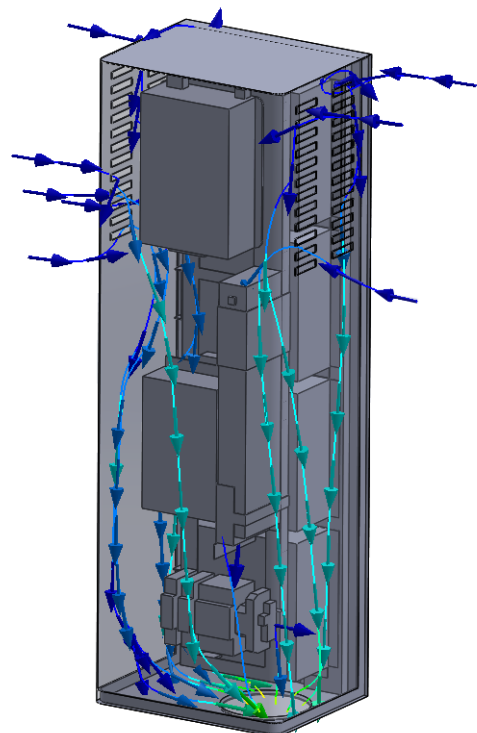
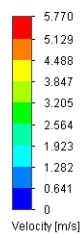
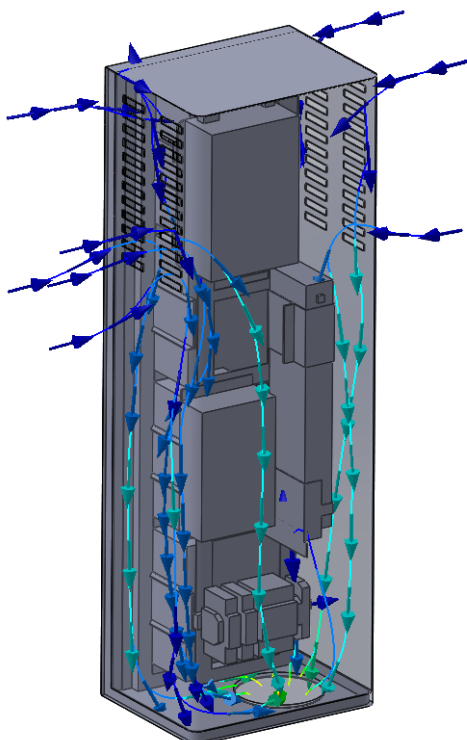
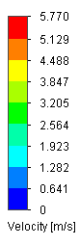




Small Cell Backup & UPS



Our product is the outdoor cabinet which can supply 400W AC and 300W DC charges (UPS & Backup) at the same time for pole mounting.

Two pieces of 176W Small Cells can support the other systems with 400W inverter. Moreover, the device provides DC output via two pieces of 48V/6A outputs. A DPR2400W rectifier which is given by customer is used to charge the batteries.

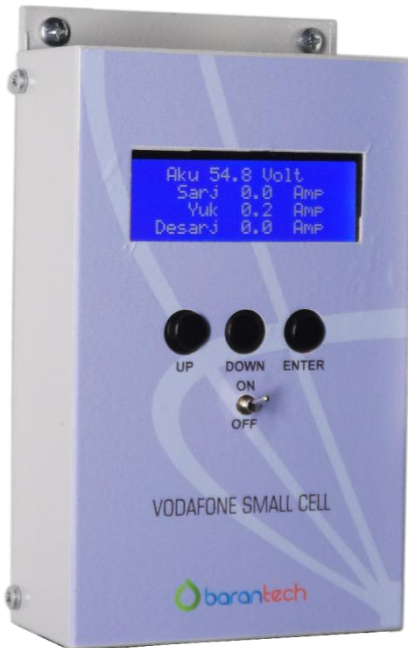
The Control card supports the inverter and 48V outputs with the energy taken from the rectifier. In addition, it charges the batteries with 3A of constant current. After 80% of the batteries are filled, the rectifier keeps on to charge with 54.5V of constant voltage. Briefly, it makes the batteries to charge using the method of trickle charging. The alarms outputs of control card is separately given at the bottom as dry contact.

- No UPS Output
- Battery Low Alarm
- No Mains

In case of the totally depth of discharge of the batteries state of charge, when the system gets started to be charge, it is going to fullfill the batteries to reach 80% of its capacity within 5 hours. Afterwards, the control card continues to charge the batteries with the method of constant voltage and it reaches 100% of charge capacity in 3 or 4 hours. If 5A of current is supplied by 48V outputs and if two pieces of Small Cells are used in system at the same time, when the batteries are fully charged, Small Cells can provide the field in 30 minutes. If one Small Cell is used in system only, it can supplies more than 3 hours. 4 quantities of 12/18Ah the battery are used in the cabinet. When the batteries begin the charging on deep of discharged, they reach %80 of the capacity within 5 hours.

