## **SPECIFICATIONS FOR 4340 LiFe**

	4-cell LiFePO4	5-cell LiFePO4	6-cell LiFePO4	7-cell LiFePO4	
Available versions	x				
Input voltage: / Line frequency	90-264Vac 47-63Hz				
Max output power	80W				
Step 0 < 30min Yellow	CC 500mA, when batt voltage < 10.5V.	CC 400mA, when batt voltage < 15.0V.	CC 300mA, when batt voltage < 15.0V.	CC 300mA, when batt voltage < 17.5V.	
Step 0 > 30min Red (4 blinks)	0A / 0V				
Step 1 (Constant Current) Yellow	CC 5.5A + 0.15A/-0.3A, when 10.5V < Vbat < 14.6V	CC 4.35A +0.1/-0.3A, when 12.5V < Vbat < 18.25V	CC3.65A +0.1/-0.3A, when 15.0V < Vbat < 21.9V	CC3.1A +0.1/-0.3A, when 17.5V < Vbat < 25.55V	
Step 2 (Constant Voltage) Flashing Yellow	CV 14.6V ± 0.2V < 3.8A until I charge < 400mA or max. 1h	CV 18.25V ± 0.2V < 3.0A until I charge < 400mA or max. 1h	CV 21.9V ± 0.2V < 2.5A until I charge < 300mA or max. 1h	CV 25.55V ± 0.2V < 2.2A 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	14.0V ± 0.2V	17.5V ± 0.2V	21.0V ± 0.2V	24.5V ± 0.2V	
Restart voltage	13.2V	16.5V	19.8V	23.0V	
Formation Charge (Step 0)	Low current start-up of c	leeply discharged battery.			
Wake-up of deeply discharged battery.	Yes, will apply voltage w	hich deactivates deep dis	charge protection in batte	ry 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 too high >60°C: Error Red (7 blinks) Battery temperature < 0 °C (too cold) or > 45°C (too hot): No charge, wait until temp. is OK.				
	< 100mV p-p				
Ripple	< 100mV p-p				
Ripple Efficiency (at 230V 100% load) approx.	< 100mV p-p >89%	>89%	>89%	>90%	
		>89%	>89%	>90%	
Efficiency (at 230V 100% load) approx.	>89% 65kHz	>89% ry voltage (< 0.72 Ah/mon	J	>90%	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with	>89% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec	th) I (2 blinks) Short circuit proof ninated after 30min. (see step	Error Indication: Red (3 to 0). Indication: Red (4 blinks)	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off	>89% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec ltage battery pack will be terr n: Red (5 blinks)	th) I (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag	Error Indication: Red (3 to 0). Indication: Red (4 blinks)	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection	>89% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec ltage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong b	th) I (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag	Error Indication: Red (3 to 0). Indication: Red (4 blinks)	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range	>89% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 4.2A	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec ltage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong be	th) (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC	Error Indication: Red (3 to 0). Indication: Red (4 blinks) te. Indication: LED is OFF.	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.	>89% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 4.2A Medical EN 60601-1 / Hom	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec itage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong b Transport and short time 3.2A e Health care EN 60601-1-11	th) (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC	Error Indication: Red (3 to 0). Indication: Red (4 blinks) te. Indication: LED is OFF.	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.  Safety	>89% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 4.2A Medical EN 60601-1 / Hom IEC 62368-1	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec itage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong b Transport and short time 3.2A e Health care EN 60601-1-11	th) (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC	Error Indication: Red (3 to 0). Indication: Red (4 blinks) te. Indication: LED is OFF.	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.  Safety  Insulation class  Insulation voltage: Primary –	>89% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 4.2A Medical EN 60601-1 / Hom IEC 62368-1 Class II. (Class I on requipment of the second of the seco	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec itage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong b Transport and short time 3.2A e Health care EN 60601-1-11	th)  (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC  2.7A  / Battery Charger EN 60335-	2.5A 2-29. A/V and Comm. tech:	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.  Safety  Insulation class  Insulation voltage: Primary – secondary	>89%  65kHz  < 1 mA at nominal batter  Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC.  4.2A  Medical EN 60601-1 / Hom IEC 62368-1  Class II. (Class I on requivalence of 4000VAC / 5700VDC  EN 55014-1 and -2, Emi	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec itage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong be Transport and short time 3.2A e Health care EN 60601-1-11	th) (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC  2.7A / Battery Charger EN 60335-	2.5A 2-29. A/V and Comm. tech:	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.  