

	2-cell	3-6 cell	4-8 cell	5-10 cell
Available versions	x			
Input voltage	90 - 264VAC / 47 - 63Hz			
Max. output power	6.5W	14W	14.7W	14.9W
Min. output voltage for -ΔV detection	2.5V (min 2 cells × min 1.25V pr. cell)	3.75V (min 3 cells x min 1.25V pr. cell)	5.0V (min 4 cells x min 1.25V pr. cell)	6.2V (min 5 cells x min 1.25V pr. cell)
Max. output voltage for -ΔV detection	3.4V (max 2 cells × max 1.7V pr. cell)	10.2V (max 6 cells x max 1.7V pr. cell)	13.6V (max 8 cells x max 1.7V pr. cell)	17V (max 10 cells x max 1.7V pr. cell)
-ΔV sensitivity mV/cell	3mV/cell	3mV/cell	3mV/cell (approx.)	3mV/cell (approx.)
SoftStart current	100mA ± 30mA @ Vbat < 2.5V	100mA ± 30mA @ Vbat < 3.75V	60mA ± 20mA @ Vbat < 5.0V	60mA ± 20mA @ Vbat < 6.25V
Fast charge current	1.3A ± 100mA	1.3A ± 100mA	1.0A ± 100mA	0.8A ± 100mA
Top off charge	160mA ± 30mA	160mA ± 30mA	130mA ± 30mA	110mA ± 30mA
Trickle charge current	30mA ± 15mA			
Efficiency at 100% load	0.7	0.76	0.78	0.8
Average efficiency	>62%	>72%	>74%	>76%
No load consumption	0.5W	0.6W	0.6W	0.65W
-ΔV mask start timer	3 min, no -ΔV de-tection in this period			
SoftStart Timer	30 minutes			
Top-off timer	1 hour			
Safety timer. The charger switch to trickle charge if no ΔV is detected before the safety timer has run out.	5 hours			
Switch frequency	56kHz.			
Temperature range	-20 to +40°C (these values are only for the charger, not for the batteries).			
Charge control	-ΔV principle. Fast charging stops when the voltage has dropped 3mV/cell below its maximum recorded level.			
Voltage changes during charging	-ΔV detection is disabled if the voltage changes quickly. This to avoid false -ΔV if an external load kicks in during charging.			
Leakage current from battery with mains switch off	< 300 μA at nominal battery voltage (< 0.22 Ah/month)			
Fuses	Fuse at input. Mosfet switch at the output protects the unit against wrong polarity.			
Insulation class	Class II.			
Electrical safety	Medical EN 60601-1 / Home Healthcare EN 60601-1-11 / Battery Charger EN 60335-2-29			
EMC-standards	EN 55014-1 and -2, EN 61000-6-3, EN 61000-6-1, EN 60601-1-2			
Insulation voltage (prim-sec)	4000V AC / 5700V DC.			
Input terminals	2-pins IEC 320 connector for exchangeable mains plug (EU, US, UK and AUS) or mains cord with C7 connector.			
Output terminals	Cord with/without plug. Exchangeable plugs available.			
LED-indication	SoftStart / Fast charge: Yellow Top off charge: Flashing yellow Trickle charge: Green Battery not connected: Flashing green (1s/1s)			
Protection	Protected against reversed polarity. Error indication: Red (2 blinks) Short circuit proof. Error indication: Red (3 blinks) Low battery voltage (SoftStart timer). Error indication: Red (4 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF.			
Thermal control (Optional, requires battery with NTC)	+dT/dt principle. Fast charging stops when the temperature increment is over 0.5°C/min. Battery temperature is too low (<0°C). Wait mode. Indication: Yellow with 1 red blink. Battery temperature is too high (>40°C). Wait mode. Indication: Yellow with 2 red blinks. High temperature (>60°C). Error Indication: Red (5 blinks). NTC missing or shorted. Error Indication: Red (6 blinks).			
Resetting	A new charging cycle starts by reconnecting a battery at the output, or by disconnecting and connecting the mains voltage.			
IP-grade	IP 41.			
Dimensions	108,5 × 49 × 29,3 mm			
Weight	150g.			
Other				

