

Imperium

DC-DC Charger 20A

14.6V /20A 4S LIFEP04 BATTERY CHARGER

(ALUMINUM CASE)



Model

IMP002

1. GENERAL

Imperium Battery Charger Model #IMP002,
 Dimensions: 245×100×54 mm
 Works normally under 14.6Vdc
 20A for LiFePO4 batteries (40-120Ah).
 Input: IEC with BS plugs
 Output: Anderson SB50
 Working mode: CC, CV

2. MAIN PRODUCT SPECIFICATIONS

Max. output power	Input voltage	Output voltage	Output current	Combined regulation
292W	100-260Vac	14.6V±0.3Vdc	20±1A	±1%

3. ENVIRONMENTAL CONDITIONS

No.	Item	Technical specification	Remark
1	Storage Range	-10~45℃	
2	Operating Range	-20~60℃	
3	Humidity	5~95%RH	
4	Ingress Protection	IP20	

4. ELECTRICAL CHARACTERISTICS

4.1 INPUT CHARACTERISTICS

No.	Item	Technical specification	Remark
1	Rated input voltage	240Vac	
2	Input voltage range	90~264Vac	Standard VDE plugs
3	AC input voltage frequency	47~63 Hz	
4	Power consumption	<3W	standby
		<29.5W	working
5	Power Factor Correction	>0.9	
6	Charger Efficiency	≥90%	Vin=230Vac, rated load

4.2 OUTPUT CHARACTERISTICS

No.	Item	Technical specification	Remark
1	Output Current(Maximum)	20A	CC
2	Output Voltage Range	14.6±0.3V	CV
3	Fully charged point	Output current down to 0.6-1.3A	CV:14.6 V
4	Standby Output Current	0A	

4.3 PROTECTION CHARACTERISTICS

No.	Item	Technical specification	Remark
1	Over Charge voltage protection	16.0V	Red Led flash
3	Over Temperature	105℃	Red Led flash
4	Over Current protection	21A	Red Led flash
5	Output short circuit protection	regain after removing the battery	Red Led flash
6	Reverse Polarity	regain after removing the battery	Red Led flash
7	Cooling	Natural Convection Cooling	Start the fan when output current >0.1A

4.4 STATUS LED

No.	Item	Status	Remark
1	Red on	Charging in progress	
2	Green on	Fully charged	
3	Red flash	Charger error	
4	Off	No AC input	

5. SAFETY & EMC

No.	Item	Standard (or test condition)	Remark	
1	Electric strength test	Input-output	1500Vac/10mA/1min	No breakdown
		Input-ground	1500Vac/10mA/1min	
		Output-ground	1500Vac/10mA/1min	
2	Isolation resistance	Input-output	≥10MΩ@500Vdc	
		Input-ground	≥10MΩ@500Vdc	
		Output-ground	≥10MΩ@500Vdc	
3	Leakage current	<3.5mA	Vin=264Vac	
4	Safety	AS/NZS 61000.6.3:2012, AS/NZS 60335-2-29:2017, AS/NZS 60335.1:2020 TUV CE IEC60601-1 EN60601-1	Short-circuited protection; anti-reverse polarity protection; over current and voltage protection; timer of 12hours	
		RE	CLASS B	EN55014
		CE	CLASS B	EN55014
		Air discharge	LEVEL 3	EN61000-4-2(discrimination B)
		Contact discharge	LEVEL 3	EN61000-4-2(discrimination B)
5	EMC	RS	LEVEL 3	EN61000-4-6(discrimination A)
		CS	LEVEL 3	EN61000-4-3(discrimination A)
		EFT	LEVEL 3	EN61000-4-4 (discrimination B)
		Surge	LEVEL 3	EN61000-4-5, differential module 1KV, common module 2KV(discrimination B)

REMARK:

discrimination A— function OK under technical requirement range; discrimination B--function temporarily debasement without reposition and halt is allowed; discrimination R— physical damage or failure of equipment are not allowed, but damage of protection device (fuse) caused by interference signal of outside is allowed, and the whole equipment can work normally after replacement of protection device and reset of running parameter.

