



Model/Modelo PG1800WP

OPERATING MANUAL

Mobile Power Center

English page 1

Version 1

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QUESTIONS?

Our Customer Service staff is ready to provide assistance. In the case of a damaged or missing part, most replacement parts ship from our facility.

For immediate help with assembly, or for additional product information, email support@sumec-na.com

¿PREGUNTAS?

Nuestro personal de servicio al cliente está listo para proveer asistencia. En el caso de una parte dañada o faltante, la mayoría de las piezas de repuesto se envían desde nuestro centro.

Si necesita ayuda inmediata con el montaje, o para obtener información adicional sobre el producto, support@sumec-na.com o correo electrónico

SAVE THIS MANUAL FOR REFERENCE

You will need this manual for safety instructions, operating procedures, and Warranty. The original sales invoice is required for warranty service.

GUARDE ESTE MANUAL DE REFERENCIA

Usted necesitará este manual para las instrucciones de seguridad, los procedimientos operativos y de Garantía. La factura de compra original se requiere para el servicio de garantía.



Sumec North America
3939 Royal Dr. NW, Suite 234
Kennesaw, GA, 30144
USA
Telephone: 1-866-902-9690
E-mail: support@sumec-na.com





PG1800WP Operating Manual

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IMPORTANT SAFETY INSTRUCTIONS

Misuse of the PG1800WP may result in injury to the user and/or damage to property. Read, understand and follow all **CAUTION** and **WARNING** statements contained in this manual.

CAUTION statements identify conditions or practices that may result in damage to the PG1800WP or to other equipment. **WARNING** statements identify conditions that may result in personal injury or loss of life.

This chapter contains important safety and operating instructions. Read and keep this Operating Manual for future reference.

Before using the PG1800WP, read all instructions and cautionary markings on the PG1800WP and all appropriate sections of this guide.

WARNING: Limitations on Use

The PG1800WP is not intended for use in connection with life support systems or other medical equipment or devices.

WARNING: Limitations on Use

The PG1800WP is not intended for use in connection with life support systems or other medical equipment or devices.

WARNING: Shock or fire hazard

The PG1800WP generates the same potentially lethal AC power as a normal household wall outlet. Please use it carefully like using a normal AC socket on the wall.

Do not insert any foreign objects into PG1800WP's AC outlets, its DC Power Socket, or the ventilation holes.

Do not remove the covers on the Power DC Terminals, unless connecting cables.

Do not, under any circumstances, connect the PG1800WP's AC receptacle to power utility AC distribution wiring.

Failure to follow the above safety instructions may result in personal injury and/or damage to PG1800WP.

WARNING: Electric Shock Hazard

Do not use PG1800WP where there are flammable fumes or gases, such as in the bilge of a gasoline powered boat, or near propane tanks.

Do not use PG1800WP in an enclosure containing automotive-type lead acid batteries. These batteries, unlike the sealed battery pack in the PG1800WP, vent explosive hydrogen gas, which can be ignited by sparks from electrical connections.

When working on electrical equipment always ensure someone is nearby to help you in an emergency.

IMPORTANT SAFETY INSTRUCTIONS

⚠ WARNING: Heat Hazard

The PG1800WP's internal inverter components may become uncomfortably warm, reaching 140°F (60°C) during prolonged operation. Ensure at least 6" (15 cm) of air space is maintained on all sides and on top of PG1800WP. During operation, keep away from materials that could be ignited by high temperatures such as blankets, pillows and sleeping bags, etc.

⚠ CAUTION: This system should not be operated in environments where the ambient air temperature is over 104°F (40°C).

⚠ Precautions for Using Rechargeable Appliances

Most rechargeable battery-operated equipment uses a separate charger or transformer that is plugged into an AC receptacle and produces a low voltage charging output. Some chargers for small rechargeable batteries can be damaged if connected to the PG1800WP.