Safety  Insulation class Insulation voltage: Primary – secondary  EMC standards	>89% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 4.2A Medical EN 60601-1 / Hom IEC 62368-1 Class II. (Class I on requivalence of 4000VAC / 5700VDC EN 55014-1 and -2, Emit 2-pins IEC 320 connectors	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec stage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong be Transport and short time 3.2A e Health care EN 60601-1-11 est) ssion EN 61000-6-3, Imme	th)  (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC  2.7A  / Battery Charger EN 60335-	2.5A 2-29. A/V and Comm. tech:	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.  Safety  Insulation class Insulation voltage: Primary – secondary  EMC standards Input terminal	>89% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 4.2A Medical EN 60601-1 / Hom IEC 62368-1 Class II. (Class I on requivalence of 4000VAC / 5700VDC EN 55014-1 and -2, Emit 2-pins IEC 320 connectors	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec ltage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong be Transport and short time 3.2A e Health care EN 60601-1-11 est) ssion EN 61000-6-3, Immur, C8 or mains cable (3pin	th)  (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC  2.7A  / Battery Charger EN 60335-	2.5A 2-29. A/V and Comm. tech:	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.  Safety  Insulation class Insulation voltage: Primary – secondary  EMC standards Input terminal  Output terminals	>89%  65kHz  < 1 mA at nominal batter  Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC.  4.2A  Medical EN 60601-1 / Hom IEC 62368-1  Class II. (Class I on requivalence of the company of the comp	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec ltage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong be Transport and short time 3.2A e Health care EN 60601-1-11 est) ssion EN 61000-6-3, Immur, C8 or mains cable (3pin	th)  (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC  2.7A  / Battery Charger EN 60335-	2.5A 2-29. A/V and Comm. tech:	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.  Safety  Insulation class Insulation voltage: Primary – secondary  EMC standards Input terminal  Output terminals  IP-Grade	>89% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 4.2A Medical EN 60601-1 / Hom IEC 62368-1 Class II. (Class I on request) 4000VAC / 5700VDC EN 55014-1 and -2, Emi 2-pins IEC 320 connectod DC connector, Battery click IP4X (IP44 on request)	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Reclarage battery pack will be term: Red (5 blinks) nated) if connecting wrong be Transport and short time 3.2A e Health care EN 60601-1-11 est) ssion EN 61000-6-3, Immur, C8 or mains cable (3pin ps, Push-on terminals or other street in the s	th)  (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltage storage: -25 to +85oC  2.7A  / Battery Charger EN 60335-  unity EN 61000-6-1, EN 60 s IEC 320 connector, C6 of open ends.	Error Indication: Red (3 to 0). Indication: Red (4 blinks) ge. Indication: LED is OFF.  2.5A 2-29. A/V and Comm. tech:	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.  Safety  Insulation class Insulation voltage: Primary – secondary  EMC standards Input terminal  Output terminals  IP-Grade  Rec. battery capacity	>89% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 4.2A Medical EN 60601-1 / Hom IEC 62368-1 Class II. (Class I on request) 4000VAC / 5700VDC EN 55014-1 and -2, Emi 2-pins IEC 320 connectod DC connector, Battery clist IP4X (IP44 on request) 2.75 - 220Ah	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Reclarage battery pack will be term: Red (5 blinks) nated) if connecting wrong be Transport and short time 3.2A e Health care EN 60601-1-11 est) ssion EN 61000-6-3, Immur, C8 or mains cable (3pin ps, Push-on terminals or other street in the s	th)  (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltage storage: -25 to +85oC  2.7A  / Battery Charger EN 60335-  unity EN 61000-6-1, EN 60 s IEC 320 connector, C6 of open ends.	Error Indication: Red (3 to 0). Indication: Red (4 blinks) ge. Indication: LED is OFF.  2.5A 2-29. A/V and Comm. tech:	

## **SPECIFICATIONS FOR 4340 LiFe**

	8-cell LiFePO4	10-cell LiFePO4	11-cell LiFePO4	12-cell LiFePO4	
Available versions	х		J.	•	
Input voltage: / Line frequency	90-264Vac 47-63Hz				
Max output power	80W				
Step 0 < 30min Yellow	CC 300mA, when batt voltage < 21.0V.	CC 300mA , when batt voltage < 25.0V.	CC 200mA, when batt voltage < 27.5V.	CC 200mA, when batt voltage < 30.0V.	
