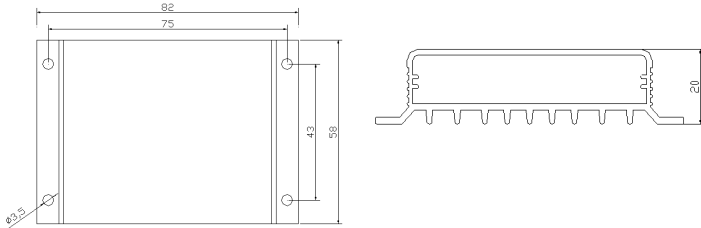


## □. Main features

1. IP68 waterproof and aluminum housing.
2. Automatic identification of 12V/24V system voltage.
3. LED digital display.
4. External temperature sensor for ambient temperature compensation.
5. Over charging protection, over discharging protection, over load, short circuit protection, reverse polarity protection.

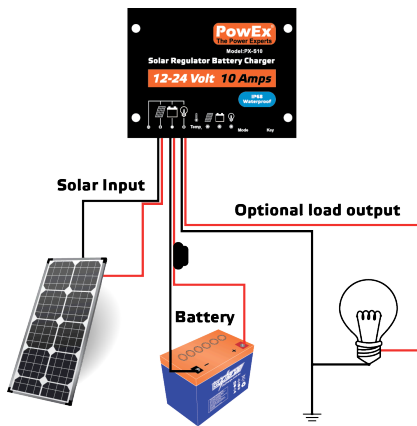
## □. Installation and wiring

1. Installation of controller should be stable and dimensions are as follows:  
Overall dimension: 82×58×20mm (PX-S10) 82×100×20mm (PX-S20)  
Installation dimension: 43×75mm (PX-S10) 86×75mm (PX-S20)  
Installation hole diameter: 3.5mm



2. The controller can be used for 12V or 24V battery banks. Once the battery is connected it will automatically detect whether it's connect to a 12V or 24V battery bank. For 12 Volt battery banks the digital display will show "0." when the battery is first connected. For 24V battery banks the digital display will show "1.". So please check to ensure it's detected the correct battery bank size.
3. The controller is designed to share the positive (+) pole. Please connect the positives of storage battery, solar input and the load (if being used) to the red (positive +) wire of the controller
4. Connect Battery Black negative (-) wire to the Battery. (Make sure it auto detects the correct battery voltage) – We also recommend using adequate size fuse to suit your application.
5. Connect Solar Black negative (-) wire to the Battery: We recommend using adequate size fuse to suit your application.
6. Connecting pole '-' of the load: connect the load wire to the load output end of controller. Current should not exceed the rated current of controller. We recommend using adequate size fuse to suit your application.

Wiring diagram is as follows: Please use adequate size wiring/ fuses.



Please install the controller in a ventilated area and close to the battery to ensure the battery compensation is effective .

## □. Status indications

LED lamp	Indications	LED Status	Functions
	Charging indication	On	There is voltage on battery panel
		Off	No voltage on battery panel
		Slow flash	Charging
		Fast flash	Over voltage on Solar input
	Storage Battery	On	Battery connected OK
		Off	Battery is not connected
		Slow flash	Battery is Low Voltage
		Fast flash	Battery is deeply discharged
	Load	On	Load is on
		Off	Load is off
		Slow flash	Overload protection mode
		Fast flash	Short circuit protection mode

## □. Modes and Settings

The PX series controllers have five working modes.

1. Purely light-operated (0): When there is no sunlight, the load output will turn on. When there is sunlight the load output will turn off.
2. Light-operated + time-controlled (1-4.): Starting process is same as above however the load will automatically turn off after the time period selected. Set time will be 1 to 14 hours.
3. Manual mode (5.): Under this mode, users can control the load-on and load-off by a short press of the key/button. This mode is suitable to occasions in need of special loads or for debugging.
4. Debug mode (6.): It is used for system debug. If there is light signal, load will be closed. If there is no light signal, load will be opened. It is convenient for checking the correctness of the system during installation and debugging.
5. Long-term On mode (7.): If being powered on, the load will be under the output status all the time. This mode is suitable for loads in need of 24-hour power supply.