⚠ CAUTION: Equipment Damage

When the PG1800WP produces modified sine wave electricity, which is different from pure sine wave utility-supplied electricity. Certain types of load equipment may be damaged by modified sine wave electricity. Some examples include:

- Small battery-operated appliances like flashlights, razors, and night lights that can be plugged directly into an AC receptacle to recharge.
- Speed controllers found in some fans, power tools, kitchen appliances, and other loads may be damaged.
- Metal halide arc (MHI) lights can be damaged.

⚠ IMPORTANT: If you are unsure about using your appliance with the PG1800WP, contact the equipment's manufacturer to find out if there are high voltages at the battery terminals or if the appliance incorporates the use of transformers.

SAVE THESE INSTRUCTIONS

INTRODUCTION

Thank you for your purchase of the PG1800WP. This system is a battery-powered system which can supply electrical power up to 1440 watts. This mobile energy center operates a wide variety of roles including recreational power, emergency power and productivity power.

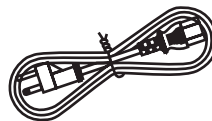
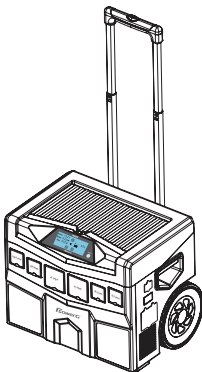
Specification

- Provides 120 VAC, 12 VDC and 5 VDC power supply anywhere
- 1800 W inverter included
- Sealed internal 100 amp-hour AGM battery included
- Retractable handle for convenient mobility
- Water-resistant design
- High temperature, overload and short-circuit protection
- Low battery alarm and automatic shutdown
- 4" LCD displays clear information
- (2) 12 VDC car lighter outlets
- (2) 120 VAC outlets
- (2) 5 VDC USB outlets
- 12 VDC terminals (positive and negative)
- Built-in GFCI
- Automotive-type fuse panel

Packing list

The PG1800WP carton contains the following items:

- PG1800WP (Sealed 100 Ah AGM battery is pre-assembled inside)
- Operating Manual
- AC input cord



INTRODUCTION

Why need to “store” or “generate” power?

In today's modern society, more and more of our daily lives depend upon the electricity supplied by our local utilities. Most of this power is derived from fossil fuel sources i.e. coal, petroleum or natural gas. Many countries and communities have recognized the need to diversify where our energy comes from and have begun to transition to other forms of power generation.

The US has many dams that produce electricity as well as the ever popular nuclear plants. Some countries and even states in the US have invested heavily in wind and solar energy programs.

Unfortunately, the increase in demand for power in many countries, even our own, is outpacing the abilities to meet this rising demand. Also with increased demand, prices of natural resources like coal and oil can also be affected. This can impact the end consumer in their pocket book through higher prices.

In addition to the issue of limited resources in the world and the yearly demand increases for power, there are many other threats to the flow of power like conflicts in the oil producing nations, terrorism etc.

Natural disasters like tornadoes, hurricanes, earthquakes and even a local lightning storm that knocks out a transformer impact our lives much greater now than they did 100 years ago. We are a very power dependent society.

Owning a Mobile Power Center unit can give you some peace of mind.

What makes up the Mobile Power Center system?

The PG1800WP is several products combined into one compact and portable unit.

- 100 Ah 12 V AGM battery. (stores DC electricity just like a battery in a car, sealed, non-spillable).
- Internal battery charger. (plugs into the 120 V wall socket (utility power) to keep the battery full when power is available).
- Internal solar charge controller (allows you to connect up to 240 watts of 12 VDC solar panels to charge your batteries when utility power is not available).
- Internal 1440 W continuous / 1800 W peak inverter, w/ (2) 120 V outlets (converts DC battery power to AC power when the power from the utility goes out or you are somewhere mobile where there is no utility power).
- (2) USB 5 VDC ports (allows your phones and other mobile devices to be charged with USB cables).
- (2) 12 VDC cigarette lighter ports (allows your phones and other mobile de-

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vices to be charged with 12 VDC car type sockets, i.e. car charger).

- Self-contained wheeled chassis (allows the entire unit to be moved freely like a portable gas generator).

