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Technical specification

POW48V10A-D1 Charger

LFP/LTO + BMS connector



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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 58.4 V		OFF	OFF	This profile is determined for LiFePO4 cells – 16 cells connected in series with final voltage 3.65V per cell.
Profile 2: Lithium Titanate (LTO) 20 cells 53.0V		OFF	ON	This profile is determined for Lithium Titanate cells - 20 cells connection in series – 2.65V per cell.
Profile 3: Lithium Titanate (LTO) 24 cells 60.8V		ON	OFF	This profile is determined for Lithium Titanate cells - 24 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.

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3. Output characteristics

No.	Item	Technical specification	Unit	Remark
2-1	Nominal charge voltage	48V	Vdc	16 LiFePO4 cells @ 3.00V 4 LiFePO4 batteries @ 12.00V 20 LTO cells @ 2.40V
2-2	Fast charge voltage (V-max) LiFePO4 mode	58.4V	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	53.0V	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	60.8V	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)	10A	A	Maximal current during full charge
2-6	Deep voltage level (V-deep)	43V (± 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 (± 0.5 A)	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

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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	10 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:	green flash, then LED green on	After AC connected
4-4	Charging finished	Green LED ON	After charging is finished

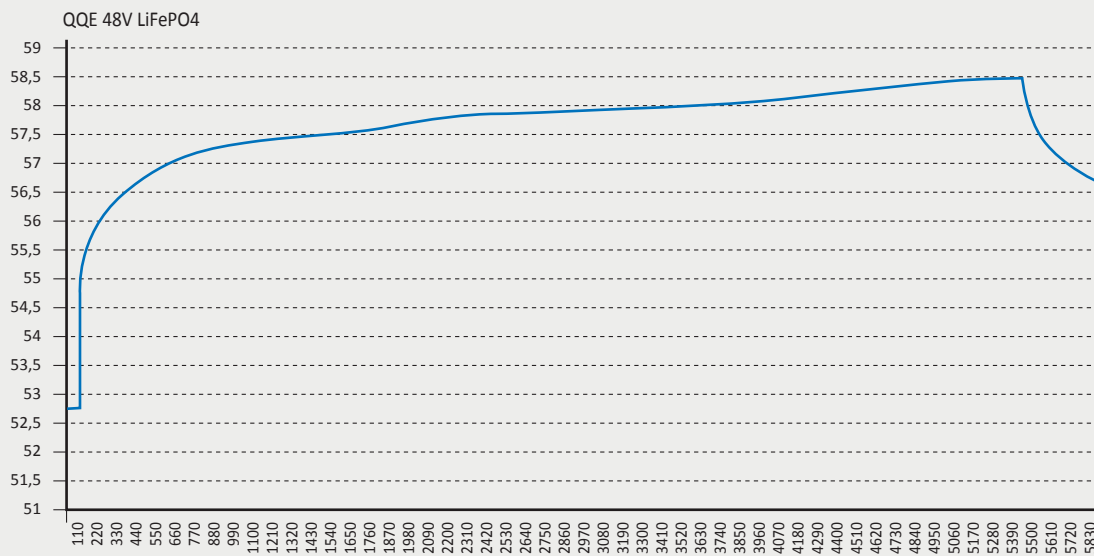
6. Environmental test requirements

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

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7. Charging curve (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	





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