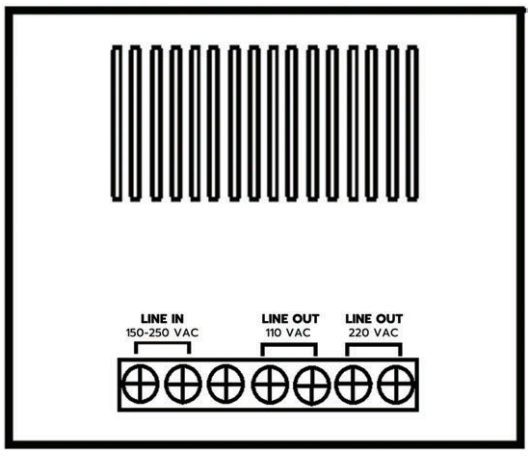
Application

- Computer system
- Sound system
- Communication system
- Security system
- CNC Machine
- Medical equipment
- Laboratory test equipment
- Industrial process control system

Block Diagram



Connecting Diagram



Specification

Connections	Hard wired connection 110VAC / 220VAC (Front AC Plug 220VAC)
Display panel	Output AC Voltmeter / Output AC Ammeter
Operating temperature	0 - 50°C
Insulation resistance	> 5MΩ
Relative humidity	< 96%

Model	Input (VAC)	Rating (kVA)	Max. Current (A)	Dimension (WxHxD) mm.	Weight (kg)
AVS-2k-P	150 - 250	2	7.5	240x185x450	11
AVS-3k-P		3	11		12.5
AVS-5k-P		5	18.5		14
AVS-3k-R		3	11	4U	12.5
AVS-5k-R		5	18.5		14
AVS-7.5k-R		7.5	28		19
AVS-3k-W		3	11	260x390x150	27
AVS-5k-W		5	18.5	260x410x180	32
AVS-10k-W		10	37		45
AVS-10k-T		10	37	310x520x340	35
AVS-15k-T		15	54	495x820x465	57
AVS-20k-T		20	70		61
AVS-30k-F	280-430	30	63	600x940x545	110
AVS-40k-F		40	84	710x1210x610	149
AVS-50k-F		50	105		159
AVS-60k-F		60	126		170
AVS-70k-F		70	147	710x1450x610	202
AVS-80k-F		80	168		205
AVS-90k-F		90	189		220
AVS-100k-F		100	210		224

Product Coding

AVS-5k-R-1P

Basic type

Output power (VA)

- 2k
- 3k
- 5k
- 7.5k
- 10k
- 15k
- 20k
- ↓
- 100k

Type

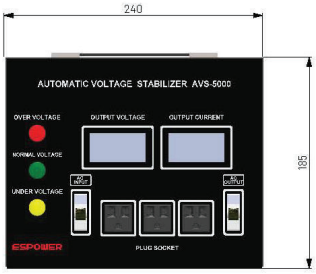
P	Portable type (2/3/5kVA)
R	Rack type (4U) (3/5/7.5kVA)
W	Wall type (3/5/10kVA)
T	Tower type (10-20kVA)
F	Free standing type 3P (30-100kVA)

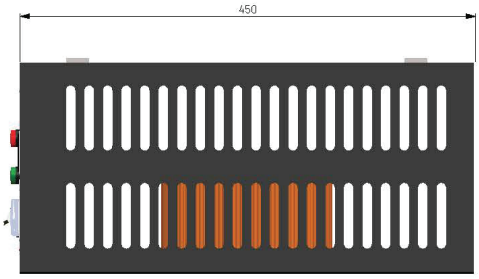
Phase

1P	Single phase
3P	Three phase

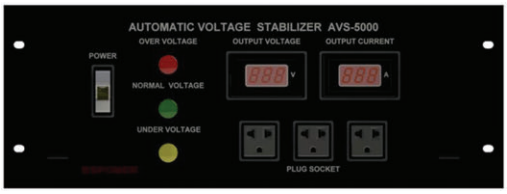
Dimension

Portable type





Rack type (19")



Tower and Free standing type

Description

OTTS (ATS) series open transition transfer switch, is used in DC power system and AC power supply system with frequency of 50Hz/60Hz, rated working voltage is AC 690V or up to DC 250V, rated working current is 80A up to 500A. When main power supply fails, (ATS) switch to standby power supply automatically to ensure reliable power supply.

Features

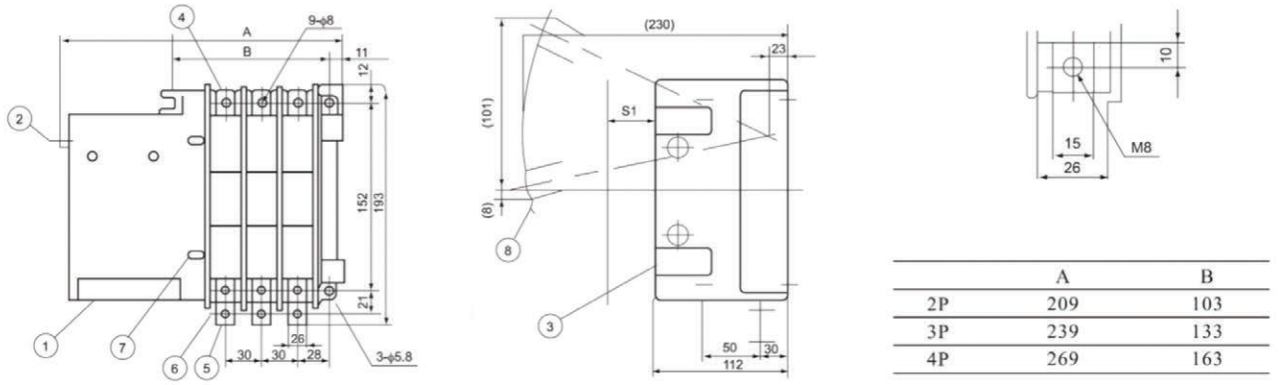
Connection mode	Front panel connection, back panel connection
Operation mode	Open transition type
Structure	Compact design with electrical operation and manual operation
Characteristics	Quick transfer speed (transfer time is 0.1 - 0.2s)
Conversion mode	Power network - Power network Power network - Generator
Safety mode	Mechanical latch
Classification	Two steps (Double throw)
Number of poles	2, 3, 4 poles
Frame current	125, 250, 500
Current rating	80, 100, 125, 160, 200, 225, 250, 300, 350, 400, 500
Ambient temperature	-5°C ~ +50°C
Standards	GB 14048.11, IEC 60947-3, IEC 60947-6-1

Specification

Model		OTTS (ATS)								
Contact rated voltage		AC 230V / 400V / 690V, DC 48V / 125V / 250V								
Coil voltage		AC 230V, DC 48V / 110V / 125V / 220V / 250V								
Rated current		80A - 125A			160A - 250A			300A - 500A		
Poles		2P	3P	4P	2P	3P	4P	2P	3P	4P
Weight (kg.)		5	5.5	6	6	8	10	11	14	18
Operating current (A) at control voltage	DC 48V	3	3	3	3	3	3	5	5	7
	DC 110V / 125V	3	3	4	3	3	5	5	5	7
	DC 220V / 250V	1.5	1.5	2	1.5	1.5	2.5	2.5	2.5	3.5
	AC 230V	1.5	1.5	2	1.5	2	2.5	2.5	2.5	3.5
Capability	Short time withstand current (kA)	5			10			12		
	Short time rated limit current (kA)	12.5			25			30		
Transfer time (ms.): power A side	Making	55								
	Breaking	20								
Transfer time (ms.): power B side	Making	80								
	Breaking	20								
Connecting way		Front connection								
Auxiliary switch		Switch capability AC100V/5A, AC220V/2.5A, DC100V/0.5A								
Life service		Electrical life 2500 numbers, mechanical life 10000 numbers								
Operating recycle time		120 numbers/hour								
Accessories		Protection cover and manual operated handle								

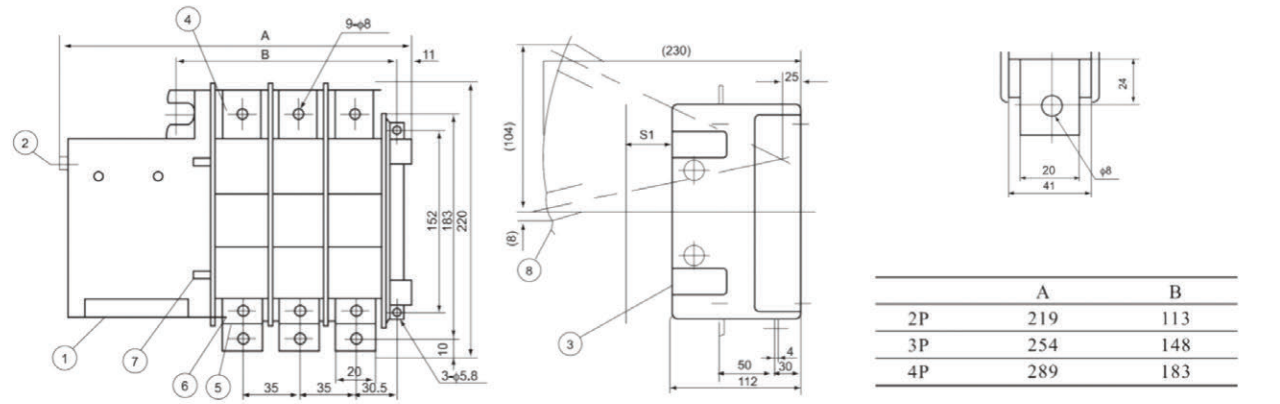
Dimension

80A-125A Panel safety distance (Space dimension) : 30mm. (400V), 60mm. (690V)



