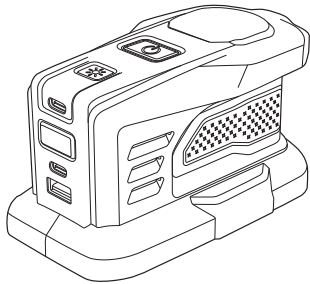


## Intelligent Power Source and Charger

for 18V Batteries [Instructions](#)

The “PSC Pro” & “PSC Pro Max”



**SYMIK**

### Introduction

The SYMIK Power Source Charger Pro (PSC Pro) is an intelligent bi-directional 100W charger and 145W power source designed for Ryobi 18V batteries. It is able to charge 18V batteries @ charging power up to 100W (when used together with a 100W PD 3.0 Power Adapter and a Type C cable with internal E-marker chip). It can also convert your 18V battery into a power bank/source by discharging the battery. The discharge power is up to 145W PD (USB-C1 100W and USB-C2 45W combined). It is designed for both beginners and Pros. It is plug-and-play for beginners with all settings set to factory recommended values. For pros, they can adjust charge power, screen off time, power off current and more for a more customized use experience.

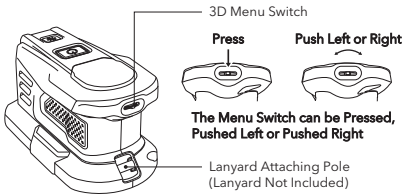
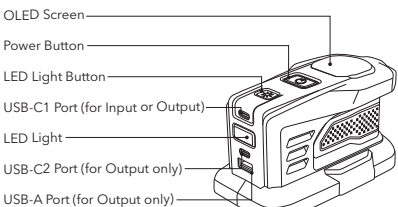
The PSC Pro Max is capable of 140W charging and 225W total power output. The USB-C1 is equipped with a state of the art PD 3.1 circuit which can process 140W input and output power. With the power enhancement, the Pro Max is ideal for large and newer 8Ah and 12Ah batteries. Ideally, the Pro Max can fully charge an 8Ah battery in 1 hour and 10 minutes. The USB-C2 and USB-A of the Pro Max have independent circuits which will not cause power reduction when both used at the same time. The USB-C2 is 45W and USB-A is 40W.

The most unique and innovative feature of the PSC is that the USB-C1's role/direction can be adjusted by the user. The user can set the role/direction of USB-C1 to “Input Only” or “Output Only”.

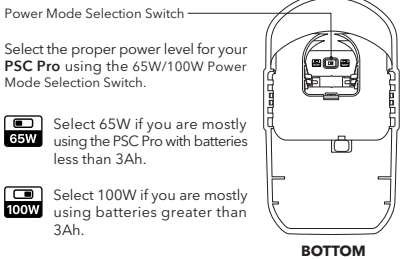
Only” or “Auto”. This feature makes the PSC the Master of all power banks: It can sink/suck energy from other power banks or source/inject energy into other power banks which is not controllable when using 2 conventional power banks without the role selection feature.

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### Charger Diagram



### Determine the Power Mode



Select the proper power level for your PSC Pro Max using the 100W/140W Power Mode Selection Switch.

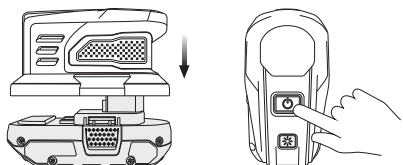
Select 100W if you are mostly using the PSC Pro Max with batteries between 3Ah and 6Ah.

Select 140W if you are mostly using batteries equal to or greater than 6Ah.

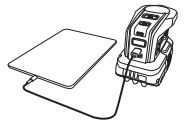
If you want to use the Pro Max to charge batteries less than 3Ah, you should limit the charge current to be less than 4Amps or Limit the USB-C1 Power to be 65W or less in the setting menu. Or just use with a 65W or smaller power adapter to charge small batteries.

### Using as a Power Source

**Step 1:** Fully Insert a battery until you hear the double clicks.



**Step 3:** Connect devices to the USB ports.



**Step 4:** Press and hold the Power Button for over 2 seconds to power off the PSC.



**Step 5:** When the PSC is powered on, press and release the LED light button to turn on/off the LED light. When the LED button is pressed, the OLED screen will switch to the USB-A/LED display mode.



**Step 6:** When the PSC is powered on, press and release the power button to switch between USB-C1/C2 and USB-A/LED display mode.



