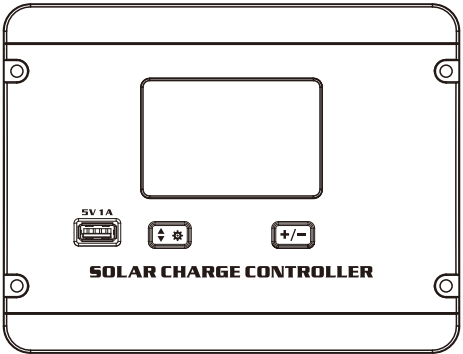


PWM Charge Controller P2430C

User Manual



* We may modify these specifications without prior notice.

Warnings and Tools Icon Chart

Icons	Name	Description
	High Voltage	High voltage device. Installation should be performed by an electrician.
	High Temperature	This device will produce heat. Mount device away from other items.
	Environmental Hazard	Electronic Equipment. Do not put in landfill.
	Wire Cutter	A wire cutter is needed for cutting and stripping prior wires to connect.
	Multi-meter	A multi-meter is needed for testing equipment and verifying polarity of cables.
	Anti-static Glove	Anti-static gloves are recommended to prevent controller damage caused by static electricity.
	Electrical Tape	Electrical tape is recommended to safely insulate spliced or bare wires.
	Screwdriver	A common size screwdriver is needed to attach wires to the controller.

Product Features

Thank you for choosing our product. This device is a PWM 12/24V 30A charge controller ideal for many applications. It's flush mount design makes it perfect for solar power systems in RVs and boats. Please be sure to read through the following pages and familiarize yourself with the features and settings of the controller.

These charge controllers have these features:

- PCBA common negative design, necessary for all negative grounded solar power systems.
- 12/24V auto recognition for Flooded, AGM and GEL batteries. Lithium battery must be manually set.
- PWM 3-phase charging: equalize - boost- float (for Flooded, AGM and GEL).
- Flush mount design for easy installation, RV fixture or similar installation.
- Back light LCD display with informative pages (system status, current, voltage, voltage value settings, etc).
- 5V USB port for mobile device load. (plug and play)
- Multiple built in protections including solar reverse connection, battery reverse connection, and battery over-discharge protection.

INSTALLATION NOTES

1) IMPORTANT REMINDERS

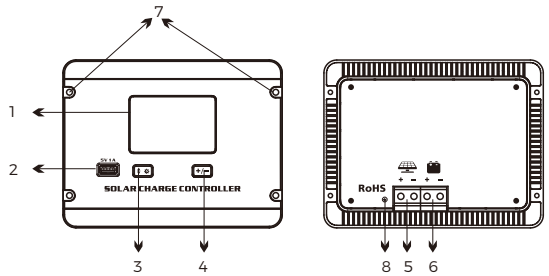
- * The battery must always be connected to the controller first.
- * Please note that the max PV input voltage is 55V open circuit voltage (Voc), so do not use solar module(s) with working voltage (Vmp) of more than 40V (refer to solar (PV) module specs).
- * Please note the max PV input power is 450W/12V or 900W/24V. Please do not exceed the rated power.
- * Do not change any settings in the "LI" battery mode if you are not using a lithium battery.
- * In the LI battery mode, you must set the battery system voltage (12V or 24V) manually.
- * If you would like to check the information in the "LI" battery mode settings, but not alter any settings, then you MUST remember to keep the right system voltage set (12V or 24V) before exiting from the settings.

2) HARDWARE SUGGESTIONS

- * For maximum PWM charge efficiency, we suggest using solar modules with an output of 18V (Vmp) for a 12V battery system, and 36V (Vmp) module for 24V battery systems. You can still use modules with higher voltages but it may lead to a slightly lower charge efficiency. In all cases the solar (PV) input voltage (Vmp) must be higher than the battery voltage.

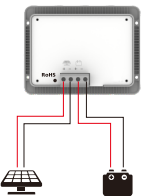
* For safety and protection we suggest using a DC breaker or fuse between both the solar and the controller, as well as between the controller and the battery.

Device Diagram



#	Description	#	Description
1	LCD Display Screen	5	Solar Terminals
2	5V 1A USB Port	6	Battery Terminals
3	Function Key	7	Installation Mounting Holes
4	Parameter Key	8	Grounding Symbol

Wire Connection Sequences

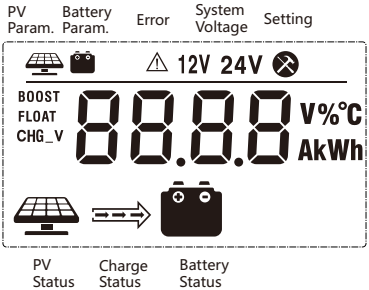


- Firstly: Connect the battery first, please choose cable accordingly.
- Secondly: Connect the solar panel second, please choose cable accordingly.