6. ENVIRONMENTAL TESTING REQUIREMENTS

No.	Item	Technical specification	Remark
1	High temperature ambient operating	+40□	Features ok
2	High temperature ambient operating	-10□	Features ok
3	High temperature storage	+70□	Work normally after recovery under normal temperature for 2hours
4	Low temperature storage	-40□	Work normally after recovery under normal temperature for 2hours
5	Random vibration	20Hz to 2000Hz 3Grms 20hours per axis	
6	Random vibration	40g peak 3 orthogonal axes,3+ and 3- in each axis, 11ms pulse width	
7	Random vibration	-35□ to 75□, <3min transition, 2.5hours dwell, 200cycle	
8	Random vibration	BS EN60068-2-32:1993 TEST ED: free fall appendix B	

7. MECHANICAL CHARACTERISTICS

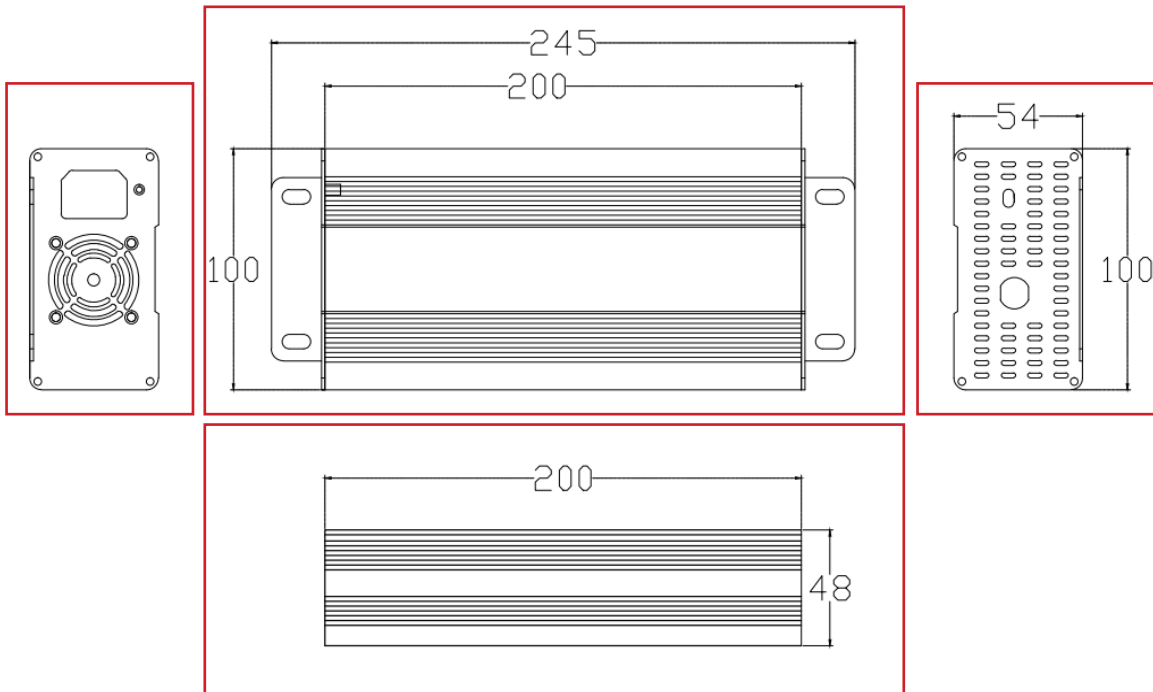
Outline dimension: L*W*H=245*100*54 mm

Input socket: meets AS/NZS standard

AC wire: 1.48m length(include plug)

DC wire: 1.22m length(include plug)

Net Weight: 1.5 Kg



8. PACKAGING, TRANSPORTATION AND STORAGE

8.1 PACKAGING DIMENSIONS

Outer carton (12 pcs): 540*380*190mm

Inner box (1pc): 260*180*55mm

8.2 TRANSPORTATION:

During transport the products must be protected from the elements (direct sun, rain, etc.) and handled with care.

8.3 STORAGE:

- The Imperium charger must be kept within its packaging box when it is in storage. The goods should be stored in the temperature range of -40~70, and the relative humidity range of 5~95%.
- The goods should be stored away from harmful gas, inflammable, explosive products and corrosive chemical products.
- The goods must be kept safely guarded against strong mechanical vibration, shock and strong magnetic field affects.
- The goods should be stored at least 20cm off the ground, and 50cm away from a wall, thermal source and vent.
- Under these circumstances the product can be stored for up to 2 years, and then should be unboxed and checked, prior to repackaging for further storage.

