

CH5555CALA/E/U



Multi-Bay Desktop Smart Charger/Calibrator 25% Instructions for use

The Inspired Energy Multi-Bay smart charging systems work with all Inspired Energy® brand smart standard packs irrespective of size, shape, voltage, cell chemistry or capacity.

What's in the box?

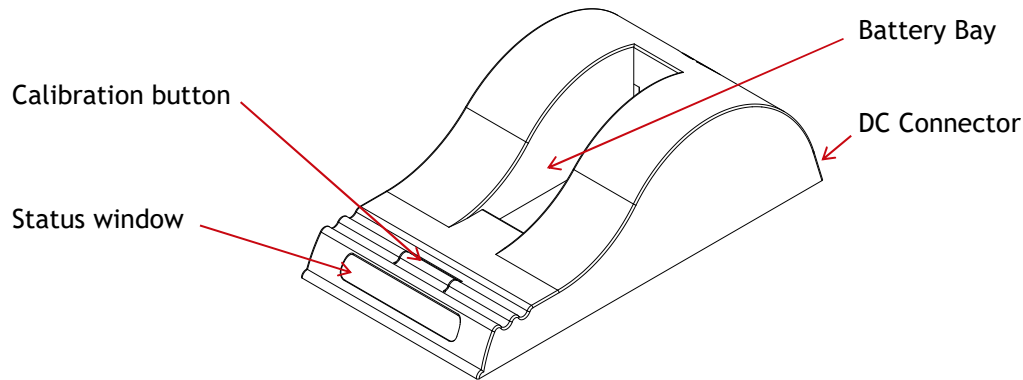
1. One multi-bay smart charging unit:
 - CH5555CAL = Four (4) single smart charger/calibrator bays
2. Twelve (12) plastic spacers to modify each battery bay to suit your battery size
3. One mains cable
 - N. American units ("A" part number suffix) are packed with a US 3-pin mains cord
 - European units ("E" part number suffix) are packed with a European 2-pin + ground recess mains cord
 - UK chargers ("U" part number suffix) are packed with a UK 3-pin mains cord

Safety:

1. Do not expose the charger or power supply to water or liquids; the case is not sealed.
2. Do not open the charger or power supply case, no user serviceable parts are inside.
3. Do not cover the air vent or obstruct the airflow, this will cause overheating.
4. Place the charger in a cool spot, away from external heat sources.
5. Caution - during recalibration the charger may become warm.

Using your Charger:

Place the charger on a flat, level surface away from sources of heat and moisture. Connect the power supply to the mains AC supply using the cable supplied (the LEDs on each unit will flash briefly on power up). Each of the charge bays operate independently of each other providing charge each battery pack inserted into the unit. A typical charge + calibration bay is shown below.



Using the Plastic Spacers:

Plastic spacers are supplied to assist in the correct insertion of all of the different sizes of smart standard packs. To insert a spacer, place the bottom of the spacer in the rear corner of the battery bay. Place a thumb on the top of the spacer and push it firmly towards the back of the charger. Correct insertion should be accompanied by a click as the guides lock into place. The cross reference of spacers to batteries is given below:

Thick “L” shaped spacer:

NC2560, NI1030 & ND2017 Style

Thin “L” shaped spacer:

NJ1020 & NI2020 Style

Flat spacer:

NL2020, NL2024 & RH2024 Style

*No spacer is required for the 203x, 204x or 205x ranges of batteries.

Charging to 25% State of Charge (SOC):

Place a battery into one of the battery bays ensuring that the 5-way connector is fully seated. The LEDs in the respective status window will provide status information, and the charger will automatically begin charging or discharging to 25% state of charge.

LED Indication:

The status of each battery is indicated by the LEDs visible in its respective status window:

* Green flashing:	Battery charging/discharging
● Green solid:	Battery achieved 25% SOC.
* Blue flashing:	Battery in calibration mode
● Blue solid:	Battery fuel gauge calibrated, battery fully charged
* Red flashing:	Battery fuel gauge in need of recalibration
● Red solid:	Error

Battery Fuel Gauge Recalibration

If the battery is in need of fuel gauge recalibration, the red LED on the respective charge bay will flash. Depending on the current operation, the green or blue may be on/flashing as well. The user has the option to calibrate the fuel gauge and fully charge the battery.

To recalibrate the fuel gauge, press the calibrate button in front of the battery bay. Calibration is initiated each time the button is pressed, so it is not recommended to press the recalibration button part way through the recalibration cycle. The blue calibration LED will flash to indicate that the battery is undergoing the recalibration cycle. The built-in fan will turn on only during a discharge of the battery. When calibration is complete the blue LED will stay constant.

Recalibration Time:

Recalibration consists of a calibration charge, followed by a calibration discharge. Finally, the battery is given a regular charge to 100% SOC. A calibration cycle will be faster if the battery is fully charged to begin with. Recalibration time is governed by the battery voltage and capacity. Larger batteries, and lower voltage batteries will take longer to recalibrate.

Battery Chemistry	Battery Model	Recalibration Time (hours)
NiMH	NI1030, NJ1020	5 - 7
Li Ion	NC2040, NC2560, ND2054, ND2034	16 - 20
	ND2053	44 - 50
	NB2037, ND2017	25 - 31
	ND2037, ND2057	22 - 25
	NF2040, NF2030	20 - 23
	NF2047	29 - 34
	NH2057	33 - 40
	NH2054, NH2034, RH2024, RH2054	18 - 21
	NI2020, NI2040, NL2020, NL2050, NL2024, NL2044, NL2054, RH2044, RI2050	18 - 26

What are the SMBus and the SBS?

The Smart Battery System defines the parameters that are stored by a compliant battery. These parameters include full battery status and fuel gauging information. The System Management Bus is the language by which these parameters are communicated between the battery, the charger and the host device. For full details of the SBS information available from your battery please refer to the battery specification sheet available at www.inspired-energy.com.

How does the charger know what charge to deliver?

The CH5555CAL is capable of sensing and delivering an appropriate charge to all Inspired Energy NiMH and Li-ion standard battery packs. Upon inserting the battery into the charger, the battery communicates to the charger over the SMBus data link, telling the charger what type of cell chemistry it is and what charge regime it needs. The charger then configures its output to provide the charge regime requested by the battery. If no SMBus communications are issued from the battery, the charger interrogates the thermistor/resistor I.D. pin on the battery terminal and delivers an appropriate charge.

Compatibility:

The system is fully compatible with all N-series (excluding the Nx40x series) Inspired Energy® brand standard battery packs. For optimum results we recommend using only Inspired Energy® brand smart batteries. For a full list of all compatible Inspired Energy batteries, please visit:

www.inspired-energy.com

CH5555CALA/E/U Specification Summary

Weight:	3.1kg / 6.9lb
Height:	127mm / 5"
Length:	400mm / 16"
Width:	203mm / 8"
Mating Connector:	5-blade standard battery connector
Communications Compliances:	System Management Bus Rev 1.1, Smart Battery Data Specification Rev 1.1 and Smart Battery Charger Specification Rev 1.1 compliant
Charger Units:	24V DC, FCC & CE Compliant, RoHS Compliant
Power Supply:	100-240VAC, 50-60Hz, 260W UL listed, FCC & CE Compliant, RoHS Compliant
Mains Cord:	"A" part number suffix - 110V N. American 3-pin connector "E" part number suffix - 220V European 2-pin connector with ground recess "U" part number suffix - 240V UK 3-pin connector