**Step 7:** When the OLED is in USB-A/LED display mode, push the menu switch to the left/right to decrease/increase the LED brightness.



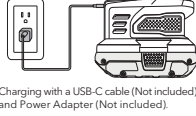
It is recommended to use the USB-C1 for Laptops and other high power demand loads, use the USB-C2 for cell phones and tablets; When USB-C2 and USB-A are used at the same time, both will have a 5V 3A capability for the PSC. The USB-C2 and USB-A of the Pro Max have independent circuits, therefore the performance will not be affected when used at the same time.

### Charging A Battery

**Step 1:** Insert a battery.

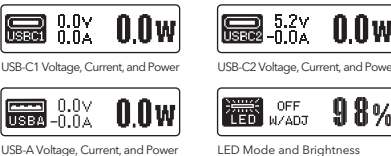
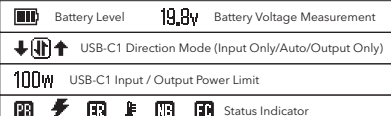
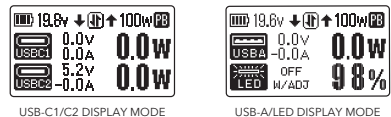


**Step 2:** Connect the USB-C1 port to a power adapter with a USB-C cable.



It is recommended to always have a battery inserted before attaching the USB-C1 to a power adapter.

### OLED Screen View Introduction



### Advanced Operations — USB-C1 Role Change

When power on, the default role of USB-C1 is “Auto”. The user can change the role/direction of USB-C1 to “Input Only” or “Output Only”.

Before performing the role change, make sure there are no cables connected to any of the USB ports. When the OLED is in USB-C1/C2 display mode, push the Menu Switch to left or right for over 2 seconds to change the role.

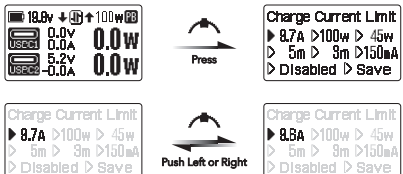
In “Input Only” Mode, USB-C1 will only sink energy from USB-C1 port into the 18V battery. User can use this feature to suck energy from other power banks or laptops (If the laptop supports output) even if the other party's USB-C port is in “Auto” mode.

In “Output Only” Mode, USB-C1 will work like a USB-C port on a power adapter which will only source energy. User can use this feature to make sure the PSC will charge other power banks.

If the PSC is not performing as expected per the role, it can be because some protection features (such as under voltage lockout) of the power chip is engaged before the role change is performed. Power off the PSC, wait for 5 seconds, power on and try the role change again. Or try a battery with different charge level.

### Advanced Operations — Settings Menu

Press and release the Menu Switch to enter the Settings Menu. In the Settings Menu view, the solid triangle ▶ indicates the active parameter for changing. Push the Menu Switch left or right to adjust the values. Press the Menu Switch to change to the next setting option.



### Charge Current Limit

This option sets the limit of the battery charge current with a 9.7A (9.7 Amps) default value. It is recommended to leave it at the default value if possible because other values require a reset of the charging chip after startup which can cause incompatible issues with a small percentage of power adapters.

### C1 Input and Output Power Limit

This menu option sets the input and output power limit of the USB-C1. It is recommended to use the Power Mode Selection Switch (PMSS) to set the input and output power if you don't have special needs. If this setting is different from the PMSS setting, the PSC will have to reset the power settings after startup which can cause incompatible issues with a small percentage of power adapters.

Please note, the charging power is restricted by C1 Input Power Limit or Charge Current Limit whichever is reached first. For example, if you set the C1 Power Limit to 65W and the Charge Current Limit to 2A, you will be charging the battery at about 36W (36 Watts) if the battery voltage is 18V. The charge power will vary with the change of the battery voltage. In the above example, the charge power will be limited to about 40W if the battery voltage increases to 20V.

Please also note, the C1 Input and Output Power Limit is only a limit. For example, if you are using a 30W power adapter with the PSC, your max possible power will be limited to 30W by your power adapter. In order to perform charging over 65W, you will need a 100W Type C PD 3.0 Power adapter and a USB-C cable which supports 100W charging (with internal e-marker chip). For the Pro Max, you will need a 140W Type C PD 3.1 Power adapter and a 140W+USB-C cable in order to perform 140W charging.

