User Guide

For Turning V3 controller

2019/5/16

Warning

- Do not power on before the controller connect well to the light panel, otherwise damage will happen.
- Do not install device barefooted or with humid or wet hands.
- Do not unplug the cord, if the plug or receptacle is wet. Disconnect the power, then, unplug and examine for the presence of water in the receptacle.

Overview

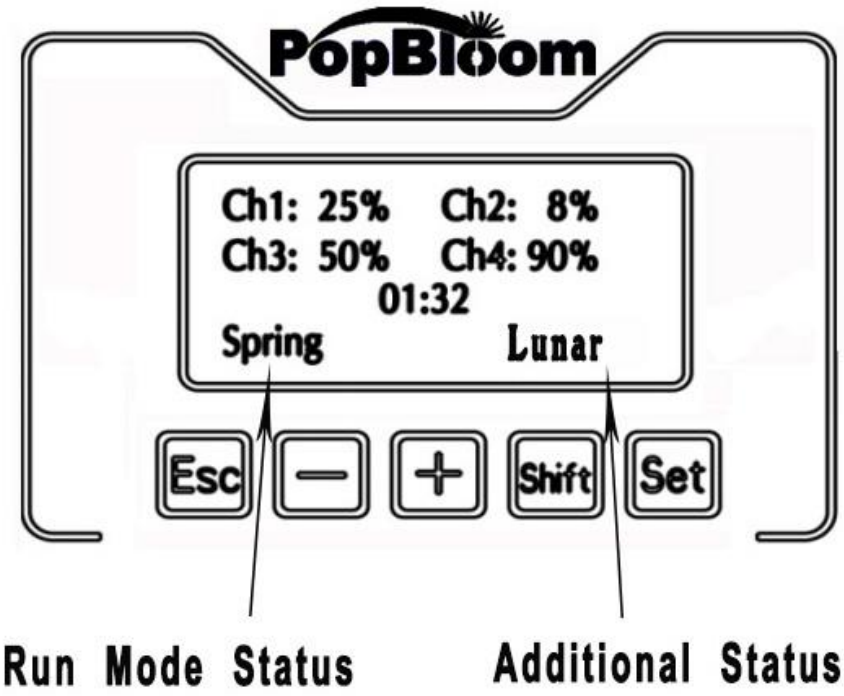
PopBloom Led System Controller allows you to automate the operation of PopBloom lighting panel to perform everything from basic on/off timer functions to a variety of coral reef light simulations. The controller provides the following features:

- 4 independent light channels, with independent intensity (dimming) levers.
- 6 smart preset modes to run the light quickly & easily.
- 8 independent light timers to flexibly program your own sun-cycle.

Table of function classification

Main Run Mode	Feature	Additional Function			
		lunar	manual moon	limited output	Time offset
Manual QuickSet	constant value	N	N	N	N
Auto Preset	factory preset	Y	Y	Y	Y
Program	user design	Y	Y	Y	Y

Standby Screen



Run Mode Status shows the current running mode of 24 hours cycle.

- **Off**: the light is turned off manually.

- **Quick** : the intensity levers of 4 channels are directly set by manually.
- **Spring/Summer/Autumn/Winter**: simulates the phases of the tropical sun-cycle base on calendar month and hemisphere.
- **Slow**: let your fish and coral slowly acclimate to the new environment. Run this "slow acclimation" mode 1-2 weeks for new tank, then choice "Show Vivid Color".
- **Vivid**: A normal mode which balances grow of size and show of color.
- **Rapid Grow**: let the coral grow as fast as possible, but lost its color. Run this mode not more than 3 weeks, then choice "Show Vivid Color" mode.
- **Cut&Frag**: give your coral suitable lighting to recover from cut or damaged.
- **-Algae**: Reduce algae and seaweed by decrease the intensity of PAR. Run this mode for 3-7 weeks when the algae or seaweed is too much.

Additional Status show how light runs during the moon time which is set by user. Channel 2 is designed to simulate moon.There are 3 types of the moon setting:

- Resume Cycle Set: all 4 channels run according to the **Run mode.** There is no display at additional status running this moon.
- Run Lunar Cycle: channel 1,3,4 are turn off and channel 2 simulates the lunar cycle. "**Lunar**" displayed at additional status.
- Manual MoonLight: dimming value during the moon time of all 4 channels is set by manually. "**Moonfix**" displayed at additional status.

