



Global leading quality, More reasonable price.

PowerFirst Technology Company Limited

深圳市顶尖电源科技有限公司

地址：深圳市龙岗区平湖街道平安大道108号开田科学园蓝田大厦

Add.: Lantian Bld., Kaitian Science Park, Pinghu Street, Shenzhen, China

Tel: +86 755-28441619 Mobile: +86 13713917197 Email: star@epowerfirst.com Website: [www.epowerfirst.com](http://www.epowerfirst.com)

## 24V10A Charging Station Technical Specification (Confidential)

Model No.: A300-2410

### CONTENTS:

1 INTRODUCTION .....	1
2 DOCUMENT HISTORY .....	1
3 SPECIFICATION.....	1-3
4 PRODUCT OUTLINE DRAWING .....	3
5 CHARGING ALGORITHM .....	4
6 CHARGER WORKING MODE .....	4

### 1 INTRODUCTION

This document specifies the specification of charging station (24V 10A) for **LiFePO4 / Li-ion Battery**. The charging station shall charge a **LiFePO4 / Li-ion Battery with CC/CV profile**.

Product picture (For reference only, physical product maybe different subject to customer's specific requirement):



### 2 DOCUMENT HISTORY

Table 2-1 Document History

Version	Date	Change record	Creator
V.01	1 Feb.,2021	Initial version	PowerFirst
V.02	17 Mar.,2021	Add Leakage protection & Electrostatic discharge	PowerFirst

### 3 SPECIFICATION

Table 3-1 Specification

No	Item	Technical specification	Remark
1	Rated input voltage	100 -240 VAC +/-10%	Universal
2	AC frequency	50-60Hz	
3	RECOVERY MODE	After charging station is connected with AC, output voltage (29.4V) lasts 10 seconds. When battery is connected with charging station, and the charging station detects output current (>1A) within 10 seconds, then the charging station will go to CHARGING MODE to charge this battery. If no output current is detected within 10 seconds, charging station will go to NORMAL STANDBY MODE.	



Global leading quality, More reasonable price.

PowerFirst Technology Company Limited

深圳市顶尖电源科技有限公司

地址：深圳市龙岗区平湖街道平安大道108号开田科学园蓝田大厦

Addr.: Lantian Bld., Kaitian Science Park, Pinghu Street, Shenzhen, China

Tel: +86 755-28441619 Mobile: +86 13713917197 Email: star@epowerfirst.com Website: [www.epowerfirst.com](http://www.epowerfirst.com)

**24V10A Charging Station Technical Specification (Confidential)**

**Model No.: A300-2410**

No	Item	Technical specification	Remark
4	Nominal voltage	24V	
5	Constant current (CC)	10A+/-0.5A (5A/8A/15A is optional ) Charging current can be adjusted by button	
6	Constant voltage (CV)	29.4V+/- 0.2V (28.8V optional) Charging voltage can be adjusted by button	
7	Cut-off current	0.5A~1.5A	
8	Patrol inspection mode	Under CHARGING MODE, battery is fully charged, if battery is still connected with charging station, the charging station will stop charging and continue detecting battery voltage; when battery voltage is lower than 28V, charging station will re-start to CV CHARGING MODE until battery is fully charged again, then go to INSPECTION STANDBY MODE, so reciprocating.	
9	BATTERY RECOVERY	Charging station can't detect battery voltage or battery is over-discharged, so, charging station can't go to CHARGING MODE by normal charging procedure, it needs BATTERY RECOVERY PROCEDURE. Steps as following:  1). Disconnect AC with charging station, charging station goes to NO AC MODE, and wait for consuming the power inside charger (to check if LED flashes)  2). Connected AC with charging station, charging station will keep CV CHARGING MODE within 10 seconds, output voltage 29.4V;  3). If battery is connected with charging station within 10 seconds, there will be output current.  4). Charging station detects output current in BATTERY RECOVERY MODE, then charging station goes to CC CHARGING MODE.	
10	WiFi wireless transmission function	Data can be transmitted wirelessly with the background management system through WiFi Charging station receives instruction through WiFi	(Optional)
11	Charging time	CC+CV < 6 Hours	
12	OVP	Over voltage protection by 29.4V + 0.6V	Signal code: E02
13	OCP	Over current protection	
14	Efficiency	Efficiency >=91% under 230V input Efficiency approx. 89% under 115V input	
15	Cooling	With fan	
16	PFC (Power Factor Correction	With PFC	
17	Leakage Current when the charger connected with batteries but disconnect from the AC mains	<1.0 mA	



Global leading quality, More reasonable price.