LED Display	Mode	LED Display	Mode
0	Purely light-operated	9	Light-operated + time-controlled for 9 hours
1	Light-operated + time-controlled for 1 hour	0 .	Light-operated + time-controlled for 10 hours
2	Light-operated + time-controlled for 2 hours	1 .	Light-operated + time-controlled for 11 hours
3	Light-operated + time-controlled for 3 hours	2 .	Light-operated + time-controlled for 12 hours
4	Light-operated + time-controlled for 4 hours	3 .	Light-operated + time-controlled for 13 hour
5	Light-operated + time-controlled for 5 hours	4 .	Light-operated + time-controlled for 14 hours
6	Light-operated + time-controlled for 6 hours	5 .	Manual mode (Key/button turns load on/off)
7	Light-operated + time-controlled for 7 hours	6 .	Debug mode
8	Light-operated + time-controlled for 8 hours	7 .	Long-term On mode

## □. How to change settings

Press the mode key/button for more than 3s until the Display starts flashing. Keep pressing the key/button until it shows the desired mode/setting. Once you have the correct mode/setting selected, wait for more than 3 seconds and settings will be saved.

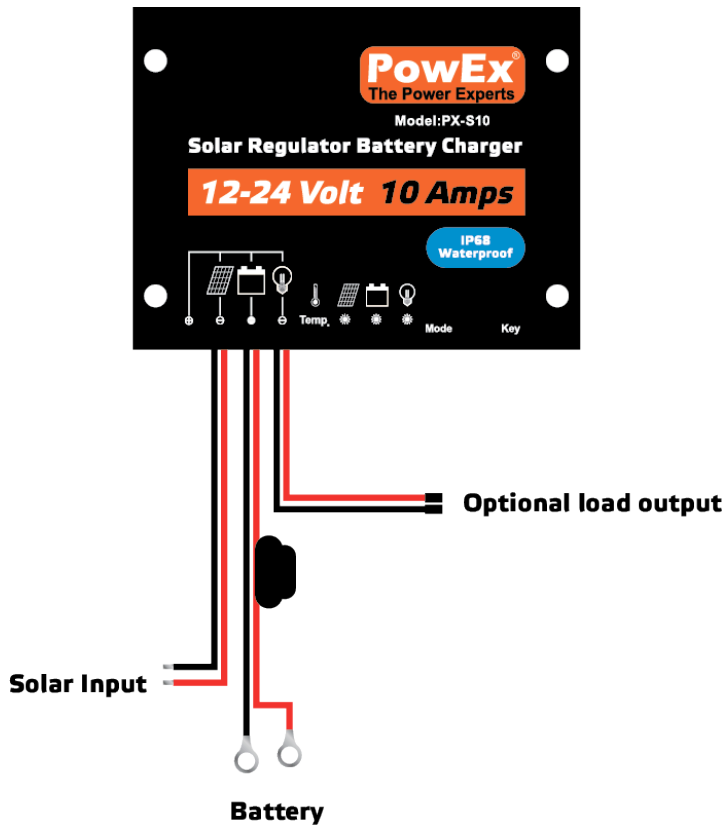
## □. Safety suggestions

1. Please do not immerse the controller into corrosive liquid. Otherwise, controller may be damaged and harmful gas may be generated.
2. When connecting 24V system, terminal voltage of battery panel may surpass the human body safety voltage. If operations are needed, insulating tools should be used and hands must be dry.
3. If storage battery is connected in reverse, the controller would not be damaged. However, there may be output of negative voltage at the load end which may damage anything connected to your load
4. Storage battery may generate combustible gas and therefore should be far away from sparks.
5. Please make sure that children are far away from the storage battery and the controller.
6. Please follow the safety suggestions given by the battery manufacturer.

