

IDX TECHNOLOGY

i400

SEQUENTIAL CHARGER/DISCHARGER

IDX Technology wants to thank you for purchasing the i400, our sequential fast charger/discharger, and hopes that its compact and careful design will satisfy all your battery charging needs. Please utilize this Operation Manual for help on how to best use the i400. If you have any additional questions, please contact the appropriate IDX office listed on the second page.

FEATURES

- Sequential fast Charger / Discharger for Nickel Cadmium (NiCD) batteries and IDX NP Nickel Metal Hydride (NiMH) batteries.
- Can be used for NP and BP style batteries
- Auto detection features for damaged or misused batteries and charger protection.
- Lightweight, compact, easy to carry for ENG, DNG and Field operation.
- Robust metal case, recessed power switch, built-in spare fuse
- Universal A/C power input 100~240vAC for worldwide use.

OPERATING INSTRUCTIONS

- A. Connect AC power cord firmly.
- B. Set the power switch ON at the rear of the unit (the front panel green led will light).
- C. **For use as a charger:-**

The i400 is a sequential charger. The sequence for battery charging is called the charging sequence loop. The charging sequence loop starts at channel 1 then progresses through to channel 4, and then back to 1 again (1,2,3,4,1,2,3,4...). The charger automatically searches each channel for a battery to charge, in a continuous loop. The charging sequence loop is interrupted only by the detection of a valid battery to be charged. The red LED will be displayed, signifying a charge in progress. Upon completion of charging the red LED will turn green and the sequence loop will resume from that point. Once fully charged all batteries are trickle charged.

For use as charger/discharger:-

The red button on the front of the unit is used to activate discharge. Unless depressed the unit will automatically charge only. Similarly to charging, the unit has sequential discharging. Once the discharge button is pressed the LED will flash green. The LEDs for all other channels will turn amber waiting for discharge.

Note: - Charge Priority for BP and NP batteries connected to the same channel

The unit gives priority to the BP Battery connector.

With BP & NP batteries connected the NP-type will not be charged. When a BP battery is connected after an NP is already connected the charging (or discharging) of the NP stops and the BP charging starts.

Typical Charge Times

This depends on battery condition and frequency of the battery usage. The following are approximate figures,

NP-23/NP-23dx/NP-1dx ----- 85 minutes

NP-H50/NP-H50dx----- 125 minutes

BP-95S/BP-95dx----- 175 minutes

Typical Discharge Times

This depends on condition and frequency of the battery usage. The following are approximate figures (From Full charge)

NP-23/NP-23dx/NP-1dx ----- 75 minutes

NP-H50/NP-H50dx ----- 120 minutes

BP-95S/BP-95dx ----- 160 minutes

SPECIAL FEATURES

- **Independent Charge/Discharge.** Although the i400 is a sequential charger/discharger, it is designed to fast charge one channel while independently discharging another. This saves the operator valuable time when conditioning batteries.
- **Low Voltage Batteries.** Batteries with low voltage will not be recognized as chargeable until the unit's initial conditioning sequence has brought them up to a valid voltage level for fast charging.
- **Two Battery Types.** The unit will charge either BP or NP type batteries, however it always gives priority to BP batteries. Inserting a BP battery in the same channel as an NP will disable charging of the NP.
- **Safety.** The unit will automatically detect abnormally high or low voltage batteries or defective batteries and will not permit charging. The channel in question will be skipped and the LED will not come on.
- **Uninterrupted Operation.** If a battery is removed during or prior to or during charging, the unit will automatically sequence on to the next available battery channel.
- **Digital Negative Delta V charging.** Using fully digital microprocessor controlled negative delta V charging method; the unit will handle most manufacturers' NP-1 or BP-90/95 style batteries. From 12V~13.2V and 1Ah~7Ah.

Battery Protection Features

Following are a list of basic charger protection features for User recognition

* Low voltage battery

- a. If the battery voltage is below or equal 5.0V

The battery will not be charged, (no charger LED)

- b. If the battery voltage is 5.0~10.5V,

The unit starts conditioning charging (red LED lights) and automatically starts quick charging when the battery voltage recovers to reach 10.5v. If the battery voltage does not reach 10.5V after 30 minutes of conditioning, charging will be stopped (orange LED blinks).

*Over charge protection

If charging does stop due to faulty battery or some other reason, a circuit protection timer is automatically activated and stops charging.

If the battery is not charged after 260minutes (4 1/2Hrs) of charging, the unit stops charging. If battery voltage is 13.0V, Green LED lights indicating usable battery. If the battery voltage does not reach 13.0V, orange LED lights indicating fault.

*Over voltage protection

Over voltage protection circuit stops charging if the battery voltage does not reach specific figure within specific time.

If the battery voltage reaches or exceeds 21.5V during quick charge is in progress, charging will be stopped. Orange LED blinks)

D COLOR STATUS LIST

Full Red.....fast charge in progress

No LED..... charge waiting (*when battery inserted*)

Full Green.....charge complete, trickle charge in progress

Blinking Green.....discharge in progress

Full Amber.....discharge waiting

Blinking Amber.....defective battery (*check battery specifications*)

Blinking Red.....defective charger (*return for service*)

OPERATIONAL PRECAUTIONS

1. During charging the unit will get a little warm, this is normal.
2. Do not rest any object on the unit, or block the ventilation holes during operation.
3. Only use approved Nickel Cadmium and Nickel Metal Hydride batteries; do not use faulty batteries or those with incorrect specifications.
4. Other batteries besides 12V/13.2V NP/BP (1Ah~7Ah) may be charged with the appropriate adapter, contact IDX for details.
5. Do not expose the unit to direct sunlight, use in well ventilated place.
6. For longer battery life it is recommended to fully discharge once for every 8 charge cycles.
7. If the unit's power fails to come on, check the fuse. If necessary, replace with spare fuse provided.
8. For repair or service do not open the unit, please contact the factory offices or authorized distributors.

SPECIFICATIONS

Applicable batteries NP-23dx, NP-1dx, NP-H50, NP-H50dx
 BP-95dx or equivalent
(Batteries in the range: 12~13.2v 1~7Ahr)

Weight:.....1.6Kgs
 Dimensions.....190mm(W) x 65mm(H) x 175mm(D)
 Conditioning Charge current.....250mA
 Quick Charge Current.....1.85A
 Discharge Current.....2.0A
 Discharge Cutoff.....10.8V
 Trickle Charge Current.....30mA
 Input Voltage.....AC100~240V (50/60Hz) Automatic
 Charge Control System.....Full Digital Microprocessor
 Negative Delta Voltage (-ΔV)

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