Key

Esc : go back to the menu without saving

－ : go back to the previous item or decrease one unit in number

＋ : go to the next item in menu or increase one unit in number

Shift : move the cursor to the next item

Set : select the current item or go back with saving

Table of key function in each type of screen

Screen	**Esc**	**-**	**+**	**Shift**	**Set**
Standby	Turn Off	Manual Quick Set	Manual Quick Set	---	enter menu
Menu	return back	move up cursor	move down cursor	move down cursor	enter
Setting	back without saving	decrease a unit	increase a unit	move down cursor	save & back

Curve of the lighting-cycle

There are 4 independently channels and each channel is able to be set 8 time-points. To best simulate the nature sun, they are gradually ramp up and down.

The change between each 2 time-points is according to the “line formulation” of **Y=(x-x0)/(x1-x0)(Y-Y0)+Y1**.

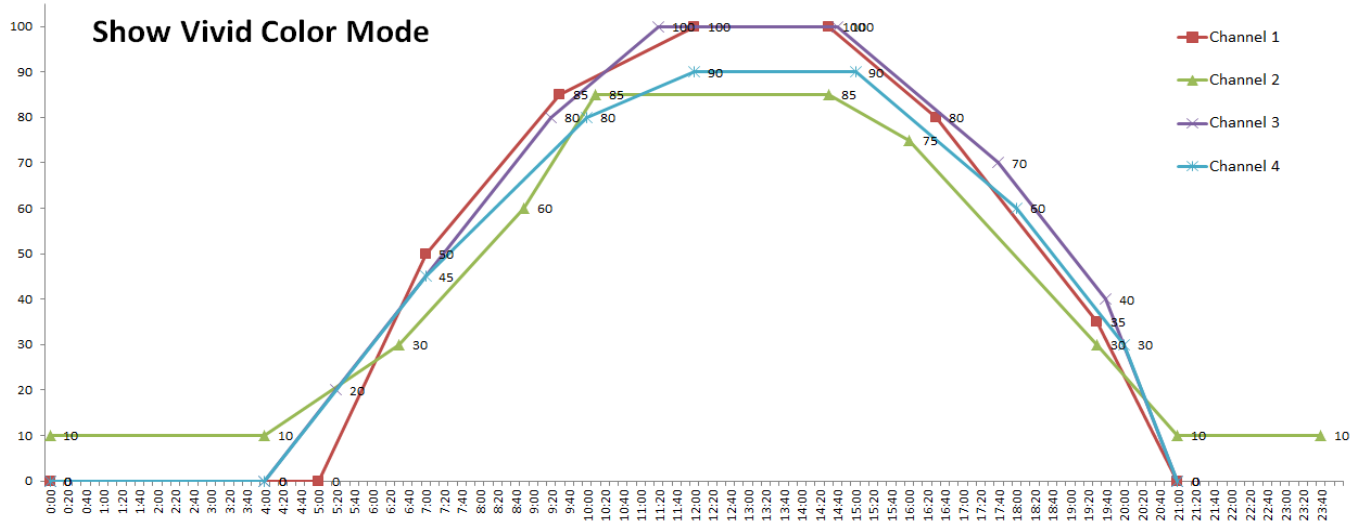
The following chart and graph are real date of “Vivid Color mode” to illustrate:

- 4 independently channels named channel 1-4.
- Each channel runs its own 8 time-points.
- The 8 time-points connected by lines.
- The running track is just like a cycle of nature sun.

The time-point table of “show vivid color” mode

Channel 1		Channel2		Channel 3		Channel 4	
Time	value	Time	value	Time	value	Time	value
5:00	0%	4:00	10%	4:00	0%	4:00	0%
7:00	50%	6:30	30%	5:20	20%	7:00	45%
9:30	85%	8:50	60%	9:20	80%	10:00	80%
12:00	100%	10:10	85%	11:20	100%	12:00	90%
14:30	100%	14:30	85%	14:40	100%	15:00	90%
16:30	80%	16:00	75%	17:40	70%	18:00	60%
19:30	35%	19:30	30%	19:40	40%	20:00	30%
21:00	0%	21:00	10%	21:00	0%	21:00	0%

Graph of running-curve of “show vivid color” mode



Moon

The 8 time-points is enough to define a completely 24 hours cycle. The purpose of designing the moon function is for a simply way to redefine the night lighting.

