

Delta UPS - Amplon Family

Delta External Charger Box for
Amplon RT 5/ 6/ 8/ 10/ 15/ 20kVA UPS

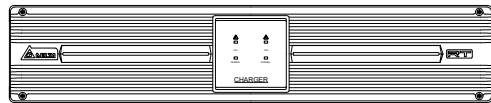
Installation & Operation Quick Guide

ENGLISH



1 Product Introduction

The Delta External Charger Box works as an external charger for a 5~20kVA on-line UPS. Its output power factor reaches to 0.97 and efficiency is up to 90%. The charger box provides wide range of charge voltage (120Vdc to 290Vdc) for you to adjust according to battery capacity. Working with a UPS, the charger box can charge lead-acid batteries and lithium batteries. Through the provided RJ45 cable, the charger box can send alarm signals to the UPS, which enhances the UPS's monitor function.



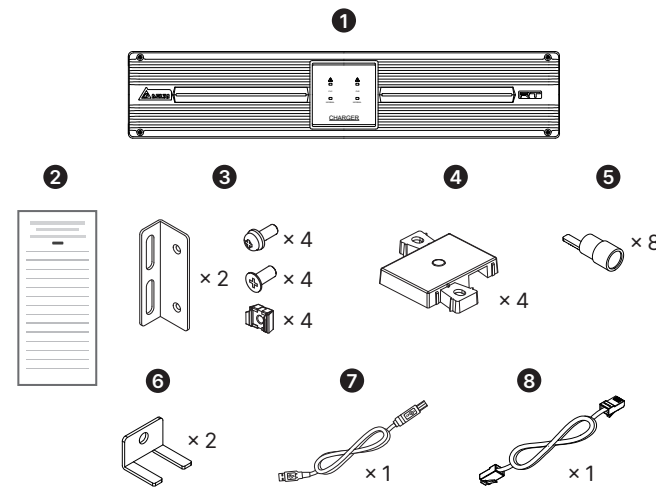
(Figure 1: Delta External Charger Box Front View)

2 Important Safety Instructions

Please read this user manual before operation and keep it for later reference. Failure to heed the manual will void the warranty.

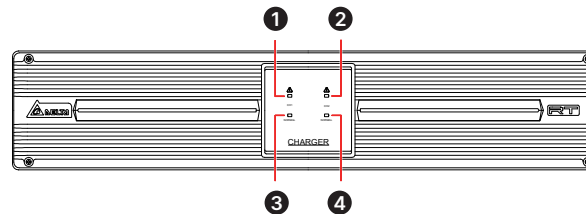
- Install the charger box in a well-ventilated area. Do not expose it to rain, dust, and moisture. Keep it away from flammable gas or explosives.
- To protect the charger box from overheating and to ensure its reliability, do not block or cover its slits and openings.
- Do not put beverages on the charger box.
- All maintenance services must be performed by qualified personnel. Do not open or remove the cover of the charger box to avoid high voltage electric shock.
- The charger box must be well grounded due to a possible risk of current leakage.
- There is a risk of dangerous high voltage when the batteries are still connected to the charger box. Before maintenance of the charger box, do not forget to remove the input power cord and disconnect the battery cable to completely cut off the power source.
- Standard Compliance
CE and cTUVus (UL 62368-1)
FCC Class A
EN 61000-4-2, Level 4
EN 61000-4-6
EN 61000-4-3, Level 3
EN 61000-4-4, Level 4
EN 61000-4-5, 2kV (Common mode)

3 Package List



No.	Item	Q'ty
1	Delta External Charger Box	1 PC
2	Installation & Operation Quick Guide	1 PC
3	Ear kit	1 SET
4	Tower Stand Extender	4 PCS
5	Terminal CU	8 PCS
6	Bus bar for DC output	2 PCS
7	Micro USB cable	1 PC
8	RJ45 Cable	1 PC

