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XY-L30A Digital Battery Charging Control Module (6–60V)

HESTORE part no: 100.519.47 (<https://www.hestore.hu/>)



User Manual & Operating Guide

1. Specifications & Highlights

- **Voltage Range:** DC 6V – 60V (Compatible with lead-acid, lithium, solar batteries, etc.)
- **Display:** LCD screen showing Voltage, Charging Percentage, and Charging Time.
- **Key Features:** Automatic charge control, timed charging protection, UART serial communication, and automatic parameter validation.

2. Core Functions

A. Automatic Charging Control

- **Lower Voltage Limit (dn):** When the battery voltage drops below dn, the relay turns **ON** and charging starts.
- **Upper Voltage Limit (UP):** When the battery voltage reaches or exceeds UP, the relay turns **OFF** and charging stops automatically.

B. Charging Time Control (OP)

- **How to enable:** Set the parameter OP to a specific time value (Format: HH:MM, max 99:59). Setting OP to 00:00 or --:-- disables this function.
- **How it works:**
 - If the voltage reaches UP before OP expires: Charging turns **OFF**.
 - If OP expires before voltage reaches UP: Charging turns **OFF** automatically.

- If OP expires and the voltage remains below dn: The relay stays **ON**, the time control function disables automatically, and **H:ER** flashes on the screen. Press any key to stop the blinking.

3. Button Operations

Main Interface Operations

- **SET Key (Short Press):** Displays current parameters (UP, dn, OP).
- **SET Key (Long Press):** Enters the Parameter Setting menu.
- **UP Key (Short Press):** Toggles display between **Charging Percentage** and **Elapsed Time**.
- **UP Key (Long Press):** Configures LCD Backlight (L-P mode):
 - OFF: Backlight stays continuously ON.
 - ON: Backlight automatically turns off after 5–10 minutes of inactivity.
- **DOWN Key (Short Press):** Manually enables or disables the relay (Disabling shows OFF on display).

4. Parameter Setting Guide

1. **Enter Settings:** Press and hold the **SET** key until SET appears on the LCD.
2. **Select Parameter:** Short press the **SET** key to cycle through options (dn -> UP -> OP).
3. **Adjust Value:** Use the **UP** and **DOWN** buttons (supports short press and press-and-hold for rapid adjustment).
4. **Save and Exit:** Press and hold the **SET** key until the settings are saved and you return to the main interface.

5. Serial Port Communication (UART)

Supports TTL-level serial communication for parameter setup and telemetry tracking.

- **Baud Rate:** 115200, 8, 1

Commands

Command	Description
on	Enable relay
off	Disable relay
start	Start telemetry/data upload
stop	Stop telemetry/data upload

Command	Description
read	Read active settings
dw10.0	Set lower limit voltage (dn) to 10.0V
up20.0	Set upper limit voltage (UP) to 20.0V
00:30	Set charging time limit (OP) to 30 minutes

Telemetry Output Format:

Battery Voltage, Percentage, Charging Time, Status

Example: 12.0V, 020%, 00:10, OP

6. System Diagnostics & Error Codes

- **ERR (Flashing):** Appears upon exiting settings if the lower limit voltage (dn) is set higher than or equal to the upper limit voltage (UP).
- **nbE:** Appears when no battery is connected to the module.
- **H:ER (Flashing):** Timeout warning indicating the charging time (OP) expired while the voltage remained below the lower limit (dn).