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# **BATTERY CHARGER TECHNICAL MANUAL**

**MODEL: UY360-HF2410-1**

**VERSION: V1.0**

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## 1. Revised History

Table 1. Revised History

| Version | Detail              | Date      |
|---------|---------------------|-----------|
| V1.0    | The initial version | 2/12/2014 |
|         |                     |           |
|         |                     |           |
|         |                     |           |
|         |                     |           |

## 2. Warning

**Please use the charger in accordance with the parameters and connections in the manual, and do not disassemble it. Or we will not be liable for the resulting loss.**

## 3. Notes

(1) High voltage inside the case, may cause harm to the human body. If the charger fails, please contact us. Users and non-professional maintenance staff is forbidden to open the charger.

(2) Charger should not be used where in damp, water, direct sunlight or near heat sources.

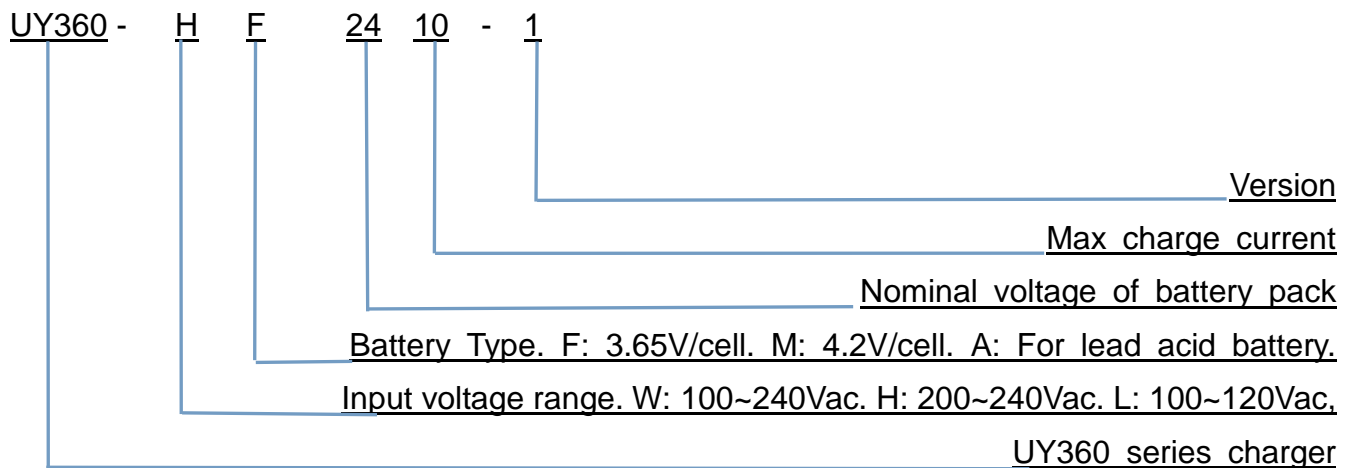
(3) Charger should be used where clean and well ventilated. Don't sheltered inlet or outlet during charging, and make sure that both inlet and outlet have air space of at least 10cm.

(4) Charger should be used to prevent children closer and touch.

(5) Is prohibited that the charger used or stored near flammable, explosive goods.

(6) While cleaning the charger please do not wash with water, we recommend using a clean rag dipped a small amount of alcohol.

## 4. Product Number System



## 5. Product Weight And Appearance

UY360 series charger is about 1.3kg. Charger appearance as figure 1 below.