## □. Instructions for parameters

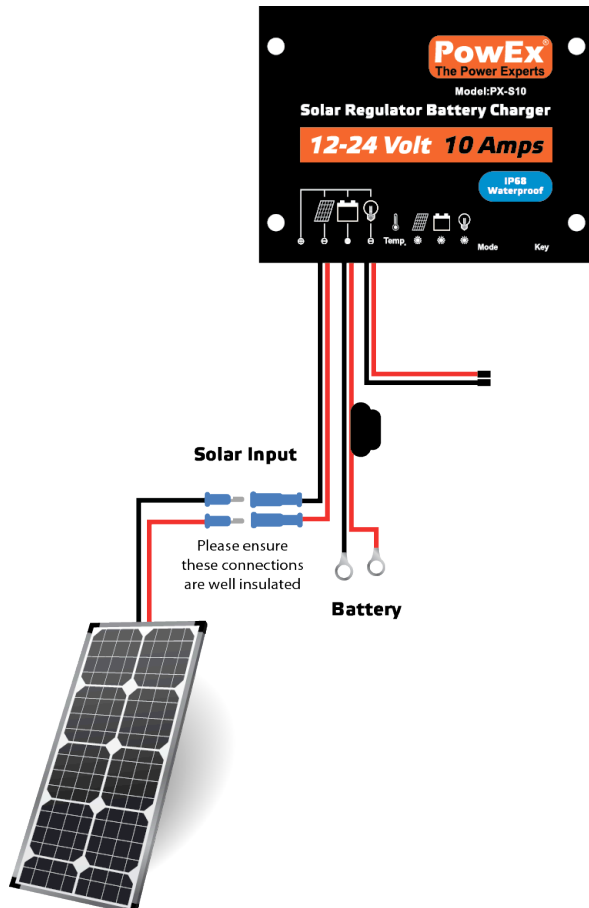
System voltage	12V/24V Auto
System current	10A/20A
No-load loss	< 5mA/10A; < 8mA/20A
Solar Input Voltage	PX-S10 - 55VDC Max. 150W(12V) – 300W(24V) PX-S20 - 55VDC Max. 300W(12V) – 600W(24V)
Overvoltage protection	17.0V / 34V
Equalising charging voltage	14.7 / 29.4V
Boost charging voltage	14.4V / 28.8V
Float charging voltage	13.6V / 27.2V
Return voltage during charging	13.2V / 26.4V
Return voltage for over-discharging	12.5V / 25V
Low Voltage Disconnect	11.5V / 23V
Temperature compensation	-4.0mV/□/2V;
Overload and short circuit protection	1.25 times of rated current: 30s; 1.5 times of rated current: 5s overload protection activity; ≥3 times of rated current: short circuit protection
Working temperature	-35DegC to +65DegC;
Protection level	IP68
Weight	140g (PX-S10) 300g (PX-S20)
Dimensions	82×58×20mm (PX-S10) 82×100×20mm (PX-S20)

□. Wiring Diagram



- 1) Solar Input wires are 600mm long – (Wires are stripped)
- 2) Battery Output wires are 600mm long with Ring Terminal Connections.
- 3) Optional load Output wires are 200mm long – (Insulated)

□. Example Solar Panel Only Connection Diagram



□. Trouble Shooting

Phenomena	Problems and solutions
There is sunlight but indicator lamp of battery panel is not on.	Please check the wiring of solar panel.
Indicator lamp for charging of battery panel flashes fast.	Overvoltage on solar input
Indicator lamp for battery is OFF.	Power supply to storage battery fails. Please check the connection of storage battery.
Indicator lamp of storage battery flashes fast and there is output .	Storage battery is over discharged. Charge the battery fully.
Indicator lamp of load flashes slowly and there is no output.	Power of load exceeds rated power. Turn off all loads and press and hold the key/button until the unit resets.
Indicator lamp of load flashes fast and there is no output.	Load is under short circuit. Turn off all loads check and fix the short circuit. Once the short circuit has been fixed, press and hold the key/button until the unit resets.
Indicator lamp of load is on permanently and there is no output	Please check load connections and fuse.

**2 YEAR PRODUCT WARRANTY**

Zylux Distribution Pty. Ltd. (ABN 66 101 378 009) of 166 Christmas Street, Fairfield, Victoria, 3078, Australia warrants to the Customer that this product is substantially free from defects in materials and workmanship under normal use for a period of Two Years from the Date of Purchase. Please ensure you keep a copy of your purchase receipt on file as this will be required to validate your warranty.

**Obtaining Warranty Service:**

Within the warranty period, the Customer must contact the authorised supplier / retailer where the product was purchased or alternatively you can contact the Oz Charge service centre through one of the following methods:

**Service help phone:** Within Australia (03) 9482 2203

**Outside of Australia:** +61 3 9482 2203

If the Authorised Supplier and / or service centre concludes that while under normal use, a product failure or malfunction occurred during the warranty period and was caused by a defect in material or workmanship (see Exclusions), the Customer will be asked to ship to the nearest service point for repair or replacement, at our discretion. The product must be packaged appropriately for safe shipment. To prove that the product is under warranty, the customer should enclose a copy of their receipt for proof of purchase. It is recommended that returned products be sent by registered mail as Zylux Distribution Pty. Ltd. (PowEx) accepts no responsibility / liability for goods lost or damaged in transit.

**Exclusions:**

If upon receiving a product for repair and if testing and examining the product has disclosed that the alleged defect or malfunction in the product does not exist or was caused by the Customer or any third persons misuse, neglect, physical abuse, water damage, unauthorised attempts to open, exposure to extremely high temperatures, tampered with or repaired by an unauthorised persons, this will not be covered under this warranty. Also charges may apply to any product returned which has no fault found or if the warranty has expired or been void.

**This Warranty is also void if:**

1. The warranty seal is broken or altered.
2. The warranty period has expired.
3. The product has been tampered with or repaired by an unauthorised person.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. For New Zealand customers, this warranty is in addition to statutory rights observed under New Zealand legislation.