CONTROL UNIT

Usage of Keypad and View of Main Display:



Firstly, the system connections are made. Secondly, it is energized to the system. Thirdly, POWER switch is turned ON. Ten seconds later, if ENTER key is pressed, the informations at the bottom will appear on display sequentially.

B	a	t	t	e	r	y	5	4	.	5	V
C	h	a	r	g	e	3	.	0	A		
L	o	a	d				8	.	5	A	
D	i	s	c	h	a	r	g	e	0	A	

B	a	t	t	e	r	y	5	4	.	5	V
T	e	m	p	.			2	5	.	6	°C
M	a	i	n	s			1	9	0	V	
U	P	S					2	3	0	V	

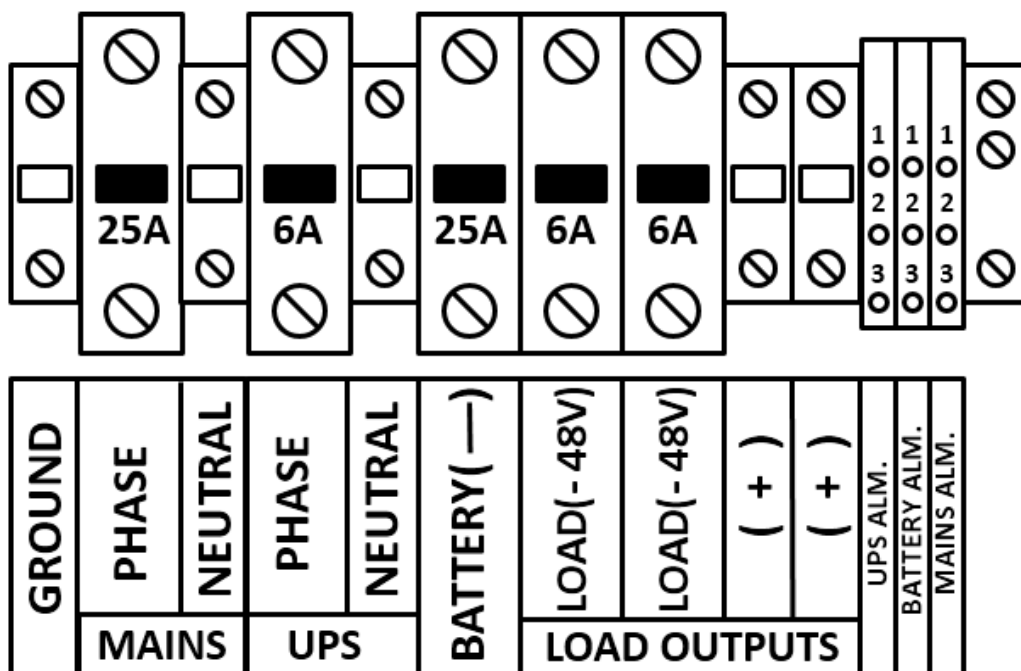
When the display is turned off, if ENTER key is held down in a short time, "Fan on" appears in screen. And then, if ENTER key is pressed, "Fan off" appears in screen again.

When the display is turned off, if ENTER key is held down in a short time, these informations appear in screen again.

T	e	m	p	e	r	a	t	u	r	e	
F	a	n		o	n		3	0	°	C	

[illegible]

CONNECTING TERMINALS



UPS PRESENT : 1 / 3 UPS NONE : 1 / 2

MAINS PRESENT : 1 / 3 MAINS NONE : 1 / 2

BATTERY > 48V : 1 / 3 BATTERY < 45V : 1 / 2

SMALL CELL BACKUP & UPS TECHNICAL FEATURES

Rectifier Voltage	54.5 V
Rectifier Power	2450 W
Battery Capacity	4 Qty VRLA 12V/18A
Operating Voltage Range	36 – 60 VDC
Load Current	0 – 6 A x 2 @ 48V
Inverter Output Voltage	230 VAC
Inverter Input Current	0.32 – 9.5 A
Inverter Output Power	400 W
Battery Charge Voltage	40 – 54.5 V
Battery Charge Current	0.1 – 3 A
Type of Fan	48 VDC @ 12W
Setting of Fan On	25 – 40 °C
Setting of Fan Off	20 – 35 °C
Operating Temperature Range	-20 to +50 °C
Operating Humidity Range	20 – 90 RH
Power Consumption	<1W
Type of Protection	IP43
Display	4 x 20 LCD
Dimensions (HxWxD)	875 x 286x 220mm
Weight	51 kg



Rectifier DPR 2400

Description

The DPR 2400 Series is a single phase rectifier with outstanding power density. Hosting up to six rectifiers, a single 1U shelf can support an optimum AC feed architecture with a capacity up to 14.4 kW, lowering installation costs. An extended operating temperature range makes it most suitable for indoor and outdoor applications.