The lighting channel for simulation moon

In our design concept, channel 2 is moon channel. So in all smart preset mode, channel 1,3 and 4 are all dark during the night. Lunar cycle runs on channel 2.

But there is NO limitation about what is moon channel. There are 2 way to set your special moon.

- In “program sun cycle” mode, set the moon lighting as normal time-point way.
- Set each channel in “manual moon light” menu.

Three choice for moon

There are 3 types for the moon setting:

- Resume Cycle set: the channels run according to the value of “Run mode”. In other words there is no special define for the night time.
- Run Lunar Moon: channel 1,3 and 4 are turn off and channel 2 simulates the nature lunar moon Cycle
- Manual moon light: each channel can be set for your own moon.

The table of the lunar cycle

Lunar date	1	2	3	4	5	6	7	8	9	10
Ch2 value	2%	4%	6%	8%	10%	12%	14%	16%	18%	20%
Lunar date	11	12	13	14	15	16	17	18	19	20
Ch2 value	22%	24%	26%	28%	30%	28%	26%	24%	22%	20%
Lunar date	21	22	23	24	25	26	27	28	29	30*
Ch2 value	18%	16%	14%	12%	10%	8%	6%	4%	2%	2%

Moon time

The start of the moon can be set from 18:00 to 21:00; the default is 21:00.

The end of the moon can be set from the 4:00 to 7:00, the default is 4:00.

We know someone want the moon begin latter than 21:00. But the creatures in your tank are over lighting if the lighting time is so long. So we designe a “time offset” function for those requirement.

Time offset

The time in controller is for smart lighting your tank, it is not required to same as real time. For example, you can delay 5 hours in controller compare with real time or you can set a summer season for your tank even now it is winter out door.

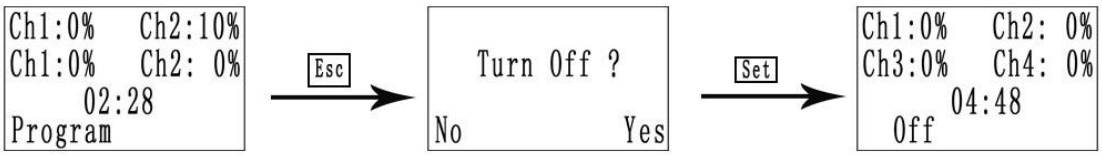
The most simply way is just offset data and clock for controller. There is also a "Time offset" function to set some delay hours for the controller compared with real time. The advantage of this is the clock on standby screen looks same as real time.

Quick Setup

Follow these steps to quickly set up your lighting controller.

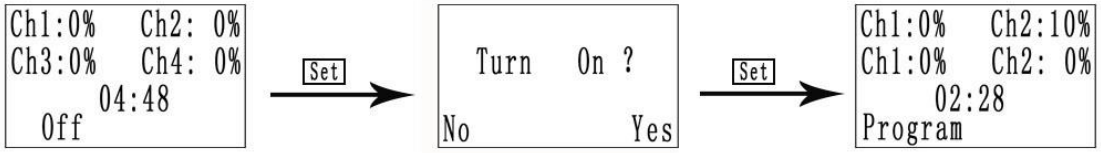
1. Turn On/Off the light

Turn Off the light



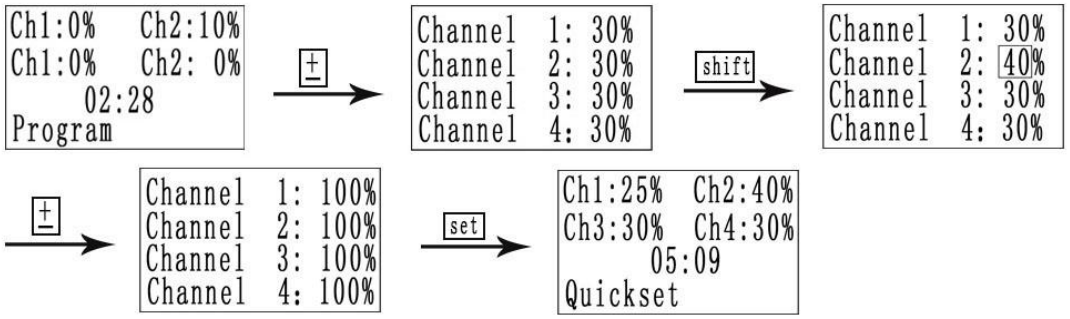
When the light is turn off, the Run Mode Status shows "Off" and the value of each channel is 0%.

