BATTERY CHARGER, 454040-L, LI-ION

SPECIFICATIONS	3 CELLS	4 CELLS	5 CELLS	6 CELLS	7 CELLS	8 CELLS
Cell-Con part number:	454040-LC	454040-LD	454040-LE	454040-LF	454040-LG	454040-LH
Input voltage:	90-264VAC					
Line frequency:	47-63Hz					
Active power factor correction:	Yes					
Max output power:	113.4W	117.6W		117.2W	117.6W	
Step 0 < 10min Yellow:	CC 500mA ±50mA, when battery voltage <3V	CC 500mA ±50mA, when battery voltage <12V	CC 500mA ±50mA, when battery voltage <15V	CC 300mA ±25mA, when battery voltage <18V	CC 300mA ±5mA, when battery voltage <21V	CC 300mA ±25mA, when battery voltage <24V
Step 0 > 10min Red (4 blinks):	0A/0V					
Step 1 (constant current) Yellow:	CC 9.0A ±0.2A, when 9V <Vbat <12.6V	CC 7.0A ±0.2A, when 12V <Vbat <16.8V	CC 5.6A ±0.2A, when 15V <Vbat <21.0V	CC 4.65A ±0.2A, when 18V <Vbat <25.2V	CC 4.0A ±0.2A, when 21V <Vbat <29.4V	CC 3.5A ±0.2A, 24V <Vbat <33.6V
Step 2 (constant voltage) Flashing Yellow:	CV 12.6V ±0.1V <6.3A until I charge <450mA or max. 1h	CV 16.8V ±0.1V <4.9A until I charge <450mA or max. 1h	CV 21.0V ±0.1V <3.9A until I charge <500mA or max. 1h	CV 25.2V ±0.2V <3.3A until I charge <270 mA or max. 1h	CV 29.4V ±0.2V <2.8A until I charge <270mA or max. 1h	CV 33.6V ±0.2V <2.5A until I charge <270mA or max. 1h
Charge timer (step2, CV):	1h					
Safety timer (all steps) Red (5 blinks):	72h					
Step 3 (charge completed) Green:	0A					
Restart voltage:	12.3V	16.4V	20.5V	24.6V	28.7V	32.8VV
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)					
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.					
Ripple:	<100mV p-p					
Efficiency (at 230V 100% load) approx.:	91%					
Switch frequency approx.:	45-75kHz					
Leakage current from battery with mains switched off:	<1mA at nominal battery voltage (<0.72 Ah/month)					
Protection:	Protected against reversed polarity. Error Indication: Red (2 blinks) Short circuit proof. Error Indication: Red (3 blinks) Charging of wrong lower voltage battery pack will be terminated after 10min. (see step 0). 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 / **Transport and short time storage:** -25 to +85°C					
Derating at 40°C approx.:	6.6A	5.5A	4.1A	3.8A	3.1A	2.5A
Safety:	**Medical:** EN 60601-1 / **Home Health Care:** EN 60601-1-11 / **Battery Charger:** EN 60335-2-29 / **A/V and Comm. tech:** IEC 62368-1					
Insulation class:	Class II (Class I on request)					
Insulation voltage: primary–secondary:	4000VAC/5700VDC					
EMC standard:	EN 55014-1 and –2, Emission EN 61000-6-3, Immunity EN 61000-6-1, EN 60601-1-2					
Input terminal:	2-pins IEC 320 connector, C8 or mains cable (3pins IEC 320 connector, C6 on request)					
Output terminals:	DC connector, Battery clips, Push-on terminals or open ends					
IP-Grade:	41					
Rec. battery capacity:	9-360Ah	7-280Ah	5.6-224Ah	4.65-186Ah	4.0-160Ah	3.5-140Ah
Dimensions:	203.5×87×43.5mm					
Weight:	590g					

CELL-CON
Battery & Charger Solutions

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BATTERY CHARGER, 454340-L, LI-ION

SPECIFICATIONS	9 CELLS	10 CELLS	11 CELLS	12 CELLS	13 CELLS	14 CELLS
Cell-Con part number:	454040-LI	454040-LJ	454040-LK	454040-LL	454040-LM	454040-LN
Input voltage:	90-264VAC					
Line frequency:	47-63Hz					
Active power factor correction:	Yes					
Max output power:	117.2W	117.4W		117.5W	117.4W	
Step 0 < 10min Yellow:	CC 200mA ±25mA,, when battery voltage <27V	CC 200mA ±25mA, when battery voltage <30V	CC 200mA ±25mA, when battery voltage <33V	CC 200mA ±25mA, when battery voltage <36V	CC 200mA ±25mA, when battery voltage <39V	CC 200mA ±25mA, when battery voltage <42V
Step 0 > 10min Red (4 blinks):	0A/0V					
Step 1 (constant current) Yellow:	CC 3.1A ±0.2A, when 27V <Vbat <37.8V	CC 2.8A ±0.2A, when 32V <Vbat <42V	CC 2.54A ±0.2A, when 33V <Vbat <46.2V	CC 2.33A ±0.2A, when 36V <Vbat <50.4V	CC 2.15A ±0.2A, when 39V <Vbat <54.6V	CC 2.0A ±0.2A, 42V <Vbat <58.8V
Step 2 (constant voltage) Flashing Yellow:	CV 37.8V ±0.2V < 2.2A until I charge <200mA or max. 1h	CV 42.0V ±0.2V < 1.7A until I charge <200mA or max. 1h	CV 46.2V ±0.3V < 1.6A until I charge <200mA or max. 1h	CV 50.4V ±0.3V < 1.6A until I charge <200 mA or max. 1h	CV 54.6V ±0.3V < 1.5A until I charge <200mA or max. 1h	CV 58.8V ±0.3V < 1.3AA until I charge <200mA or max. 1h
Charge timer (step2, CV):	1h					
Safety timer (all steps) Red (5 blinks):	72h					
Step 3 (charge completed) Green:	0A					
Restart voltage:	36.9V	41V	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)					
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.					
Ripple:	<100mV p-p					
Efficiency (at 230V 100% load) approx.:	91%					
Switch frequency approx.:	45-75kHz					
Leakage current from battery with mains switched off:	<1mA at nominal battery voltage (<0.72 Ah/month)					
Protection:	Protected against reversed polarity. Error Indication: Red (2 blinks) Short circuit proof. Error Indication: Red (3 blinks) Charging of wrong lower voltage battery pack will be terminated after 10min. (see step 0). 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 / **Transport and short time storage:** -25 to +85°C					
Derating at 40°C approx.:	2.5A	1.8A	1.5A	1.7A	1.4A	1.3A
Safety:	**Medical:** EN 60601-1 / **Home Health Care:** EN 60601-1-11 / **Battery Charger:** EN 60335-2-29 / **A/V and Comm. tech:** IEC 62368-1					
Insulation class:	Class II (Class I on request)					
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EMC standard:	EN 55014-1 and –2, Emission EN 61000-6-3, Immunity EN 61000-6-1, EN 60601-1-2					
Input terminal:	2-pins IEC 320 connector, C8 or mains cable (3pins IEC 320 connector, C6 on request)					
Output terminals:	DC connector, Battery clips, Push-on terminals or open ends					
IP-Grade:	41					
Rec. battery capacity:	3.1-124Ah	2.8-112Ah	2.54-101Ah	2.33–93Ah	2.15-86Ah	2-80Ah
Dimensions:	203.5×87×43.5mm					
Weight:	590g					

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