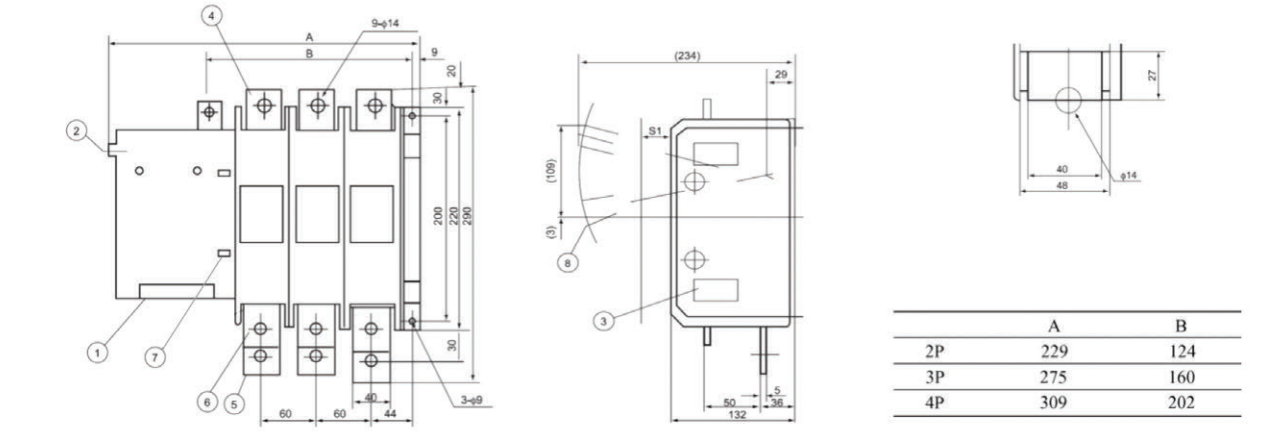
	A	B
2P	209	103
3P	239	133
4P	269	163

160A-250A Panel safety distance (Space dimension) : 30mm. (400V), 60mm. (690V)



	A	B
2P	219	113
3P	254	148
4P	289	183

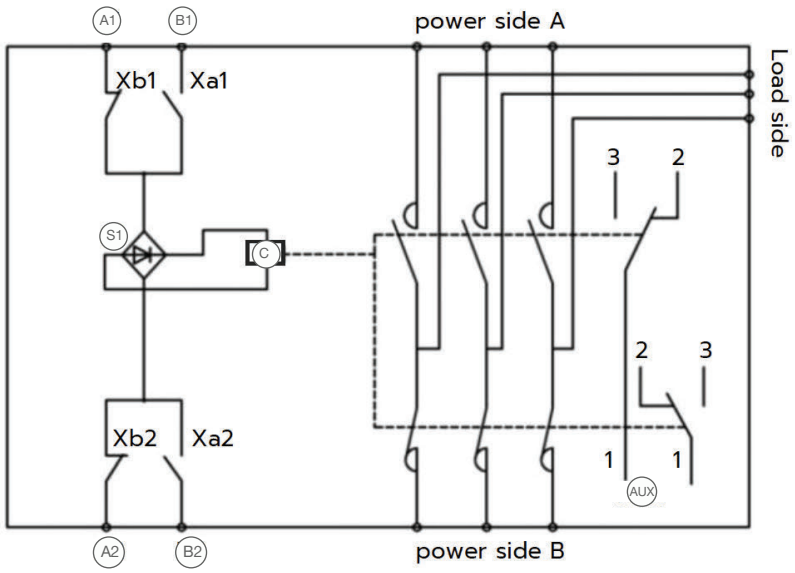
300A-500A Panel safety distance (Space dimension) : 30mm. (400V), 60mm. (690V)



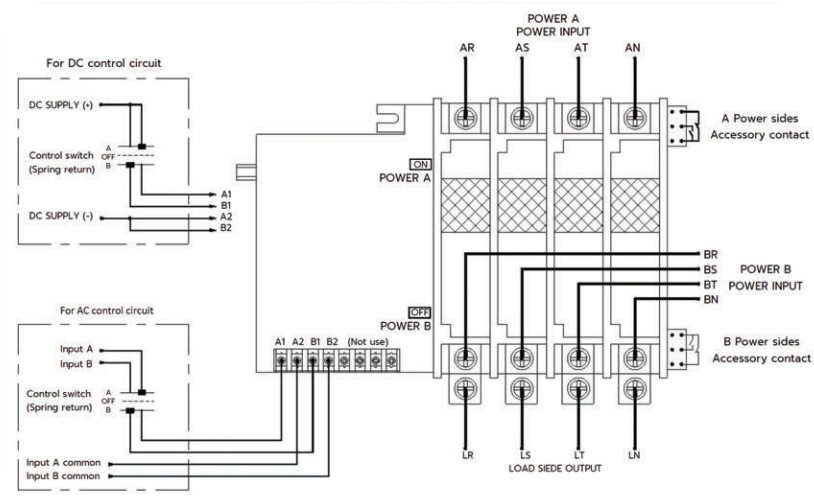
	A	B
2P	229	124
3P	275	160
4P	309	202

① Control circuit terminal
② Hand - operated handle entrance
③ Auxiliary switch
④ A Power side main terminal
⑤ Main terminal load side
⑥ B Power side main terminal
⑦ ON/OFF position selector
⑧ Hand - operated handle
(Movable type)

Control Circuit Diagram



B1 B2 Internal control switch
A1 A2 Internal control switch
C throw in coil
S1 Rectifier
AUX Auxiliary switch
AT1 - AT2 A Power side tripping terminal
BT1 - BT2 B Power side tripping terminal



Note : A1-A2, B1-B2 Input signal import by AC/DC as per rate control supply of device.
: Do not supply continue of both sides.
: A, B auxiliary contact can be use in connecting the signal of indication or alarm function, and that depends on the customer requirement.

Product Coding

OTTS-2P-125A-125VDC

Basic type	Poles	Rated current	Control voltage
OTTS(ATS) : Open Transition Transfer Type	2P	80A	48VDC
	3P	100A	110VDC
	4P	125A	125VDC
		↓	220VDC
		500A	250VDC
			230VAC

Description

Advances in the high-level information society required 24-hour uninterruptible service of power supply, and the demand for power loss to other power without power loss increased. Our CTTS can detect voltage differences and frequency differences between the two power sources and check the synchronous conditions to automatically cut other power sources.

USE of CTTS

- Due to the large number of PLANT facilities affected by CTTS main purpose and power outage, if causes voltage loss or power loss on commercial power, or if is likely to occur on long-term restoration load, it can be switched from commercial power to electricity.
- In case of a planned power outage, such as a regular inspection of electric facilities, the power cut may be uninterrupted.

Specification

Phase	DC, Single-phase, Three-phase
Rated voltage	110V / 220V / 380V / 440V
Rated frequency	50Hz - 60Hz
Rated current	100A / 200A / 400A / 600A / 1000A / 1600A / 2000A
Control voltage	DC 48V / 110V / 125V / 220V / 250V, AC 230V
Phase difference in synchro	Within ten degrees of electricity
Frequency difference at transfer	Within 0.2Hz
Voltage at transfer	Within 5% of the voltage difference from util. side use

Characteristics

- This is an uninterruptible switch with closed transition type operation mechanism, which temporarily switches power to both commercial and power generation at the same time and then switches to the control direction.
- It is possible to switch to uninterruptible during parallel operation of both power sources. The trip structure also enables the neutral position (positive power off). The same operation as the existing CTTS is possible. A->OFF B, B->OFF A and A->OFF->A, B->OFF->B Operation are possible. Overlapping switching and Not overlapping are also possible according to the operating instructions.

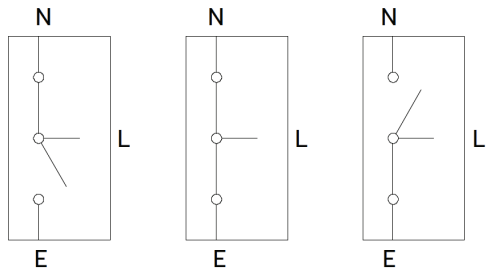


FIG.1 Closed transition transfer to emergency source. (Test or changing power source)

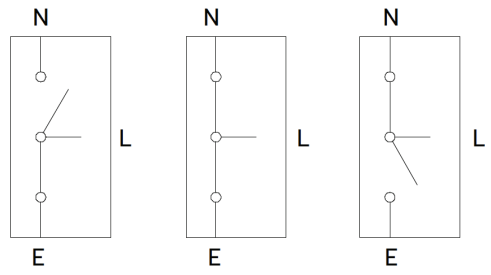


FIG.2 Closed transtion transfer back to normal

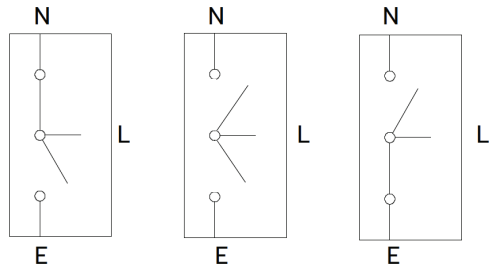


FIG.3 Closed transition transfer to emergency source in the open state. (In case of main source failure)

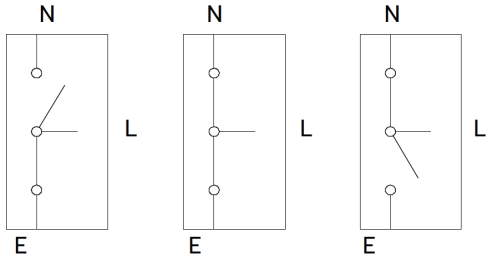


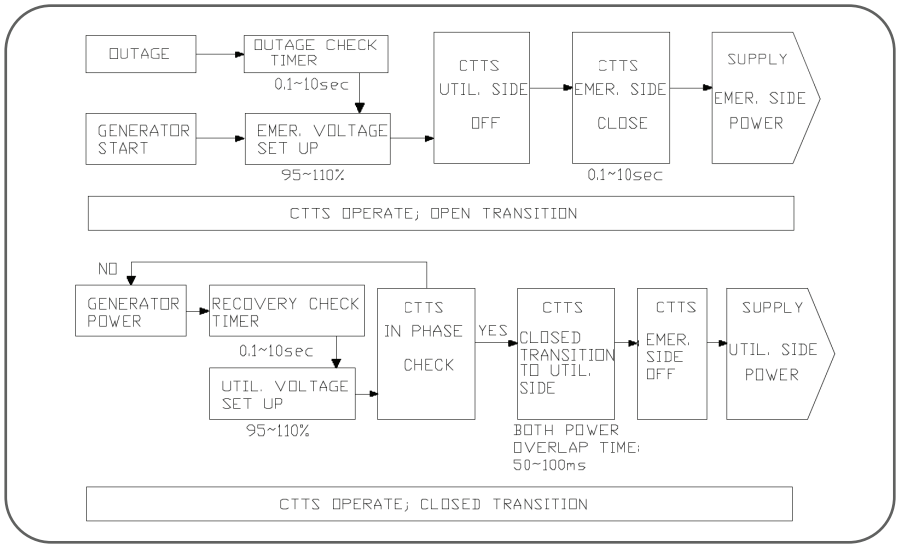
FIG.4 Closed transition transfer back to main source (No interruption to load on retransfer to normal)