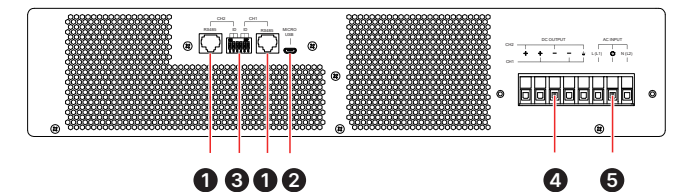
4 LED Indicators



(Figure 2: LED Indicators)

LED No.	LED Status	Meaning
1	Off	CH1 works normally.
	Flashing (Red)	CH1's setting is abnormal.
	On (Red)	CH1 works abnormally.
2	Off	CH2 works normally.
	Flashing (Red)	CH2's setting is abnormal.
	On (Red)	CH2 works abnormally.
3	Off	CH1's input power is abnormal.
	Flashing (Green)	CH1's input power is out of working range.
	On (Green)	CH1's input power is normal.
4	Off	CH2's input power is abnormal.
	Flashing (Green)	CH2's input power is out of working range.
	On (Green)	CH2's input power is normal.

5 Rear Panel



(Figure 3: Rear Panel)

No.	Printing	Meaning	Description
1	RS 485	RS 485	For connection to the RS485 port on UPS. With a UPS, you can detect charger box information and control the charging voltage to synchronize with the UPS. RS 485 and Micro-USB can not be communicated at the same time.
2	MICRO USB	Micro-USB port	For configuring the charger box's setting.
3	ID	DIP Switch	You can set communication ID by DIP Switch, please refer to Table 1 for ID setting.
4	DC OUTPUT	Output terminal	For connection to battery cabinet.
5	AC INPUT	Input terminal	For connection to power input.

Table 1 Communication ID setting

DIP Switch						FW	ID	
CH2 ID Set			CH1 ID Set				CH2	CH1
DIP1	DIP2	DIP3	DIP4	DIP5	DIP6			
OFF	OFF	OFF	OFF	OFF	OFF	0	ID11	ID11
OFF	OFF	ON	OFF	OFF	ON	0	ID12	ID12
OFF	ON	OFF	OFF	ON	OFF	0	ID13	ID13
OFF	ON	ON	OFF	ON	ON	0	ID14	ID14
ON	OFF	OFF	ON	OFF	OFF	0	ID15	ID15
ON	OFF	ON	ON	OFF	ON	0	ID16	ID16
ON	ON	OFF	ON	ON	OFF	0	ID17	ID17
ON	ON	ON	ON	ON	ON	0	ID18	ID18
OFF	OFF	OFF	OFF	OFF	OFF	1	ID19	ID19
OFF	OFF	ON	OFF	OFF	ON	1	ID20	ID20
OFF	ON	OFF	OFF	ON	OFF	1	ID21	ID21
OFF	ON	ON	OFF	ON	ON	1	ID22	ID22
ON	OFF	OFF	ON	OFF	OFF	1	ID23	ID23
ON	OFF	ON	ON	OFF	ON	1	ID24	ID24
ON	ON	OFF	ON	ON	OFF	1	ID25	ID25
ON	ON	ON	ON	ON	ON	1	ID26	ID26



NOTE:

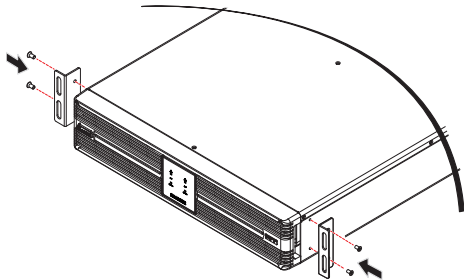
1. Please set different ID of CH1 and CH2.
2. Please restart the charger box after FW ID is set, otherwise, FW ID setting is ineffective.

6 Installation and Configuration

6.1 Installation

• Rack Mounting:

- 1 Attach the included bracket ears to the lateral mounting holes of the Delta external charger box. See **Figure 4**.