### C2 Output Power Limit

The available power options for USB-C2 are 30W, 45W, 65W and 100W. However, USB-C2 is based on a Buck Converter which steps

down voltage only. As a result, with the voltage drop of the battery, not all power ratings can be maintained. A good maintainable power level is 45W (15V 3A output). From the factory, the C2 output power limit is set to 45W. The 65W and 100W options will require a fully charged battery with C1 plugged into 65W or 100W. We are keeping the 65W and 100W options so that some users may want to have the unit's C1 always plugged into 65W/100W and have the same power passed through to C2.

### Screen Idle Timer (Screen Off After)

This option sets how long time will the OLED screen stay on if there is no user activity detected.

User activity includes key press and port status change.

### Power Off Timer and Power Off Current Limit

These 2 options are used together to define how long time will the unit stay on if the current of all ports are less than a certain value. The factory default values are 3 min and 150mA which should provide a pretty good experience. The user can adjust these values to suit their needs. Please note, a too long time setting

here may cause the unit fail to power off when some devices are attached. For example, if you attach an old iPhone to the USB-A port, after the iPhone is fully charged, it will draw a few seconds of current every 30-40 seconds to maintain the battery level. In this case, if you want the PSC to power off automatically, you should decrease the power off time and increase the power off current limit. Again, the default 3 min and 150mA should provide a pretty good user experience.

### Strobe Light Modes Control

The strobe light modes can be enabled or disabled by the user. The default setting is disabled. The user can enable them if needed. After the strobe light modes are enabled, Press the LED light button to cycle through the constant mode and strobe light modes.

### Save the Settings

The available options for this setting are “Save” and “Reset”. Press and hold the menu switch to perform a “Save” or “Reset”. A reset will restore all the settings back to factory default.



### Trouble Shooting and Recommendations

• If the PSC reports a charge error (ER) with a battery, it is typically because either the T1 or T2 terminal of your battery is not contacting with the PSC very well. You can try the following to solve the issue:

(1) Make sure the battery is fully inserted into the PSC. You should hear the double clicks during inserting if fully inserted.

(2) It can also be the T1 or T2 terminal of the battery is not clean enough for a secure contact. Wipe the T1 and T2 terminal of your battery thoroughly with a dry clean cloth and try again.

(3) Check if the T2 contact (enclosed in the green plastic) on the PSC has good resilience to provide a good contact.

• It is normal that some 18V batteries will perform a reset after the end of a charge cycle. Known battery model with this characteristic is P108.

• When unplugging C1 from a charge, the battery will need to restart itself which causes a voltage drop on the terminals as a result. This may cause the C1 circuits to freeze (will not output). This is even worse if there is a load on USB-C2 or USB-A. A power cycle (Turn off and turn on again) of the PSC will solve the issue.

### Specifications

#### PSC Pro

Operating Ambient Temperature: 5° to 40° C (41° to 104° F)

USB-C1 Input /Output:  
100W Mode: 5V, 9V, 12V, 15V 3A; 20V 5A (100W Max)  
140W Mode: 5V, 9V, 12V, 15V 3A; 20V, 28V 5A (140W Max)

USB-C2 Output:  
5V 3A; 9V 3A; 12V 3A; 15V 3A; (45W Max)

USB-A Output:  
5V 3A; 9V 2A; 12V 1.5A; (18W Max)

LED Light:  
1W with 1-100% brightness adjustable in constant mode

Applicable Battery Type:  
Lithium-Ion Battery ONLY; Not Ni-Cd / Ni-MH Batteries

#### PSC Pro Max

Operating Ambient Temperature: 5° to 40° C (41° to 104° F)

USB-C1 Input /Output:  
100W Mode: 5V, 9V, 12V, 15V 3A; 20V 5A (100W Max)  
140W Mode: 5V, 9V, 12V, 15V 3A; 20V, 28V 5A (140W Max)

USB-C2 Output:  
5V 3A; 9V 3A; 12V 3A; 15V 3A (45W Max)

USB-A Output:  
5V 3A; 9V 2A; 12V 1.5A, 10V 4A (40W Max)

LED Light:  
1W with 1-100% brightness adjustable in constant mode

Applicable Battery Type:  
Lithium-Ion Battery ONLY; Not Ni-Cd / Ni-MH Batteries

Designed by SYMIK  
MADE IN CHINA