Installation is simplified as all Delta rectifiers have their connectors at rear and are hot-pluggable. Fan cooling with speed control ensures near silent operation.

Main features

- Space savings – leading edge shelf power density
- Energy saving – high efficiency
- Advanced energy saving functionality
- Protection against loss of Neutral and AC overvoltage
- Extended operating temperature range
- Low audible noise

Applications

DPR 2400 is used in Delta InD and OutD systems for:

- Network base stations
- Wireless applications

Technical specifications

1. Input	
Mains voltage	80 - 300 Vrms
Mains frequency	50 / 60 Hz
Harmonic distortion (THD)	5 %
EMI (conducted)	EN 55022, class B
Protection	Internal fuse 2 x 20A
AC over voltage protection	Incl. loss of neutral

2. Output	
Nominal system voltage	53.5 V
Operating voltage range	42 - 58 V
Power limitation	2450 W
Current limitation	53 A
Overvoltage protection	59 V
EMI (conducted)	EN 55022, class A
Load sharing	yes
Protection	Internal fuse

Ordering information	
Description	DPR 2400B-48



Delta rectifiers are market leaders in power density offering solutions for compact space and weight requirements. In addition to that, the highest efficiency ensures lower total energy consumption and leads to smaller environmental footprint.

With a focus on continuous improvement of total cost of ownership, Delta rectifiers combined with advanced controlling and monitoring units help reducing both CAPEX and OPEX.

3. General	
Efficiency	94.3 %
Power density	35 W / in ³
Control and monitoring	PSC 3
User interface	Status indication
Dimensions (W x H x D)	83 x 40.5 x 361.4 mm 3.23 x 1.60 x 14.23 in
Weight	1.5 kg 3.30 lb
Standards	
• Safety	EN / IEC 60950 UL 60950 CAN / CSA - C22.2
• EMI (radiated)	EN 55022, class B
• Environment	RoHS compliant
Cooling	Fan cooled
Acoustics	46 dB (A)
Operating temperature	-45 to +75 °C -49 to +167 °F

Subject to change without notice.


■ Features :

- True sine wave output (THD<3%)
- High surge power up to 800W
- High efficiency up to 88.5%
- Thermostatically controlled cooling fan
- Built-in remote ON-OFF control
- Front panel indicator for operation status
- Power ON-OFF switch
- Protections: Bat. low alarm / Bat. low shutdown / Over voltage / Over temp. / Output short / Input reverse polarity / Overload
- Application : Home appliance, power tools, office and portable equipment, vehicle and yacht ...etc.
- 3 years warranty

