

NiCD/MH Battery Chargers: AP4, smart charger

Analyzing

Detection of shorts, bad contact or leakage

"Forming" revives deep discharged cells

"Dry" (leaking) cells trigger an "Error" signal, charging of cell is inhibited

Charging

the respective LED assigned to each cell flashes rhythmically, it changes into a steady state at charge-end

Discharging

the LEDs, lined up alongside the cells, appear to be cascading backwards, thus signaling "Discharge in Progress"

General

- Input: detachable AC-Cord (2-pin IEC plug), 100...240VAC
- "Battery Full" criteria
- -dV with safety timer
- Charge Current: 1100mA (AA), 500mA (AAA), trickle current at charge-end



Technical Specifications

Model	AP4
Input voltage	100-240VAC 50/60Hz
Power consumption	Max. 15W
Max. charge current for each compartment	Approximately 1100A(AA), 500mA(AAA)
Max. discharge current for each compartment	Approximately 800mA(AA), 300mA(AAA)
Dimensions	145*70*45mm
Weight	200g
Weight including power cable	280g

NiCD/MH Battery Chargers: AV4m

• The Diagnostic Charger, with a View

Diagnosing

- Each charge cycle starts with diagnosing cells for a possible short / deep discharge condition, for bad contact and leaking / dry cells
- "Forming" attempts to restore deep discharged cells
- Stained cells with bad or no contact are indicated as such
- Dry cells are marked for disposal

Failed "Forming, "Dry Cell" and "Bad Contact" detection disable cells for further charging, rescue attempts and results are shown in LCD

Charging

- Slide switch permits to select from 3 different charge currents, for 4 cells
AA/AAA: 1200/600mA, 900/400mA, 700/250mA
- Battery bars in LCD climb upwards, charged-in "Ah" values increase
- Charge End: total AmpHours & charge time stay in LCD



Discharging/Charging

- Pressing "Discharge" key initiates discharge of cells
- Batt.bars in LCD descend, discharged "Ah" values increase
- End of Discharge: cells change into charge mode, discharged capacity stays in memory, ready to be recalled, at any time
- End of Charge: the "Energy Index" concludes a completed charge/discharge cycle by assigning the healthiest cell the index "1.00", the reference for rating all other cells in decreasing order. Cells with index figures close to each other are matching in strength, those outside a narrow cluster should be discarded of

Cycling/Conditioning

Pressing "Discharge" key for several seconds triggers a continuous charge/discharge cycle which comes to a halt only if no further increase of capacity is registered. New cells are mostly weak, cycling with small charge current builds considerable strength.

Capacity Recall

Pressing "Capacity recall" calls up last discharged AmpHours shown in LCD as "Ah"-values.

Select-a-Cell

Repeated pressing of the "Cell select" button assigns temporary, independent control to one or more charge bays. Any one of the targeted bays can be assigned a discharge or cycling job, regardless of the status all other cell are in.

General

- 4 NiCd/NiMH batteries (AA or AAA)
- Battery-full criteria: negative Delta-U detection with safety timer
- 4 indiv.temp.sensors prevent possible heating of cells
- Detachable universal mains adaptor and car plug for 12VDC

Technical Specifications

Model	AV4m
Input voltage	100-240VAC 50/60Hz or 9-14VDC (Wall adaptor)
Power consumption	Max. 18W
Max. charge current for each compartment	Approximately 1200mA(AA), 600mA(AAA)
Max. discharge current for each compartment	Approximately 500mA(AA), 180mA(AAA)
Dimensions of mains plug:	80*50*80mm
Dimensions of charging unit:	145*70*45mm
Weight	400g (mains plug to charging unit)
Connection line:	Approximately 140cm (mains plug to charging unit)
Connection line:	Approximately 140cm (12V charging cable)

NiCD/MH Battery Chargers: AP8

• The 2-in-1 charger

With 2 banks of 4 batteries each. Both banks can be charged or discharged at the same time.

Either bank can be assigned either of both functions selectively.

All cells are individually monitored, cut-off criteria is "-dV".

Clear Cell Monitoring

By 2 strings of red & green LEDs, lined up alongside the cell banks.

The state of charge of the cell, like "Charging", "Discharging", "Cell Full" are signaled by the distinctive flashing of the cell's respective LED.

Cell Diagnostics

In case of deeply discharged cells "Forming" is attempted to bring them

back to live. Charging starts within minutes if recovery is successful. if not,

the associated LED will show a state of "Error" If a leaking "Dry Cell" is detected the respective LED will also flash the "Error" signal, indicating that the cell is beyond recovery



World Wide Mobility

Is assured by the detachable adaptor unit with mains voltage ranging from 100..240Vac. The accompanying car plug adaptor extends the user's roaming range considerably.

Technical Specifications

Model	AP8
Input voltage	100-240VAC 50/60Hz (Wall adaptor)
Power consumption	Max. 18W
Input voltage	9-14VDC (Charger)
Max. charge current for each compartment	Approximately 650mA(AA), 250mA(AAA)
Max. discharge current for each compartment	Approximately 600mA(AA), 300mA(AAA)
Dimensions	210*70*45mm
Weight	430g