全漢企業股份有限公司
FSP TECHNOLOGY INC.
台灣桃園市桃園區建國東路22號　統一編號：84239055
No. 22, Jianguo E. Rd., Taoyuan Dist., Taoyuan City 330, Taiwan (R.O.C)
TEL:+886-3-375-9888　Website:www.FSP-group.com
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SPECIFICATION

Model Name: FSP700-BC50V14A2

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Change List

Rev.	Date	Changed contents	Why
0.1	2023-11-22	New	

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The Contents

Item	Document Name	Page	Rev.
1.	Electrical Specification	4-9	0.1
2.	Mechanical Dimension	10	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.

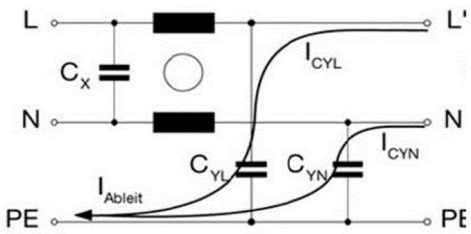
1-4 Input current

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

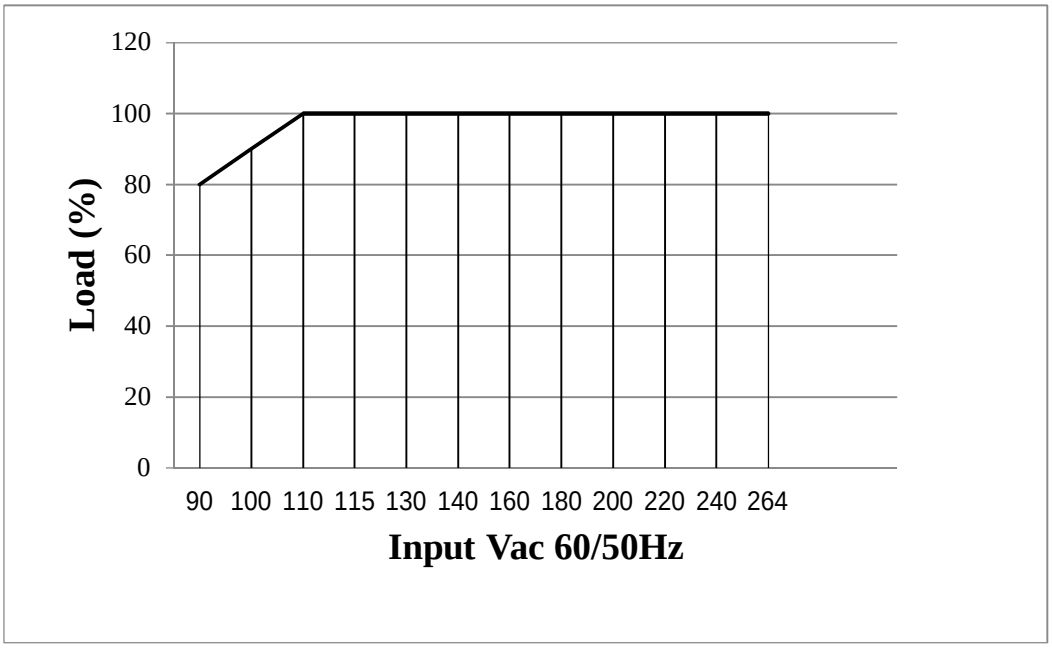
The leakage current to ground for each AC core shall be less than 3.5mA when tested at 264VAC.



1-6 Power factor

PF≧ 0.95 @ full load /115Vac and PF≧0.9 @ full load / 230Vac.

