

Delta UPS - Amplon Family

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

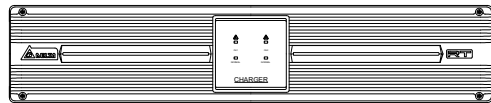
Installation & Operation Quick Guide

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)

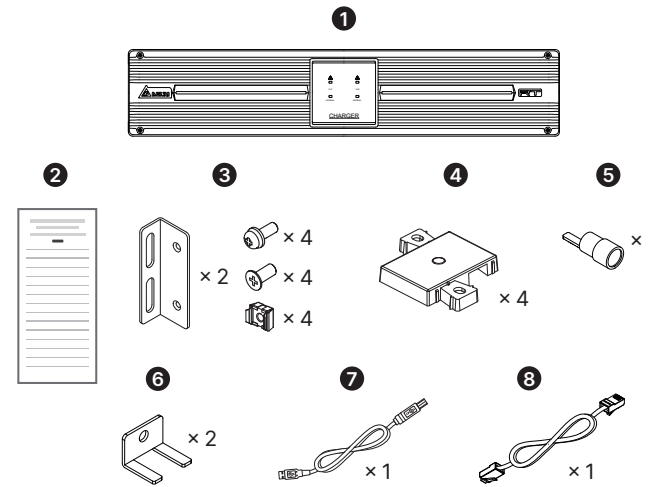
2 Important Safety Instructions

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.

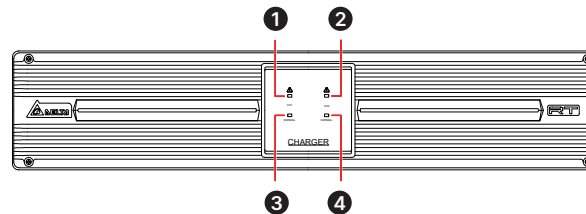
- Standard Compliance
CE and cTUVus (UL 62368-1)
FCC Class A
EN 61000-4-2, Level 4
EN 61000-4-6
EN 61000-4-3, Level 3
EN 61000-4-4, Level 4
EN 61000-4-5, 2kV (Common mode)

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

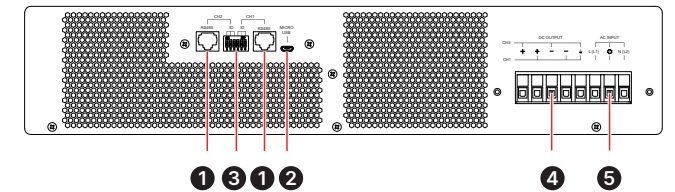
4 LED Indicators



(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.
	On (Red)	CH2 works abnormally.
3	Off	CH1's input power is abnormal.
	On (Green)	CH1's input power is normal.
4	Off	CH2's input power is abnormal.
	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 OUTOUTPUT	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:

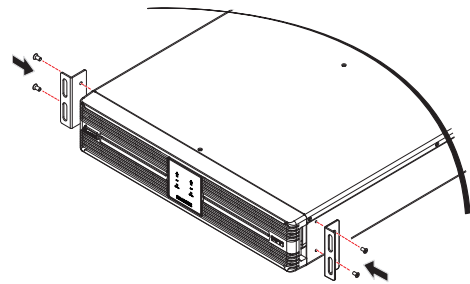
1. Please set different ID of CH1 and CH2.
2. Please restart the charger box after FW ID is set, otherwise, FW ID setting is ineffective.

6 Installation and Configuration

6.1 Installation

Rack Mounting:

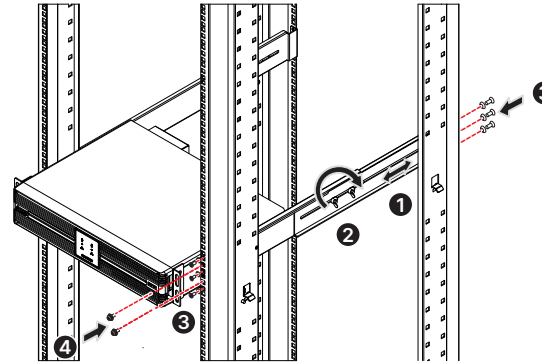
- 1 Attach the included bracket ears to the lateral mounting holes of the Delta external charger box. See *Figure 4*.