How can Mobile Power Center help me in an average short term power outage?

In the event of a power outage, most people are limited to handheld flashlights, cell-phones and candles. That's about the extent of your emergency kit. If the power is off for more than 1 hour people start to feel an impact to their lives.

After an hour, you start to be impacted in other ways, no air conditioning or heating. Refrigerators are not cooling the food any more. The lights do not even work in the refrigerator. Microwaves, cordless phones, garage door openers, alarm clocks, TVs, computers, cell phone chargers, home alarms, sump pumps in basements etc. are all affected.

If you have a gasoline generator, you could pull it out of the shed or garage, fill it with gas (if you have any) start it up and then run extension cords into some devices inside the house. **(You cannot use a gas generator indoors because of carbon monoxide risks!).**

Depending on the size of the generator and your fuel storage at home, you may be able to run many things like a TV, fridge, microwave etc. and do pretty well except for the noise and fumes and then the filling of the tank with gas every 4-8 hours. Your neighbors on the other hand, will also hear your generator and you may get visitors or worse.

The fact is, most people do not have a gas generator. Fuel is a terrible thing to store and goes bad very quickly these days because of the ethanol (alcohol) in it. Gasoline sitting in a tank unused for months is problematic.

The Mobile Power Center scenario is different in several ways. If you had a Mobile Power Center unit on hand and charged up, you can deploy it easily when the power goes off. You can move it into the desired position inside your home, turn it on, plug-in items like a light, cell phone chargers, a TV or a weather radio. You could even run high current items like a microwave for short periods of time to cook a quick meal. Keeping your refrigerator running is another option.

Mobile Power Center is an energy storage and energy conversion device. The unit stores DC electricity in the battery. This electricity is pulled from your regular wall outlet in AC form and converted by the unit to DC, to be stored in the internal battery. Mobile Power Center can also store energy from the sun and store it in the battery.

There would be very little if any noise, no dangerous fumes and no extension cords running outside the home. Your main concern with Mobile Power Center

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is managing the loads. You can easily do this by monitoring the display panel which tells you the battery capacity left and current wattage draw from the unit (how much power you are using). The lower the draw, the longer the run time.

If the power stayed off into the night, you could wheel the unit into your bedroom, plug in the all important alarm clock and cell phone and sleep worry free. No fumes no noise.

If you plug the unit into the wall, and the power is restored during the night, the unit will sense the power is back on and begin recharging the battery and still keep supplying power to the devices you had plugged into it during the night.

What about more severe or lengthy power outages?

In a more severe situation like 12 hours or more, of course you will more than likely start to feel the effects and after 2 days, it usually becomes a real burden.

In the case of a gasoline generator, the answer lies in fuel availability. A single 5 gallon can of gasoline will last between 3 days in a small generator and 12 hours in a large one. The issue is a little more of a hassle because if you have no power, neither do businesses around you. The gas pumps at the gas station run on electricity.

You can have the generator and the empty gas can, but really run into a challenge trying to find gas. This is the same problem that other people are having and when they do find the gas station operating, they take as much as they can hold. This usually makes quick work of the stations tanks. They may have power but nothing to sell.

In the case of Mobile Power Center you would eventually deplete the battery storage and it will shut itself off until you can find a way to charge it up again.

Option 1

If you purchased Mobile Power Center and wanted the capability to recharge the battery in a severe outage, you could deploy the 12 VDC solar panel. The unit can accept up to a 240 W array of 12 VDC panels. Please email us for solar panel kit purchase at support@sumec-na.com, or call our toll free hotline: 1-866-902-9690.

This panel will allow you to recharge the battery from the sun and continue to use the Mobile Power Center every day as long as the sun is shining and you manage your power loads. You cannot take more energy in a day than the panel array can replace in a day.

Your main concern to manage would be cloudy or overcast days where solar production was very low so power usage would need to drop as well.

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Option 2

Use the Mobile Power Center and a small gasoline generator as a team effort. Run your generator and 12 VDC solar panel to charge the Mobile Power Center during the day. Use the Mobile Power Center alone at night to cut noise and fuel usage.