Step 0 > 30min Red (4 blinks)	0A / 0V			_	
Step 1 (Constant Current) Yellow	CC 2.7A +0.1/-0.3A, when 21.0V < Vbat < 29.2V	CC 2.2A ± 0.2A, when 25.0V < Vbat < 36.5V	CC 2.0A ± 0.2A, when 27.5V < Vbat < 40.15V	CC 1.8A ± 0.2A, when 30.0V < Vbat < 43.8V	
Step 2 (Constant Voltage) Flashing Yellow	CV 29.2V ± 0.2V < 1.9A until I charge < 300mA or- max. 1h.	CV 36.5V ± 0.2V < 1.5A until I charge < 300mA or max. 1h	CV 40.15V± 0.3V < 1.4A until I charge < 200mA or- max. 1h.	CV 43.8V ± 0.3V < 1.2A 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	28.0V ± 0.2V	35.0V ± 0.2V	38.5V ± 0.2V	42.0V ± 0.3V	
Restart voltage	26.4V	33.0V	36.3V	39.6V	
Formation Charge (Step 0)	Low current start-up of deeply discharged battery.				
Wake-up of deeply discharged battery.	Yes, will apply voltage w	hich deactivates deep dis	charge protection in batte	ry 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 too high >60°C: Error Red (7 blinks) Battery temperature < 0 °C (too cold) or > 45°C (too hot): No charge, wait until temp. is OK.				
	< 100mV p-p				
Ripple	< 100mV p-p				
Ripple Efficiency (at 230V 100% load) approx.	< 100mV p-p >90%	>89%	>90%	>90%	
		>89%	>90%	>90%	
Efficiency (at 230V 100% load) approx.	>90% 65kHz	>89% ry voltage (< 0.72 Ah/mon	J.	>90%	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with	>90% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec ltage battery pack will be terr n: Red (5 blinks)	th) (2 blinks) Short circuit proof	Error Indication: Red (3 to 0). Indication: Red (4 blinks)	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off	>90% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec ltage battery pack will be terr n: Red (5 blinks)	th) (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag	Error Indication: Red (3 0 0). Indication: Red (4 blinks)	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection	>90% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec ltage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong b	th) (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag	Error Indication: Red (3 to 0). Indication: Red (4 blinks)	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range	>90% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC.	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec ltage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong be Transport and short time	th) (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC	Error Indication: Red (3 to 0). Indication: Red (4 blinks) te. Indication: LED is OFF.	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.	>90% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 2.2A Medical EN 60601-1 / Hom	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec itage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong b Transport and short time 1.7A e Health care EN 60601-1-11	th) (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC	Error Indication: Red (3 to 0). Indication: Red (4 blinks) te. Indication: LED is OFF.	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.  Safety	>90% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 2.2A Medical EN 60601-1 / Hom IEC 62368-1	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec itage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong b Transport and short time 1.7A e Health care EN 60601-1-11	th) (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC	Error Indication: Red (3 to 0). Indication: Red (4 blinks) te. Indication: LED is OFF.	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.  