(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)

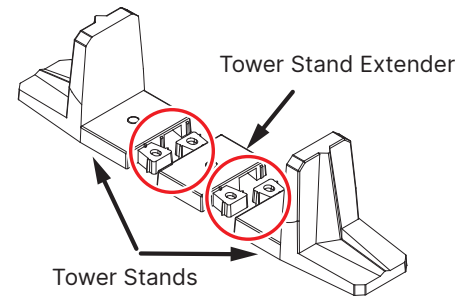


NOTE:

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

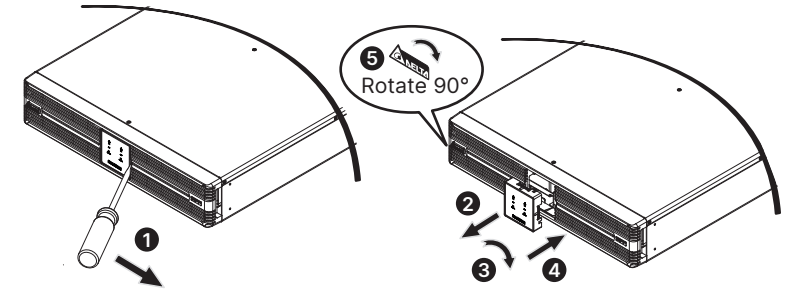
Tower Mounting:

- 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*.



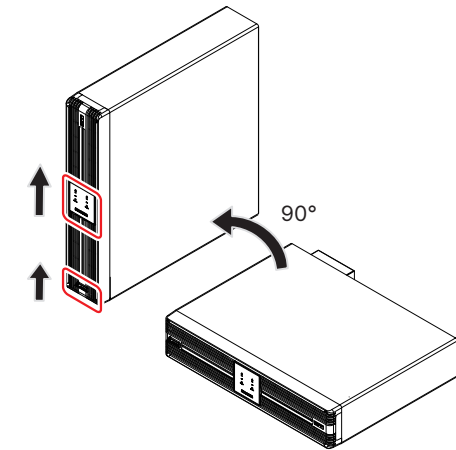
(Figure 6: Connect the Tower Stand Extenders with the UPS's Tower Stands)

- 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*.



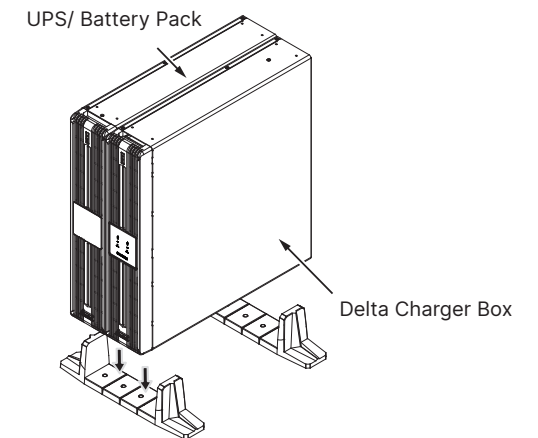
(Figure 7: Rotate the Delta External Charger Box's Control Panel & Delta Logo Nameplate)

- 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)

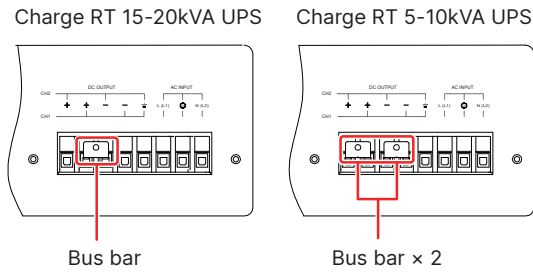
- 4 Place the Delta external charger box and the UPS inside the tower stands. See *Figure 9*.



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

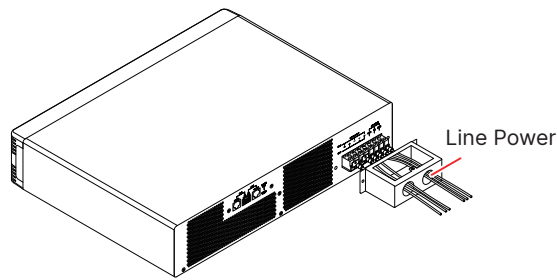
- Connect the Delta external charger box to UPS

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**.

