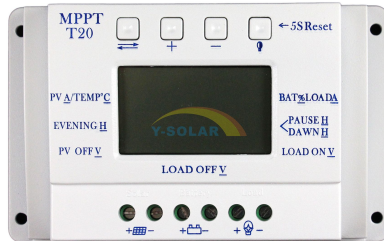


T10/T20/T30/T40 User Manual



This is a three-time controller into the evening (evening) working time, an interval of rest or pause time, Dawn working time (morning light function), the user can according to their needs, set a different time.

This is a compatible MPPT charge controller PWM intelligent / efficient / energy saving, he not only has efficient MPPT controller charging function to automatically track the maximum power point, 10% -30% higher than the ordinary controller charging efficiency, also has standby energy saving, more than 30% energy than ordinary controller, the standby power consumption of only 10mA-15mA.

1: Product introduction

"T" series of an intelligent, multi purpose solar charge controller

LCD screen display	Battery reverse discharge protection
Simple (and more time control) operation	Battery reverse polarity protection
MPPT+ PWM charging mode	Battery under voltage protection
Parameter user can reset	Overload, short-circuit protection
A key to open and close the load	Automatic temperature compensation function
A key to restore the factory settings	USB5V charge (current 500mA) Optional

2: Installation Instructions

Installation (Installing wires, first loosen the screw counterclockwise)

- ① Ready installation tools and materials, and cable. Please matching suitable cable

- ② ensure that the current density $<4A/mm^2$ This will help reduce the line pressure drop.

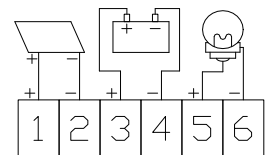
Check the installation site meets the relevant safety requirements, avoid damp, dusty, flammable, explosive and corrosive gases

- ③ Install the controller fixed to the vertical plane, see Section V mounting aperture and hole spacing. In order to ensure a good controller cooling conditions, the controller on the bottom of each reserved 10cm space

- ④ As shown on the right wiring sequence: load, battery, solar

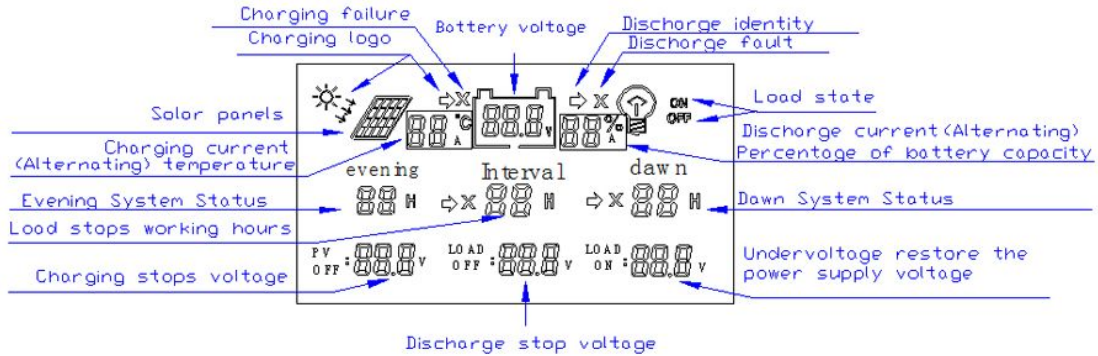
Battery plate is connected to the controller to be taken to ensure that the load, battery,

The polarity of the solar cell panel and controller



- ⑤ Before use: external temperature sensor probe into the left of the controller temperature probe interface probe placed in similar battery temperature. (Line extension must be built-in devices of the external temperature probe coextensive Otherwise, the controller will control parameters of the temperature compensation of the error
- ⑥ Warning: In order to prevent accidents from occurring, install: non-professionals can not be engaged in loading and unloading operations

3:LCD operating interface description



Charging	Charging Fault	Is discharging	Discharge failure
A	°C	A	%
Solar charging current	Ambient temperature	Load current	Battery capacity
PV OFF	Load OFF	Load ON	
V	V	V	
Stop battery is fully charged voltage (can be set)	Battery under voltage stop the supply voltage (can be set)	Under voltage battery Load voltage is switched on again	

Evening H	<p>Load output state is set: Set to 00H, said that under the light control mode, after dark (dusk) open load; after dawn (Dawn) load to stop working. Set to: 24H represents the load has been open until the battery voltage protection automatically disconnects the load; Set time: 01H to 23H, said under the next delay lighting control mode, the load is loaded loaded loaded automatically after a delay before disconnecting a few hours in the evening and applications. (Expressed as the number of time delay)</p>
Interval H	<p>An interval of time setting (set this time, Dawn to Evening; to stop working load time) Set to: 00H indicates Evening to Dawn without the interval or intervals of 0H Set to: 01H to 24H represents Evening to Dawn stopping power load time (corresponding to the numbers indicate the length of time delay).</p>
Dawn H	<p>Load output state is set: the length of the second opening hours or workload; Set to: 00H means no load open or the length of time the load power 0H; Set: 01H24H said opening a load length of time; (numbers indicate the length of time corresponding to the open load).</p>