Option 3

Do the 3 way system. Mobile Power Center + 240 watts of panels + gasoline generator. Use the Mobile Power Center and panels as a primary and only use the generator on cloudy or low sunlight days to recharge the unit.

Can Mobile Power Center be used for other activities besides power out-ages?

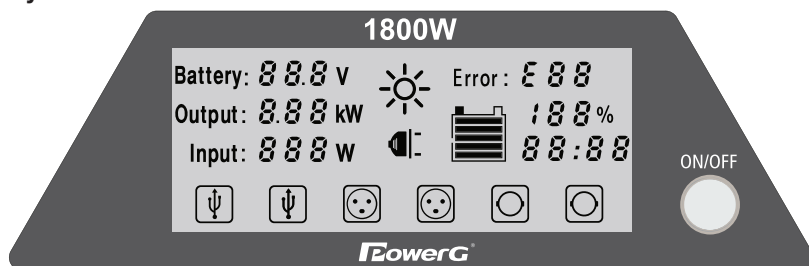
There are lots of other ways to utilize Mobile Power Center.

Outdoor activities like sporting events (tail gating, kid's soccer games, camping, and birthday parties at the park) a fully charged Mobile Power Center can be transported and used almost anywhere. Attach the 12 VDC solar panel and you can extend your power capabilities even longer.

Jobsites / Construction sites are another area where power availability can be limited. Mobile Power Center could be used to power many types of corded power tools within the unit's wattage capabilities.

FEATURE

1. System Control Panel



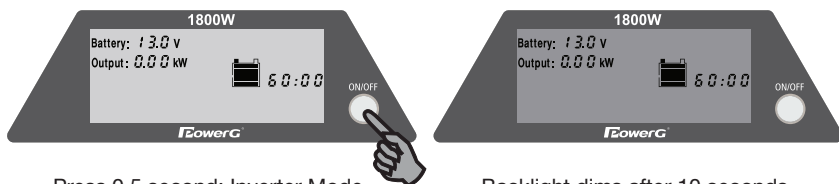
Press ON/OFF button for 0.5 second: Self-test mode

(Note: Real color of display is blue)

Figure 1 Control Panel

Power On

To power-on the PG1800WP, press and hold the ON/OFF button for approximately one-half second and release the button when the unit beeps. The PG1800WP will then be activated and the LCD panel will display the self-test's progress. All indicators will be illuminated at the same time. After the self-test completes (approximately 5 seconds), the LCD display panel will be illuminated and then turn off after approximately 10 seconds.



Press 0.5 second: Inverter Mode

Backlight dims after 10 seconds

Figure 2 Turn on the PG1800WP

Power Off

Press and hold the ON/OFF power button for approximately 0.5 second, release when the unit beeps. The PG1800WP will be turned off, AC outlets will be unpowered, but the USB and 12 VDC outlets can still be used.

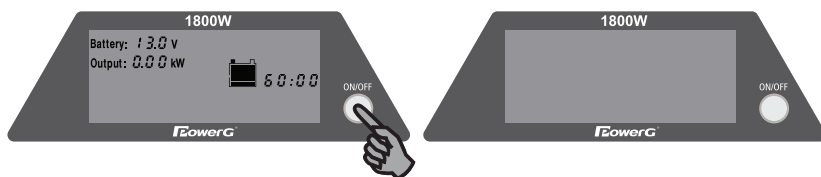


Figure 3 Turn off the PG1800WP (Press 0.5 second)

FEATURE

LCD Display Backlight

The PG1800WP's LCD display backlight comes pre-programmed from the factory to briefly light the panel and then turn off automatically. If you prefer, you can reprogram the backlight to stay on until turned off manually instead of turning off automatically.

To switch the backlight to manual-mode, press and hold the ON/OFF button for approximately four seconds. After approximately one-half second, the unit will beep once, but continue pressing the ON/OFF button down for approximately three more seconds until the unit beeps again and the back light is illuminated.