Product Coding

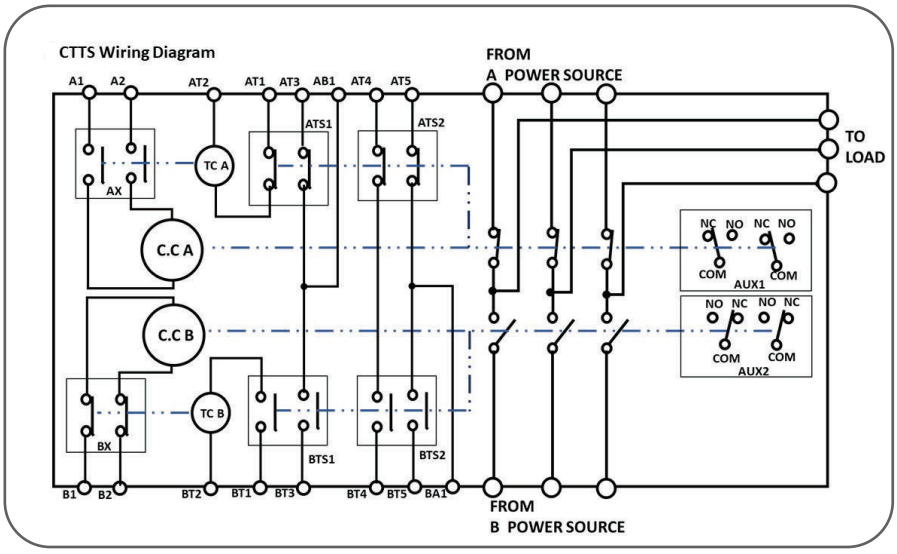
CTTS-2P-200A-125VDC

Basic type	Poles	Rated current	Control voltage
CTTS : Closed Transition Transfer Type	2P	100A	48VDC
	3P	160A	110VDC
	4P	200A	125VDC
		250A	220VDC
		↓	250VDC
		2000A	230VAC

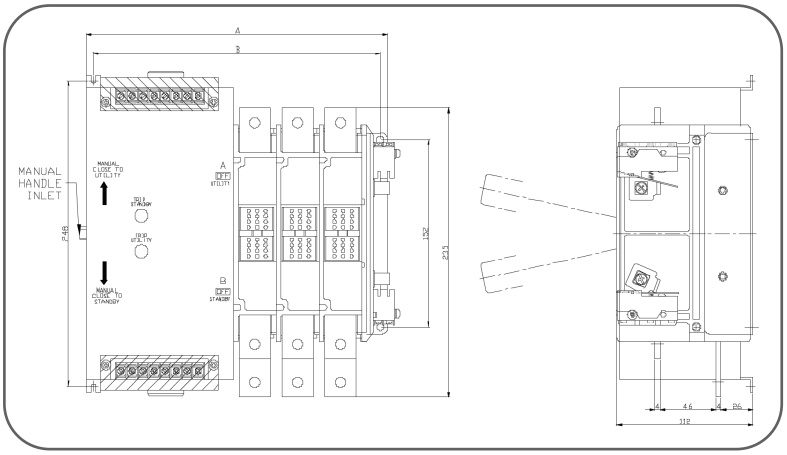
Operational Flow Chart



Schematic Diagram



Overall Dimension



Type	Pole	A	B
100A Front	2P	200.5	189
	3P	230.5	219
200A Front	2P	210.5	199
	3P	245.5	234

Tower type

Rack type

Description

The "ESPOWER" power inverter employs high frequency PWM technology with microprocessor-based design that controls all diagnostics and operations to address the critical AC powering requirements of equipment applications. The front panel is designed for simple and efficient operation with LCD display that measures and indicates all important parameters.

Intelligent power inverters are fully protection of overload, short circuit, and reverse polarity, over/under input voltage and over temperature. In case of any failures occur that it will send an output alarm contact to show or control the equipment. The output of the inverter is the pure sine wave type. The waveform is shown as figure 1, is a perfect processor generated output, which is suitable for all types of loads. The "ESPOWER" power inverter INV/P series are generally applied for :

- Backup system for small industrial loads such as a computer system for machine control or computer for CSCS/SCADA/DCS.
- Power inverter INV/P series are suitable for sensitive powering of telecommunications and data-processing equipment.
- Office or domestic appliances such as a computer, photocopy machine, television, fluorescent lights, and kitchen appliances.

Features

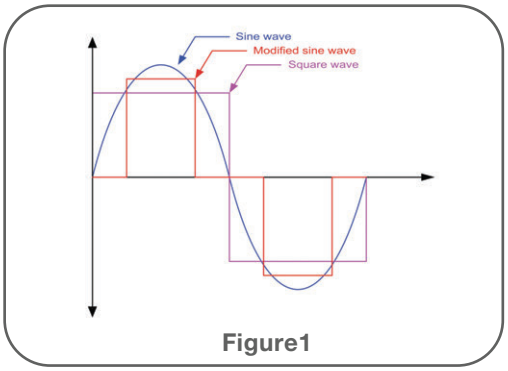


Figure1

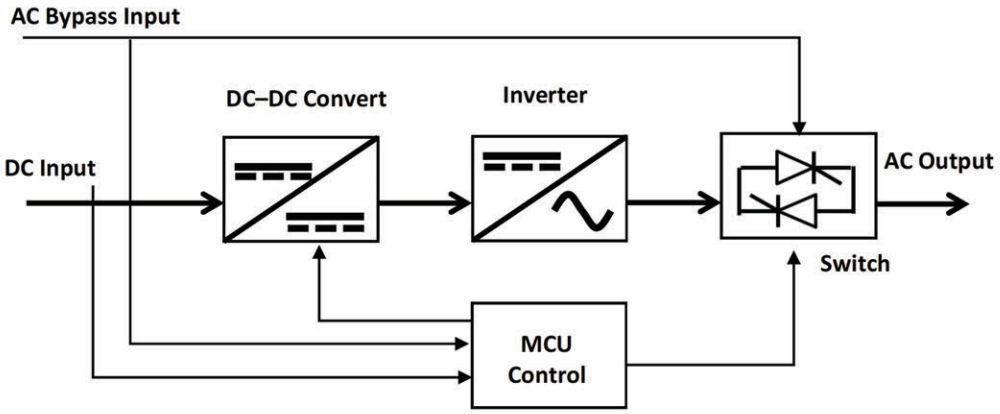
- EN 61000 standard
- Pure sine wave AC output
- Wide range of DC input voltage
- LED front screen display
- Fan's speed controlled by temperature
- Low Noise, less than 45 dB(A) at 1 m distance
- AC MCB and DC MCB for on-off function at front panel
- Dry contact alarm for control of operation equipment
- Complete with static bypass switch which transfer time ≤ 5 ms
- Compact size (2U), designed to use in 19" equipment racks or tower case type for ease of mobility or movement.
- Ideal for handling sensitive loads for telecommunication and network field application
- APC (Advance Polarity Check) technology applied to replace old-style fuse and diode, which warn you when reversed wiring.

Specification

Model		INV/P					
Rating		1kVA	2kVA	3kVA	4kVA	5kVA	6kVA
DC Input	Nominal voltage/ Max. current	24VDC/33.3A 48VDC/16.7A 125VDC/6.4A	24VDC/66.6A 48VDC/33.4A 125VDC/12.8A	48VDC/50.0A 110VDC/21.8A 125VDC/19.2A 220VDC/10.9A	48VDC/66.7A 110VDC/29.1A 125VDC/25.6A 220VDC/14.5A	48VDC/83.3A 110VDC/36.4A 125VDC/32.0A 220VDC/18.2A	48VDC/100.0A 110VDC/43.6A 125VDC/38.4A 220VDC/21.8A
	Voltage range	24VDC (20~30VDC) 48VDC (40~60VDC) 125VDC (105~150VDC)		48VDC (40~60VDC) 110VDC (90~135VDC) 125VDC (105~150VDC) 220VDC (201~265VDC)			
	Connections	Hard-wired connection					
	Effciency	>85% (Full Load) at 24 or 48 or 125VDC					
	Protection(ON-OFF)	DC circuit breaker					
Utility power (Bypass)	Nominal voltage	110VAC or 230VAC ±20%					
	Frequency	50 or 60Hz ±3Hz					
	Protection(ON-OFF)	AC circuit breaker					
Inverter output	Output power	800W	1600W	2400W	3200W	4000W	4800W
	Max.surge power	1200W	2400W	3600W	4800W	6000W	7200W
	Voltage	110VAC or 230VAC ±5% Re-settable ±5% of rating voltage via front panel					
	Voltage regulation	<2% at Linear load					
	Frequency	50 or 60Hz ±0.1% Auto sensing by AC power source					
	Waveform	Pure sine wave					
	THD distortion	<3% at Linear load					
	Crest factor	3					
	Power factor	0.8					
	Cooling system	Forced ventilation					
	Protection(ON-OFF)	AC circuit breaker					
Protection	Short circuit	Inverter shut off, Manual reset when the unit get back to normal					
	Overload	105% ~ 125% for 60 Seconds 126% ~ 150% for 30 Seconds >151% for 1 second; Switch to bypass or shut down immediately					
	DC polarity reverse	Not operate in case of wrong polarity					
	Over temperature	Acoustic warning before shut-off and auto restart and buzzer alarm					
Indicator and Alarm buzzer	LCD display	Input/output : Voltage/Frequency, DC : Voltage Loading : Current/Percentage, Temperature : Core Temperature/Environment temperature					
	Alarm buzzer	AC Input fail, DC Input fail, Inverter/Bypass, Fault/Overload					
Environment	Operating temp.	-10°C to 50°C					
	Storage	-20°C to 60°C					
	Relative humidity	0-90%, no moisture condensation					
Dimension (WxHxD) mm.	Rack type	480 x 88 x 465					
	Tower type	200 x 360 x 500					

