BATTERY CHARGER, 453540-L, LI-ION

SPECIFICATIONS	3 CELLS	4 CELLS	6 CELLS	7 CELLS	8 CELLS	9 CELLS
Cell-Con part number:	453540-LC	453540-LD	453540-LF	453540-LG	453540-LH	453540-LI
Input voltage:	115 or 230VAC					
Line frequency:	50Hz					
Active power factor correction:	Yes					
Max output power:	252W	294W	252W	294W	293W	
Step 0 < 10min Yellow:	CC 1.0A ±0.4A, when battery voltage <9V	CC 1.0A ±0.2A, when battery voltage <12V	CC 0.8A ±0.4A, when battery voltage <18V	CC 0.8A ±0.2A, when battery voltage <21V	CC 0.5A±0.2A, when battery voltage <24V	CC 0.5A ±0.2A, when battery voltage <27V
Step 0 > 10min Red (4 blinks):	0A/0V					
Step 1 constant current (Yellow):	CC 20A +0.2/-0.3A, when 9V <Vbat <12.6V	CC 17.5A +0.2/-0.3A, when 12V <Vbat <16.8V	CC 10A +0.2/-0.3A, when 18V <Vbat <25.2V ±0.2V	CC 10A +0/-0.3A, when 21V <Vbat <29.4V	CC 8.7A +0.1/-0.3A, when 24V <Vbat <33.6V	CC 7.7A +0.1/-0.3A, 27V <Vbat <37.8V
Step 2 constant voltage: (Flashing Yellow)	CV 12.6V ±0.1V <14A, until I charge <1.0A or max. 2h	CV 16.8V ±0.1V <12.4A, until I charge <1.0A or max. 2h	CV 25.2V ±0.2V <8.8A, until I charge <0.8A or max. 2h	CV 29.4V ±0.2V <8.8A, until I charge <0.8A or max. 2h	CV 33.6V ±0.2V <7.5A, until I charge 0.5A or max. 1h	CV 37.8V ±0.2V <6.0A, until I charge <0.5A or max. 1h
Charge timer (step2, CV):	2h		1h			
Safety timer (all steps) Red (5 blinks):	72h					
Step 3 charge completed (Green):	0A					
Restart voltage:	12.3V	16.4V	24.6V	28.7V	32.8V	36.9V
Formation charge (step 0):	Low current start-up of deeply discharged battery					
Wake-up of deeply discharged battery:	Yes, will apply voltage which deactivates deep discharge protection in battery pack					
Indication when "battery not connected":	Flashing Green (1s/1s)					
Leakage current from battery with mains switched off:	<150µA @ 12.6V	<170µA @ 16.8V	<140µA @ 25.2V	<170µA @ 29.4V	<170µA @ 33.6V	<190µA @ 37.8V
Efficiency (at 100% load, 115V) approx.:	>91%	>91%	>92%			
Switch frequency approx.:	65kHz					
Ripple:	<100mV p-p					
NTC input, on request (std is 10kohm, B-value approx. 4000):	0–45 °C: Normal charge. Battery temperature <0 °C (too cold) or >45°C (too hot): No charge, wait until temp. is OK. WAIT MODE INDICATIONS: Yellow with 1 red blink: Battery temperature is too low (<0°C) Yellow with 2 red blinks: Battery temperature is too high (>45°C)					
Protection:	Thermal protection. Prevents sparking. Short circuit proof. Error Indication: Red (3 blinks) Safety timer: 72h. Error Indication: Red (5 blinks) Protected against reversed polarity. Error Indication: Red (2 blinks) Charging of wrong lower voltage battery pack (e.g. 2-cell) will be limited to 1.0A and terminated after 10min. Indication: Red (4 blinks) Safety timer. Error Indication: Red (5 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF.	