1-7 Derating curve under low input voltage



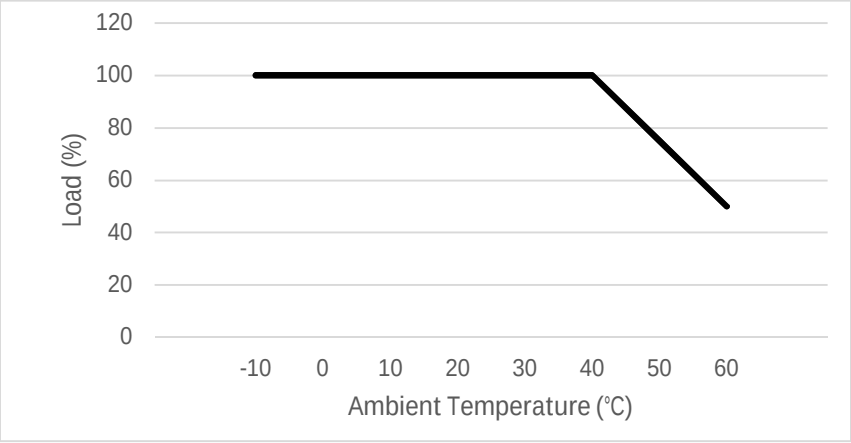
2 Output Specifications

2-1 DC Output Specification

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

Characteristic	CC-CV	Charging curve programmable 3 Step charging curve as pre-defined for dumb-mode. Under Smart-mode charger will only follow CAN command.
2-1.1 Reverse current	< 500μA	AC connected or not connected
2-1.2 Dumb-mode		
2-1.2.1 Pre-Charge Current mode	2A±0.3A	Charge Voltage 33V~ 36V
2-1.2.2 Main Charge Current mode	14A±0.3A	Charge Voltage 36V±1V~ 49V
2-1.2.3 Constant Voltage Mode	14A~0.5A	Charge Voltage 49V±0.5V ~ 50.4V
2-1.2.4 Output voltage max. (end of charge)	50.4V	+/- 0.3V @ 0.5±0.3A
2-1.3 Delayed start	Less than 3S	After AC on
2-1.4 Minimal battery voltage criteria	33V	for start charging (battery on)
2-1.5 Output power derating	>= 40°C* (acc. 2-3)	Ambient temperature
2-1.6 Start of charge		Only if an opposite voltage recognized
2-1.7 End-of-charge-voltage		Measured @ Battery-Terminal

2-2 Output Power Derating by Temperature



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)	53V± 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	< 18A	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	-52V	When the battery polarities are connected reversely, stop charging and led red on. After the fault is removed, resume to normal charge.

4 Regulatory Compliance

ITEM	CONDITION	SPECIFICATION
4-1 Safety standard acc. to	IEC 62368-1 3rd UL 62368-1 3rd IEC 60335-1 & IEC 60335-2-29	
4-2 EMC emissions (design comply with)	EN55032 EN 55014-1	
4-3 EMC immunity	EN55035 EN 55014-2 EN 61000-3-3	
4-4 Harmonic current	EN IEC 61000-3-2 Class A	
4-5 Hi-Pot	Primary to secondary 4242Vdc 60 sec (routine test – 3sec) Primary to frame ground 2121Vdc 60 sec (routine test – 3sec)	
4-6 RoHS	2011/65/EU	
4-7 Ingress Protection Rating	IP40	

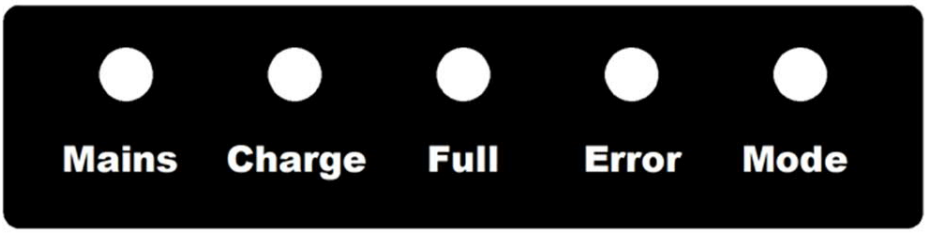
5 Mechanical

ITEM	CONDITION	SPECIFICATION
5-1 Dimension (L x W x H)	283.7mm * 200 mm * 107.5mm (typ.)	To be determined by prototype dimension
5-2 Weight		TBD
5-3 Input socket	AC input socket	C14
5-4 Output cable	DC output cable	TBD