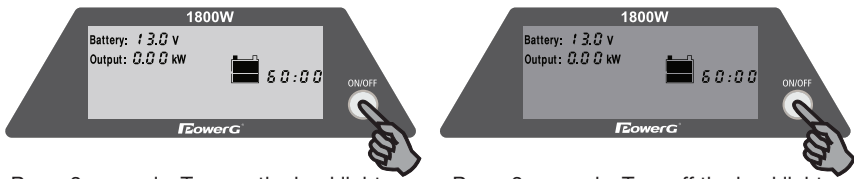


Figure 4 Turn ON/OFF the backlight

To reprogram the backlight so that it turns off automatically, repeat the above procedure.

Battery: 12.8 v

The battery indicator displays the battery's current voltage level. The battery's voltage is shown in DC volts.

Output: 1.00 kw

The output indicator displays the total power being pulled from the AC inverter or the DC terminals.

Input: 200 w

The input indicator displays the total power being input into the PG1800WP from the solar panel(s) or the AC charger.

Error: E01

The error indicator displays an error code, if any. See also the Troubleshooting section beginning on page 19.

Time remaining indicator 88:88

The battery capacity indicator displays the percentage of battery's capacity remaining.

➤ **NOTICE:** Remaining time is calculated based on 100 Ah battery. There will be discrepancy between the display and the actual working time if you used other kind of Lead-acid battery.

Battery capacity indicator: 100%

The battery capacity indicator displays the percentage of battery's capacity remaining.

FEATURE

➤ **NOTICE:** If Error code “E05” is displayed, the battery should be recharged using the AC charger, solar charge controller, or any of the other available charging options.

Solar charging indicator ☀

When the PG1800WP is connected to a solar panel, the solar charging indicator will be illuminated. When the solar panel is initially connected (or disconnected), the LCD display's backlight will be illuminated for approximately five seconds and the unit will beep.

AC charging indicator 🔌

The AC charging indicator will be displayed when connecting to any sources of AC power. Upon initial connection, the AC charging indicator will be illuminated, the LCD display's backlight will be illuminated for approximately five seconds and the PG1800WP will beep.

Battery level indicator 🔋

The battery level indicator displays the battery's approximate remaining capacity.

USB output indicator 🔌

The USB indicator will be illuminated if output loads (devices) are connected to any of the USB ports. If nothing is connected to any of the USB ports, the indicator will be dimmed.

AC output indicator 😊

If a load (device) is connected to any of the AC outlets, the AC output indicator will be illuminated. If no loads / devices are connected to any of the AC outlets, the indicator will be dimmed.

➤ **NOTICE:** There is no AC output power if the inverter is not turned on.

DC car lighter output indicator 🔌

The DC car lighter output indicator will be illuminated if any load / device greater than 1 amp is plugged into the DC car lighter port. If no load / device greater than 1 amp is plugged into the port, the indicator will be dimmed.

➤ **NOTICE:** The DC car lighter indicator will not be illuminated if the PG1800WP is turned off, but power will still be available at the DC car lighter port.

FEATURE

2. Output Panel

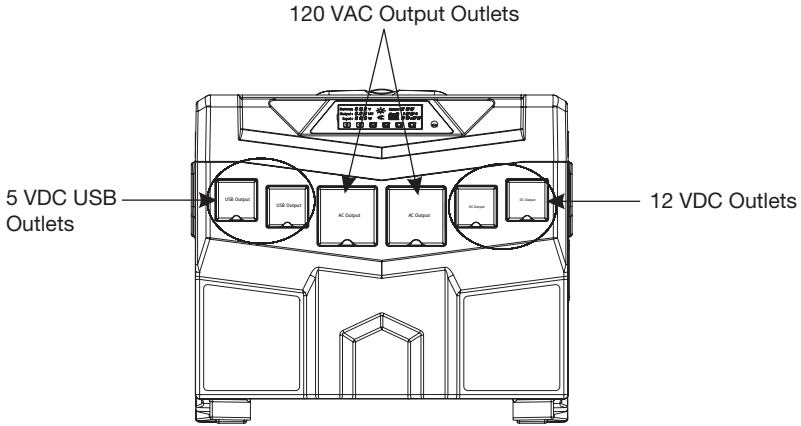


Figure 5 Output panel

The Output Panel contains a total of six electrical outlets:

- Two 5 VDC USB outlets provide power whether or not the PG1800WP is powered on.
- Two 120 VAC outlets provide 120 V / 60 Hz power only when the PG1800WP is powered on.
- Two 12 VDC car lighter outlets provide power whether or not the PG1800WP is powered on.