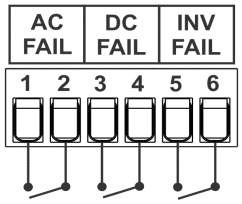
Note: The rated output power with error 1-10kVA is ±100W

Block Diagram



Dry Contact for Alarm

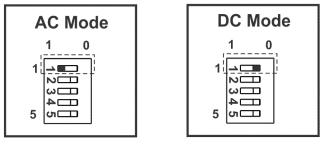
Alarm Dry Contact



AC FAIL 1-2 : AC Input Fault
DC FAIL 3-4 : DC Input Fault
INV FAIL 5-6 : Inverter Fault

* Normally Open

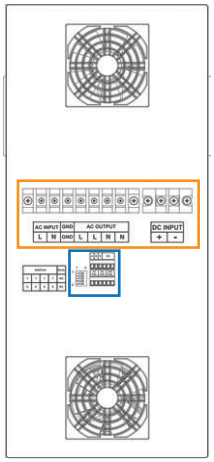
Dip Switch AC - DC Mode Setting



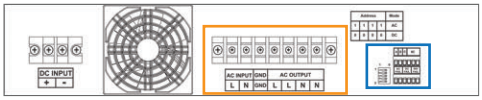
AC Mode = AC for main Input
DC Mode = DC for main Input

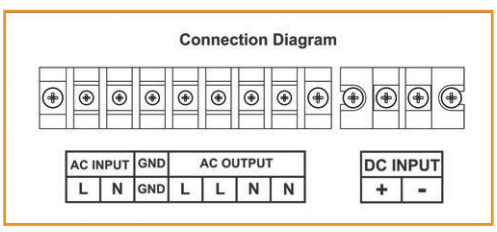
Connection Diagram

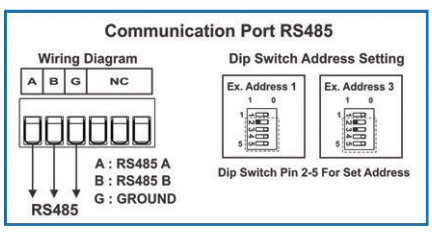
Tower type



Rack type



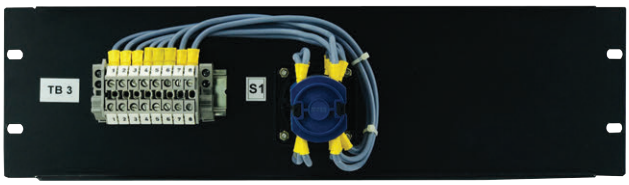




Connection Diagram
Communication Port RS485

Related product

1.) Maintenance bypass switch : ("ESPOWER" MTS series)

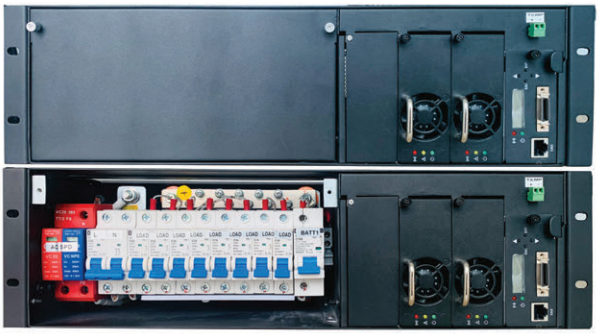


2.) Isolation transformer : "1kVA, 2kVA, 3kVA, 4kVA, 5kVA" ("ESPOWER" IST series)

Product Coding

INV/P-125-1k-230-R

Basic type	DC input voltage		Output power		Output voltage		Type	
	024	24VDC	1k	1kVA	110	110VAC	R	Rack
	048	48VDC	2k	2kVA	230	230VAC	T	Tower
	110	110VDC	3k	3kVA				
	125	125VDC	4k	4kVA				
	220	220VDC	5k	5kVA				
			6k	6kVA				



Description

Under normal conditions, every parameter of rectifier modules and distribution unit are all under control of the monitoring module, operating according to the pre-set parameter or user's commands. If AC mains fault, the system will be powered by the battery. When the battery discharge, the terminal voltage of the battery starts to descend. Until the voltage is under 42V±0.5V, the monitor reports DC under voltage alarm signal and cuts off the load output then the power system stops working. After the external AC mains recover, the system will resume to the normal work state (all above monitoring data is system default values that users can reset). Except for battery over-discharge protection, battery or load over-temperature protection is prohibit under default, users can send command to activate or inactivate according to the demanding. The operating temperature is 55°C or more but power derating will be employed in case of operating temperature is over 55°C. Regarding the demand of telecom rectifier system, we can customize the requirements by using the following specification :

- AC input : 90 - 290VAC
- Rectifier 48VDC, output power can reach up to 768 W/Unit (15A/51.2V)
- Rectifier 48VDC, output power can reach up to 1536 W/Unit (30A/51.2V)
- Rectifier 24VDC, output power can reach up to 1280 W/Unit (50A/25.6V)
- Rack mounting DC power supply system output current range : 15A to 640A

Features

- Hot-swappable
- Auto current sharing
- Embedded mounting
- Output short circuit protection
- Output over current protection
- Output over voltage protection
- Input over/under voltage protection
- Operating temperature range -15°C ~ +55°C
- Wide operating range of AC input voltage 175 ~ 280VAC
- Battery temperature compensation and LVBD protection
- Zero current / voltage switching technology with high efficiency ≥92%
- Adoption of active power factor compensation technology with factor > 0.98

Application

- Communication system
- Transmission equipment
- Small scale program-controlled exchanges
- Security system
- Factory control system
- Access control network

System Configuration

The system consists of rectifier module and monitoring module. The configuration is optional, for example as following table.

Configuration	Rectifier module	Monitoring module	Output current	Output voltage
4500W	GPR4830A x 3	GPM48DI x 1	120A	42-58VDC

Specification

Input voltage range	Nominal operating voltage: 175 - 280VAC
Input frequency	45 - 65Hz
Inrush current	50A; Cold start @ 25°C, 285VAC input tested at full load
Power factor	0.98
Output voltage range	42 - 58VDC
Ripple (Vp-p)	200mV
Output efficiency	92% at 230VAC
Load regulation	±1%
Output power	4500W at 176 - 285V Input
Output configuration	N + 1 (3000 + 1500W)
Max current output	120A
Operating temperature	-15°C ~ +55°C (For temperature between 55°C and 65°C, output De-rating to 80%)
Storage temperature	-40 ~ +70°C
Relative humidity	5 - 95%
Altitude	0 - 400m
Cooling method	Forced cooling, front-in & rear-out with speed programmable by temperature

Product Coding

ERC 48 90 - R

Basic type	Rated voltage		Rated current	Type	
	24	24 VDC	50, 100, 150A	R	Rack 19"
	48	48 VDC	15, 30, 60, 90A, 120A	T	Tower

Description

ERC Series (Surface Mounted) The ERC Rectifier & Charger Series are designed for direct loads supply and simultaneous charging stationary batteries of VRLA or other types. They are designed and built with the employment of switch mode technology, with feature excellent dynamic characteristics and high output parameters.

Features

- Efficiency > 85%
- Direct supplying of DC circuits
- 3 color LED battery indicator (all in one)
- User selectable 2 or 3 stage charging profile
- Built-in active power factor correction (PFC function)
- Buffering operation with loads parallel connected to the battery
- Short circuit protection / Reverse polarity / Over voltage / Over temperature
- Thermostatically controlled fan; built-in temperature compensation function (by NTC)
- Wide operating temperature range: -20°C to +60°C (refer to output derating curve)

Specification

Model	Rated output voltage (VDC)	Power (W)	Charging voltage (VDC)	Rated output current (ADC)	Input voltage (VAC)	Dimensions (WxHxD) cm.	Weight (kg)
ERC1270	12	1000	14.4	70	90-265	40x14.5x20	9
ERC2435	24	1000	28.8	35	90-265	40x14.5x20	9.5
ERC4817	48	1000	57.6	17.5	90-265	40x14.5x20	10

Product Coding

ERC 48 17 - S

Basic type

Rated voltage

12	12VDC
24	24VDC
48	48VDC

Rated current

70	70A
35	35A
17	17.5A

Type

S	Surface mounted

Description

Redundant power supply use for DC Power reserved of 24VDC, 20A. Input by 2 sources of 24VDC (one input is working as standby source) and output is 24VDC/20A as input source (max. 580W)

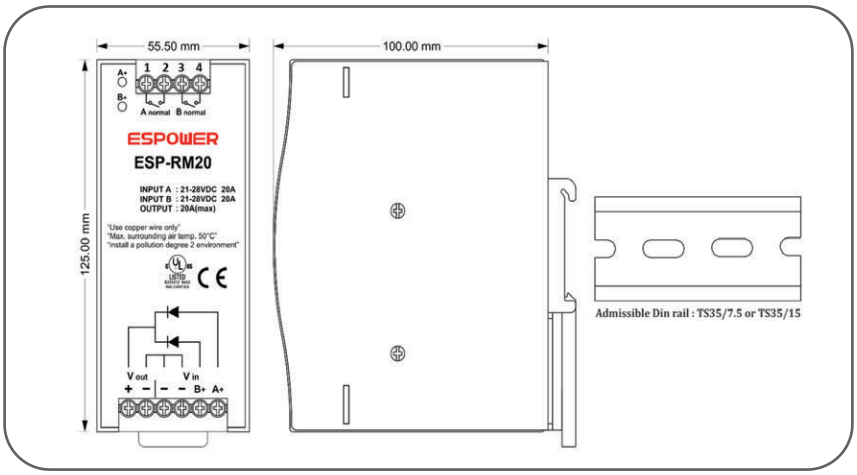
Features

Cooling	Free air convection
Structure	Compact design DIN rail TS35/7.5 or 15
Operation	Redundant power supply of 24VDC system (max. 580W)
Status indicator	LED indicator & dry contact relay output for input failure alarm

