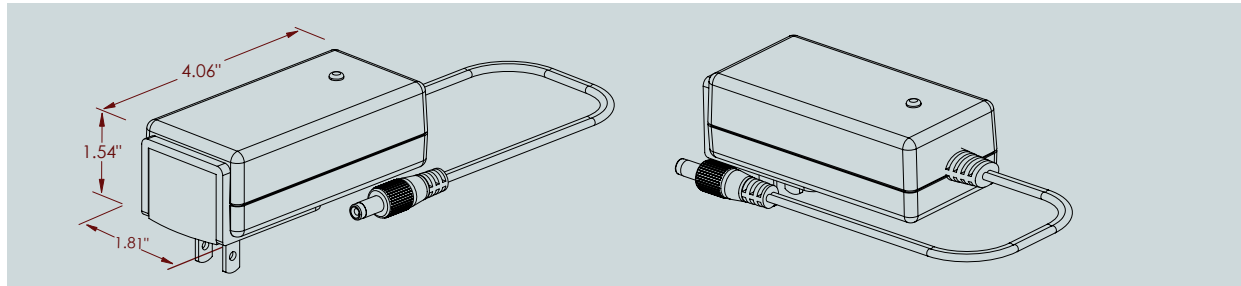


Cell-Con, Inc. nickel metal hydride / nickel cadmium wall plug in smart chargers are designed to charge packs made of either rechargeable chemistry. Each model is capable of charging various quantities of cells. Chargers are based on a nominal, universal input of 90-264VAC/50-60Hz.



**Features:**

- Medically certified (UL60601)
- Wall plug in form with exchangeable AC plugs
- Multiple charge detection options
  - dV (typical), dT/dt, 0dV
- Charges NiMH or NiCd battery packs
- 5 versions for 2-20 cell packs
- Integral start timer to prevent initial, false -dV detection
- Reverse polarity/short circuit protection
- Safety timer termination



**NiMH/NiCd SMART CHARGER WPL, 16W**

Category	Specification
Model number	452116 Series
Cell count	5 versions for 2-20 cells
Input rating	Nominal 90-265VAC/50-60Hz
Maximum output power	16W
Trickle charge current	30mA +/- 15mA continuously (10-20 cell: 25mA +/- 10mA continuously)
Leakage current (from battery with mains off)	<1mA
Start timer (no -dV detection)	3 minutes
Timer settings	Start, top off, & safety timer are factory programmed per application
Switch frequency	40 kHz
Temperature range	-20°C to +40°C
Efficiency	≈ 80%
Insulation class	II
Electrical safety	UL-60601, EN 60601-1, EN 60950, EN 60335-2-29
EMC standards	EN 60601-1-2 (Medical), EN 61000-6-3 (Emission), EN 61000-6-1 (Immunity)
Input connection	2 PIN IEC 320-C7 (input cordset not included)
Output connection	NiCd: 2.5 x 5.5 x 9.5mm barrel plug, NiMH: 3 PIN DIN (other options available)
Dimensions/weight	4.06" x 1.81" x 1.54" (103 x 46 x 39mm) / .29 lbs (130g)

\*other output connection options available upon request



## Functionality:

Charging begins when a battery pack is connected to the charger. The LED will be orange before the fast charge starts and the LED changes to red. When the cells are fully charged and the voltage drops (because of the -dV signal from the cells), the charger will go into a top-off charge mode before switching to trickle charge mode.

During the top-off charge session, the LED will be green with short, intermittent orange flashes. When the top-off charge is complete, the charger will go into trickle charge mode, changing the LED color to green. The charge current is now reduced to a safe level, permitting the charger to stay connected to a NiCd battery pack without damaging the cells. Depending upon the specific manufacturer of NiMH cells, trickle charging in excess of 24 hours may not be permitted.