Turn On the light



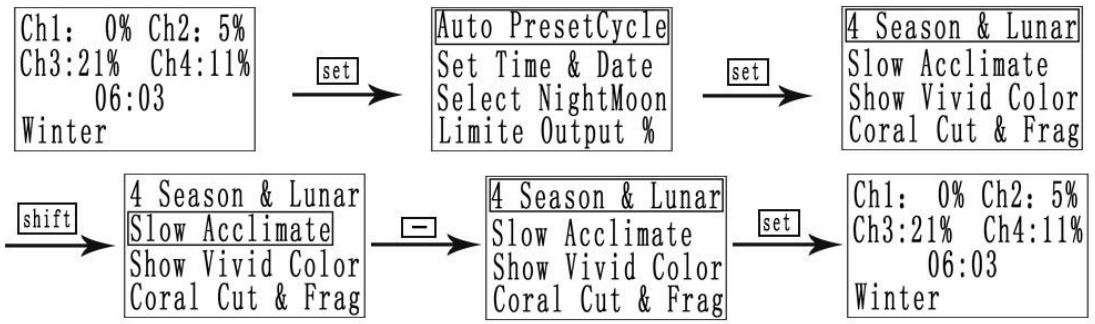
2. Manually quick set each channel

Play this mode to familiar the light spectrum and led layout of each channel.



3. *Choice an smart preset mode*

"Auto Preset Cycle" mode is designed for easy setting for the usual application



Each auto preset mode has its own factory default 24-hours-cycle setting. There are following preset mode:

- 4 season&Lunar: simulates the phases of the tropical sun-cycle base on calendar month.
- Slow Acclimation: run this mode 1-2 weeks for a new tank, then choice "Show vivid color".
- Show Vivid color: this is the usual mode to light your tank.
- Coral Cut&Frag: run this mode 2-3 weeks after the coral is cut or damaged to let it recover
- Reduce Algae: run it for 3-5 weeks when algae or seaweed grow too much.
- Rapid Growth: this mode designed to fast grow the coral, but the color on coral may lost. So not more than 3 weeks to run mode, especially in summer.

4. *Set date , clock and hemisphere*

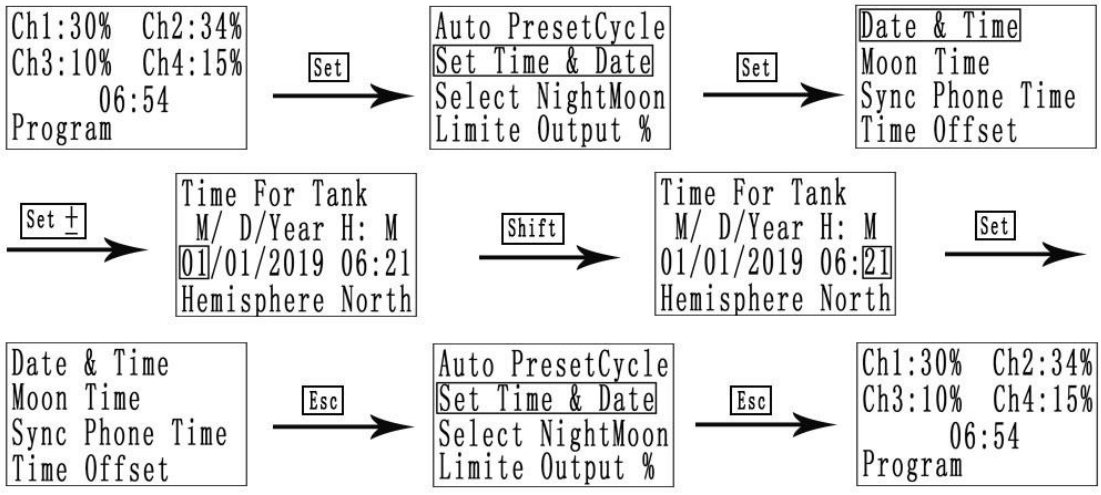


Table of month and season

	Month											
Hemisphere	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**
Northern	Spring			Summer			Autumn			winter		
Southern	Autumn			winter			Spring			Summer		

Tips: saving cooling and heating cost for your tank

The date is for your coral and fish and it is not required to matching your local time in concept. You can use this trick to much save power energy consumption of your tank.