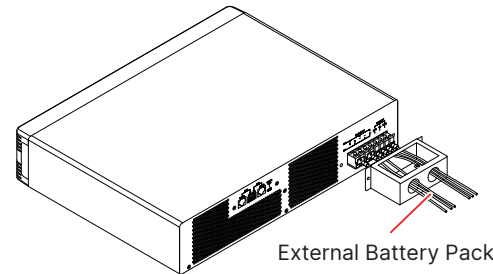


(Figure 11: Install Input Cables)

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.

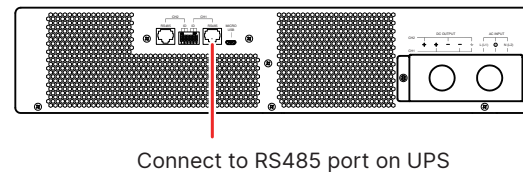
Spec. / Capacity	CHG240-RT-1/ CHG240-RT-2
Input/ Output Cables (Rating Temperature 90°C)	#12AWG (3 mm ²)
Tightening Torque	5.07kgf-cm (4.40 lb-in)

6.2 Configuration

6.2.1 Configure the charger box automatically

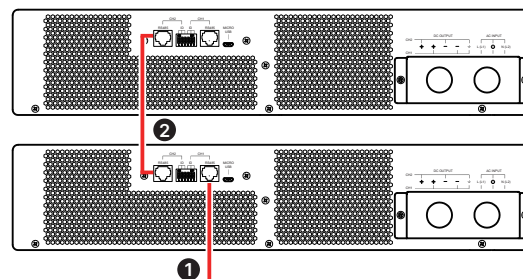
When the charger box is communicated with UPS (UPS need support charger box's communication protocol) through RS485, charger box's configuration is controlled by UPS, that is, follows UPS's setting. Please refer to **Figure 13** and **Figure 14** for connection.

- 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.	
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 cables are firmly connected. 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.	

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:
 - Whether the LED indicators are normal.
 - 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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Version : V 1.1
Release Date : 2022_08_04

台达 UPS - Amplon 系列

台达外接充电箱

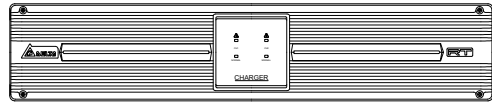
适用于 Amplon RT 5/ 6/ 8/ 10/ 15/ 20kVA UPS

安装操作指南

简体中文

1 产品介绍

此充电箱可作为 RT 5-20kVA 在线式不间断电源系统的外部充电器使用, 当不间断电源系统电池容量较大时, 仍可提供快速充电。充电箱的输入功率因数 0.97, 整机效率达 90%; 此充电箱有宽输出: 120Vdc~290Vdc, 可依客户需求选择充电电池颗数。充电器可搭配不间断电源系统给铅酸电池和锂电池充电, 而且它可以和不间断电源主机通过 RS485 建立通讯, 有利于进行整个 UPS 系统监控; 充电箱还可以通过并联的方式增加充电能力, 使用上非常灵活。



(图 1: 台达外接充电箱前视图)

