

# SPECIFICATION



ESD-00005390

FSP700-BC48V14A01

Date:2024-12-17 19:03



# Electrical Specification

Model Name: FSP700-BC48V14A01

Rev. 0.1

## 1 AC input specification

### 1-1 AC input parameters

The power supply must operate at a sinusoidal input voltage defined in section 1-1.

Parameter	Min.	Nominal	Max.	Unit
Frequency	47	50/60	63	Hz
Voltage* (acc. 1-6)	90	100-240	264	V

Table 1-1 AC input range

### 1-2 Inrush current

- 1-2.1 The in-rush current will be less than 30 A at cold start, maximum load, at 25°C and at 115Vac and 60Hz at any phase angle. All capacitors will be completely discharged when the power is applied (full cold start).
- 1-2.2 The in-rush current will be less than 60 A at cold start, maximum load, at 25°C and at 230Vac and 50Hz at any phase angle. All capacitors will be completely discharged when the power is applied (full cold start).
- 1-2.3 In-rush current must not blow the input fuse.

### 1-3 Efficiency

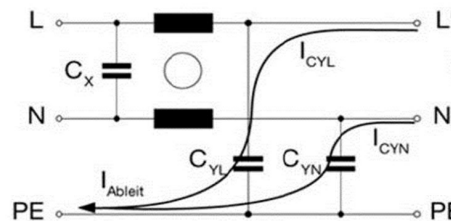
- 1-3.1 Efficiency: 91% min. @ 115Vac & 57V/12A.
- 1-3.2 Efficiency: 93% min. @ 230Vac & 57V/12A.

### 1-4 Input current

- 1-4.1 Input current will be less than 8.0 A at 115 Vac and 60 Hz.
- 1-4.2 Input current will be less than 4.0 A at 230 Vac and 50 Hz.

### 1-5 Leakage current

The leakage current to ground for each AC core shall be less than 3.5mA when tested at 264VAC.



### 1-6 Power factor

$PF \geq 0.95$  @ full load / 115Vac and  $PF \geq 0.9$  @ full load / 230Vac.

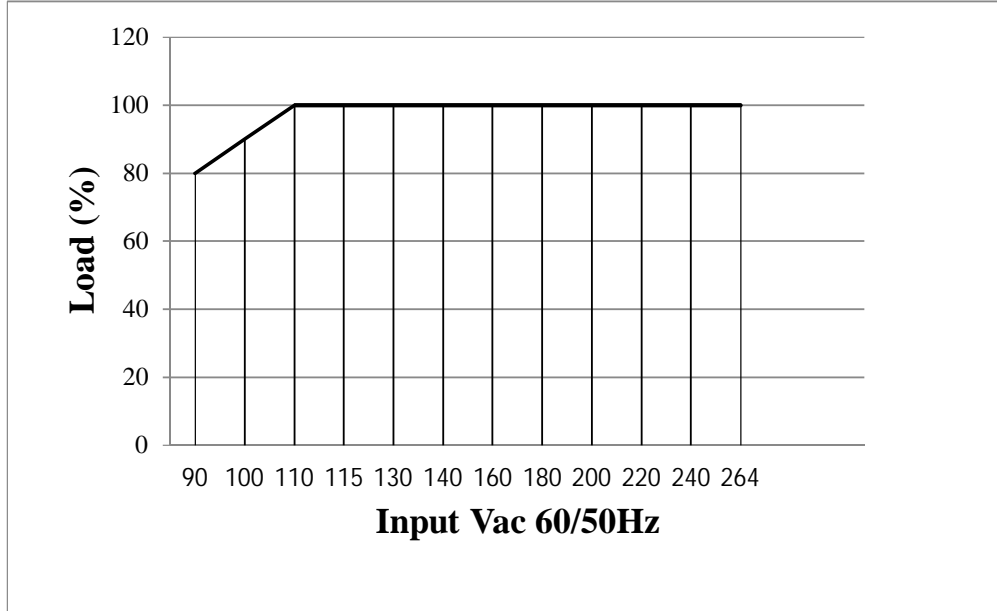


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## 1-7 Derating curve under low input voltage