For example: you are live in northern hemisphere, but you choice southern hemisphere for the controller. In summer, the light run winter mode which means shortest lighting time and lowest lighting intensity. Then the power consumption for cooling system is much cost down. Run summer mode in winter with longest lighting time and highest lighting intensity to save energy cost for heating your tank.

5. Now your lights automatically runs

It runs the preset auto mode of your choice.

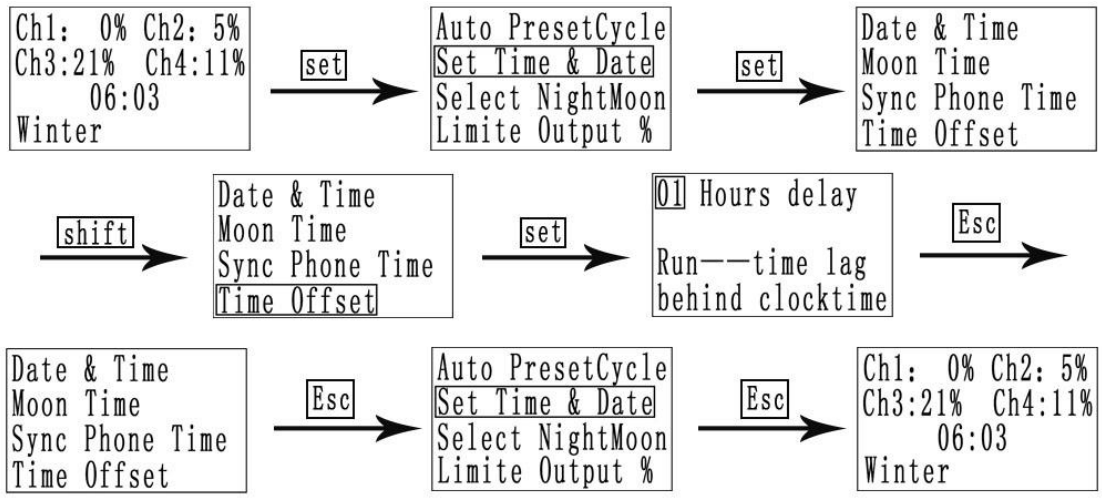
After 4:00 in the morning, the light begins to light up step by step and ramp down from 14:00 just like the real sun cycle.

During the 21:00 in the night to next 4:00 in the dawn, the light simulates the moon spectrum and run “lunar” cycle automatically.

Customization Tips

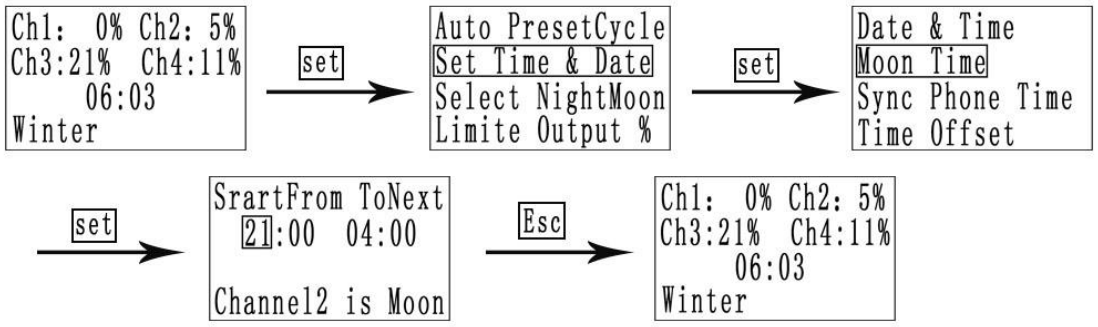
Tips: I want to watch my tank after I come back in the night

You can set the delay hours of your tank lag behind real run clock time. For example, you always go back home at 20:00. Set 5 hours delay. Then when you enter the home, the tank is bright same as 15:00.