## 6. Indicator LEDs

RED & GREEN: STANDBY or CHARGED

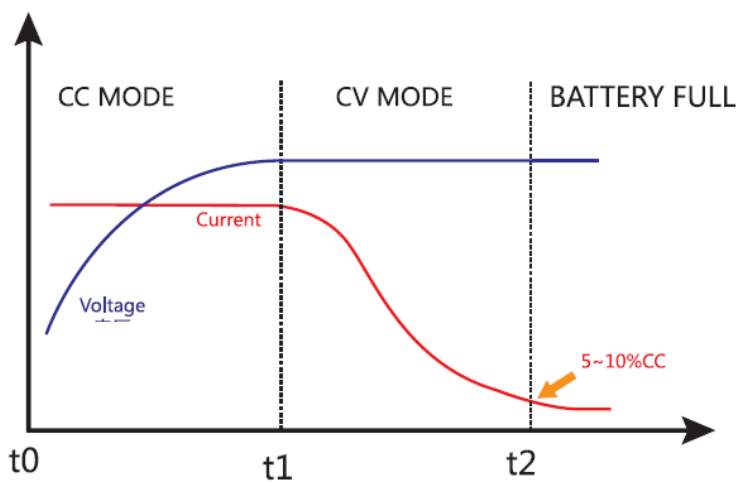
RED & RED: CHARGING

## 7. Electronic Characteristics

Table 3. Electronic characteristics

| No. | Item                                      | Unit | Min. | Typ. | Max.                       | Remark    |
|-----|---|------|------|------|----------------------------|-----------|
| 01  | Input voltage                             | Vac  | 200  | 220  | 260                        |           |
| 02  | Input power                               | W    | -    | -    | 380                        |           |
| 03  | Constant charge voltage                   | Vdc  | 28.9 | 29.2 | 29.5                       |           |
| 04  | Float voltage(for lead acid battery only) | Vdc  | -    | -    | -                          |           |
| 05  | Constant charge current                   | A    | 9.7  | 10.0 | 10.3                       |           |
| 06  | Charge complete current                   | A    | 0.65 | 0.8  | 0.95                       |           |
| 07  | Ripple voltage                            | -    | -    | -    | Constant charge voltage*1% |           |
| 08  | Efficiency                                | %    | 80   | -    | -                          | Full load |

## Charge Curve



## **8. Protect Characteristics**

### **8.1 Output Over Voltage Protection**

When the charger output voltage exceeds the maximum charging voltage, the charger enters the standby state protection. It will restore to normal working condition automatically after troubleshooting.

### **8.2 Output Over Current Protection**

When the charger output current exceeds the maximum charging current, the charger enters the over current protection status. It will restore to normal working condition automatically after troubleshooting.

### **8.3 Short Circuit Protection**

When the charger has short circuit at output, the charger enters short-circuit protection status. It will restore to normal working condition automatically after troubleshooting.

### **8.4 Reverse Polarity Protection**

If charger DC output terminal connect to battery reverse, fuse on the output side would be blown, output circuit would be cut off. Replace the fuse, and then connect to battery correctly, charger would resume working.

### **8.5 Over-Temperature protection**

When charger internal temperature exceed 85°C, it will be into the over-temperature protection state and the cuts off output and the cooling fan stop working. When the temperature returns to 65°C, the charge is restored again.

## **9. Environmental**

### **9.1 Working Conditions**

Ambient temperature: -5°C ~ +40°C;

RH: 5% ~ 95%;

Max. altitude: 2000 meter;

Cooling: UY series chargers use of forced air cooling system. Under dustless and ventilated conditions, the full load temperature rise not exceeding 40°C.

### **9.2 Storage Conditions**

Ambient temperature: -40°C ~ +70°C;

RH: 0% ~ 95%;

Max. altitude: 20000 meter.

## 10. Reliability

Table 4. Reliability

| No. | Item           | Description                                 | Remark |
|-----|----------------|---|--------|
| 01  | MTBF           | average operating life $\geq 30000\text{h}$ | 25°C   |
| 02  | Anti-vibration | 5mm/50Hz/600s vibration test                | PASS   |

## 11. Safety

### 11.1 Insulation Characteristics

Table 5. Insulation characteristics

|                      |                 |   |
|----------------------|-----------------|---|
| Insulation resistant | Input to output | DC500V 50M $\Omega$ min (25°C, Humidity $\leq 70\%$ ) |
|                      | Input to case   | DC500V 50M $\Omega$ min (25°C, Humidity $\leq 70\%$ ) |
|                      | Output to case  | DC500V 50M $\Omega$ min (25°C, Humidity $\leq 70\%$ ) |
| Hi-Pot               | Input to output | 1500Vac 50Hz 1minute $\leq 10\text{mA}$               |
|                      | Input to case   | 1500Vac 50Hz 1minute $\leq 10\text{mA}$               |
|                      | Output to case  | 500Vac 50Hz 1minute $\leq 10\text{mA}$                |

### 11.2 Leakage Current

With max input and full load, the leakage current  $< 0.75\text{mA}$ , meet to Class II.

### 11.3 Standard specifies

EN 55022:2006+A1:2007

EN 61000-3-2:2006+A1:2009+A2::2009

EN 61000-3-3:2008

EN 55024:1998+A1:2001+A2:2003

### 11.4 Electromagnetic Interference

Conducted interference: EN55011.13.14-1.15.22.FCC part 15&18.VCCI;

Radiated interference: EN55011.13.22.FCCpart 15&18.VCCI/EN55013.EN55014-1.

### 11.5 Electromagnetic Immunity

Anti-static: IEC/EN61000-4-2 8KV;

Pulse group: IEC/EN61000-4-4 2KV;

Lightning surge: IEC/EN61000-4-5 1.5KV;

Harmonic: IEC/EN61000-3-2  $< 25\%$ .