PowerFirst Technology Company Limited

深圳市顶尖电源科技有限公司


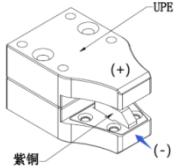

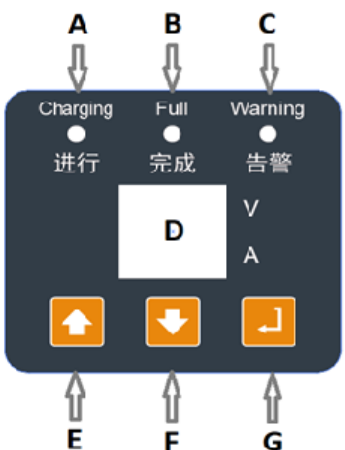
地址：深圳市龙岗区平湖街道平安大道108号开田科学园蓝田大厦

Add.: Lantian Bld., Kaitian Science Park, Pinghu Street, Shenzhen, China

Tel: +86 755-28441619 Mobile: +86 13713917197 Email: star@epowerfirst.com Website: [www.epowerfirst.com](http://www.epowerfirst.com)

**24V10A Charging Station Technical Specification (Confidential)**

**Model No.: A300-2410**

No	Item	Technical specification	Remark														
18	Nominal storage temperature	-20℃ ~ 85℃															
19	Nominal operating temperature	0℃ ~ 40℃															
20	Nominal operating humidity	10%~95%RH															
21	Emergency stop switch	Manually cut off the power supply in case of emergency															
22	Leakage protection	Yes															
23	Electrostatic discharge	Yes															
24	Short circuit protection	Short circuit protection, should be automatically recovery after removing the connecting. (no short circuit protection during the 10 seconds after AC connected.)															
25	Reverse polarity protection	Reverse polarity protection, should be automatically recovery after remove the connecting. (Signal code: E01) (no reverse polarity protection during the 10 seconds after AC connected.)															
26	Additional protection	Sparkless protection AC surge protection, Over temperature protection															
27	CE-LVD/EMC/ROHS	LVD : EN61558-1 // EN61558-2-16 EMC : EN61000-6-1 // EN61000-6-3	Pending														
28	Output definition & connector																
29	AC input cable/connector	AC socket: IEC C14 3PIN at side panel. AC power cord: 3*0.75mm <sup>2</sup> with EU plug. Length: 1800mm															
30	Panel operation instruction	<table border="1"> <tbody> <tr> <td>A</td> <td>Yellow LED</td> </tr> <tr> <td>B</td> <td>Green LED</td> </tr> <tr> <td>C</td> <td>Red LED</td> </tr> <tr> <td>D</td> <td>Digital Display</td> </tr> <tr> <td>E</td> <td>Voltage Selection</td> </tr> <tr> <td>F</td> <td>Current Selection</td> </tr> <tr> <td>G</td> <td>Enter Button</td> </tr> </tbody> </table> 	A	Yellow LED	B	Green LED	C	Red LED	D	Digital Display	E	Voltage Selection	F	Current Selection	G	Enter Button	
A	Yellow LED																
B	Green LED																
C	Red LED																
D	Digital Display																
E	Voltage Selection																
F	Current Selection																
G	Enter Button																



Global leading quality, More reasonable price.