LCD Display Interface Overview

1) Display Overview

You can check system information in the LCD display, including PV input voltage, charge current, battery voltage, battery capacity, controller temperature, error code and battery setting pages. Here is an overall picture of the LCD display:



2) Solar (PV), Battery & Charge Indications

Status Icon	Indication	Status	Description
	PV Indication	Steady ON	PV volt higher than light control volt
		OFF	PV volt lower than light control volt
		Fast flash ON	PV over voltage
	Battery Indication	Steady ON	Battery is ok
		OFF	Battery is not ok
		Fast flash ON	Battery over discharge
	Charge Indication	Floating	Charging
		No float	No charge

LCD Display Rules & Cycles

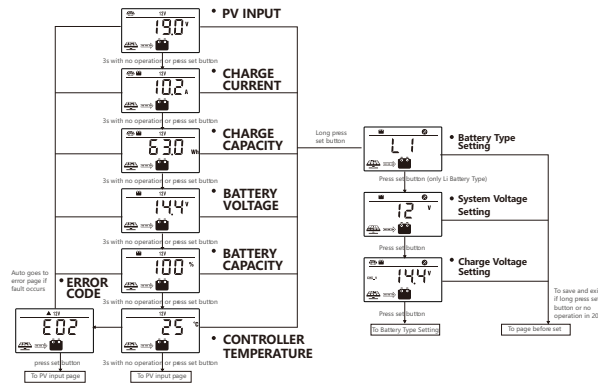
1) Button Setting Info

There are 2 buttons on the controller for operations and settings. Check the below diagram for setting details:

Function Key	System Mode	Input	Input Function
	In Setting	Long press	Enter page not for settings
		Short press	Enter next page for settings
	Not in Setting	Long press	Enter page for settings
		Short press	Enter next page not for settings
	In Setting	Long press	No function
		Short press	To adjust parameter
	Not in Setting	Long press	No function
		Short press	No function

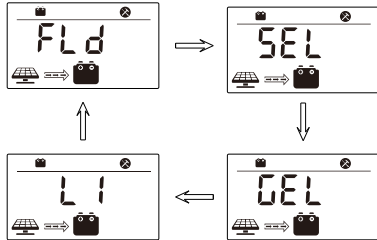
Remarks: "In Setting" means the user is in process of setting parameters.

2) Information Pages



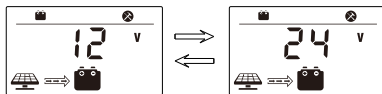
Battery Type & Parameter Settings

1) Battery Type Setting



DISPLAY	BATTERY TYPE	REMARKS
FLD	Flooded Battery	Battery system voltage auto recognition; parameters default set.
SEL	Sealed/AGM Battery	
GEL	Gel Battery	
LI	Lithium Battery	System voltage, charge parameters adjustable.

2) Battery System Voltage Setting (only for lithium battery)



3) Charge Voltage Setting (only for lithium battery)



Error Code Chart

Due to a variety of potential issues, the controller may sometimes display an error code on the LCD screen. If this happens please refer to the below diagram:

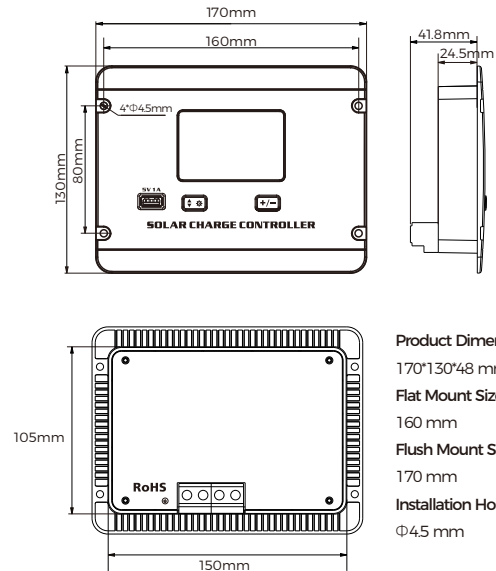
Code	Error	Description & Quick Troubleshoot
E00	No Error	No action needed.
E01	Battery Over-discharged	Battery voltage is too low. DC load will be turned off until battery re-charges to recovery voltage.
E02	Battery Over-voltage	Battery voltage has exceeded controller limit. Check battery bank voltage for compatibilit with controller.
E06	Overheating	Controller temperature limit. Ensure the controller is placed in a well-ventilated cool, dry place.
E08	Solar Over Amperage	Solar array amperage exceeds controller rated input amperage. Decrease the amperage of solar panels connected to the controller or upgrade to a higher rated controller.
E10	Solar Over-voltage	Solar array voltage exceeds controller rated input voltage. Decrease the voltage of solar panels connected to the controller.
E13	PV Anti-connection	Solar (PV) module +-polarity reverse-connection
E14	Battery Anti-connection	Battery +- polarity reverse-connection

* Please contact professions for technical support on additional trouble shooting.