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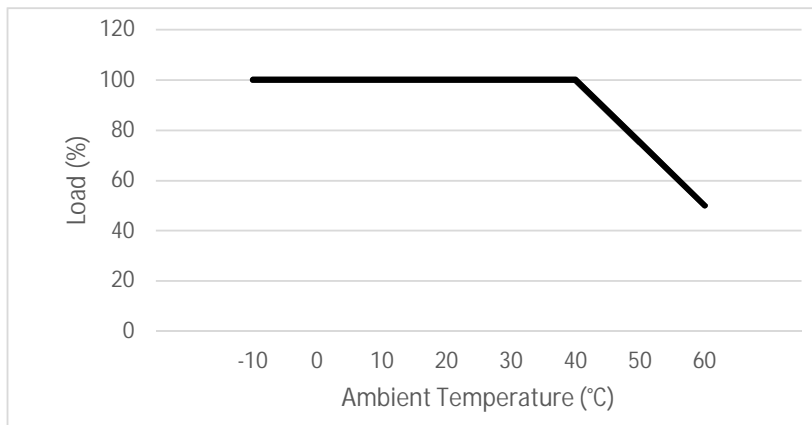
## 2 Output Specifications

### 2-1 DC Output Specification

All values listed below are measured at an ambient temperature of +25°C and after 10 minutes of operation.

Characteristic	CC-CV	Charger will only follow CAN command.
2-1.1 Reverse current	< 500 $\mu$ A	AC connected or not connected
2-1.2 Pre-Charge Current mode	1-4A $\pm$ 0.5A	Charge Voltage 38V~ 42V
2-1.3 Main Charge Current mode	10-14A $\pm$ 0.4A 8-12A $\pm$ 0.4A 1-12A $\pm$ 0.4A	Charge Voltage 42V $\pm$ 1V~ 50V Charge Voltage 50V $\pm$ 1V~ 55V Charge Voltage 55V $\pm$ 1V~ 57V
2-1.4 Constant Voltage Mode	12A~0A	Charge Voltage 57V $\pm$ 0.5V ~ 58.8V
2-1.5 Output voltage max. (end of charge)	58.8V	+/- 0.3V @ 0A
2-1.6 Delayed start	Less than 3S	After AC on
2-1.7 Minimal battery voltage criteria	36V	for start charging (battery on)
2-1.8 Output power derating	$\geq 40^{\circ}$ C* (acc. 2-2)	Ambient temperature
2-1.9 Start of charge		Only if an opposite voltage recognized
2-1.10 End-of-charge-voltage		Measured @ Battery-Terminal

### 2-2 Output Power Derating by Temperature





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## 3 Electrical protection

ITEM	CONDITION	SPECIFICATION
3-1 Short Circuit Protection	When the output is short circuit, stop charging and led red on. After the fault is removed, resume to normal charge.	No fire, no smoke and no safety issue.
3-2 Over Voltage Protection (Firmware protection)	61V $\pm$ 1V	Charger should shut down and led red on, when over voltage happen on output side. It will return to normal state by DC reset (un-plug DC connector).
3-3 Secondary Side over current protection	< 15A	Charger should shut down and led red on, when over current happen on output side. It will return to normal state by DC reset (un-plug DC connector).
3-4 Max charging time limit		CAN command no predefined time limit.
3-5 Over temperature protection	Charger detect the temperature inside charger, in case of too high temperature. Activation derating to maintain the temperature inside charger are not raised.	No fire, no smoke, no safety issue.
3-6 Inverse-polarity protection	-60V	When the battery polarities are connected reversely, stop charging and led red on. After the fault is removed, resume to normal charge.



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## 4 Regulatory Compliance

ITEM	CONDITION	SPECIFICATION
4-1 Safety standard acc. to	IEC 62368-1 3rd UL 62368-1 3rd	
4-2 EMC emissions (design comply with)	EN55032 FCC USA Part 15B	
4-3 EMC immunity	EN55035 EN 61000-3-3	
4-4 Harmonic current	EN IEC 61000-3-2 Class A	
4-5 Electric Strength	Primary to secondary 4242Vdc/60 sec for type test Primary to frame ground 2500Vdc /60 sec for type test	
4-6 Routine Test	1. Hi-pot test: Primary to secondary 4242Vdc/3 sec Primary to frame ground 2500Vdc/ 3 sec 2. Earth continuity test: 12Vac / 25A / 3 sec Max. 0.1 ohm	
4-7 RoHS	2011/65/EU	
4-8 Ingress Protection Rating	IP54	