Safety  Insulation class  Insulation voltage: Primary —	>90% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 2.2A Medical EN 60601-1 / Hom IEC 62368-1 Class II. (Class I on requipment of the second of the seco	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec itage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong be Transport and short time 1.7A e Health care EN 60601-1-11	th) (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC	Error Indication: Red (3 to 0). Indication: Red (4 blinks) to 0. Indication: LED is OFF.  1.5A 2-29. A/V and Comm. tech:	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.  Safety  Insulation class  Insulation voltage: Primary – secondary	>90% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 2.2A Medical EN 60601-1 / Hom IEC 62368-1 Class II. (Class I on requipment of 4000VAC / 5700VDC EN 55014-1 and -2, Emi	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec stage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong be Transport and short time 1.7A e Health care EN 60601-1-11 est) ssion EN 61000-6-3, Imme	th) (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC  1.6A / Battery Charger EN 60335-2	Error Indication: Red (3 to 0). Indication: Red (4 blinks) ge. Indication: LED is OFF.  1.5A 2-29. A/V and Comm. tech:	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.  Safety  Insulation class Insulation voltage: Primary – secondary  EMC standards	>90% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 2.2A Medical EN 60601-1 / Hom IEC 62368-1 Class II. (Class I on requivalence of 4000VAC / 5700VDC EN 55014-1 and -2, Emit 2-pins IEC 320 connectors	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec stage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong be Transport and short time 1.7A e Health care EN 60601-1-11 est) ssion EN 61000-6-3, Imme	th) (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC  1.6A / Battery Charger EN 60335-2  unity EN 61000-6-1, EN 60 s IEC 320 connector, C6 o	Error Indication: Red (3 to 0). Indication: Red (4 blinks) ge. Indication: LED is OFF.  1.5A 2-29. A/V and Comm. tech:	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.  Safety  Insulation class Insulation voltage: Primary – secondary  EMC standards Input terminal	>90% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 2.2A Medical EN 60601-1 / Hom IEC 62368-1 Class II. (Class I on requivalence of 4000VAC / 5700VDC EN 55014-1 and -2, Emit 2-pins IEC 320 connectors	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec ltage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong be Transport and short time 1.7A e Health care EN 60601-1-11 est) ssion EN 61000-6-3, Immer, C8 or mains cable (3pin	th) (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC  1.6A / Battery Charger EN 60335-2  unity EN 61000-6-1, EN 60 s IEC 320 connector, C6 o	Error Indication: Red (3 to 0). Indication: Red (4 blinks) ge. Indication: LED is OFF.  1.5A 2-29. A/V and Comm. tech:	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.  Safety  Insulation class Insulation voltage: Primary – secondary  EMC standards Input terminal  Output terminals	>90% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 2.2A Medical EN 60601-1 / Hom IEC 62368-1 Class II. (Class I on requivalence of the same	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Rec ltage battery pack will be terr n: Red (5 blinks) nated) if connecting wrong be Transport and short time 1.7A e Health care EN 60601-1-11 est) ssion EN 61000-6-3, Immer, C8 or mains cable (3pin	th) (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC  1.6A / Battery Charger EN 60335-2  unity EN 61000-6-1, EN 60 s IEC 320 connector, C6 o	Error Indication: Red (3 to 0). Indication: Red (4 blinks) ge. Indication: LED is OFF.  1.5A 2-29. A/V and Comm. tech:	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.  