6 CAN Communication (option)

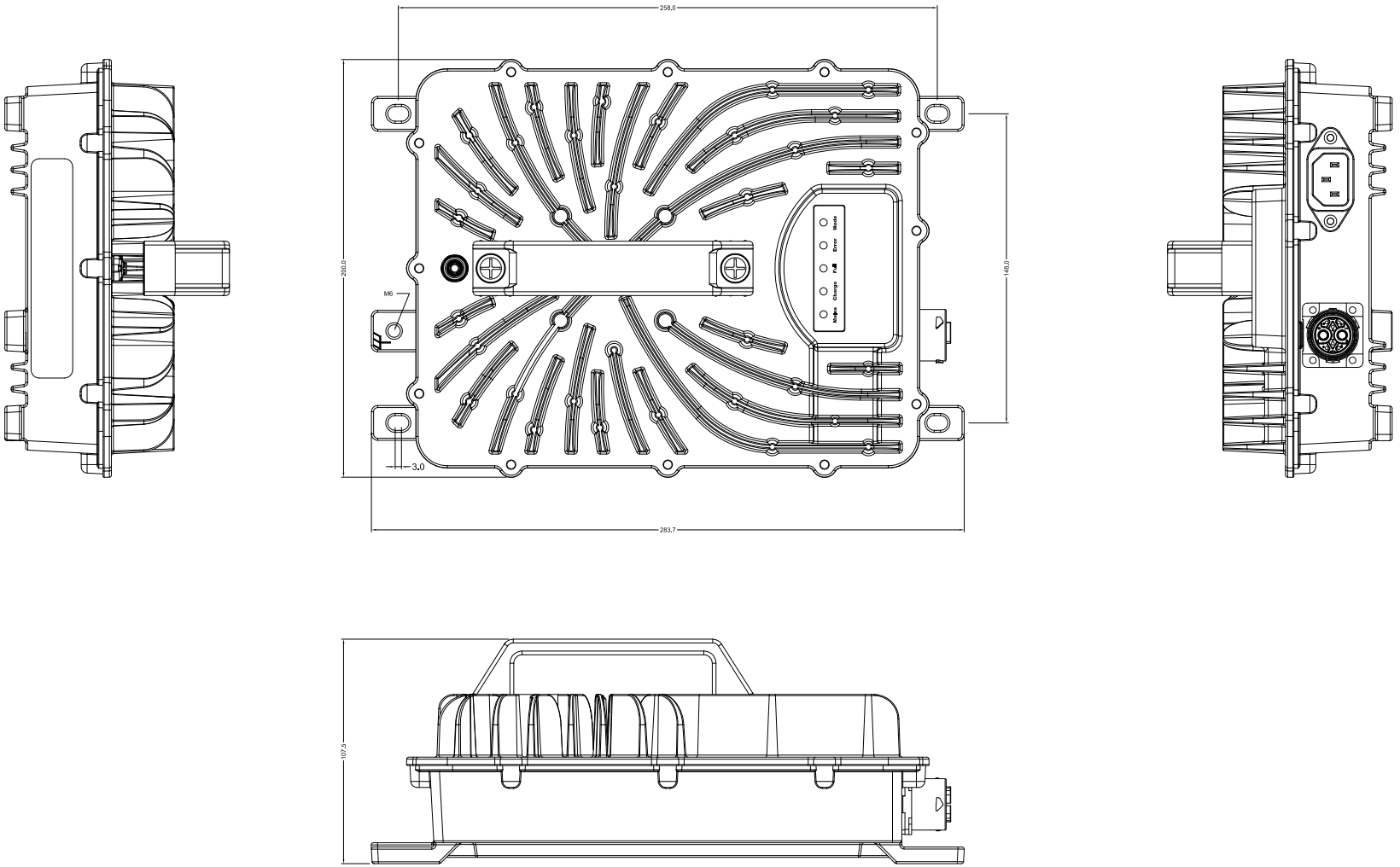
CAN Protocol	Extended	
CAN Baudrate	500	kbits/s

7 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
Mode	1. Solid-blue for dumb charging 2.Blinking-blue for smart mode charging



P/N.:FSP700-BC50V14A2_OAD

MODEL NO. : FSP700-BC50V14A2	TITLE: Physical Dimension		SHEET: 1 OF 1 REV:01
R&D3 Division	P E	ME	DATE
L.J	ZL	ZL	2023-11-22
INTERIOR COUNTERSIGN:			

THIRD ANGLE PROJECTION

SCALE:
UNIT:mm

DIMENSIONAL TOLERANCES | HOLES : ±0.05 ANGLES : ±0.5°

(\/)	( )	( )	( )
<30 :±0.2	DECIMALS	UP~100 :±0.2	UP~600 :±1.5
>30~100 :±0.3	X :±0.8	100~150 :±0.25	600~900 :±2.4
>100~200 :±0.4	X.X :±0.5	150~200 :±0.3	900~OVER :±3.1
>200~300 :±0.5	X.XX:±0.3	200~250:±0.35	
ABOVE 300:±0.8		250~300 :±0.4	
		300~350 :±0.45	
		350~400 :±0.5	