

Technical specification

POW12V20A-D1 Charger

LFP/LTO + BMS connector







POW12V20A-D1 Charger

LFP/LTO + BMS CONNECTOR

1. Input characteristics

No.	Item	Technical specification	Unit	Remark
1-1	Rated input voltage	230V	Vac	
1-2	Input voltage range	180V – 264V	Vac	
1-3	AC input voltage frequency	47 - 63	Hz	
1-4	Inrush current	< 50 A	A	@ 264Vac start-up in cold condition
1-5	Max input current	6 A	A	

2. Adjustable charging characteristics:

Profile	Jumper setting	K1 status	K2 status	Remark
Profile 1: LiFePO4 / LiFeYPO4 14.6 V		OFF	OFF	This profile is determined for LiFePO4 cells – 4 cells connected in series with final voltage 3.65V per cell.
Profile 2: Lithium Titanate (LTO) 5 cells 13.3V		OFF	ON	This profile is determined for Lithium Titanate cells - 5 cells connection in series – 2.65V per cell.
Profile 3: Lithium Titanate (LTO) 6 cells 15.2V		ON	OFF	This profile is determined for Lithium Titanate cells - 6 cells connection in series – 2.53V per cell.
Disable mode		ON	ON	This position cannot be used for charging. Setting this mode will result in LED red flash after AC power connected.

POW12V20A-D1 Charger

LFP/LTO + BMS CONNECTOR

3. Output characteristics

No.	Item	Technical specification	Unit	Remark
2-1	Nominal charge voltage	12V	Vdc	4 LiFePO4 cells @ 3.00V 1 LiFePO4 battery @ 12.00V 5 LTO cells @ 2.40V
2-2	Fast charge voltage (V-max) LiFePO4 mode	14.6V	Vdc	Tolerance to stop charging according to the battery capacity ± 0.5 V, see table 2. for how to set this mode.
2-3	Fast charge voltage (V-max) LTO mode	13.3V	Vdc	Tolerance to stop charging according to the battery capacity ± 0.5 V, see table 2. for how to set this mode.
2-4	Fast charge voltage (V-max) Optional mode	15.2V	Vdc	Tolerance to stop charging according to the battery capacity ± 0.5 V, see table 2. for how to set this mode. Caution – this mode will result in overcharging LiFePO4 or LTO cells!
2-5	Constant current (I-CC)	20A	A	Maximal current during full charge
2-6	Deep voltage level (V-deep)	10V (± 1 V)	Vac	Deep discharge voltage level, bellow this voltage, the current is limited to I-min
2-6	Deep discharge current (I-min)	2A	A	The limited current bellow V-Deep (± 0.5 A)
2-7 opt	BMS limit current (I-BMS)	approx 2A (± 0.5 A)	A	The limited current for cell balancing (controlled by BMS)
2-8	Power efficiency	>80%		@ 230Vac

POW12V20A-D1 Charger

LFP/LTO + BMS CONNECTOR

4. Protection characteristics

No.	Item	Technical specification	Unit	Remark
3-1	Thermal cutback	The internal temperature monitor reduces the charger output power in extreme operational temperature to prevent damage		
3-2	Output current limiting protection	20 A	A	@ CC Mode
3-3	Output short circuit protection	Short circuit protection at the output terminals. Automatic recovery after restoring to normal conditions.		
3-4	Electronic reverse battery protection	The charger is electronically protected against permanent reversed battery connection.		