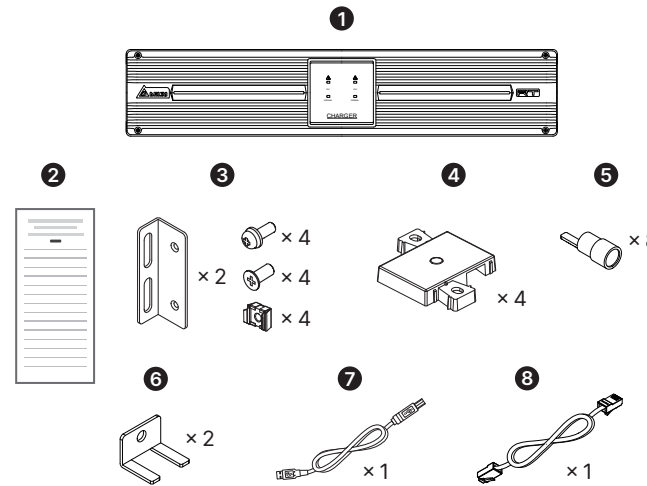
2 安全注意事项

使用此设备之前请详细阅读此说明书, 并保存此说明书为永久参考数据。若有违反本说明书而造成的产品损坏或故障, 将无法享有保修服务。

- 此设备需放置于通风良好区域, 勿使其暴露到雨水、尘垢或湿气重的地方, 并远离可燃液体、瓦斯或爆炸物。
- 为避免充电箱过热并确保其良好的可靠性, 箱体的通风口不可被塞住或盖住。
- 请勿将饮料容器放置在此设备上。
- 所有的维修服务必须由合格人员执行, 切勿企图自己维修。严禁打开或移开设备盖子, 以免遭遇高压电。
- 为防止有漏电流存在, 充电箱必须保持良好的接地。
- 若电池还连接在充电箱上, 则存在高危险之电压。在做任何维修服务时, 需先行将输入电源及电池连接线拔掉, 以切断充电箱电源。

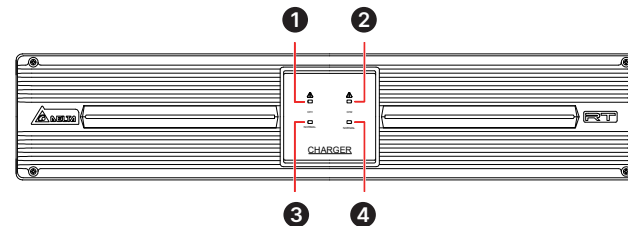
- 安规标准
CE and cTUVus (UL 62368-1)
FCC Class A
EN 61000-4-2, Level 4
EN 61000-4-6
EN 61000-4-3, Level 3
EN 61000-4-4, Level 4
EN 61000-4-5, 2kV (Common mode)

3 包装清单



项次	项目	数量
①	台达外接充电箱	1 台
②	安装操作指南	1 张
③	耳挂	1 套
④	塔式延长架	4 个
⑤	端子	8 个
⑥	DC 输出铜排	2 个
⑦	Micro USB 连接线	1 条
⑧	RJ45 连接线	1 条

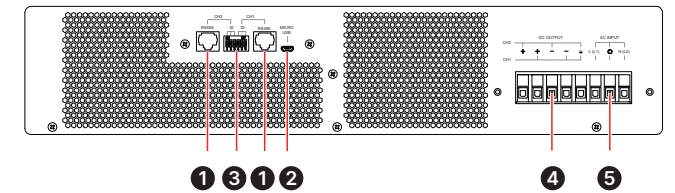
4 LED 指示灯



(图 2: LED 指示灯)

LED 序号	LED 状态	说明
①	灭掉	CH1 充电板工作正常。
	闪烁 (红)	CH1 充电板参数设定不正常。
	亮灯 (红)	CH1 充电板工作不正常。
②	灭掉	CH2 充电板工作正常。
	亮灯 (红)	CH2 充电板工作不正常。
③	灭掉	CH1 充电板输入电源工作异常。
	亮灯 (绿)	CH1 充电板电源超出正常工作范围。
④	灭掉	CH2 充电板输入电源工作异常。
	亮灯 (绿)	CH2 充电板电源超出正常工作范围。
	亮灯 (绿)	CH2 充电板电源工作正常。

5 后背板



(图 3: 充电箱后背板)

项次	印刷	说明	描述
①	RS 485	RS 485 接口	用于连接 UPS RS485 接口。UPS 可用来侦测充电箱信息, 控制充电电压与 UPS 同步。RS 485 和 Micro-USB 不能同时通讯。
②	MICRO USB	Micro-USB 接口	用于配置充电箱参数。
③	ID	通讯指拨开关	用于设定通讯 ID, 请参考表 1 通讯 ID 设定。
④	DC OUTPUT	输出端子台	用于连接电池箱。
⑤	AC INPUT	输入端子台	用于连接市电输入。