PowerFirst Technology Company Limited

深圳市顶尖电源科技有限公司

地址：深圳市龙岗区平湖街道平安大道108号开田科学园蓝田大厦

Address: Lantian Bld., Kaitian Science Park, Pinghu Street, Shenzhen, China

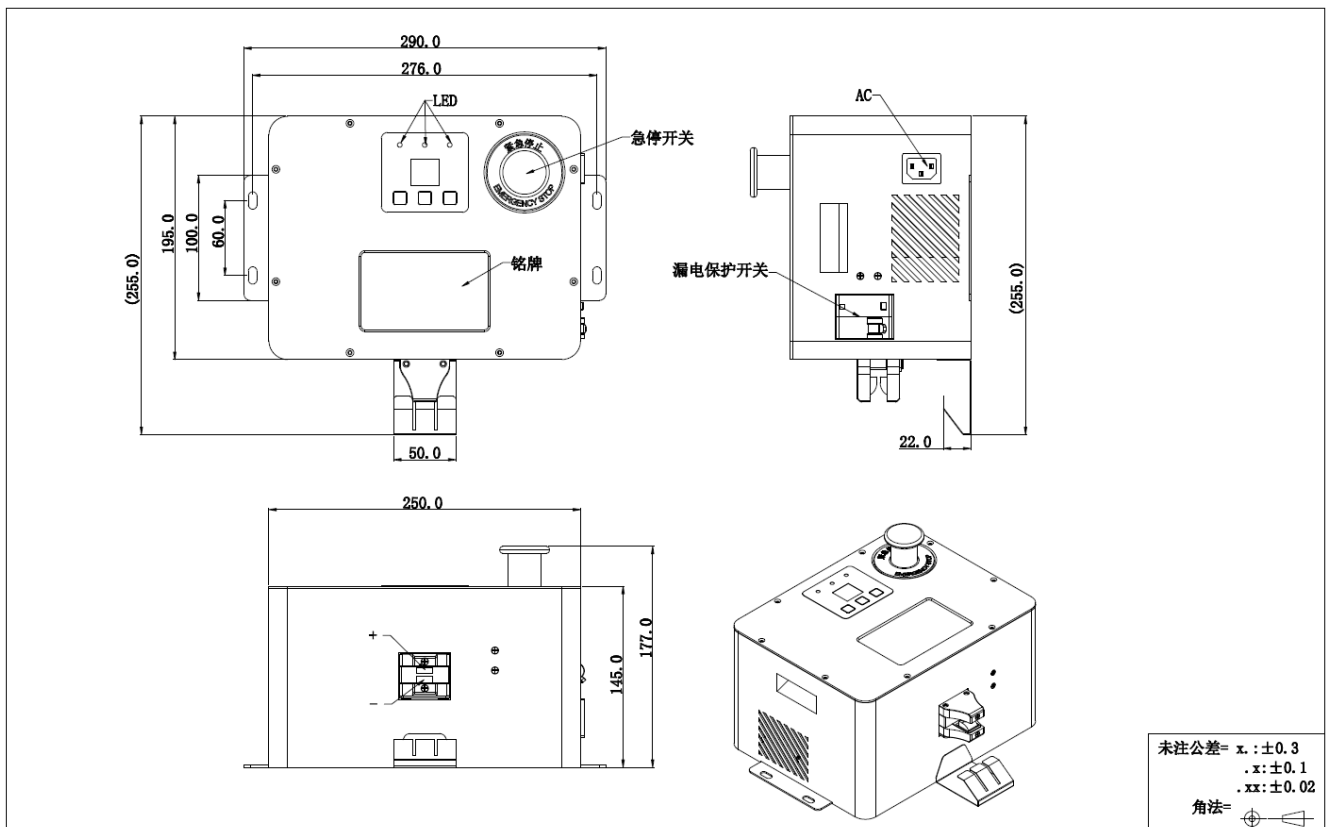
Tel: +86 755-28441619 Mobile: +86 13713917197 Email: star@epowerfirst.com Website: [www.epowerfirst.com](http://www.epowerfirst.com)