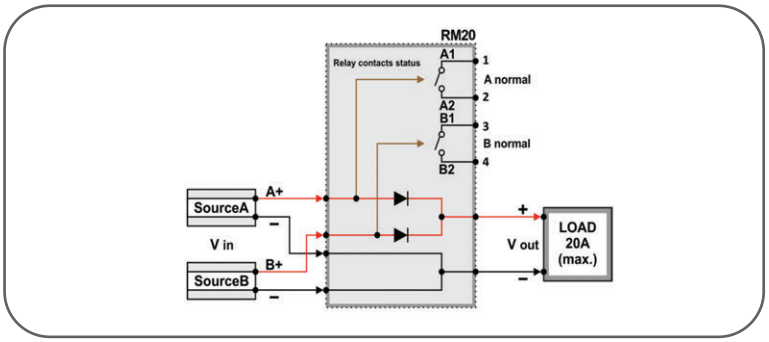
Specification

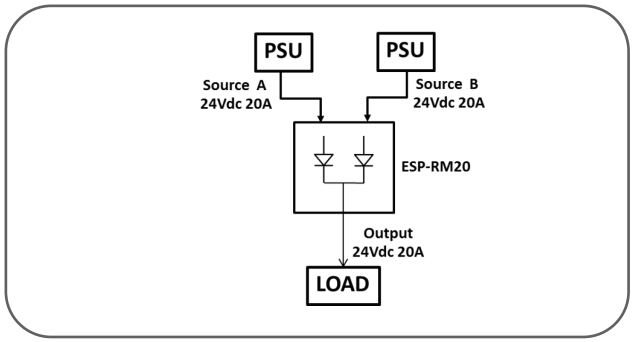
Model	**ESP-RM20**
Input	21 ~ 28VDC (2 channels) / 20A (max.)
Output	20A (max.) (1 channel), Reverse voltage 30V (max.)
Indicators	Green LEDs indicating A & B input is "OK" or "Fail"
Voltage alarm	When input is > 20V (±5%) or < 30V (±5%) relay contacts status "NO"
Relay contact rating	30VDC, 1A (max.)
Working temperature	-40 ~ +70°C, 20 ~ 90% RH
Storage temperature	-40 ~ +85°C, 10 ~ 95% RH
Vibration	10 ~ 500Hz, 2G 10min. / 1cycle, period for 60min. each along X, Y, Z axes ; Mounting compliance to IEC 60068-2-6xx
Safety standards	UL 508, EAC TP TC 004 approved
Withstand voltage	Terminal-chassis : 0.5kVAC, Relay contact-terminal : 0.5kVAC
Isolation resistance	Terminal-chassis : >100M Ohms / 500VDC / 25°C / 70% RH
EMC emission	Compliance to EN 55032 (CISPR 32) class B, EN 61000-3-2, 3 EAC TP TC 020
EMC immunity	Compliance to EN 61000-4-2, 3, 4, 5, 6, 8, 11, heavy industry level, criteria A, EAC TPTC 020
MTBF	996,800 hrs. MIL-HDBK-217F (25°C)
Dimension (WxHxD) mm.	55.5 x 125 x 100
Weight	0.5 kg.

Dimension

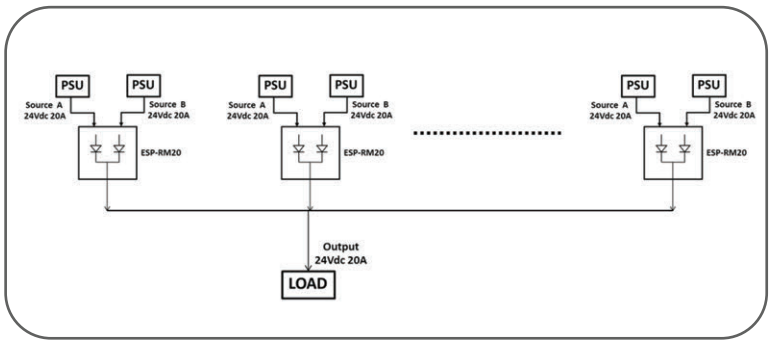


Connection Diagram

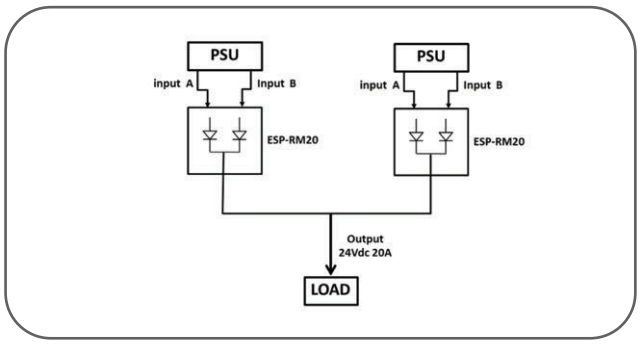




1) Power supply unit 1 + Redundancy power supply unit 1
Main PSU + Redundant PSU



2) Power Supply Unit 1 + N
Use more redundant power supply unit to increase the reliability



3) 2 Power supply units & 2 Power supply redundant modules to reduce stress of diode (protect surge current when starting load) and hence increase the reliability.

Product Coding

ESP - RM 20

- ESP — Basic type
- RM — Redundant module
- 20 — Rated current

Description

Power supply unit is working by switching regulator circuit. It makes the Power supply unit capable to work in wide range input voltage from 85VAC to 265VAC while output voltage is still regulated. Suitable for capacitive and inductive load, high efficiency, compact size and easy install.

Features

Structure	Metal case, compact design
Efficiency	Up to 90%
Wide range input	85 - 265VAC / 47-63Hz
Safety mode	Thermal protection, Over current protection, Over voltage protection
Ambient temperature	- 20°C to +70°C (60°C to 70°C derate to 75% load)
Standards	IEC/EN/UL 60950 - 1, CE, UL 508 Listed

Product Coding

ESP - 60 - 24

Basic type

Output power

60	60W
120	120W
200	200W
240	240W
300	300W
360	360W
480	480W
600	600W

Output voltage

24	24VDC
48	48VDC
*110	110VDC
*125	125VDC
**220	220VDC
**250	250VDC

*Start from 120W - 600W
**Start from 240W - 480W

Specification

Models		ESP-60-24	ESP-120-24	ESP-120-110	ESP-120-125
Input	AC/DC input voltage range	80 ~ 265VAC, 100~350VDC		88 ~ 132VAC, 180 ~ 264VDC	
	Frequency	47 ~ 63Hz			
	Inrush cold current	30A/115VAC, 60A/230VAC	20A/115VAC, 40A/230VAC		
	Power factor	PF > 0.98/115VAC, PF > 0.94/230VAC at full load		PF > 0.98/115VAC, PF > 0.95/230VAC at full load	
	AC current	1.8A (230VAC)	2.6A (230VAC)	1.1A (230VAC)	1.0A (230VAC)
	Efficiency	90%	87.5%	80%	84%
Output	DC voltage	24V(24 ~ 28V)		110V±2%	125V±2%
	Current range	0~2.5A	0~5A	0~1.1A	0~1.0A
	Rated current	2.5A	5A	1.1A	1.0A
	Rated power	60W	120W		
	Line regulation	±1.0%	±0.5%	±0.5%	±0.5%
	Load regulation	±1.0%	±1.0%	±1.0%	±1.0%
	Ripple and noise (max.)	150mVp-p	150mVp-p	150mVp-p	150mVp-p
	Hold up time	30mS/230VAC, 12mS/115VAC	16mS/230VAC, 10ms/115VAC	36mS/230VAC, 22ms/115VAC	
Protection	Overload	105~160%	105~130%	105~130%	105~130%
	Over voltage	30~36V	29~33V		
Environment	Operating temperature	-20°C ~ +70°C			
	LED indicators	DC OK signal-green (Vout > 80% rated output voltage) Peak power mode-red			
	Storage temperature	-40 ~ +85°C, 10 ~ 95% RH			
	Operating humidity	20 ~ 95% RH non-condensing			
	Cooling	Convection		Forced-air cooled (by fan)	
	Vibration	Component : 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting : Compliance to IEC 60068-2-6			
Safety & EMC	Withstand voltage	I/P-O/P : 3kVAC	I/P-O/P : 3kVAC I/P-FG : 2kVAC, O/P-FG : 0.5kVAC	I/P-O/P : 1.5kVAC(1minute), I/P-FG : 1.5kVAC(1minute) O/P-FG : 1.5kVAC(1minute)	
	Isolation resistance	I/P-O/P : 100M Ohms 500VDC/25°C/70°C RH	I/P-O/P, I/P-FG, O/P-FG : >100M Ohms / 500VDC / 25°C/ 70% RH		
	Shock	<196m/s^2			
	Safety agency approvals	UL508, TUV BS EN/EN 62368-1, EAC TP TC 004, BSMI CNS14336-1 approved; (meet BS EN/EN 60204-1)		EN 55011, EN 55022, EN 55024, EN 61000-4-2to6, 8, 11	
	Emissions	Compliance to BS EN/EN 55032 (CISPR32), BS EN/EN 61204-3 Class B, BS EN/EN 61000-3-2, -3, EAC TP TC 020,CNS13438 Class B			
	Immunity	Compliance to BS EN/EN 61000-4-2, 3, 4, 5, 6 ,8, 11, BS EN/EN 55024, BS EN/EN 61000-6-2 (BS EN/EN 50082-2), BS EN/EN 61204-3, heavy industry level, criteria A, EAC TP TC 020			
Others	DC OK contact	N/A	Option	Option	Option
	MTBF	927.6K hrs min. MIL-HDBK-217F (25°C)	456.3K hrs min. MIL-HDBK-217F (25°C)	230.2K hrs min. MIL-HDBK-217F (25°C)	230.2K hrs min. MIL-HDBK-217F (25°C)
	Dimension (WxHxD) mm.	52.5 x 90 x 54.5	40 x 125.2 x 113.5	65 x 125 x 110	65 x 125 x 110
	Weight	0.2kg	0.6kg	0.6kg	