SPECIFICATION

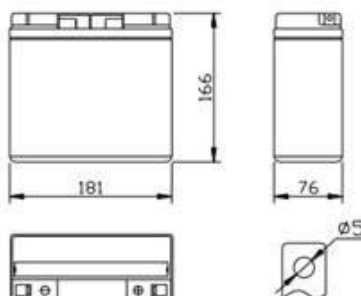
SPECIFICATION							
MODEL		TS-400-112□	TS-400-124□	TS-400-148□	TS-400-212□	TS-400-224□	TS-400-248□
OUTPUT	RATED POWER	400W					
	MAXIMUM OUTPUT POWER	460W for 180 sec. / 600W for 10 sec. / surge power 800W for 30 cycles(typ.)					
	AC VOLTAGE	Factory setting set at 110VAC 100 / 110 / 115 / 120VAC selectable by setting button S.W			Factory setting set at 230VAC 200 / 220 / 230 / 240VAC selectable by setting button S.W		
	FREQUENCY	60±0.1Hz 50/60Hz selectable by setting button			50±0.1Hz 50/60Hz selectable by setting button		
	WAVEFORM Note.2	True sine wave (THD<3%)					
	AC REGULATION Note.2	±3.0% at rated input voltage					
	FRONT PANEL INDICATOR	Operation status ; Green : normal, Orange(flashing) : remote control OFF, Red : abnormal					
INPUT	BAT. VOLTAGE	12V	24V	48V	12V	24V	48V
	VOLTAGE RANGE (Typ.) Note.3	10.5 ~ 15VDC	21 ~ 30VDC	42 ~ 60VDC	10.5 ~ 15VDC	21 ~ 30VDC	42 ~ 60VDC
	DC CURRENT (Typ.)	40A	20A	10A	40A	20A	10A
	NO LOAD CURRENT DRAW (Typ.)	1.25A	0.63A	0.32A	1.25A	0.63A	0.32A
	OFF MODE CURRENT DRAW	≤1mA					
	EFFICIENCY (Typ.) Note.1	84.5%	86%	87%	86%	87.5%	88.5%
	BATTERY TYPES	Open & sealed Lead Acid					
BATTERY INPUT PROTECTION	FUSE	40A*2	40A*1	20A*1	40A*2	40A*1	20A*1
	BAT. LOW ALARM	11.3±4%	22.5±4%	45±4%	11.3±4%	22.5±4%	45±4%
	BAT. LOW SHUTDOWN	10.5±4%	21±4%	42±4%	10.5±4%	21±4%	42±4%
	BAT. POLARITY	By internal fuse open					
OUTPUT PROTECTION	OVER TEMPERATURE	85℃± 5℃ 75℃± 5℃ 70℃± 5℃ 85℃± 5℃ 75℃± 5℃ 70℃± 5℃ Protection type : Shut down o/p voltage, re-power on to recover; by internal RTH1 detect power transistor					
	OUTPUT SHORT	Protection type : Shut down o/p voltage, re-power on to recover					
	OVER LOAD (Typ.)	105 ~ 115% load for 180 sec., 115% ~ 150% load for 10 sec. Protection type : Shut down o/p voltage, re-power on to recover					
	GFCI PROTECTION	Optional (Only type F)				None	
	FUNCTION	REMOTE CONTROL	Open : Normal work ; Short : Remote off				
ENVIRONMENT	WORKING TEMP.	-10 ~ +40℃ @ 100% load ; +60℃ @ 50% load					
	WORKING HUMIDITY	20% ~ 90% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-30 ~ +70℃ / -22 ~ +158°F, 10 ~ 95% RH					
	VIBRATION	10 ~ 500Hz, 3G 10min./1cycle, 60min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS	Design refer to UL458			None		
	LVD	None			EN60950-1		
	WITHSTAND VOLTAGE	Bat. I/P - AC O/P:3.0KVAC AC O/P - FG:1.5KVAC					
	ISOLATION RESISTANCE	Bat. I/P-AC O/P, AC O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH					
	EMC EMISSION	Compliance to FCC class A			Compliance to EN55022 class A, 72/ 245/ CEE, 95/ 54/ CE, E-Mark		
	EMC IMMUNITY	None			Compliance to EN61000-4-2,3,8		
OTHERS	MTBF	104.7K hrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	205*158*67mm (L*W*H)					
	PACKING	1.73Kg; 6pcs/11.4Kg/1.55CUFT					
NOTE	1.Efficiency is tested by 300W, linear load at 13V/26V/52V input voltage. 2.AC regulation and THD are tested by 400W, linear load at 13V/26V/52V input voltage. 3.The tolerance of each voltage value by models is:112/212→±0.5V;124/224→±1V;148/248→±2V 4.All parameters not specified above are measured at rated load, 25℃ of ambient temperature and set to factory setting.						

SB 18-12 (12V 18Ah /20 hr)




The battery is constructed by plates, separators, safety valves and container.
Since the electrolyte is held by a glassmat separator and plates, the battery can use in any direction and position without leakage.

Outer Dimensions



Dimensions and Weight

Length (mm / inch)	181 / 7.73
Width (mm / inch)	76 / 2.99
Height (mm / inch)	166 / 6.54
Total Height (mm / inch)	166 / 6.54
Approx.Weight(Kg / lbs)	5.0 / 11.0

Performance Characteristics

Nominal Voltage	12V
Number of cell	6
Design Life	5 years
Nominal Capacity 77°F(25°C)	
20 hour rate(0.9A,10.5V)	18Ah
10 hour rate(1.67A,10.5V)	16.7Ah
5 hour rate (3.06 A,10.5V)	15.3Ah
1 hour rate(11.6A,9.6V)	11.6Ah
Internal Resistance	
Fully Charged battery 77°F(25°C)	15 mΩ
Self-Discharge	
3% of capacity declined per month at 20°C(average)	
Operation Temperature Range	
Discharge	-20~60°C
Charge	-10~60°C
Storage	-20~60°C
Max.Discharge Current 77°F(25°C)	270A(5s)
Short Circuit Current	1080A

Battery Construction

COMPONENT	Positive plate	Negative plate	Container	Cover	Safety valve	Terminal	Separator	Electrolyte
RAW MATERIAL	Lead dioxide	Lead	ABS	ABS	Rubber	Copper	Fiberglass	Sulfuric acid

Charging Methods

Application	Charging method	Charging Voltage at 25°C	Temperature compensation coefficient of charging voltage	Max.charging current	Charging time 25°C(h)		Temp (°C)
					100% discharge	50% discharge	
For standby power source	Constant voltage & Constant Current Charging (with current restriction)	13.4-13.8V	-18 mV/°C	5.4A	24	20	0~40 (32~104°F)
For cycle service		14.5-15.0V	-30 mV/°C	5.4A	16	10	

*Temperature compensation of charging voltage is not needed when using the batteries within 15°C to 35°C range.