Possible options on request: Charger parameters programmable with "Configurator tool". Constant current charge (no battery management). 0dV detection for EoC. DoE compliance.
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	6-12 cell	10-20 cell	15-30 cell
Available versions	x		
Input voltage	90 - 264VAC / 47 - 63Hz		
Max. output power	15.3W	14.4W	15.3W
Min. output voltage for -ΔV detection	7.5V (min 6 cells x min 1.25V pr. cell)	12.5V (min 10 cells x min 1.25V pr. cell)	18.75V (min 15 cells x min 1.25V pr. cell)
Max. output voltage for -ΔV detection	20.4V (max 12 cells x max 1.7V pr. cell)	34V (max 20 cells x max 1.7V pr. cell)	51V (max 30 cells x max 1.7V pr. cell)
-ΔV sensitivity mV/cell	3mV/cell (approx.)		
SoftStart current	50mA ± 20mA @ Vbat < 7.5V	40mA ± 20mA @ Vbat < 12.9V	30mA ± 20mA @ Vbat < 18.5V
Fast charge current	0.7A ± 100mA	400mA ± 50mA	300mA ± 50mA
Top off charge	100mA ± 30mA	65mA ± 20mA	55mA ± 20mA
Trickle charge current	30mA ± 15mA	25mA ± 10mA	25mA ± 10mA
Efficiency at 100% load	0.81	0.84	0.84
Average efficiency	>77%	>80%	>80%
No load consumption	0.7W	0.5W	0.75W
-ΔV mask start timer	3 min, no -ΔV de-tection in this period		
SoftStart Timer	30 minutes		
Top-off timer	1 hour		
Safety timer. The charger switch to trickle charge if no ΔV is detected before the safety timer has run out.	5 hours		
Switch frequency	56kHz.	56kHz.	35kHz.
Temperature range	-20 to +40°C (these values are only for the charger, not for the batteries).		
Charge control	-ΔV principle. Fast charging stops when the voltage has dropped 3mV/cell below its maximum recorded level.		
Voltage changes during charging	-ΔV detection is disabled if the voltage changes quickly. This to avoid false -ΔV if an external load kicks in during charging.		
Leakage current from battery with mains switch off	< 300 μA at nominal battery voltage (< 0.22 Ah/month)	< 300 μA at nominal battery voltage (< 0.22 Ah/month)	< 0.5 mA at nominal battery voltage (< 0.4 Ah/month)
Fuses	Fuse at input. Mosfet switch at the output protects the unit against wrong polarity.		
Insulation class	Class II.		
Electrical safety	Medical EN 60601-1 / Home Healthcare EN 60601-1-11 / Battery Charger EN 60335-2-29		
EMC-standards	EN 55014-1 and -2, EN 61000-6-3, EN 61000-6-1, EN 60601-1-2		
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Input terminals	2-pins IEC 320 connector for exchangeable mains plug (EU, US, UK and AUS) or mains cord with C7 connector.	2-pins IEC 320 connector for exchangeable mains plug (EU, US, UK and AUS) or mains cord with C7 connector.	2-pins IEC 320 connector for exchangeable mains plug (EU, US, UK and AUS).
Output terminals	Cord with/without plug. Exchangeable plugs available.		
LED-indication	SoftStart / Fast charge: Yellow Top off charge: Flashing yellow Trickle charge: Green Battery not connected: Flashing green (1s/1s)		
Protection	Protected against reversed polarity. Error indication: Red (2 blinks) Short circuit proof. Error indication: Red (3 blinks) Low battery voltage (SoftStart timer). Error indication: Red (4 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF.		
Thermal control (Optional, requires battery with NTC)	+dT/dt principle. Fast charging stops when the temperature increment is over 0.5°C/min. Battery temperature is too low (<0°C). Wait mode. Indication: Yellow with 1 red blink. Battery temperature is too high (>40°C). Wait mode. Indication: Yellow with 2 red blinks. High temperature (>60°C). Error Indication: Red (5 blinks). NTC missing or shorted. Error Indication: Red (6 blinks).		
Resetting	A new charging cycle starts by reconnecting a battery at the output, or by disconnecting and connecting the mains voltage.		
IP-grade	IP 41.		
Dimensions	108,5 × 49 × 29,3 mm		
Weight	150g.		

Other	Possible options on request: Charger parameters programmable with "Configurator tool". Constant current charge (no battery management). OdV detection for EoC. DoE compliance.
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