Models		ESP-200-24	ESP-240-24	ESP-240-110	ESP-240-125
Input	AC input voltage range	90~264VAC ,127 ~ 370VDC		88-132VAC or 180-264VAC, 47 ~ 63Hz	
	Inrush cold current	20A at 115VAC, 35A at 230VAC		20A at 115VAC, 40A at 230VAC	
	Efficiency	88.5%		84%	
Output	DC voltage	24V(24 ~ 28V)		110VDC	125VDC
	Rated current	8.5A	10A	2.2A	1.95A
	Rated power	200Watt	240Watt		
	Start up time	40mS @ Full load (typical)			
	Hold up time	28mS/230VAC, 22mS/115VAC	16mS @ Full load (typical)		
Environment	Operating temperature	-20°C ~ +70°C			
	Storage temperature	-40°C ~ +85°C			
	Operating humidity	10% ~ 95% RH (non-condensing)			
Protection & indicator	Typical protection	Overload / Over voltage / Over temperature			
	Cooling	Forced - air cooled (by fan)			
	Indicator	LED Power on indication			
Safety & standards	Withstand voltage	I/P-O/P : 1.5kVAC (1 minute), I/P-FG : 1.5 kVAC (1 minute), OP-FG : 1.5 kVAC (1 minute),			
	Safety standards	UL 60950-1, EN 60950-1			
	EMC standards	EN 55022 Class A			
Others	Dimension (WxHxD)	125 x 125 x 100 mm.			
	Weight	1.0kg			

Models		ESP-240-220	ESP-240-250
Input	AC input voltage range	88-132VAC or 180-264VAC, 47 ~ 63Hz	
	Inrush cold current	20A at 115VAC, 40A at 230VAC	
	Efficiency	84%	
Output	DC voltage	220VDC	250VDC
	Rated current	1.1A	0.96A
	Rated power	240Watt	
	Start up time	40mS @ Full load (typical)	
	Hold up time	16mS @ Full load (typical)	
Environment	Operating temperature	-20°C ~ +70°C	
	Storage temperature	-40°C ~ +85°C	
	Operating humidity	10% ~ 95% RH (non-condensing)	
Protection & indicator	Typical protection	Overload / Over voltage / Over temperature	
	Cooling	Forced - air cooled (by fan)	
	Indicator	LED Power on indication	
Safety & standards	Withstand voltage	I/P-O/P : 1.5kVAC (1 minute), I/P-FG : 1.5 kVAC (1 minute), OP-FG : 1.5 kVAC (1 minute),	
	Safety standards	UL 60950-1, EN 60950-1	
	EMC standards	EN 55022 Class A	
Others	Dimension (WxHxD)	125 x 125 x 100 mm.	
	Weight	1.0kg	

Models		ESP-300-110	ESP-300-125	ESP-300-220	ESP-300-250
Input	AC input voltage range	88-132VAC or 180-264VAC, 47 ~ 63Hz			
	Inrush cold current	20A at 115VAC, 40A at 230VAC			
	Efficiency	95%			
Output	DC voltage	110VDC	125VDC	220VDC	250VDC
	Rated current	2.70A	2.40A	1.36A	1.20A
	Rated power	300Watt			
	Start up time	50mS @ Full load (typical)			
	Hold up time	20mS @ Full load (typical)			
Environment	Operating temperature	-20°C ~ +70°C			
	Storage temperature	-40°C ~ +85°C			
	Operating humidity	10% ~ 95% RH (non-condensing)			
Protection & indicator	Typical protection	Overload / Over voltage / Over temperature			
	Cooling	Forced - air cooled (by fan)			
	Indicator	LED Power on indication			
Safety & standards	Withstand voltage	I/P-O/P : 1.5kVAC (1 minute), I/P-FG : 1.5 kVAC (1 minute), OP-FG : 1.5 kVAC (1 minute),			
	Safety standards	UL 60950-1, EN 60950-1			
	EMC standards	EN 55022 Class A			
Others	Dimension (WxHxD)	50 x 200 x 112 mm.			
	Weight	0.8kg		0.95kg	

Models		ESP-360-110	ESP-360-125	ESP-360-220	ESP-360-250
Input	AC input voltage range	88-132VAC or 180-264VAC, 47 ~ 63Hz			
	Inrush cold current	20A at 115VAC, 40A at 230VAC			
	Efficiency	95%			
Output	DC voltage	110VDC	125VDC	220VDC	250VDC
	Rated current	3.30A	2.90A	1.60A	1.44A
	Rated power	360Watt			
	Start up time	50mS @ Full load (typical)			
	Hold up time	20mS @ Full load (typical)			
Environment	Operating temperature	-20°C ~ +70°C			
	Storage temperature	-40°C ~ +85°C			
	Operating humidity	10% ~ 95% RH (non-condensing)			
Protection & indicator	Typical protection	Overload / Over voltage / Over temperature			
	Cooling	Forced - air cooled (by fan)			
	Indicator	LED Power on indication			
Safety & standards	Withstand voltage	I/P-O/P : 1.5kVAC (1 minute), I/P-FG : 1.5 kVAC (1 minute), OP-FG : 1.5 kVAC (1 minute),			
	Safety standards	UL 60950-1, EN 60950-1			
	EMC standards	EN 55022 Class A			
Others	Dimension (WxHxD)	110 x 222 x 58 mm.			
	Weight	1.2kg		1.3kg	

Models		ESP-480-110	ESP-480-125	ESP-480-220	ESP-480-250
Input	AC input voltage range	88-132VAC or 180-264VAC, 47 ~ 63Hz			
	Inrush cold current	20A at 115VAC, 40A at 230VAC			
	Efficiency	89%			
Output	DC voltage	110VDC	125VDC	220VDC	250VDC
	Rated current	4.40A	3.80A	2.20A	1.90A
	Rated power	480Watt			
	Start up time	70mS @ Full load (typical)			
	Hold up time	36mS @ Full load (typical)			
Environment	Operating temperature	-20°C ~ +70°C			
	Storage temperature	-40°C ~ +85°C			
	Operating humidity	10% ~ 95% RH (non-condensing)			
Protection & indicator	Typical protection	Overload / Over voltage / Over temperature			
	Cooling	Forced - air cooled (by fan)			
	Indicator	LED Power on indication			
Safety & standards	Withstand voltage	I/P-O/P : 1.5kVAC (1 minute), I/P-FG : 1.5 kVAC (1 minute), OP-FG : 1.5 kVAC (1 minute),			
	Safety standards	EN 55011, EN 55022, EN 55024, EN 61000-4-2,3,4,5,6,8,11			
	EMC standards	EN 61000-6-2 (EN 50082-2)			
Others	Dimension (WxHxD)	112 x 226 x 58 mm.			
	Weight	1.2kg		1.3kg	

Models		ESP-600-110	ESP-600-125
Input	AC input voltage range	88-132VAC or 180-264VAC, 47 ~ 63Hz	
	Inrush cold current	5A at 115VAC, 30A at 230VAC	
	Efficiency	95%	
Output	DC voltage	110VDC	125VDC
	Rated current	5.40A	4.80A
	Rated power	600Watt	
	Start up time	50mS @ Full load (typical)	
	Hold up time	20mS @ Full load (typical)	
Environment	Operating temperature	-20°C ~ +70°C	
	Storage temperature	-40°C ~ +85°C	
	Operating humidity	10% ~ 95% RH (non-condensing)	
Protection & indicator	Typical protection	Overload / Over voltage / Over temperature	
	Cooling	Forced - air cooled (by fan)	
	Indicator	LED Power on indication	
Safety & standards	Withstand voltage	I/P-O/P : 1.5kVAC (1 minute), I/P-FG : 1.5 kVAC (1 minute), OP-FG : 1.5 kVAC (1 minute),	
	Safety standards	UL 60950-1, EN 60950-1	
	EMC standards	EN 55022 Class A	
Others	Dimension (WxHxD)	112 x 256 x 58 mm.	
	Weight	1.4kg	

Rack type (19")

Tower type

Description

The power supply adopts high frequency switching power technology. It is controlled by high performance microcomputer. The power supply widely used in industrial control and electronic products aging and testing. It is suitable for all kinds resistive load, capacitive load, inductive load. The control chip of the DC voltage stabilized power supply adopts the mature imported components at present and the power components adopt the latest developed great power in the world. The DC regulated power supply eliminates the bulkiness of traditional DC power supply due to power frequency transformer. Compared with the traditional power supply, the high frequency DC power supply has the advantages of small size, light weight and high efficiency. At the same time, it creates the conditions for reducing the volume of high-power DC power supply, which is also called high frequency switching power supply. DC regulated power supply has completed protection function.

Specification

Model		ESPH						
Input voltage		1 phase 220VAC ±15%, 50Hz/60Hz						
Output voltage/current		110VDC, 10A 125VDC, 8A	110VDC, 11A 125VDC, 9.6A	110VDC, 15A 125VDC, 12A	110VDC, 20A 125VDC, 17.6A	110VDC, 30A 125VDC, 25A	110VDC, 40A 125VDC, 36A	110VDC, 50A 125VDC, 44A
Output power		1000W	1200W	1500W	2200W	3000W	4500W	5500W
Source voltage regulation rate		≤ 0.5%						
Load regulation		Voltage ≤ 1%						
		Current ≤ 2%						
Display digit		4 digits						
Output voltage overshoot		≤ 2% of maximum output						
Operation temperature		-10 ~ 45°C						
Over-temperature protection		75 ~ 85°C						
Cooling mode		Fan heat dissipation						
Ripple voltage		Vpp ≤ 2%						
Efficiency		≤ 86%						
Start-up output voltage setting time		≤ 3s						
Protection		Lower voltage, over voltage, over current, overload, overheating protection						
AC withstand voltage		Input to Output : AC1500V, 10mA, 1 minute Input to FG : AC1500V, 10mA, 1 minute Output to FG : AC1500V, 10mA, 1 minute						
Insulation resistance		Input to Output : ≥ 20MΩ Input to FG : ≥ 20MΩ Output to FG : ≥ 80MΩ						
MTTF		≥ 50,000h						
Dimension (W x H x D) mm.	Rack type	430 x 88 x 450				430 x 177 x 465		
	Tower type	200 x 450 x 500						
Net weight	Rack type	9 kg						
	Tower type	10.5 kg						

Dimension

Rack type (19")

Tower type

Product Coding

ESPH - 5500 - 110 - R

Basic type	Output power		Output voltage		Type	
	1000	1000W	110	110V	R	Rack 19"
	1200	1230W	125	125V	T	Tower
	1500	1500W				
	2000	2000W				
	2500	2500W				
	3000	3000W				
	4500	4500W				
	5500	5500W				
	6000	6000W				

Rack type (19")

Tower type

Portable type

Flying case type

Description

The Adjustable DC Power supply adopts high frequency switching power technology. it is controlled by high performance microcomputer. The voltage and current can be adjusted independently. The adjustable power supply widely used in industrial control and electronic products aging and testing. It is suitable for all kinds resistive load, capacitive load, inductive load

Features

- Advance switching mode power supply technology and component, excellent design, small volume, light weight, high efficiency, which ensure the stability and reliability of long-term full-load operation.
- Max Output : 150/300V, 10/20/30A, Max Power : 6000W
- Constant voltage value and constant current value can be continuously adjustable within the range 0 - 100%.
- Digital display output voltage and output current
- Temperature control fan, Over-temperature automatic protection ; Output over - voltage
- Over-current and short-circuit protection ; start up delay soft starting can avoid the over shoot voltage when start up.
- Simple operation, convenient use
- Store temperature (-40 ~ 70)$^{\circ}$C, working temperature : (-20 ~ 50)$^{\circ}$C
- Relative humidity : 90% (40 ±2°C), Atmospheric pressure (70 - 106)kPa

Application

It is widely use in electric power DC Screen system engineering, control, communication, scientific research, and other equipment.