9. RELIABILITY REQUIREMENTS

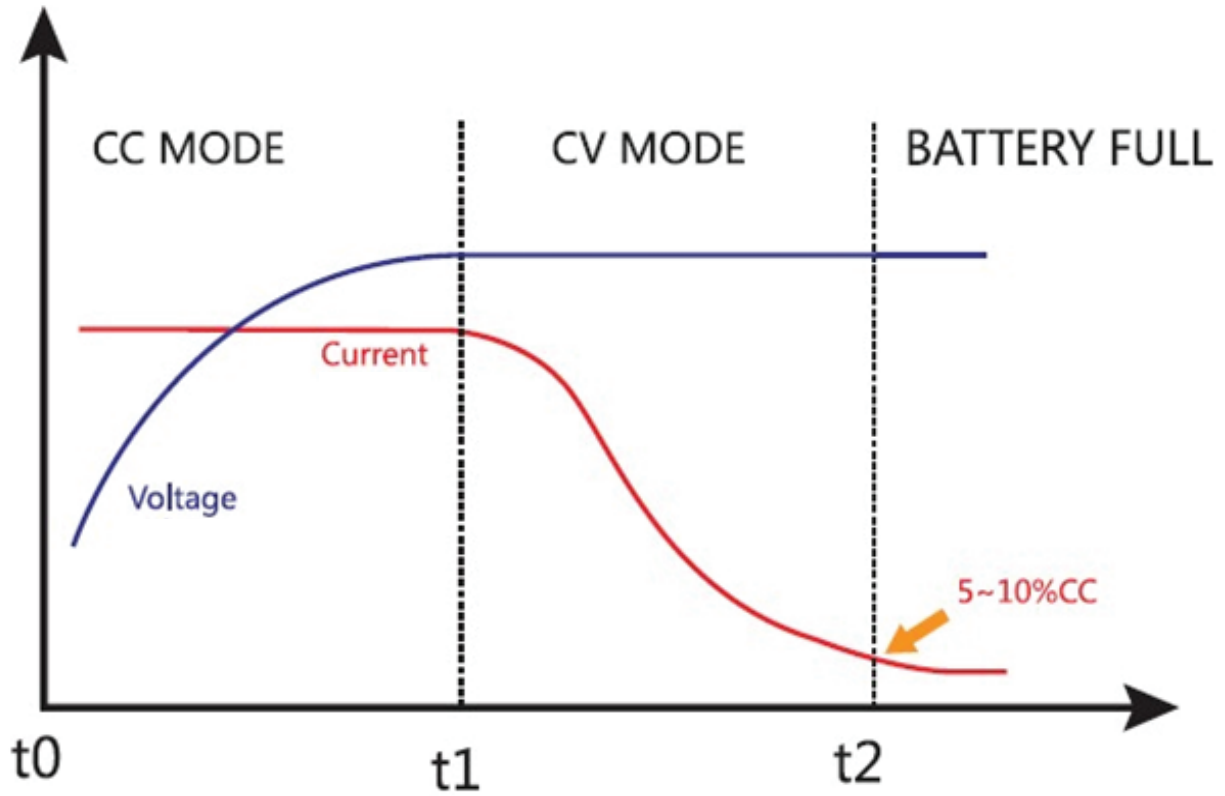
MTBF (standard, environmental temperature, load requirement) $\geq 30K$ hours; testing condition: 25 \square , full load, testing proved value.

10. CHARGER WIRING

10.1 A spark often occurs upon first connection of the charger to the battery terminals due to the initial charging of the internal output capacitors. This is normal and should not lead to undue concern. Due to this, care must be taken to ensure the battery vent caps are closed and there are no flammable objects in the vicinity of where the initial connection will be made.

10.2 The charger has been calibrated to take account of the voltage drop in the DC output cables during operation. To prevent the possibility of over or under charging the battery it is recommended that the DC output cable be connected directly to the battery without modification.

CHARGING CURVE



Imperium

DC-DC Charger **20A**

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