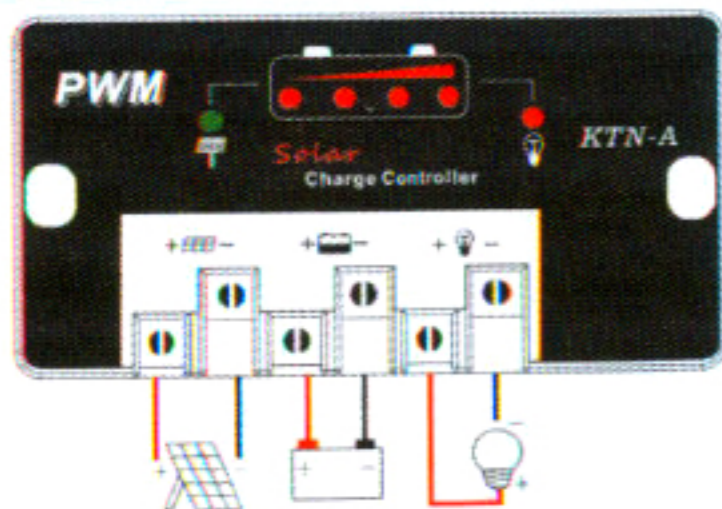


MANUAL v1.0 KTN-A

SAFETY INSTRUCTIONS

1. This controller is a 12V / 24V controller. When installing for the first time, make sure the battery has enough voltage so that the controller can identify the correct battery voltage type.
2. Install the controller as close to the battery as possible to avoid voltage drop caused by too long wire, which will affect the normal voltage judgment.
3. This controller is only applicable to all kinds of lead-acid batteries (including flooded, sealed, AGM, etc.), do not use it in other batteries (including lithium battery, Ni-MH battery, etc.). The wrong type of battery may lead to overcharge of battery, which may lead to safety accidents such as fire or explosion.
4. This controller can only use solar panel as the charging source, do not use DC power as the charging source.
5. The controller will generate heat when running. Please pay attention to install the controller on a flat and well ventilated surface.
6. This product can not be used in series or parallel!
7. This product is not waterproof! Humid environment will corrode the circuit board, damage the controller and lose the warranty!
8. Do not install the product in the car, the temperature in the closed car box in summer will be as high as 70 °C or above, which will cause the controller to burn!

SYSTEM CONNECTION



1. Connect the battery to the charge regulator - plus and minus.
2. Connect the solar module to the regulator - plus and minus.
3. Connect the consumer to the charge regulator - plus and minus.
be careful!! Please connect in strict accordance with the above order, otherwise the controller will be damaged.
be careful!! The removal sequence is the reverse of the wiring sequence, otherwise the controller will be damaged.
be careful!! Do not connect the inverter to the output port, please connect it directly to the battery.

HOW THE CONTROLLER WORKS

The direct current from the solar panel charges the battery after passing through the controller, and the battery voltage rises gradually. When the battery voltage reaches the limit value, the controller adopts PWM technology to automatically control the voltage battery in the constant voltage charging state, so as to ensure that the battery will not be overcharged. At the same time, the load output is also monitored by the controller. When the battery voltage reaches the over discharge protection value, the controller automatically cuts off the output to protect the battery from injury. Only when the battery voltage is recharged to the over discharge recovery voltage, the controller can automatically turn on the load output again.

Some models have the function of light time control output. The controller judges night by detecting the voltage of solar panel, then turns on the load output and turns off after a certain time delay. At the same time, at night, the controller can prevent the battery from reverse discharging to the solar panel.

INDICATOR FUNCTION

	Solid on:Charging / Off:not charging.
	Solid on:Output enable / Off:Output disable.
	Battery >12.6V
	Battery >12.2V
	Battery >11.6V
	Battery >10.7V
	When the battery voltage V is less than 10.7v, the controller is in the state of over discharge protection. The user needs to charge the battery to "over discharge recovery voltage" and then output will recover automatically.

TROUBLESHOOTING TABLE

PROBLEM	POSSIBLE CAUSES	SOLUTION
no indicator is on after connecting to the battery	1.battery voltage is too low. 2.battery is reversed	1.fully charge the battery. 2.check battery connection.
Sun light is good but the charge indicator is off	PV wire is broken or reversed	re-connect the wire

No output voltage	over protection	discharge	charge the battery to "over discharge recovery voltage" and then output will recover automatically.
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DATASHEET

Rated system voltage	12V/24V auto
Rated input current	10~30A
Rated output current	10A
Maximum Input PV voltage	<50V 1. For 12V battery, use 18V solar panel 1. For 24V battery, use 30-36V solar panel Do not use 30-36V solar panel to charge 12V battery!!
Charge voltage	13.7V
Low-voltage Disconnect (LVD)	10.7V
Low-voltage Re-connect (LVR)	12.0V
Maximum Wire size	15mm ² /6AWG
USB output	5V/2A
Standby lost	<10mA@ 12V
Working temp.	-20~+60 °C
Size/Weight	133*70*21.5mm /150g
Mounting hole size	119.5mm

*all red color voltage X2 while using 24V system.

*Product specifications are subject to change without prior notice.