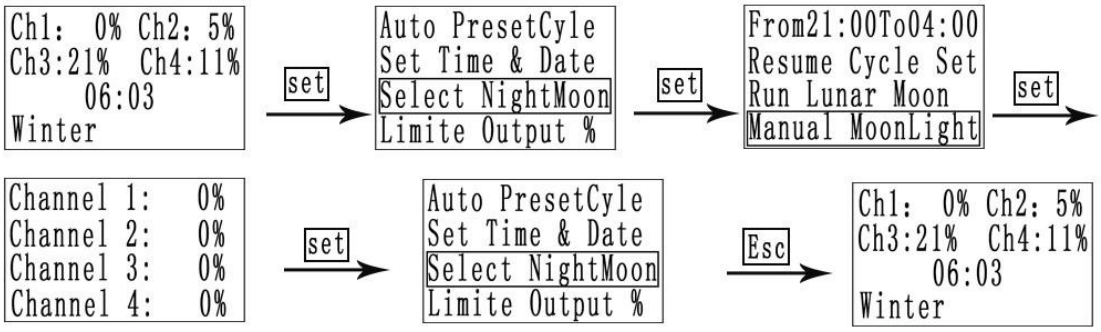
Tips: I want to change the moon time

Set the start time and end time of the moon.



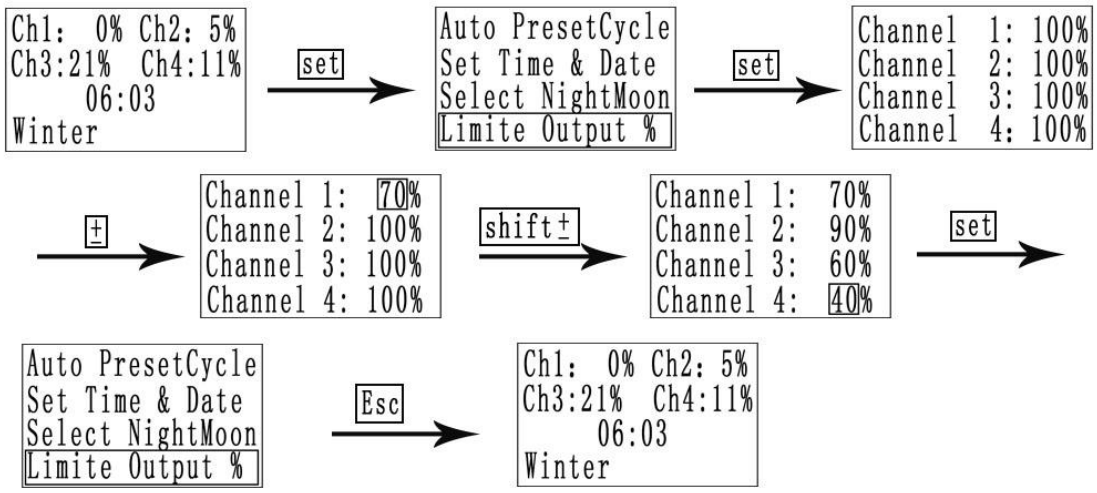
Tips: My tank is in bed room, I want it dark in the night

There is a very useful function “Manual MoonLight” to configure your own moon intensity and color by set the dim value of each channel. In this case, Set 0% for each channels, then the light will dark during the moon time.



Tips: I want to limited the max output of one channel or all channels

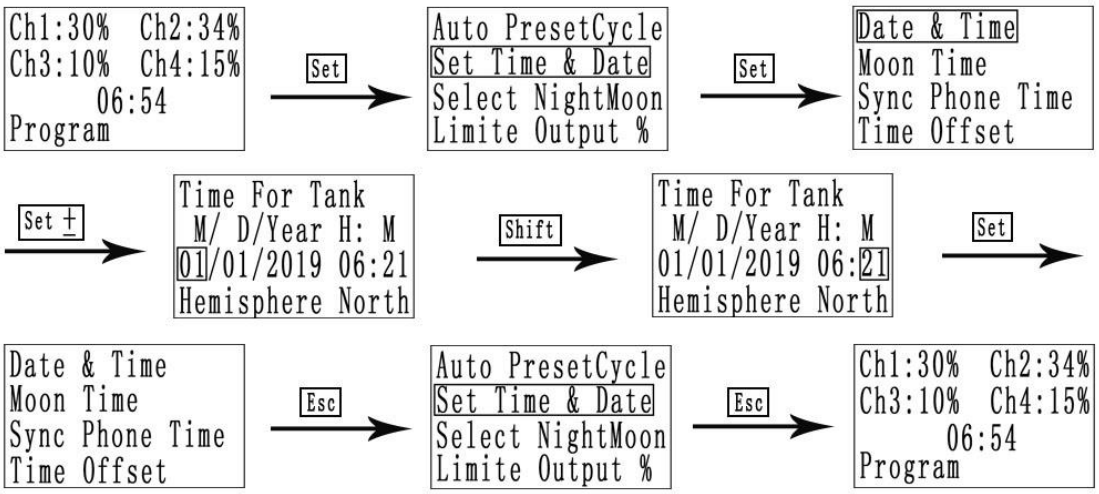
Maybe you feel the lighting in one channel or all channels are too strong in an auto preset mode, you can set the max value of each channel. Then output of the channel is limited to your setting.