(Figure 4: Mount the Bracket Ears)

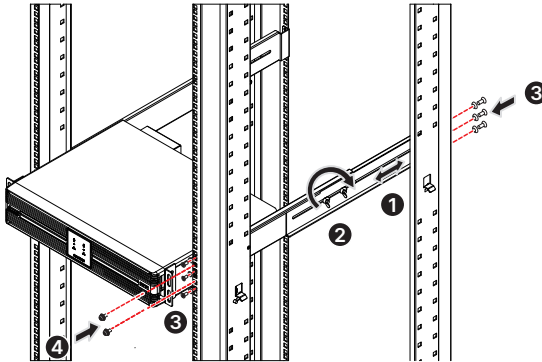
- 2 Follow steps 1 to 2 to install the Delta External Charger Box in Delta's rail kit (optional). See **Figure 5**.

Step 1: Adjust the length of the rails according to your rack.

Step 2: Tighten the rails' nuts.

Step 3: Fix the rails on your rack.

Step 4: Install the Delta external charger box on your rack and tighten the provided screws.



(Figure 5: Install the Delta External Charger Box on Your Rack)

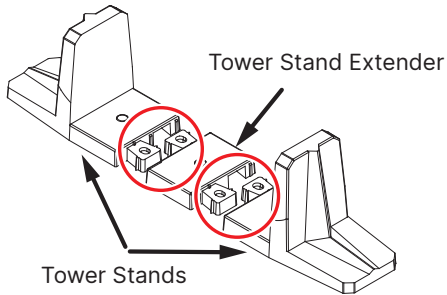


NOTE:

If you want to use a non-Delta rail kit, please only follow step 4.

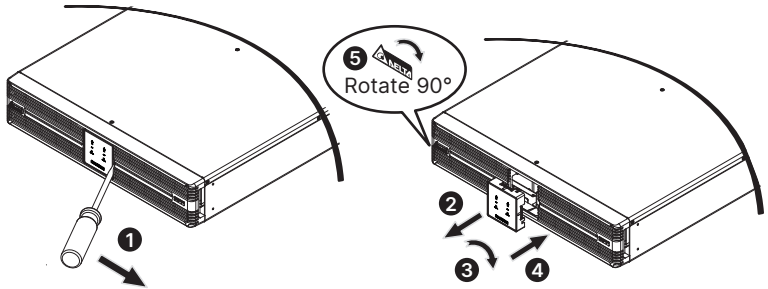
• Tower Mounting:

- 1 Connect the provided tower stand extenders with the tower stands provided in the UPS's carton (please take the UPS and the Delta external charger box's size into consideration). See **Figure 6**.



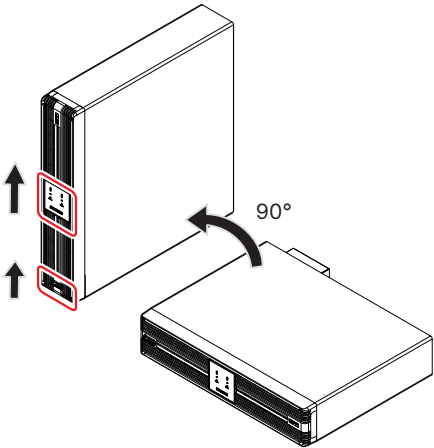
(Figure 6: Connect the Tower Stand Extenders with the UPS's Tower Stands)

- 2 Pull out the Delta external charger box's control panel (1 & 2), rotate it 90° clockwise (3) and re-insert the control panel (4). After that, rotate the Delta logo nameplate 90° clockwise (5). See **Figure 7**.