Safety  Insulation class Insulation voltage: Primary – secondary  EMC standards Input terminal  Output terminals  IP-Grade	>90% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 2.2A Medical EN 60601-1 / Hom IEC 62368-1 Class II. (Class I on requ 4000VAC / 5700VDC EN 55014-1 and -2, Emi 2-pins IEC 320 connecto DC connector, Battery cli IP4X (IP44 on request)	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Reclarge battery pack will be term: Red (5 blinks) mated) if connecting wrong be transport and short time 1.7A  e Health care EN 60601-1-11  est)  ssion EN 61000-6-3, Immur, C8 or mains cable (3pin ps, Push-on terminals or other terminals.	th)  (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC  1.6A  / Battery Charger EN 60335-2  unity EN 61000-6-1, EN 60 s IEC 320 connector, C6 of open ends.	Error Indication: Red (3 to 0). Indication: Red (4 blinks) ge. Indication: LED is OFF.  1.5A 2-29. A/V and Comm. tech:	
Efficiency (at 230V 100% load) approx.  Switch frequency approx.  Leakage current from battery with mains switched off  Protection  Temperature range  Derating at 40oC approx.  Safety  Insulation class Insulation voltage: Primary – secondary  EMC standards Input terminal  Output terminals  IP-Grade  Rec. battery capacity	>90% 65kHz < 1 mA at nominal batter Protected against reversed blinks) Charging of wrong lower vol Safety timer. Error Indicatio No charge (or charge termin Operating: -25 to +40oC. 2.2A Medical EN 60601-1 / Hom IEC 62368-1 Class II. (Class I on requ 4000VAC / 5700VDC  EN 55014-1 and -2, Emi 2-pins IEC 320 connecto DC connector, Battery cli IP4X (IP44 on request) 1.35 - 108Ah	ry voltage (< 0.72 Ah/mon polarity. Error Indication: Reclarge battery pack will be term: Red (5 blinks) mated) if connecting wrong be transport and short time 1.7A  e Health care EN 60601-1-11  est)  ssion EN 61000-6-3, Immur, C8 or mains cable (3pin ps, Push-on terminals or other terminals.	th)  (2 blinks) Short circuit proof ninated after 30min. (see step attery pack with higher voltag storage: -25 to +85oC  1.6A  / Battery Charger EN 60335-2  unity EN 61000-6-1, EN 60 s IEC 320 connector, C6 of open ends.	Error Indication: Red (3 to 0). Indication: Red (4 blinks) ge. Indication: LED is OFF.  1.5A 2-29. A/V and Comm. tech:	

## **SPECIFICATIONS FOR 4340 LiFe**

SPECIFICATIONS FOR 4340 LiFe		Generated 04/12/2023		
	13-cell LiFePO4	16-cell LiFePO4		
Available versions	x			
Input voltage: / Line frequency	90-264Vac 47-63Hz			
Max output power	80W			
Step 0 < 30min Yellow	CC 200mA, when batt voltage < 32.5V.	CC 200mA, when batt voltage < 41.6V.		
Step 0 > 30min Red (4 blinks)	0A / 0V			
Step 1 (Constant Current) Yellow	CC 1.68A ± 0.2A, when 32.5V < Vbat < 47.45V	CC 1.35A ± 0.2A, when 41.6V < Vbat < 58.4V		
Step 2 (Constant Voltage) Flashing Yellow	CV 47.45 ± 0.3V < 1.1A until I charge < 200mA or max. 1h.	CV 58.4V ± 0.3V < 0.9A 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	45.5.0V ± 0.3V	56.0V ± 0.3V		
Restart voltage	42.9V	52.8V		
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 dis	charge 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 too high >60°C: Error Red (7 blinks) 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.	65kHz			
Leakage current from battery with mains switched off	< 1 mA 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 30min. (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 +40oC. Transport and short time	storage: -25 to +85oC		
Derating at 40oC approx.	1.3A	1.1A		
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 standards	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	IP4X (IP44 on request)			
Rec. battery capacity	0.84 - 67 Ah	0.68 - 54Ah		
Dimensions	172.5 × 73 × 42 mm			
Weight	400g			
Other	CBC functionality: Configurable Battery Charger. Charging history: Log of 10 latest charge cycles.			