继续下一页 ⇨⇨



表 1：通讯 ID 设定

通讯指拨开关						FW	ID	
CH2 ID 设定			CH1 ID 设定				CH2	CH1
DIP1	DIP2	DIP3	DIP4	DIP5	DIP6			
关	关	关	关	关	关	0	ID11	ID11
关	关	开	关	关	开	0	ID12	ID12
关	开	关	关	开	关	0	ID13	ID13
关	开	开	关	开	开	0	ID14	ID14
开	关	关	开	关	关	0	ID15	ID15
开	关	开	开	关	开	0	ID16	ID16
开	开	关	开	开	关	0	ID17	ID17
开	开	开	开	开	开	0	ID18	ID18
关	关	关	关	关	关	1	ID19	ID19
关	关	开	关	关	开	1	ID20	ID20
关	开	关	关	开	关	1	ID21	ID21
关	开	开	关	开	开	1	ID22	ID22
开	关	关	开	关	关	1	ID23	ID23
开	关	开	开	关	开	1	ID24	ID24
开	开	关	开	开	关	1	ID25	ID25
开	开	开	开	开	开	1	ID26	ID26

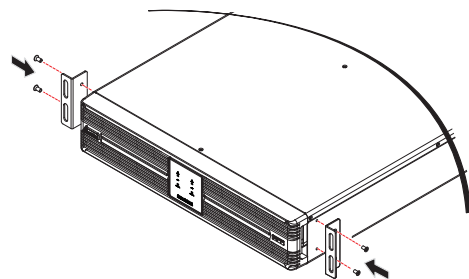
- 注：**
- CH1 和 CH2 需设定不同的通讯 ID。
 - FW ID 设定完成后，请重启充电箱，否则 FW ID 设定将无效。

6 安装及配置

6.1 安装步骤

• 机架式固定：

- 将附件的耳挂锁附到充电箱侧面的安装孔上。如图 4。



(图 4: 安装耳挂)

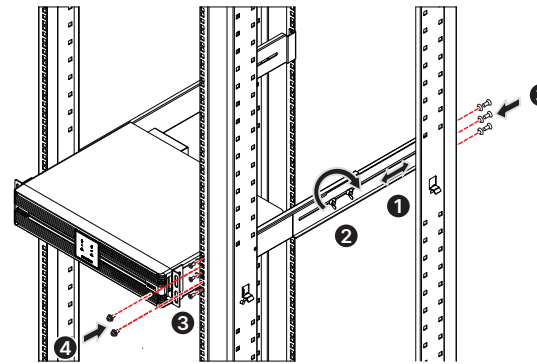
- 按照步骤 1 到 4 将充电箱安装到台达的固定导轨上（选配）。如图 5。

步骤 1：根据机架调整固定导轨的长度。

步骤 2：旋紧固定导轨的螺帽。

步骤 3：将固定导轨固定于机架内。

步骤 4：将台达外接充电箱插入机架内，并锁紧固定螺丝。

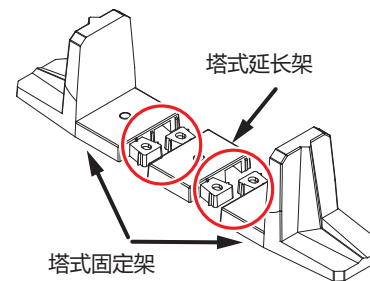


(图 5: 将充电箱安装于机架)

