

Model 3743 NiMH

15 W max out • 90-264 VAC input

- Universal input voltage
- Optimized battery performance and lifetime by:
 - Robust -dV sensitivity detection
 - Low cell temperature at end of fast charge
 - Top-off charge ensures all cells are fully charged and balanced
 - Safety indication and protection: against reverse polarity, short circuit, charging battery packs with the wrong number of cells
- Approvals:
 - Medically certified
 - Safety: EN 60601-1 ed. 3.1
 - Home healthcare EN 60601-1-11
 - EMC: EN 60601-1-2 ed. 4
 - UL approved
- Custom specifications on request:

Charging parameters, connectors, cords, logo print, housing/open frame/IP rating and certificates. For more information: [custom design info sheet](#)
- Configurable battery charger (CBC)

The CBC module offers a range of custom charge parameter settings, including: dV, dT/dt, 0 dV, Timer, Safety timer, dV threshold, temperature gradient adjustment.

The CBC is also configurable in field. For more information, [see CBC data sheet](#)

Notes:

Plug-in/desktop unit
Exchangeable AC and DC plugs available
Mounting bracket available
Order plugs and mains cord separately

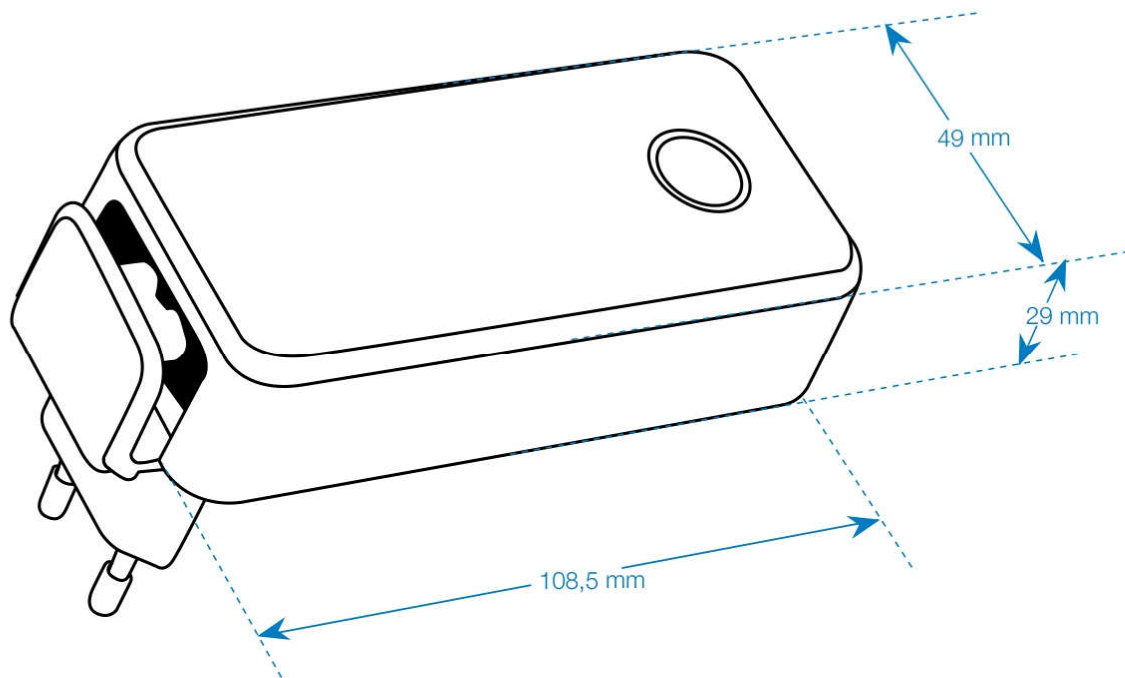


Available versions

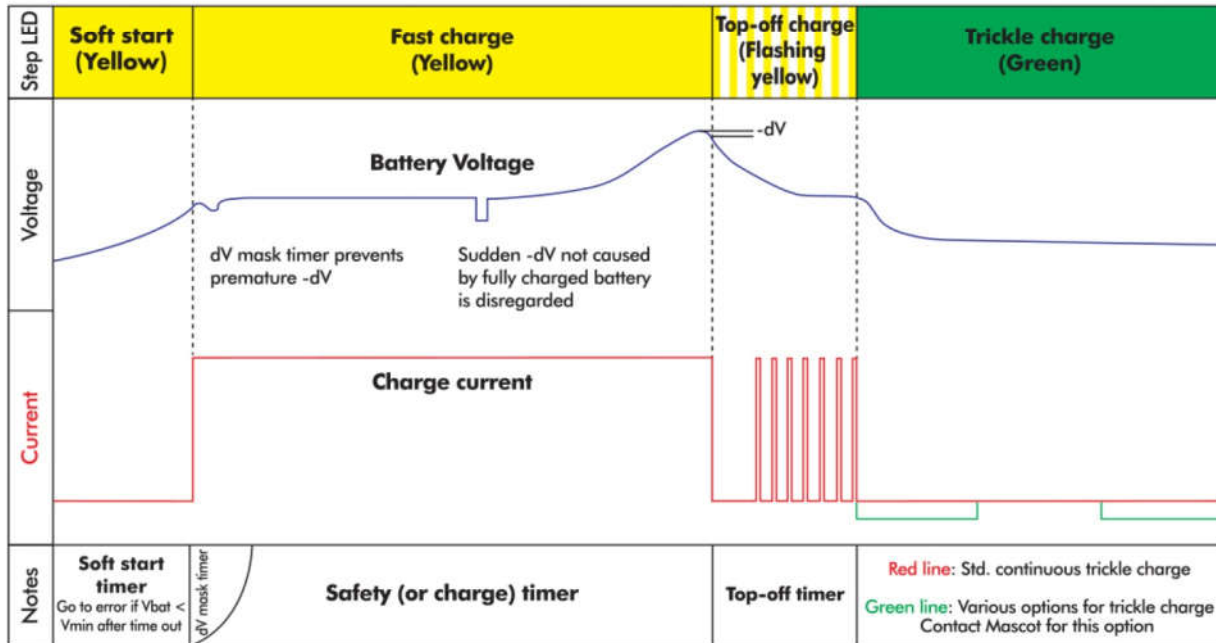
- 2 cells / 1,3A
- 3-6 cells / 1,3A
- 4-8 cells / 1A
- 5-10 cells / 0,8A
- 6-12 cells / 0,7A
- 10-20 cells / 0,4A