Specification

Model		ESPA-0.3k-150P	ESPA-0.6k-150T	ESPA-1.0k-150T	ESPA-1.5k-150T
Adjustable range		AC to DC ; 0~150VDC / 0~10A			
Adjustable voltage / current mode		Knob type			
Input voltage		1 Phase : AC220V ±15%, 50Hz/60Hz			
Output	Stabilizer value 1% to 100%	0 - 150VDC	1.5 - 150VDC		
	Constant current value 1% to 100%	0 - 2A	0.1 - 10A		
Output power		300W	600W	1000W	1500W
Source voltage regulation rated		≤ 1%	0 ≤ 0.5%		
Load regulation		≤ 1%	Stabilizer voltage ≤ 1%; Constant current ≤ 2%		
Voltage display accuracy		±1%	+1.2%		
Current display accuracy		±1%	+1.5%		
Display		LED display 4 digits (0.000 to 9999)			
Output voltage overshoot		-	≤2% of maximum output		
Operation environment temperature		(-10 ~ 45)°C			
Over-temperature protection		-	(75 ~ 85)°C		
Heat dissipation mode / cooling mode		Fan heat dissipation			
Ripple voltage		≤ 1%	VPP ≤ 2%		
Efficiency		-	≥ 86%		
Start-up output voltage setting time		-	≤ 3s		
Protection		short circuit, overheating	Lower voltage, over voltage, over current short circuit, overheating protection		
Insulation strength		-	Input - output : AC1500V, 10mA, 1 minute Input - FG : AC1500V, 10mA, 1 minute Output - FG : AC1500V, 10mA, 1 minute		
Insulation resistance		-	Input - Output ≥ 20MΩ		
MTTF		-	≥ 50000h		
Dimension (W x H x D) mm.		82 x 152 x 147	160 x 400 x 320		
Net weight (kg)		1.5	10.5		
Color		Black	Black		

Specification

Model		ESPA-2.5k-150	ESPA-3.0k-150	ESPA-4.5k-150	ESPA-6.0k-150
Adjustable range		AC to DC ; 0~150VDC / 0~40A			
Adjustable voltage / current mode		Knob type			
Input voltage		1 Phase : AC220V ±15%, 50Hz/60Hz			
Output	Stabilizer value 1% to 100%	1.5 - 150VDC			
	Constant current value 1% to 100%	0.1 - 40A			
Output power		2500W	3000W	4500W	6000W
Source voltage regulation rated		0 ≤ 0.5%			
Load regulation		Stabilizer voltage ≤ 1%; Constant current ≤ 2%			
Voltage display accuracy		+1.2%			
Current display accuracy		+1.5%			
Display		LED display 4 digits (0.000 to 9999)			
Output voltage overshoot		≤2% of maximum output			
Operation environment temperature		(-10 ~ 45)°C			
Over-temperature protection		(75 ~ 85)°C			
Heat dissipation mode / cooling mode		Fan heat dissipation			
Ripple voltage		VPP ≤ 2%			
Efficiency		≥ 86%			
Start-up output voltage setting time		≤ 3s			
Protection		Lower voltage, over voltage, over current short circuit, overheating protection			
Insulation strength		Input - output : AC1500V, 10mA, 1 minute Input - FG : AC1500V, 10mA, 1 minute Output - FG : AC1500V, 10mA, 1 minute			
Insulation resistance		Input - Output ≥ 20MΩ			
MTTF		≥ 50000h			
Dimension (W x H x D) mm.		Depends on rack type or tower type			
Net weight (kg)		Depends on rack type or tower type			
Color		Black			

Specification

Model		ESPA-0.3k-300P	ESPA-0.6k-300T	ESPA-1.0k-300T	ESPA-1.5k-300T
Adjustable range		AC to DC ; 0~300VDC / 0~5A			
Adjustable voltage / current mode		Knob type			
Input voltage		1 Phase : AC220V ±15%, 50Hz/60Hz			
Output	Stabilizer value 1% to 100%	0 - 300VDC	1.5 - 300VDC		
	Constant current value 1% to 100%	0 - 1A	0.1 - 5A		
Output power		300W	600W	1000W	1500W
Source voltage regulation rated		≤ 1%	0 ≤ 0.5%		
Load regulation		≤ 1%	Stabilizer voltage ≤ 1%; Constant current ≤ 2%		
Voltage display accuracy		±1%	+1.2%		
Current display accuracy		±1%	+1.5%		
Display		LED display 4 digits (0.000 to 9999)			
Output voltage overshoot		-	≤2% of maximum output		
Operation environment temperature		(-10 ~ 45)°C			
Over-temperature protection		-	(75 ~ 85)°C		
Heat dissipation mode / cooling mode		Fan heat dissipation			
Ripple voltage		≤ 1%	VPP ≤ 2%		
Efficiency		-	≥ 86%		
Start-up output voltage setting time		-	≤ 3s		
Protection		short circuit, overheating	Lower voltage, over voltage, over current short circuit, overheating protection		
Insulation strength		-	Input - output : AC1500V, 10mA, 1 minute Input - FG : AC1500V, 10mA, 1 minute Output - FG : AC1500V, 10mA, 1 minute		
Insulation resistance		-	Input - Output ≥ 20MΩ		
MTTF		-	≥ 50000h		
Dimension (W x H x D) mm.		82 x 152 x 147	160 x 400 x 320		
Net weight (kg)		1.5	10.5		
Color		Black			

Specification

Model		ESPA-2.5k-300	ESPA-3.0k-300	ESPA-4.5k-300	ESPA-6.0k-300
Adjustable range		AC to DC ; 0~300VDC / 0~20A			
Adjustable voltage / current mode		Knob type			
Input voltage		1 Phase : AC220V ±15%, 50Hz/60Hz			
Output	Stabilizer value 1% to 100%	1.5 - 300VDC			
	Constant current value 1% to 100%	0.1 - 20A			
Output power		2500W	3000W	4500W	6000W
Source voltage regulation rated		0 ≤ 0.5%			
Load regulation		Stabilizer voltage ≤ 1%; Constant current ≤ 2%			
Voltage display accuracy		+1.2%			
Current display accuracy		+1.5%			
Display		LED display 4 digits (0.000 to 9999)			
Output voltage overshoot		≤2% of maximum output			
Operation environment temperature		(-10 ~ 45)°C			
Over-temperature protection		(75 ~ 85)°C			
Heat dissipation mode / cooling mode		Fan heat dissipation			
Ripple voltage		VPP ≤ 2%			
Efficiency		≥ 86%			
Start-up output voltage setting time		≤ 3s			
Protection		Lower voltage, over voltage, over current short circuit, overheating protection			
Insulation strength		Input - output : AC1500V, 10mA, 1 minute Input - FG : AC1500V, 10mA, 1 minute Output - FG : AC1500V, 10mA, 1 minute			
Insulation resistance		Input - Output ≥ 20MΩ			
MTTF		≥ 50000h			
Dimension (W x H x D) mm.		Depends on rack type or tower type			
Net weight (kg)		Depends on rack type or tower type			
Color		Black			

Dimension

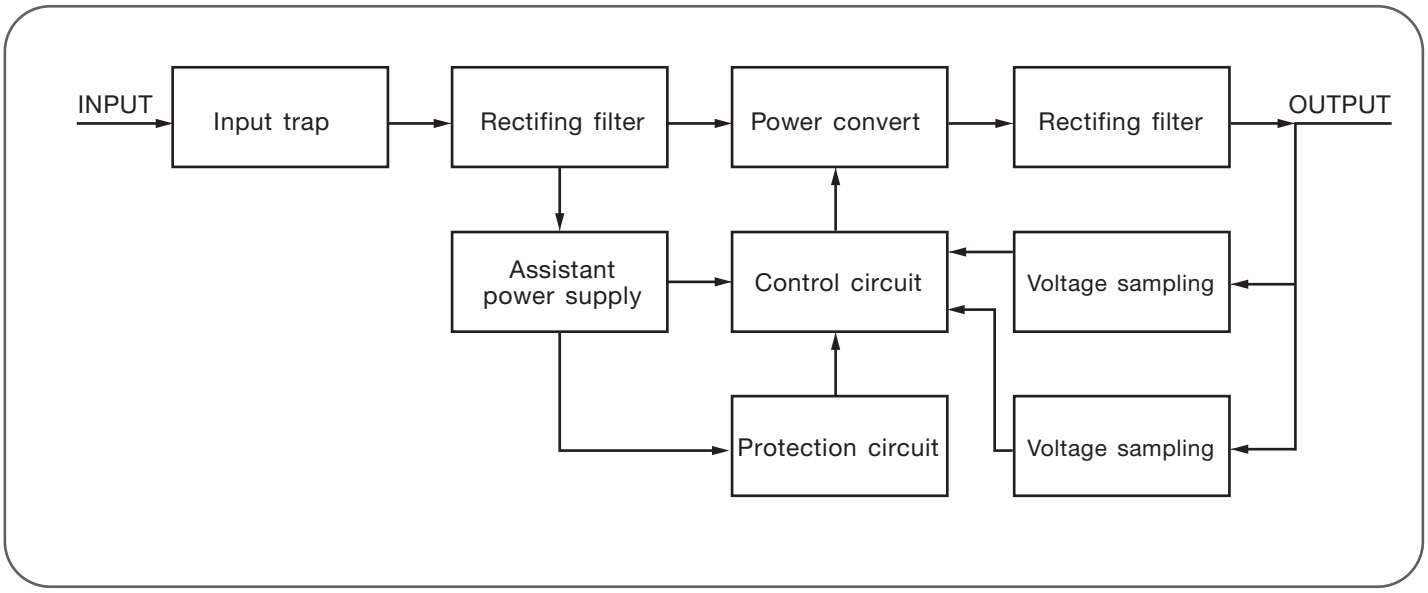
Rack type (19")