Controller Specification

Parameter	Value			
Model No.	P2430C			
Nominal Output Voltage(DC)	14.2VDC/28.4VDC			
No-load Loss	8ma (12V), 12ma (24V)			
Max Input Voltage(DC)	55Voc			
Rated Solar Charge Current	30A			
Max Solar Input Power	450W/14.2VDC ; 900W/28.4VDC			
Light Control Voltage	5V(12V system) ;10V(24V system)			
Light Control Delay Time	10s			
USB Output	5V DC 1A			
Operating Temperature	-35°C ~ +25°C			
IP Protection	IP32			
Net Weight	0.36 kg			
Operating Altitude	≤3000 meters			
Controller Dimension	170*130*48 mm			
Parameter	Battery Parameters			
Battery Types	FLD	SEL	GEL	LI
Equalize Charge Voltage	14.8V(12V) 29.6V(24V)	14.6V(12V) 29.2V(24V)	--	--
Boost Charge Voltage	14.6V(12V) 29.2V(24V)	14.4V(12V) 28.8V(24V)	14.2V(12V) 28.4V(24V)	14.2V(12V) 28.4V(24V) (adjustable)
Float Charge Voltage	13.8V(12V); 27.6V(24V)			--
Boost Charge Recovery Voltage	13.2V(12V); 26.4V(24V)			--
Over Discharge Recovery Volt.	12.6V (12V) / 25.2V (24V)			12.6V (12V) / 25.2V (24V) *auto adjusted to over-discharge volt
Over Discharge Voltage	11.1V (12V) / 22.2V (24V)			11.1V (12V) / 22.2V (24V) adjustable

Product Dimensions



Product Dimension:

170*130*48 mm

Flat Mount Size:

160 mm

Flush Mount Size:

170 mm

Installation Hole Size:

Φ4.5 mm

Important Safety Instructions

A. SAVE THESE INSTRUCTIONS - This manual contains important instructions for Models P2430C that shall be followed during installation and maintenance of the charge controller.

B. Terminal connectors for field wiring connections shall be provided with instructions specifying a range of values or a nominal value of tightening torque to be applied to the clamping screws of the terminal connectors.

C. WARNING: Risk of fire and shock, energize battery terminals prior to the energizing of solar panel terminals.

D. CAUTION: Hot surfaces - To reducethe risk of burns - Do not touch

E. Grounding Information

Wire Gauge: 12-14 AWG

Terminal Specification: OT4-5

Tightening Torque: 1-1.5 N-m

F. Compatible Battery Types and Chemical Composition

Lead-Acid Battery

Main Chemical Components: Lead/Lead Dioxide/Dilute Sulfuric Acid

Lithium Battery

Main Chemical Components:

- Lithium Hexafluorophosphate (LiPF₆)
- Ethylene Carbonate (EC)
- Dimethyl Carbonate (DMC)
- Diethyl Carbonate (DEC)

A. CONSERVEZ CES INSTRUCTIONS: Le présent manuel contient des instructions importantes concernant le modèle P2430C, qui doivent être respectées lors de l'installation et de l'entretien du contrôleur de charge.

B. Le présent manuel contient des instructions importantes concernant le modèle P2430C, qui doivent être respectées lors de l'installation et de l'entretien du contrôleur de charge.

C. AVERTISSEMENT: Risque d'incendie et de choc électrique. Mettez d'abord les bornes de la batterie sous tension avant de raccorder les bornes du panneau solaire.

D. ATTENTION: Surface chaude. Afin de reduirele risque de brulure, ne pas toucher.

E. Informations de mise à la terre

Section du câble: 12-14 AWG

Spécification de la cosse: OT4-5

Couple de serrage: 1-1,5 N-m

F. Types de batteries compatibles et composition chimique

Batterie au plomb-acide

Principaux composants chimiques: Plomb/Dioxyde de plomb/Acide sulfurique dilué

Batterie au lithium

Principaux composants chimiques:

- Hexafluorophosphate de lithium (LiPF₆)
- Carbonate d'éthylène (EC)
- Carbonate de diméthyle (DMC)
- Carbonate de diéthyle (DEC)