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Model 3546 NiMH

27 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 makes sure 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:

  - Household safety, EN 60335-1 & -2-29
  - 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

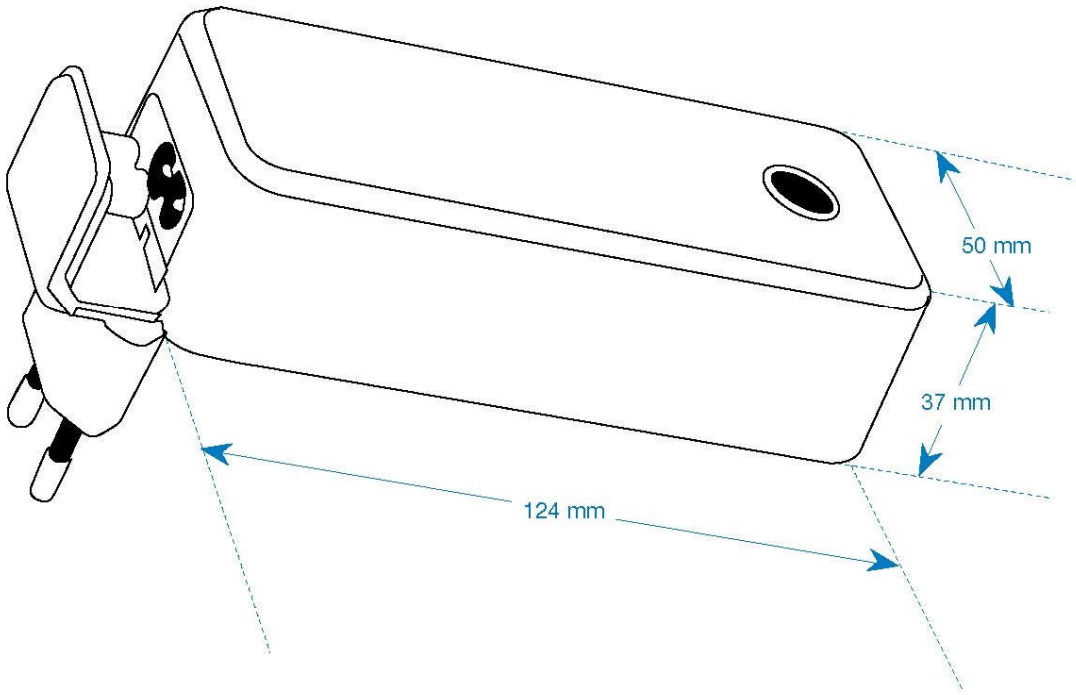
Available versions On request

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

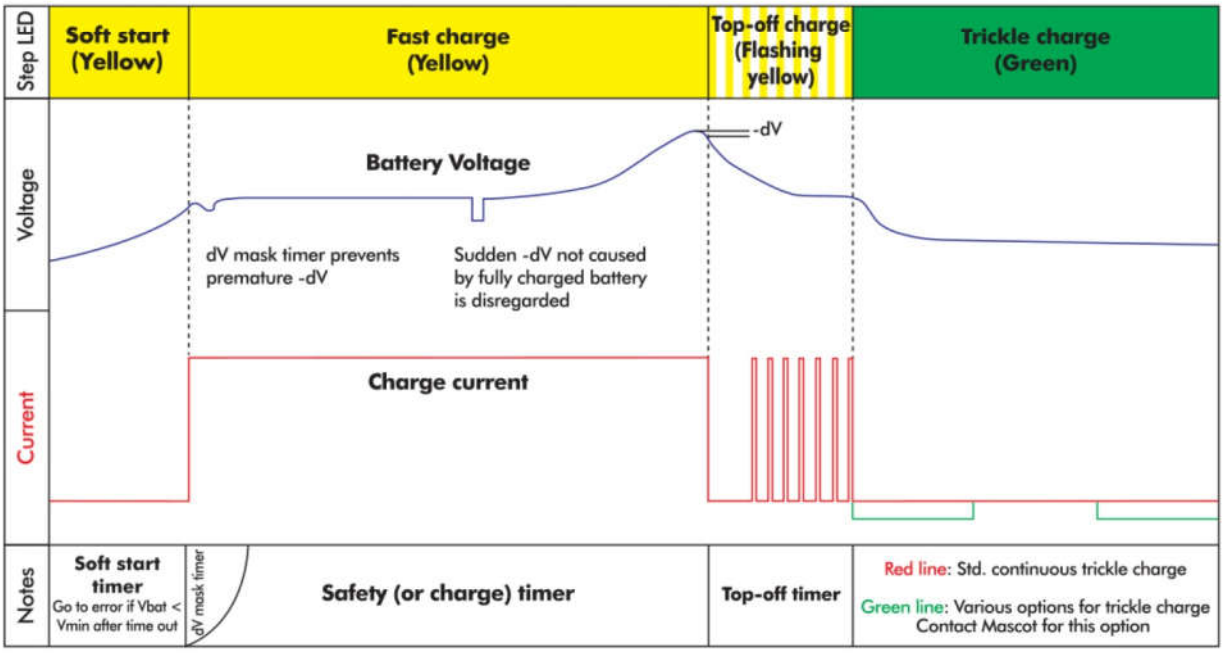
Notes:
Plug-in/desktop unit
Exchangeable AC and DC plugs available
Mounting bracket available
Order plugs and mains cord separately

MASCOT type 3546 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	6.8W	22.5W	27.2W	27.2W	26.5W	27.2W
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)	13V (min 10 cells x min 1.3V 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 (approx.)	3mV/cell (approx.)	3mV/cell (approx.)	3mV/cell (approx.)	3mV/cell (approx.)	3mV/cell (approx.)
SoftStart current	100mA ± 25mA @ Vbat < 2V	100mA ± 25mA @ Vbat < 3.75V	100mA ± 25mA @ Vbat < 5.0V	100mA ± 25mA @ Vbat < 6.2V	100mA ± 25mA @ Vbat < 7.5V	50mA ± 15mA @ Vbat < 13V
Fast charge current	2.5A ± 100mA	2.2A ± 100mA	2.0A ± 100mA	1.6A ± 100mA	1.3A ± 100mA	800mA ± 50mA
Top off charge	300mA ± 50mA	310mA ± 50mA	290mA ± 50mA	250mA ± 50mA	220mA ± 30mA	125mA ± 20mA
Trickle charge current	100mA ± 25mA	100mA ± 25mA	100mA ± 25mA	100mA ± 25mA	100mA ± 25mA	50mA ± 15mA
Efficiency at 100% load	70%	78%	80%	82%	83%	84%
Average efficency	>62%	>72%	>78%	>80%	>80%	>80%
No load consumption	TBD	TBD	TBD	TBD	TBD	TBD
-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 min	10 min	10 min	10 min	10 min
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 3546 NiMH/NiCd:	2-cell	3-6 cell	4-8 cell	5-10 cell	6-12 cell	10-20 cell
Switch frequency	35kHz.					
Temperature range	-20 to +40ºC (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	< 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					
Insulation voltage (prim-sec)	4000V AC / 5700V DC.					
Input terminals	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.					
NTC input, on request (std is 10kohm, B-value approx. 4000)	+dT/dt principle. Fast charging stops when the temperature increment is over 0.5ºC/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	123,5 × 49.5 × 37 mm					
Weight	220g.					
Other	Possible options on request: Charger parameters programmable with “Configurator tool”. Constant current charge (no battery management). 0dV detection for EoC. DoE compliance.					


50 mm
37 mm
124 mm

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°C)
Yellow with 2 red blinks: Battery temperature is too high (>40°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°C
6 red blinks: NTC missing or short (if mandatory)
LED off: Battery voltage is too high. Check battery voltage.