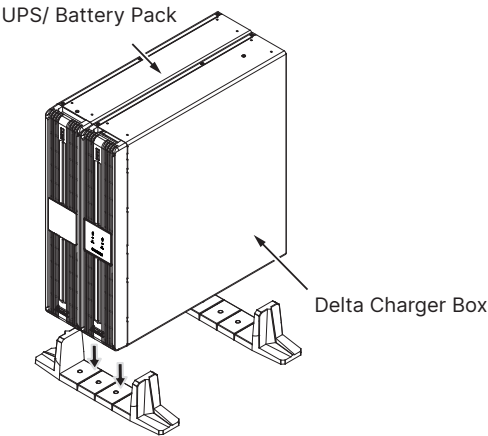
(Figure 7: Rotate the Delta External Charger Box's Control Panel & Delta Logo Nameplate)

- 3 Carefully lift the Delta external charger box upright with the Delta logo and the icon shown on the control panel facing up. A minimum of two people are required. See **Figure 8**.



(Figure 8: Place the Delta External Charger Box Upright)

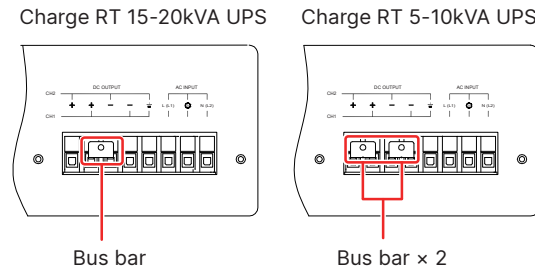
- 4 Place the Delta external charger box and the UPS inside the tower stands. See **Figure 9**.



(Figure 9: Place the Delta External Charger Box and the UPS inside the Tower Stands)

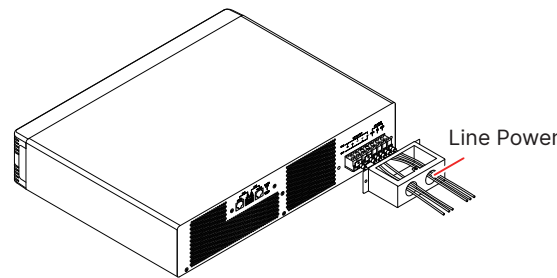
- Connect the Delta external charger box to UPS

1 Before installing input cables and output cables, fix the bus bar (provided in packing) first. See **Figure 10**.



(Figure 10: Fix Bus bar)

2 Select proper input cables and cable gland, and compress the terminal CU in package to one end of the cable. Connect the terminal end to charger box's input terminal block and the other end to line power. See **Figure 11**.

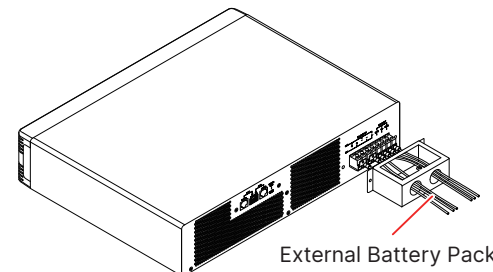


(Figure 11: Install Input Cables)

3 When connecting the external charger box to the mains, it is highly recommended that you install the protective devices. Please refer to the table below.

External Charger Box Model	Suggested Protective Device
CHG240-RT-1	250Vac/ 16A breaker
CHG240-RT-2	250Vac/ 25A breaker

4 Select proper output cables and cable gland, and compress the terminal CU in package to one end of the cable. Connect the terminal end to charger box's output terminal block and the other end to external battery pack. See **Figure 12**.