Tower type

Portable type

Flying case type

Operational flow chart



Product Coding

ESPA - 1.5k - 150T

Basic type

Output power

0.3k	300W
0.6k	600W
1.0k	100W
1.5k	1500W
2.5k	2500W
3.0k	3000W
4.5k	4500W
6.0k	6000W

Output voltage

150	0-150V
300	0-300V

Type

R	Rack 19"
T	Tower
P	Portable
F	Flying case

Description

ESP-UPS30 series UPS includes the 10kVA to 50kVA (3 phase input & 3 phase output) double conversion On-Line ups with an isolation transformer at output. The load is supplied continuously by the inverter with clean, stabilized and regulated sine wave output power. Input & Output filters increase the immunity of load from power disturbances and surges.

ESP-UPS30 series UPS entirely surmounted the technical bottleneck in analog circuitry age, ingeniously applied the digital control technology and high-accuracy SMD technology which assured ultra-high system stability and is able to fully acclimate various grid environment, Single-machine capacity is ranging from 10kVA and 50kVA, widely used in telecom, bank, bond, traffic, utility, manufacture, etc.

Highlights

- True online-double conversion technology
- 7-inch large display
- Stable rectifier and harmonic filter
- IGBT PWM inverter technology
- High efficiency up to 92%
- Wide input voltage range
- Advanced battery management
- Short circuit and overload protection
- 256 real time event log with detailed parameters
- Static & Manual bypass operation
- Advanced communication capabilities
- Perfect generator compatibility
- Cold start function
- Auto restart function
- ECO work mode setting - enable
- Optional EPO function
- Users can set UPS work status, can choose UPS, ECO, or Inverter work mode

Product Coding

ESP - UPS30 10

Basic type

Phase

10	1 Phase
30	3 Phase

Output voltage

10	10kVA
20	20kVA
30	30kVA
40	40kVA
50	50kVA

Features

- Advanced digital circuit system provides over stable machine run through digital circuit system's high-speed microcontroller and programmable logic devices, this circuit system of ESP-UPS30 series UPS makes circuit control, parameters setting and running management more perfect. Digital circuit system can provide self-inspection and fault analysis function and achieve pure sine wave voltage under various loading conditions.
- Advanced & Intelligent battery management: ESP-UPS30 series UPS guarantees to enhance battery life and maximize battery performance, life span and reliability through intelligent precision charging. Advanced battery management provides real-time information about battery voltage, charging current, battery quantity and battery capacity. This information can be seen on LCD panel. Besides, ESP-UPS30 series UPS can provide temperature compensated battery charging, battery discharging management.
- Intelligent inspection system : ESP-UPS30 series UPS can online inspect power status, breaker status, fuse status and all circuit work status. Once machine has fault, inspection system will alarm and notify the administrator.
- Parallel redundancy : Optional N+1 redundancy parallel. In redundant operation number of devices (N) would supply the load and one more unit (N+1) would remain standby. When one of the UPS goes out of order because of failure or maintenance works, the other standby UPS continues feeding the critical loads without any interruption.

High precision SMD technique

- Improve the circuit reliability and running precision.
- Chip modules can work without jamming, anti-jamming ability greatly improved thereby.
- Stand higher temperature, work more precisely, better filtering and more durable, life span extended by 80%

The 6th Generation IGBT inverter

- DSP controlled IGBT inverter provides the highest quality output power, the inverter efficiency is higher, ensures the cleanest output voltage waveform to protect connected loads.

Static & Manual (Maintenance) bypass

- Static bypass provides safe failure to mains if the UPS is overloaded or develops a fault condition.
- Manual bypass is used to power down the UPS without interrupting the power to the load. With this feature technical personnel can work on the faulty UPS and it is completely safe to change the inner units.

Auto restart

- When the main and bypass sources fail, the UPS draws power from the battery system to supply the load until the batteries are depleted.
- When UPS will reach its end of discharge, it will shut down. UPS will automatically restart and enable output power.

Advanced user interface

- Audio alert function.
- User-friendly touch screen display, which can provide operating information in english, Due to advanced LCD display all parameters of working device can be monitored and controlled. UPS is capable of recording up to 256 events.
- Visual LED indicator: workflow and work status can be seen on LED indicator.

Advanced communication capabilities

- SNMP card for remote control. Excellent load characters.
- Completely fulfill saltus from 0-100% without switching to bypass and safeguard stable output.

Thorough protections

- Input-output over-low voltage protection, input surge protection, phase protection.
- Battery overcharge-over discharge protection, output overload shortcut protection.
- Overheat protection and alerting.

High-performance dynamic characters

- Implement high dynamic regulation and minish output voltage distortion.

3 Phases separately adjustment, balance stabilizing

- Can achieve 100% unbalanced loads output.

Perfect generator compatibility

- ESP-UPS30 series UPS are perfectly compatible with diverse sources, especially with generators.
- With high input power factor performance, it is enough to choose generator with power only 20% higher rated than the UPS.

Optional EPO (Emergency power off)

- EPO function is designed to switch off the UPS in emergency conditions. This system will turn off the rectifier, Inverter and will stop powering the load immediately (including the inverter and bypass) also the battery stops charging or discharging.
- If the input utility is still present, the UPS's control units will remain active, however, the output will be turned off. To remove all power from the UPS the external feeder breaker should be opened.

Optional input harmonic filter or 12 pulse wave rectifiers

- UPS with 12 pulse rectifier and input harmonic filter can make the THD <5% and make the input power factor >0.96 optional battery detecting modules.
- Can inspect single cell battery's parameters, and display in panel. If the battery has fault, will alarm immediately and notify the administrator.

Specification

Model		ESP-UPS				
Capacity		10kVA	20kVA	30kVA	40kVA	50kVA
Power watt		8kW	16kW	24kW	32kW	40kW
Working principle		Low frequency transformer based true online-double conversion				
Degree of protection		IP30				
Rectifier (INPUT)	Phase	Single Phase / Three phases				
	Input power factor	Standard ≥ 0.9 (6 pulse rectifier+filter), Optional ≥ 0.96 (12 pulse rectifier+filter)				
	Input voltage range	220/380VAC (230V/400VAC or 240V/415) ±25% 3P+N+PE 110V/208VAC (120V/220VAC or 277V/480VAC) Optional				
	Input frequency range	50Hz ±10% / 60Hz ±10% (selectable)				
	Total harmonic distortion (THD)	6 pulse rectifier < 30%, Optional 12 pulse rectifier & filter <5%				
	Output ripple	< 2%				
	Soft start	0~100% 5sec				
Charging	Charging mode	Constant current, then constant voltage, charge with temperature compensation, automatic switch between equalized charging and float charging.				
	Float charging voltage	432VDC				
	Equalized charging voltage	464VDC				
	Temperature compensated voltage	-3mV / °C / cell				
	Charging current	0.1C (Automatic adjust according to battery capacity)				
Battery	Type	VRLA/AGM/Gel, optional Lithium Battery				
	Battery capacity	7~999AH settable (Configurate battery capacity according to back-up time)				
	Quantity	32units 12V or 192units 2V batteries (Nominal voltage 384VDC)				
	Temperature	20°C - 25°C (For Maximum efficiency)				
Inverter (Output)	Phase	Single phase / Three phase				
	Rated voltage	Rated capacity*0.9				
	Nominal voltage	220/380VAC (230V/400VAC or 240V/415VAC), 3P+N 110V/208VAC (120V/220VAC or 277V/480VAC) optional				
	Output voltage regulated accuracy	±1% (Stable load), ±3% (Fluctuant load)				
	Output frequency range	50Hz 60Hz < ±0.5% (Asynchronous)				
	Crest factor	>3 : 1				
	Output total harmonic distortion(THD)	Pure sine wave, Linear load < 3%, Non-Linear load < 5%				
	Dynamic characteristics	Instant voltage < ±5% (from 0 to 100%), Instant recover time < 10ms				
	Unbalanced load voltage	>±15%				
	Overload capacity	At 115% load, normal work, At 125% load 10 min, At 150% load 1 min, At 200% load 1s				
	Inverter efficiency	>92% (full load)				
Phase	Input nominal voltage	220/380VAC (230V/400VAC or 240V/415VAC) 110V/208VAC (120V/220VAC or 277V/480VAC) optional				
	Output nominal voltage	220/380VAC (230V/400VAC or 24OV/415VAC) 11OV/208VAC (120V/220VAC or 277V/480VAC) optional				
	Transfer time	0 ms (adopt static switch)				
Protection function	Input protection	Input voltage, frequency over limited protection, Phase fault, Phase lack				
	Output protection	Over current, short circuit, over voltage, low voltage				
	Battery protection	Over charge, over-discharge protection				
	Temperature protection	Environment over temperature protection, inverter over temperature protection				
	Hardware fault protection	Assistant power abnormal, breaker cut off, breaker overload, power devices over current/over voltage etc., protection				
Safety performance	Noise (dB)	55 ~ 60				
	Dimension (W x H x D) mm.	700 x 1520 x 600				
	Weight (kg)	254	304	407	485	506

200V-208V-220V (Ph-Ph) version is available

ESP technologies reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on esp technologies products previously or subsequently sold.

Product Catalog 2022

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