**24V10A Charging Station Technical Specification (Confidential)**

**Model No.: A300-2410**

No	Item	Technical specification	Remark																																												
31	LED instruction:	<table border="1"> <thead> <tr> <th></th> <th>Yellow</th> <th>Green</th> <th>Red</th> </tr> </thead> <tbody> <tr> <td>Self-inspection mode</td> <td colspan="3">3-color lights ( Yellow, Green, Red, ) are displayed in turn</td> </tr> <tr> <td>Recovery mode</td> <td>Flashing</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>Standby mode</td> <td>Flashing</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>Constant current (CC)</td> <td>ON</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>Constant voltage (CV)</td> <td>ON</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>Cut-off</td> <td>OFF</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>Patrol inspection mode</td> <td>OFF</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>Emergency stop</td> <td>OFF</td> <td>OFF</td> <td>OFF</td> </tr> <tr> <td>Reverse polarity</td> <td>OFF</td> <td>OFF</td> <td>Flashing</td> </tr> <tr> <td>Battery voltage abnormality</td> <td>OFF</td> <td>OFF</td> <td>Flashing</td> </tr> </tbody> </table>		Yellow	Green	Red	Self-inspection mode	3-color lights ( Yellow, Green, Red, ) are displayed in turn			Recovery mode	Flashing	OFF	OFF	Standby mode	Flashing	OFF	OFF	Constant current (CC)	ON	OFF	OFF	Constant voltage (CV)	ON	OFF	OFF	Cut-off	OFF	ON	OFF	Patrol inspection mode	OFF	ON	OFF	Emergency stop	OFF	OFF	OFF	Reverse polarity	OFF	OFF	Flashing	Battery voltage abnormality	OFF	OFF	Flashing	
	Yellow	Green	Red																																												
Self-inspection mode	3-color lights ( Yellow, Green, Red, ) are displayed in turn																																														
Recovery mode	Flashing	OFF	OFF																																												
Standby mode	Flashing	OFF	OFF																																												
Constant current (CC)	ON	OFF	OFF																																												
Constant voltage (CV)	ON	OFF	OFF																																												
Cut-off	OFF	ON	OFF																																												
Patrol inspection mode	OFF	ON	OFF																																												
Emergency stop	OFF	OFF	OFF																																												
Reverse polarity	OFF	OFF	Flashing																																												
Battery voltage abnormality	OFF	OFF	Flashing																																												
32	Mechanical fixing	Standing																																													
33	Housing Color	Orange																																													
34	Dimensions	L290* W255 *H177mm																																													
35	Weight	4.8 kgs	Maybe some tolerance																																												

**4. PRODUCT OUTLINE DRAWING**





Global leading quality, More reasonable price.

PowerFirst Technology Company Limited

深圳市顶尖电源科技有限公司

地址：深圳市龙岗区平湖街道平安大道108号开田科学园蓝田大厦

Add.: Lantian Bld., Kaitian Science Park, Pinghu Street, Shenzhen, China

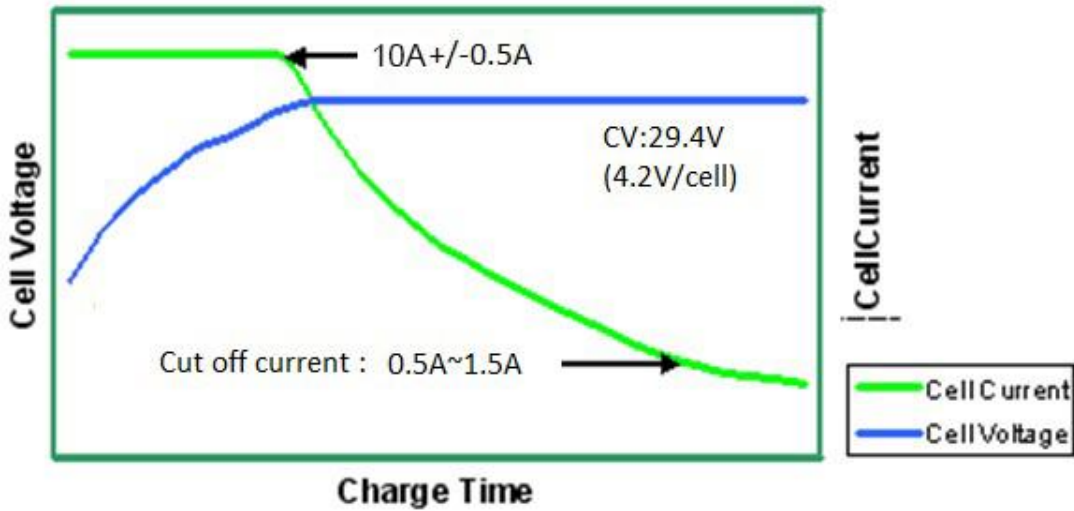
Tel: +86 755-28441619 Mobile: +86 13713917197 Email: star@epowerfirst.com Website: [www.epowerfirst.com](http://www.epowerfirst.com)

### 24V10A Charging Station Technical Specification (Confidential)

Model No.: A300-2410

#### 5. CHARGING ALGORITHM

■ CC+CV for Li-ion batteries (default set)



□ CC+CV for LiFePO4 batteries