Three time periods set; (cases)

Warning : (If (night) setting (00H) or (24H), (time interval and dawn) would prohibit these two time periods set))

Evening 00H	Interval --H	Dawn --H
After dark (night) open workload until dawn (dawn) load stops working,		
Evening 24H	Interval --H	Dawn --H
Normally open mode, the load has been working until the battery (under voltage) automatic protection, load stop working;		
Evening 01H	Interval 00H	Dawn 00H
Interval and Dawn are set to 00H, after dark 1H off load after load of work (can set)		
Evening 23H	Interval 00H	Dawn 00H
Interval and Dawn are set to 00H, after dark 23H off load after load of work (can set)		
Evening 05H	Interval 07H	Dawn 03H
(Evening) work load 5H, (interval) to stop supplying the load 7H, (Dawn) work load 3H (can set)		

Time Status	Evening H	Interval H	Dawn H
Set	00H (Light control mode)	Setting prohibited	Setting prohibited
Set	24H (Normally open mode)	Setting prohibited	Setting prohibited
Set	01H---23H(Any value)	00H--24H (can set0-24)	00H—24H (can set0-24)
Set	01H---23H(Any value)	00H (No time interval; direct execution of dawn working time	00H (Load operating time 0H)
Set	01H---23H(Any value)	01H---23H (Stop halfway load hours (H))	01H---23H(Open the load again working hours (H))

4: Function keys:

: Toggle key	“+”Set parameters: "plus"	“-” Set parameters: "Minus"	Manual switch load
Long press and hold this button for 5 seconds to restore the factory settings			
"x" error or system failure, click this button, you can troubleshoot or eliminate "x"			

5: Parameter settings (≥ 5 seconds keystrokes, parameters are saved automatically)

PV OFF→LOAD OFF→LOAD ON →Evening → Interval→ Dawn (Set order (automatic cycle))	
+ Parameters "+" setting	- Parameters "-" setting
This button can be "manually" open load or manually close the load. Long press and hold this button for 5 seconds to restore the factory settings "x" error or system failure, click this button, you can troubleshoot or eliminate "x"	

6: Charging Problem Solution

- a. **No proper installation of solar panels cable polarity ("+" "-") Removing the polarity, you can re-install the correct**
- b. **More than the rated power of solar panels to reduce solar panel power does not exceed the rated power controller**
- c. **Discharge Problem Solution**
- d. **Removing the load is not properly connected to the load, reinstall the correct**
- e. **More than the rated load power to reduce load power, the controller does not exceed the rated power**
- f. **Instantaneous starting current is too large, the battery capacity is too small, the replacement of high-capacity batteries, button troubleshooting**
- g. **Wire cable polarity loose or too square and increase retightening bold cable**
- h. **All keys can troubleshoot faults, press 5 seconds to restore factory settings**

7: Parameter table

Parameters / Model	MPPT1	MPPT2	MPPT3	MPPT
	0	0	0	40
Maximum power current	12A	20A	30A	40A
Installation Lin (mm ²)	4mm ²	8mm ²	10mm ²	12mm ²
Installation Line(AWG)	10(AWG)	8(AWG)	7(AWG)	6(AWG)
Weight	280g	300g	475g	480
Dimensions	143×89×46 (mm)		187*97*61 (mm)	
System load loss	≤13mA			
Loop Buck	≤100mV			

Battery float voltage	13.8V (12V system) /27.6V (24V system)
Battery(under voltage) protection	10.6V (12V system) /21.2V (24V system)
Battery (under voltage)recovery voltage	12.6V (12V system) /25.2V (24V system)
Charge mode	MPPT+PWM MODE
Operating Temperature	-10℃~60℃
Storage Temperature	-30℃~70℃
Humidity requirements	≤90%, No condensation
Temperature compensation	-4mV/Cell/℃

Temperature Probe (built components)	NTC 100K thermistats
Maximum open circuit voltage of the solar panel	18V-24V (12V system) 36V-48V (24V system)
Solar panels maximum open circuit voltage (V)	≤48V

8 : (Cases) 12V system standard configuration (only applicable to our solar charge controller)

Maximum power voltage	18V-25V	18V-25V	18V-25V	18V-25V
Peak power of solar panel	50W-130W	100W-260	200W-380W	≤500W
Model	MPPT10	MPPT20	MPPT30	Mppt40
Battery standard voltage	12V	12V	12V	12V
Battery capacity configuration	≥100AH	≥200AH	≥300AH	≥400AH
Installation mm ²	4mm²	8mm²	10mm²	12mm²
Installation Line(AWG)	10(AWG)	8(AWG)	7(AWG)	6(AWG)