MASCOT type 3743 NiMH/NiCd:	2-cell	3-6 cell	4-8 cell	5-10 cell	6-12 cell	10-20 cell
Input voltage	90 - 264VAC / 47 - 63Hz	90 - 264VAC / 47 - 63Hz	90 - 264VAC / 47 - 63Hz	90 - 264VAC / 47 - 63Hz	90 - 264VAC / 47 - 63Hz	90 - 264VAC / 47 - 63Hz
Max. output power	6.5W	14W	14.7W	14.9W	15.3W	14.4W
Min. output voltage for -ΔV detection	2.5V (min 2 cells x 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)	7.5V (min 6 cells x min 1.25V pr. cell)	12.5V (min 10 cells x min 1.25V pr. cell)
Max. output voltage for -ΔV detection	3.4V (max 2 cells x 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)	20.4V (max 12 cells x max 1.7V pr. cell)	34V (max 20 cells x max 1.7V pr. cell)
-ΔV sensitivity mV/cell	3mV/cell	3mV/cell	3mV/cell (approx.)	3mV/cell (approx.)	3mV/cell (approx.)	3mV/cell (approx.)
SoftStart current	30mA ± 15mA @ Vbat < 2V	30mA ± 15mA @ Vbat < 3.5V	30mA ± 15mA @ Vbat < 4.8V	30mA ± 15mA @ Vbat < 6V	30mA ± 15mA @ Vbat < 7.2V	25mA ± 10mA @ Vbat < 12.25V
Fast charge current	1.3A ± 100mA	1.3A ± 100mA	1.0A ± 100mA	0.8A ± 100mA	0.7A ± 100mA	400mA ± 50mA
Top off charge	160mA ± 30mA	160mA ± 30mA	130mA ± 30mA	110mA ± 30mA	100mA ± 30mA	65mA ± 20mA
Trickle charge current	30mA ± 15mA	30mA ± 15mA	30mA ± 15mA	30mA ± 15mA	30mA ± 15mA	25mA ± 10mA
Efficiency at 100% load	70%	76%	78%	80%	81%	84%
Average efficiency	>62%	>72%	>74%	>76%	>77%	>80%
No load consumption (typical value)	0.5W	0.6W	0.6W	0.65W	0.7W	0.5W
-ΔV mask start timer	3 min, no -ΔV detection in this period	3 min, no -ΔV detection in this period	3 min, no -ΔV detection in this period	3 min, no -ΔV detection in this period	3 min, no -ΔV detection in this period	3 min, no -ΔV detection in this period
SoftStart Timer	10 minutes	10 minutes	10 minutes	10 minutes	10 minutes	10 minutes
Top-off timer	1 hour	1 hour	1 hour	1 hour	1 hour	1 hour
Safety timer	5 hours	5 hours	5 hours	5 hours	5 hours	5 hours
	The charger switch to trickle charge if no -ΔV is detected before the safety timer has run out.					

MASCOT type 3743 NiMH/NiCd:	2-cell	3-6 cell	4-8 cell	5-10 cell	6-12 cell	10-20 cell
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 (V _{NOM} ≥110VAC) / 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). Diode protected batteries charge. 0dV detection for EoC. DoE compliance.					



Charging characteristics and LED indication



CHARGE INDICATIONS

- Flashing green: Battery not connected
- Yellow: Fast charge (or soft start)
- Flashing yellow: Top-off
- Green: Trickle

WAIT MODE INDICATIONS

- Yellow with 1 red blink: Battery temperature is too low ($<0^{\circ}\text{C}$)
- Yellow with 2 red blinks: Battery temperature is too high ($>40^{\circ}\text{C}$)

ERROR INDICATIONS

- 2 red blinks: Battery is connected to charger with wrong polarity!
- 3 red blinks: Charger output is shorted. Check output cable connection!
- 4 red blinks: Battery voltage is low. Check battery status or voltage. (ss timer)
- 5 red blinks: Warm error. Temperature $>60^{\circ}\text{C}$
- 6 red blinks: NTC missing or short (if mandatory)
- LED off: Battery voltage is too high. Check battery voltage.