(Figure 12: Install Output Cables)

5 For the specification of input/ output cables, please refer to below table.

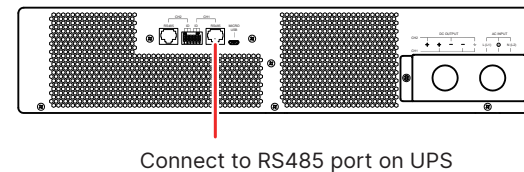
Spec. / Capacity	CHG240-RT-1/ CHG240-RT-2
Input/ Output Cables (Rating Temperature 90°C)	#12AWG (3 mm ²)
Tightening Torque	5.07kgf-cm (4.40 lb-in)

6.2 Configuration

6.2.1 Configure the charger box automatically

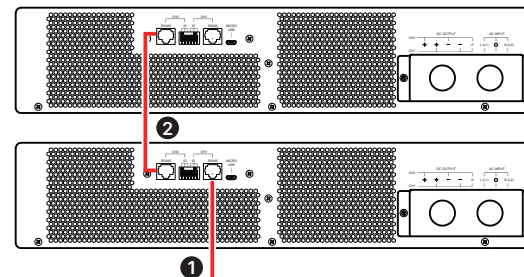
When the charger box is communicated with UPS (UPS need support charger box's communication protocol) through RS485, charger box's configuration is controlled by UPS, that is, follows UPS's setting. Please refer to **Figure 13** and **Figure 14** for connection.

- Connect single charger box to UPS



(Figure 13: Connect Single Charger Box to UPS)

- Connect paralleled charger boxes to UPS



(Figure 14: Connect Paralleled Charger Boxes to UPS)

7 Troubleshooting

LED Indicators	Problems	Solutions
LED flashes (Red)	The charger box's setting is abnormal.	Check whether the configuration is correct. If all configuration is correct, please contact your local dealer or customer service representative.
LED on (Red)	The charger works abnormally.	Check whether the input power is abnormal. If not, connect them. If the input cables are firmly connected but the LED still flashes or off, please contact your local dealer or customer service representative.
LED off (Green)	1. The input power is abnormal. 2. The charger board's power is abnormal. 3. The charger board is not well connected.	Check whether the input power is abnormal. If not, connect them. If the input cables are firmly connected but the LED still flashes or off, please contact your local dealer or customer service representative.
LED flashes (Green)	The input power is out of working range.	Check whether the input power is out of working range. If not, connect them. If the input cables are firmly connected but the LED still flashes or off, please contact your local dealer or customer service representative.

8 Maintenance

Charger Box Cleaning:

- Regularly clean the charger box, especially the slits and openings, to make sure air flows freely through the charger box to avoid overheating.

Charger Box Inspection:

- Regularly check the charger box and inspect:
 1. Whether the LED indicators are normal.
 2. Whether the fan works normally and air flows freely through the charger box.

Fan:

- Higher temperatures shorten fan life. When the charger box is running, please check if the fan works normally and make sure the charger box is ventilated properly. If not, replace the fan.



NOTE:

Please ask your local dealer or customer service representative for more maintenance information. Do not perform maintenance if you are not trained for it.

9 Technical Specifications

Delta External Charger Box		CHG240-RT-1	CHG240-RT-2
Input	Voltage Range	176~280Vac (Full load)	
	Frequency	40~70Hz	
	Current Rate	10A	20A
	Power Factor	> 0.97	
	Protective Device	15A fuse (charger board)	
Output	OutputPower	1600W	3200W
	Charging Voltage	120 ~ 290Vdc	120 ~ 290Vdc
	Charging Current (Maximum)	8A	16A
Dimensions (W × D × H)		440 × 395 × 88.5 mm (17.3" × 15.6" × 3.5")	
Weight		5.7 kg (12.5 lb)	7.2 kg (15.8 lb)
Noise		< 45dBA@ < 30°C amb * ¹	
Environment	Operating Temperature	0 ~ 55°C (32 ~ 104°F) * ²	
	Relative Humidity	0 ~ 95% (non-condensing)	



NOTE:

- *¹ At a distance of 3.28 ft (1 meter) in front of the Delta external charger box.
- *² De-rate to 75% load when the operating temperature is over 40°C (104°F), de-rate to 50% load when the operating temperature is over 50°C (122°F).
- Refer to the rating label for the safety rating.
- All specifications are subject to change without prior notification.

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