Thermal protection. Prevents sparking. Short circuit proof. Error Indication: Red (3 blinks) Safety timer: 72h. Error Indication: Red (5 blinks) Protected against reversed polarity. Error Indication: Red (2 blinks) Charging of wrong lower voltage battery pack (e.g. 2-cell) will be limited to 1.0A and terminated after 10min. Indication: Red (4 blinks) Safety timer. Error Indication: Red (5 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF.	Thermal protection. Prevents sparking. Short circuit proof. Error Indication: Red (3 blinks) Safety timer: 72h. Error Indication: Red (5 blinks) Protected against reversed polarity. Error Indication: Red (2 blinks) Charging of wrong lower voltage battery pack (e.g. 4-cell) will be limited to 0.8A and terminated after 10min. Indication: Red (4 blinks) Safety timer. Error Indication: Red (5 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF.	Thermal protection. Prevents sparking. Short circuit proof. Error Indication: Red (3 blinks) Safety timer: 72h. Error Indication: Red (5 blinks) Protected against reversed polarity. Error Indication: Red (2 blinks) Charging of wrong lower voltage battery pack (e.g. 4-cell) will be limited to 0.8A and terminated after 10min. Indication: Red (4 blinks) Safety timer. Error Indication: Red (5 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF.	Thermal protection. Prevents sparking. Short circuit proof. Error Indication: Red (3 blinks) Safety timer: 72h. Error Indication: Red (5 blinks) Protected against reversed polarity. Error Indication: Red (2 blinks) Charging of wrong lower voltage battery pack (e.g. 5-cell) will be limited to 0.5A and terminated after 10min. Indication: Red (4 blinks) Safety timer. Error Indication: Red (5 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF.	Thermal protection. Prevents sparking. Short circuit proof. Error Indication: Red (3 blinks) Safety timer: 72h. Error Indication: Red (5 blinks) Protected against reversed polarity. Error Indication: Red (2 blinks) Charging of wrong lower voltage battery pack (e.g. 6-cell) will be limited to 0.5A and terminated after 10min. Indication: Red (4 blinks) Safety timer. Error Indication: Red (5 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF.
Temperature range:	**Operating:** -25 to +40°C / **Storage:** -25 to +65°C					
Derating:	Charge current automatically reduced to approx. 14A at 40°C	Charge current automatically reduced to approx. 14A at 40°C	Charge current automatically reduced to approx. 7.5A at 40°C	Charge current automatically reduced to approx. 7.5A at 40°C	Charge current automatically reduced to approx. 6A at 40°C	Charge current automatically reduced to approx. 6A at 40°C
Safety:	EN 60601-1					
Insulation class:	Double insulated (Class II)					
Insulation voltage: primary–secondary:	4000VAC/5700VDC					
EMC standard:	EN 60601-1-2: 2015 (Edition 4)					
Input terminal:	2 pin IEC60320 or mains cable					
Output terminals:	Cord with open ends or XLR plug					
Protection against ingress (IP-code)	IP44					
Rec. battery capacity:	20-800Ah	17.5-700Ah	10-400Ah	10-400Ah	8.57-348Ah	7.7-308Ah
Dimensions:	210× 113×53mm					
Weight approx.:	With mains cable 1400g. With IEC60320 1150g.					