Each time, when you switch the mode from “auto preset” mode to “manual quick set” or “program”, the limited value is reset to 100%, which means no limitation.

Tips: I want to set a special season NOT base on the calendar

You only offset the month. For example, if you want to start the winter mode Oct 21th, you just set the current date time Dec 21th, and then the light today is same as sun in winter even the calendar is autumn.

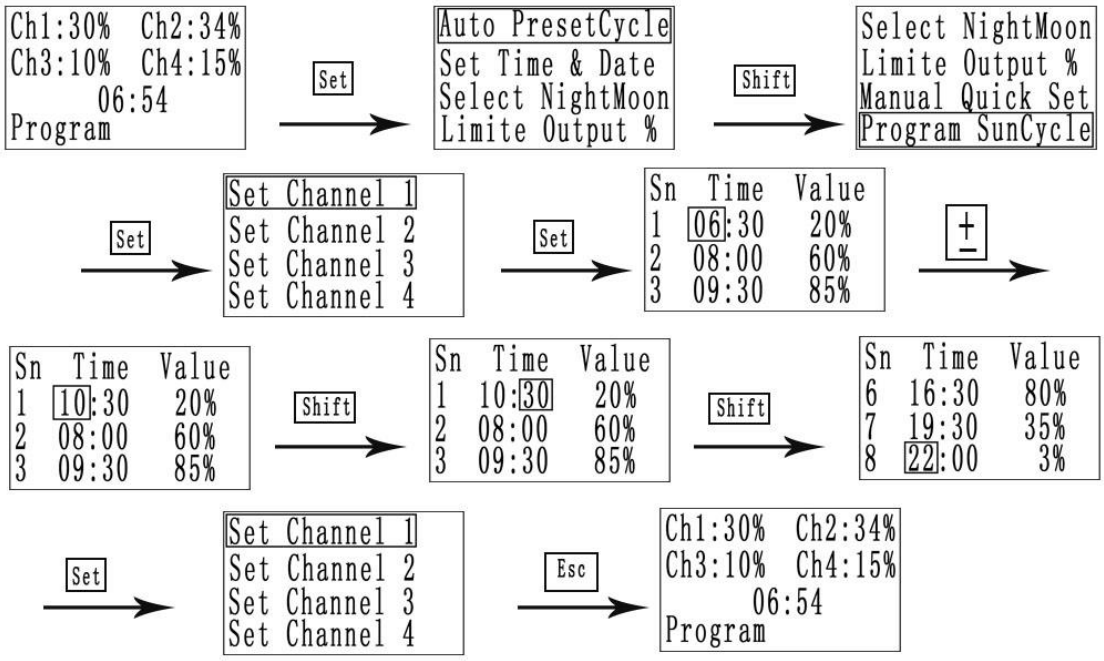


Not be satisfied with the smart auto run cycle?

Program mode is a most flexible and powerful tool to define your own 8 time points for each of 4 independent channels.

The light is gradually ramp up or down from one time point to another according to the "line formulation": **Y=(x-x0)/(x1-x0)(Y-Y0)+Y1**.

For example, at **00:00,** the value is **0%** and **10:00** is **100%**, then at **00:00**, the intensity is **0%**; at **2:00**, it is **20%**; at **05:00**, it is **50%**; finally at **10:00**, it is **100%**.



Tips: How to set a constant value for a period time

Set a same value in the start time point and the end time point for a constant or continuous value. For example, if you want 20% from the 18:00 to next 5:00 in channel 2. Set the Sn-1: 5% at 5:00 and Sn-8: 5% at 18:00.

Power Outages

Your controller has a built-in, permanent power source that never needs replacing. In the event of a loss of power, the clock will maintain the correct time more than 24 hours. When power is restored, it takes less than 5 minutes to fully recharge the power source in preparation for the next outage.

Your mode settings and options are stored in permanent memory and will never be erased, no matter how long the controller is without power.

Contact Us

Company Web: www.popbloom.store
Sales Support: Sale@DSunY.com.cn
Technical Support: Tech@DSunY.com.cn