- 注：**
- 如果使用非台达的固定导轨，只需要按照步骤 4 执行。

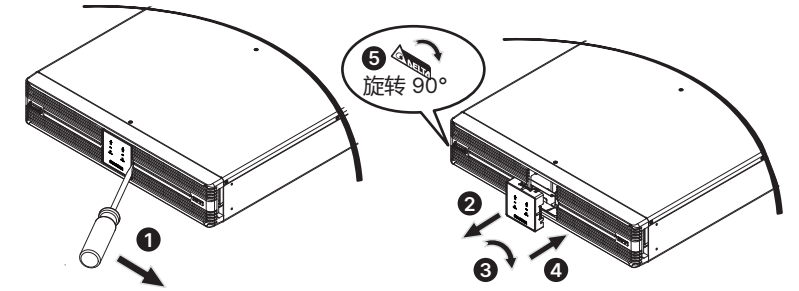
• 塔式固定：

- 将充电箱附件的塔式延长架与 UPS 附件的塔式固定架连接起来（请考量 UPS 以及充电箱的尺寸）。如图 6。



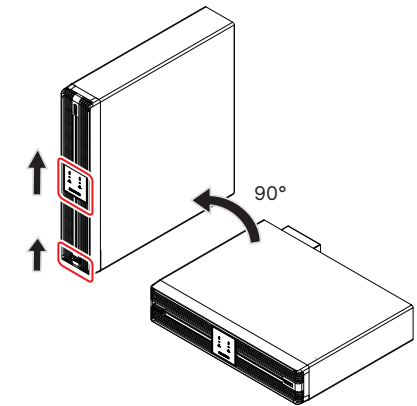
(图 6: 连接塔式固定架与塔式延长架)

- 拉出台达充电箱的控制面板 (1 & 2)，顺时针旋转 90° (3) 并重新插入控制面板 (4)。之后，将台达铭牌顺时针旋转如 90° (5)。如图 7。



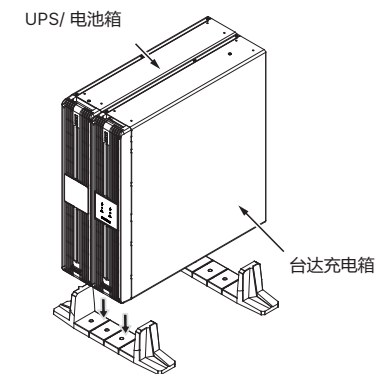
(图 7: 旋转充电箱的控制面板以及台达铭牌)

- 小心的将充电箱直立抬起并让台达铭牌以及控制面板上显示的图标朝上。此动作至少需要两个人操作。如图 8。



(图 8: 垂直放置台达外接充电箱)

- 将充电箱和 UPS 放置在塔式固定架内。如图 9。

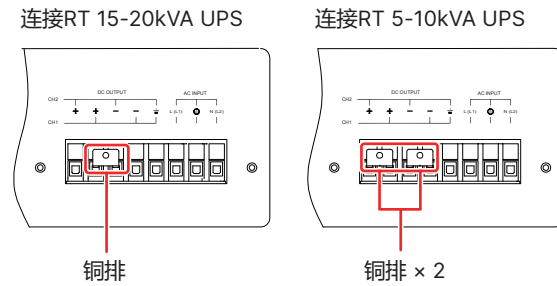


(图 9: 将充电箱和 UPS/ 电池箱放置在塔式固定架内)

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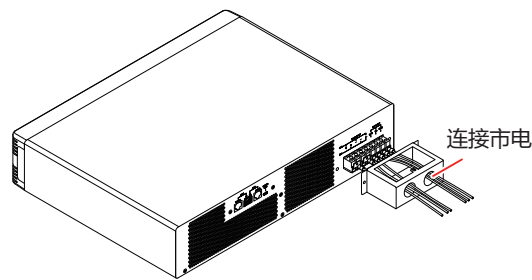
• 连接台达外接充电箱和 UPS

1 在安装充电箱输入和输出线材前，先将附件中的铜排依下图位置固定。如图 10。



(图 10: 安装铜排)

2 选择合适的线材和线扣，搭配附件中的端子，将压好端子一端的线材连接充电箱输入端子台，另一端连接市电接口。如图 11。

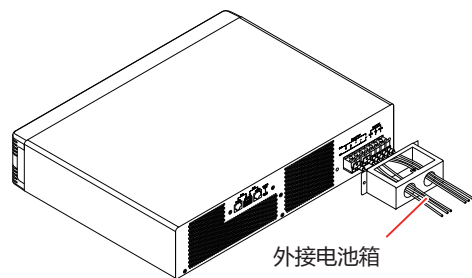


(图 11: 连接输入线)

3 将充电箱连接至市电时，需要安装适当的保护装置。请参考下表：

充电箱型号	建议的保护装置
CHG240-RT-1	250Vac/ 16A 断路器
CHG240-RT-2	250Vac/ 25A 断路器

4 选择合适的线材和线扣，搭配附件中的端子，将压好端子一端的线材连接充电箱输出端子台，另一端连接到电池箱。如图 12。



(图 12: 连接外接电池箱)