CELL-CON Battery & Charger Solutions

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BATTERY CHARGER, 453540-L, LI-ION

SPECIFICATIONS	10 CELLS	11 CELLS	12 CELLS	13 CELLS	14 CELLS
Cell-Con part number:	453540-LJ	453540-LK	453540-LK	453540-LM	453540-LN
Input voltage:	115 or 230VAC				
Line frequency:	50Hz				
Active power factor correction:	Yes				
Max output power:	294W	292W		284W	294W
Step 0 < 10min Yellow:	CC 0.5A ±0.1A, when battery voltage <30V	CC 500mA ±50mA, when battery voltage <33V	CC 300mA ±50mA, when battery voltage <36V	CC 300mA ±50mA, when battery voltage <39V	CC 300mA ±50mA, when battery voltage <42V
Step 0 > 10min Red (4 blinks):	0A/0V				
Step 1 charge current:	CC 7.0A +0/-0.3A, when 30V <Vbat <42.0V	CC 17.5A +0.2/-0.3A, when 12V <Vbat <16.8V	CC 5.8A +0.1/-0.3A when 36V <Vbat <50.4V	CC 5.2A +0.1/-0.3A, when 39V <Vbat <54.6V	CC 5A +0.1/-0.3A, when 42V <Vbat <58.8V
Step 2 charge voltage: (Flashing Yellow)	CV 42.0V ±0.2V <5.8A, until I charge <0.5 or max. 1h	CV 46.2V <5A, until I charge <500mA or max. 1h	CV 50.4V ±0.3V < 4.5A, until I charge <300mA or max. 1h	CV 54.6V ±0.3V < 3.9A, until I charge <300mA or max. 1h	CV 58.8V ±0.3V < 3.7A, until I charge <300mA or max. 1h
Charge timer (step2, CV):	1h				
Safety timer (all steps) Red (5 blinks):	72h				
Step 3 (charge completed) Green:	0A				
Restart voltage:	41.0V	45.1V	49.2V	53.3V	57.4V
Formation charge (step 0):	Low current start-up of deeply discharged battery				
Wake-up of deeply discharged battery:	Yes, will apply voltage which deactivates deep discharge protection in battery pack				
Indication when "battery not connected":	Flashing Green (1s/1s)				
Leakage current from battery with mains switched off:	<170µA @ 42V	<170µA @ 46.2V	<165µA @ 50.4V	<170µA @ 54.6V	<160µA @ 58.8V
Efficiency (at 100% load, 115V) approx.:	>92%	>91%	>92%	>91%	>92%
Switch frequency approx.:	65kHz				
Ripple:	<100mV p-p				
NTC input, on request (std is 10kohm, B-value approx. 4000):	0–45 °C: Normal charge. Battery temperature <0 °C (too cold) or >45°C (too hot): No charge, wait until temp. is OK. WAIT MODE INDICATIONS: Yellow with 1 red blink: Battery temperature is too low (<0°C) Yellow with 2 red blinks: Battery temperature is too high (>45°C)				
Protection:	Thermal protection. Prevents sparking. Short circuit proof. Error Indication: Red (3 blinks) Safety timer: 72h. Error Indication: Red (5 blinks) Protected against reversed polarity. Error Indication: Red (2 blinks) Charging of wrong lower voltage battery pack (e.g. 7-cell) will be limited to 0.5A and terminated after 10min. Indication: Red (4 blinks) Safety timer. Error Indication: Red (5 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF.	Thermal protection. Prevents sparking. Short circuit proof. Error Indication: Red (3 blinks) Safety timer: 72h. Error Indication: Red (5 blinks) Protected against reversed polarity. Error Indication: Red (2 blinks) Charging of wrong lower voltage battery pack (e.g. 8-cell) will be limited to 0.5A and terminated after 10min. Indication: Red (4 blinks) Safety timer. Error Indication: Red (5 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF.	Thermal protection. Prevents sparking. Short circuit proof. Error Indication: Red (3 blinks) Safety timer: 72h. Error Indication: Red (5 blinks) Protected against reversed polarity. Error Indication: Red (2 blinks) Charging of wrong lower voltage battery pack (e.g. 8-cell) will be limited to 0.3A and terminated after 10min. Indication: Red (4 blinks) Safety timer. Error Indication: Red (5 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF.	Thermal protection. Prevents sparking. Short circuit proof. Error Indication: Red (3 blinks) Safety timer: 72h. Error Indication: Red (5 blinks) Protected against reversed polarity. Error Indication: Red (2 blinks) Charging of wrong lower voltage battery pack (e.g. 9-cell) will be limited to 0.3A and terminated after 10min. Indication: Red (4 blinks) Safety timer. Error Indication: Red (5 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF.	Thermal protection. Prevents sparking. Short circuit proof. Error Indication: Red (3 blinks) Safety timer: 72h. Error Indication: Red (5 blinks) Protected against reversed polarity. Error Indication: Red (2 blinks) Charging of wrong lower voltage battery pack (e.g. 9-cell) will be limited to 0.3A and terminated after 10min. Indication: Red (4 blinks) Safety timer. Error Indication: Red (5 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF.
Temperature range:	**Operating:** -25 to +40°C / **Storage:** -25 to +65°C				
Derating:	Charge current automatically reduced to approx. 5A at 40°C	Charge current automatically reduced to approx. 4A at 40°C	Charge current automatically reduced to approx. 3.5A at 40°C		
Safety:	EN 60601-1				
Insulation class:	Double insulated (Class II)				
Insulation voltage: primary–secondary:	4000VAC/5700VDC				
EMC standard:	EN 60601-1-2: 2015 (Edition 4)				
Input terminal:	2 pin IEC60320 or mains cable				
Output terminals:	Cord with open ends or XLR plug				
Protection against ingress (IP-code)	IP44				
Rec. battery capacity:	7-280Ah	6.3-250Ah	5.8-230Ah	5.2-208Ah	5-200Ah
Dimensions:	210× 113×53mm				
Weight approx.:	With mains cable 1400g. With IEC60320 1150g.				

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