5. LED

No.	Profile number	Technical specification	Remark
4-1	Profile 1:	red flash, green flash, then LED green on	After AC connected
4-2	Profile 2:	green flash, green flash, then Led green on	After AC connected
4-3	Profile 3:	yellow flash, green flash, then LED green on	After AC connected
4-4	Charging finished	Green LED ON	After charging is finished

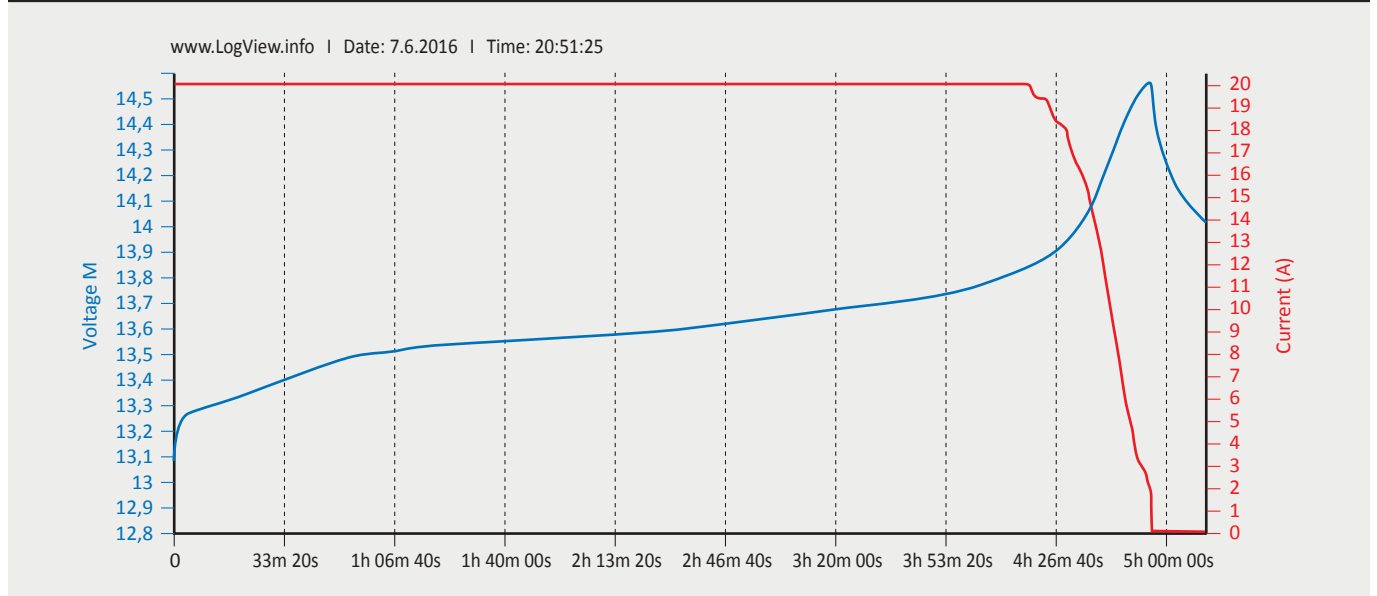
6. Environmental test requirements

No.	Item	Technical specification	Unit	Remark
6-1	High ambient operating temperature	+40 °C	deg C	continuous operation
6-2	Low ambient operating temperature	-10 °C	deg C	continuous operation
6-3	Highest storage temperature	+70 °C	deg C	allow 2 hours to recover to normal temperature
6-4	Lowest storage temperature	-40 °C	deg C	allow 2 hours to recover to normal temperature
6-5	Drop shock	40 g peak		EN60068-2-32:1993

POW12V20A-D1 Charger

LFP/LTO + BMS CONNECTOR

7. Charging curve (current A – red, voltage V - blue)



8. BMS connector operation (OPTIONAL, only for the model with BMS option)

Contacts	Status	Comment
ON/OFF	Brown connected to GND	Connecting both Brown (ON/OFF) and Blue (HIGH/LOW current) to gnd will result in charging OFF. Therefore it is possible to stop LOW charging by using ON/OFF feature of the charger
HIGH/LOW	Blue connected to GND	
GND	Common GND	





POW12V20A-D1 Charger

GWL Power Ltd.
Průmyslová 11,102 19 Prague 10
Czech Republic, European Union