5 输入 / 输出线的规格，请参考下表：

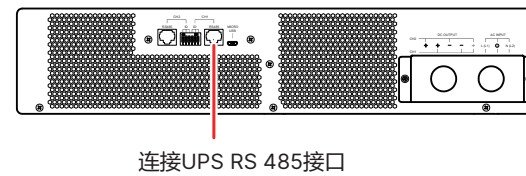
规格	CHG240-RT-1/ CHG240-RT-2
输入 / 输出线 (额定温度 90° C)	#12AWG (3 mm ²)
紧力扭矩	5.07kgf-cm (4.40 lb-in)

6.2 配置

6.2.1 自动配置充电箱参数配置

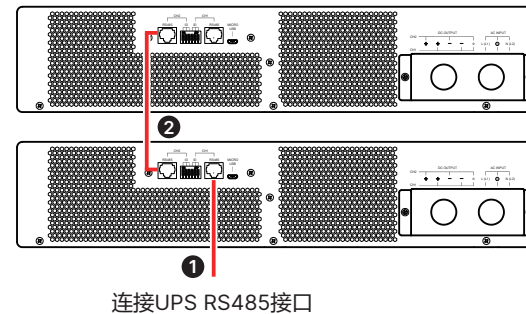
当充电箱与 UPS (UPS 需支持充电箱的通讯协议) 通过 RS485 连接时，充电箱参数受控于 UPS，即跟随 UPS 设定。充电箱与 UPS 连接请参考图 13 和图 14。

- 连接单台充电箱到 UPS



(图 13: 连接单台充电箱到 UPS)

- 连接多台充电箱到 UPS



(图 14: 连接多台充电箱到 UPS)

7 故障排除

灯号颜色 / 状态	说明	故障排除方法
LED 闪烁 (红色)	充电板设定不正常。	请确认充电板设定是否正确。如以上条件皆已排除，请联系经销商或客服人员。
LED 亮灯 (红色)	充电板工作不正常。	
LED 灭掉 (绿色)	1. 输入电源不正常。 2. 充电板电源工作不正常。 3. 充电板未链接。	请检查输入电源是否正常且输入电源正确连接；若以上条件皆已排除仍故障，请联系经销商或客服人员。
LED 闪烁 (绿色)	输入电压超出工作范围。	

8 保养与维护

充电箱清洁：

- 定期清洁充电箱，特别是通风孔。需确保气流在机箱内能自由流通。

充电箱检查：

- 在使用充电箱的过程中，需检查以下内容：
 1. LED 面板指示灯是否正常，是否有故障产生。
 2. 风扇是否正常运转，后背板是否有风吹出。

风扇：

- 使用环境温度越高，风扇使用寿命越短。充电箱运行使用中，应定期检查所有风扇是否运行正常，并确认有风从充电箱前框吸入，后背板通风孔吹出。若有损坏，需更换风扇。



注：

有关保养与维护的相关信息，请联络当地经销商或客服人员。若您未受过专业训练，请勿自行保养与维护。

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9 技术规格

台达外接充电箱		CHG240-RT-1	CHG240-RT-2
输入	电压范围	176~280Vac (满载)	
	频率范围	40~70Hz	
	电流	10A	20A
	功率因数	> 0.97	
	保护装置	15A 保险丝 (单块充电板)	
输出	功率	1600W	3200W
	充电电压范围	120 ~ 290Vdc	120 ~ 290Vdc
	最大充电电流	8A	16A
尺寸 (宽 × 深 × 高)		440 × 395 × 88.5 mm	
重量		5.7 kg	7.2 kg
噪音		< 45dBA@ < 30° C *1	
环境	运行温度	0 ~ 55° C *2	
	相对湿度	0 ~ 95% (不结露)	



注:

- *1 充电箱前 1 米处。
- *2 当运行温度高于 40° C 时, 充电箱输出功率会降额至 75%, 当运行温度高于 50° C 时, 充电箱输出功率会降额至 50%。
- 安规内容请参考产品标签。
- 本规格仅供参考, 若有变更则不另行通知。

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