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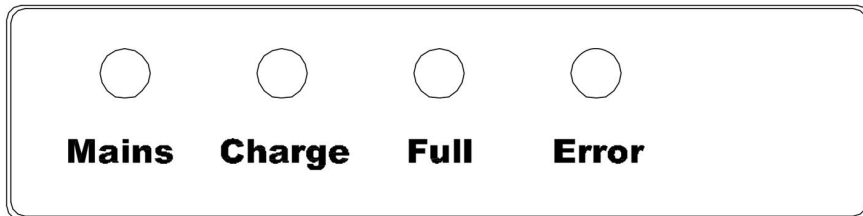
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## 5 Mechanical

ITEM	CONDITION	SPECIFICATION
5-1 Dimension (L x W x H)	283.7mm * 200 mm * 107.5mm (typ.)	
5-2 Weight		2750g (typ.)
5-3 Input socket	AC input socket	C14
5-4 Output cable	DC output socket	Mate Series 2+6 Flange socket

## 6 LED Indicator



### Description:

Function	Color
Error	Red LED blinking every 1s
Full	Green LED turn on
Charging	Yellow LED turn on
Mains	Green LED turn on

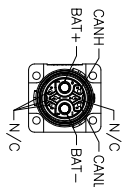
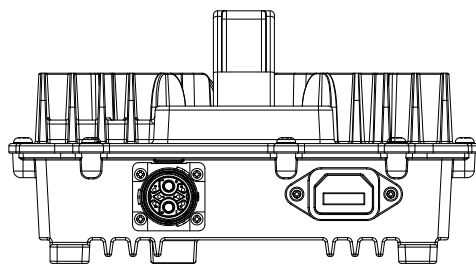
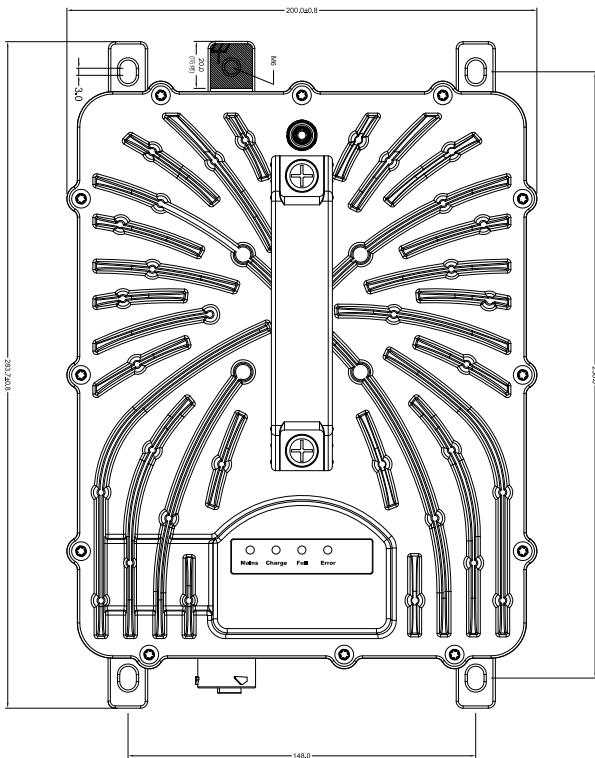
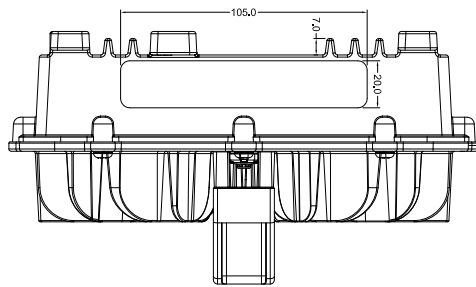
# MECHANICAL DRAWING



OAD-00013306

FSP700-BC48V14A01

Date:2024-12-13 15:16



Housing material : Aluminium  
Bottom color : Black  
Cover color : Black  
Handle color : Black

THIRD ANGLE PROJECTION

DIMENSIONAL TOLERANCES

( )	( )	( )	( )
<30	DECIMALS	UP-100	DN-600
>30-100	X : ±0.8	100-150	600-900
>100-300	X : ±1.0	150-300	900-999
>300-500	XX: ±1.0	300-400	999-999.9
>500-900		400-500	
>900		500-999	

HOLE: ±0.05 ANGLES : ±0.5°

SCALE: UNIT:mm

MODEL NO. : FSP700-BC48V14A01 TITLE: Physical Dimension SHEET: 1 OF 1 REV:01

R&D3 Division PE ME DATE

L.J ZL ZL 2024-06-28

INTERIOR COUNTERSIGN:

P/N.:90L7000300 PN01

Mechanical Drawing (外觀/機構圖)