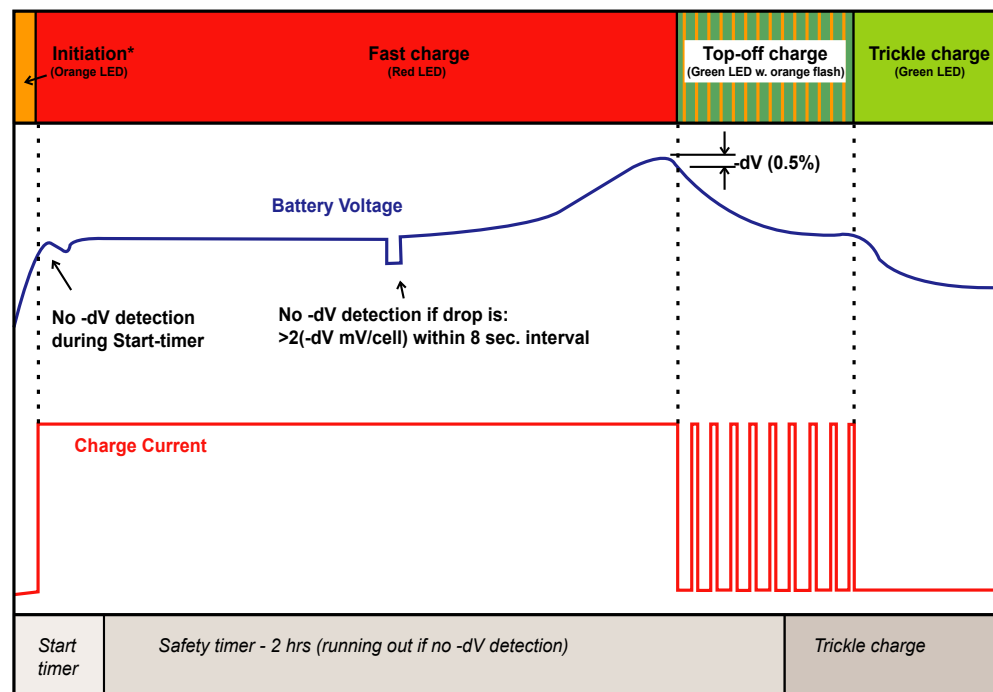
If the safety timer disconnects before -dV, the top-off charge will not be engaged. The charger will then go directly to trickle charge mode and the LED will be green in color. If the battery voltage is far below normal, the charger will stop the fast charge current and switch to trickle charge mode. The LED will then indicate "error" by flickering green and red.

If the mains are turned off, the charger will reset and start a new charge cycle if the mains are turned on again.

## Versions

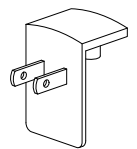
Model number	Cell count	No-load voltage	Min. out for -dV detection (max. 1.5V/cell)	Max. out for -dV detection (max. 1.8V/cell)	-dV detection	Fast charge current	Top-off charge
452116-NZ	2	6.3V+/-0.7V	2.5V (2 cell min.)	5.4V (2 cell max.)	10mV/0.6%	1.3A +/- 100mA	160mA +/- 30mA
452116-NA	3-6	12.8V+/-0.7V	3.7V (3 cell min.)	10.8V (6 cell max.)	12mV-10mV/0.7-0.6%	1.3A +/- 100mA	160mA +/- 15mA
452116-NB	4-8	16.5V+/-1.0V	5.0V (4 cell min.)	14.4V (8 cell max.)	8mV/0.5%	1.0A +/- 100mA	130mA +/- 30mA
452116-NC	5-10	21V+/-1.2V	6.2V (5 cell min.)	18V (10 cell max.)	8mV/0.5%	0.8A +/- 100mA	110mA +/- 30mA
452116-ND	6-12	24.7V+/-1.5V	7.5V (6 cell min.)	21.6V (12 cell max.)	8mV/0.5%	0.7A +/- 100mA	100mA +/- 30mA
452116-NE	10-20	41V+/-2V	12.5V (10 cell min.)	36V (20 cell max.)	8mV/0.5%	400mA +/- 50mA	65mA +/- 20mA

## Charging diagram and LED indication for -dV detection

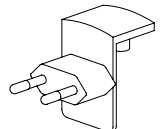


\*When specifying product, please consult with Cell-Con to verify that the specifications identified on this data sheet are current.

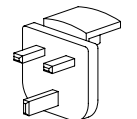
## Removeable AC Plugs



US Plug Adapter  
#470200



EU Plug Adapter  
#470201



UK Plug Adapter  
#470202