➤ **NOTICE:** If the PG1800WP's battery voltage is lower than 10.2 VDC, the USB & 12 VDC outlets will turn off automatically.

3. Input Panel

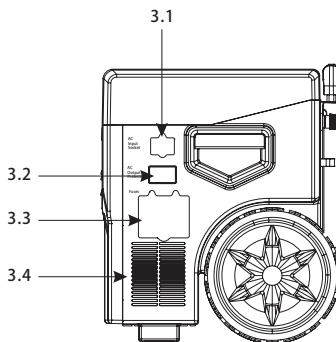


Figure 6 Input panel

3.1 AC charging interface: connect to 120 VAC source of AC power.

FEATURE

3.2 GFCI: 20 A Built-in GFCI for 120 VAC output.

3.3 Fuse set:

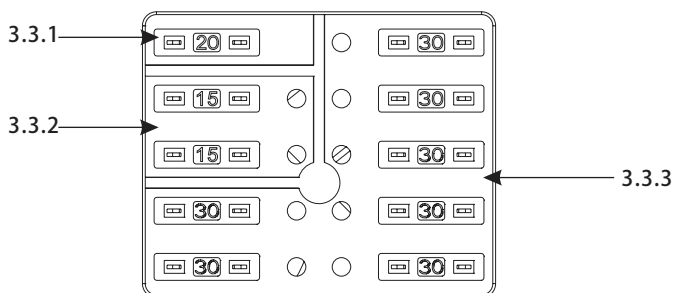


Figure 7 Fuse set

3.3.1 Solar input fuse: one 20 A / 32 VDC.

3.3.2 DC car lighter output fuses: two 15 A / 32 VDC.

3.3.3 Jump start fuses: seven 30 A / 32 VDC.

3.4 Vent: the vent for inner fan.

⚠ WARNING: Always maintain at least 6" (15 cm) of empty air space around all sides of the PG1800WP's cabinet to allow for proper cooling whenever the unit is operating.

4. Back Panel

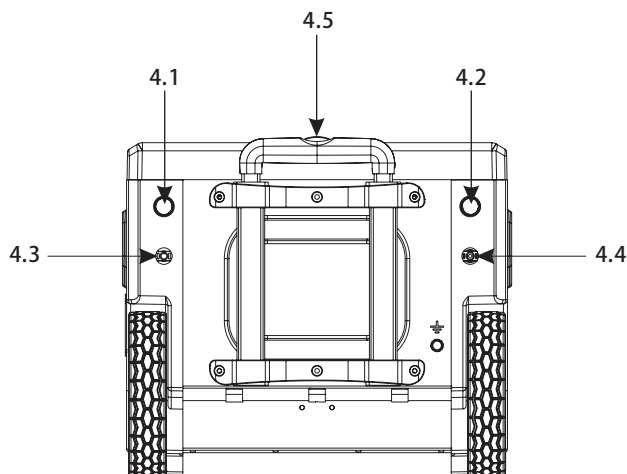


Figure 8 Back panel

4.1/4.2 12 VDC terminals: Jump start a car by connecting the red positive (+) and black negative (-) terminals to the battery of the car.

FEATURE

4.3/4.3.3 Solar charging input: Charge the PG1800WP's battery by connecting the red positive (+) and black negative (-) terminals to the solar panel.

4.5 Telescopic handle

Telescopic handle release button: Use your thumb to press the release button, then pull and extend the telescopic handle. (see the illustration below)

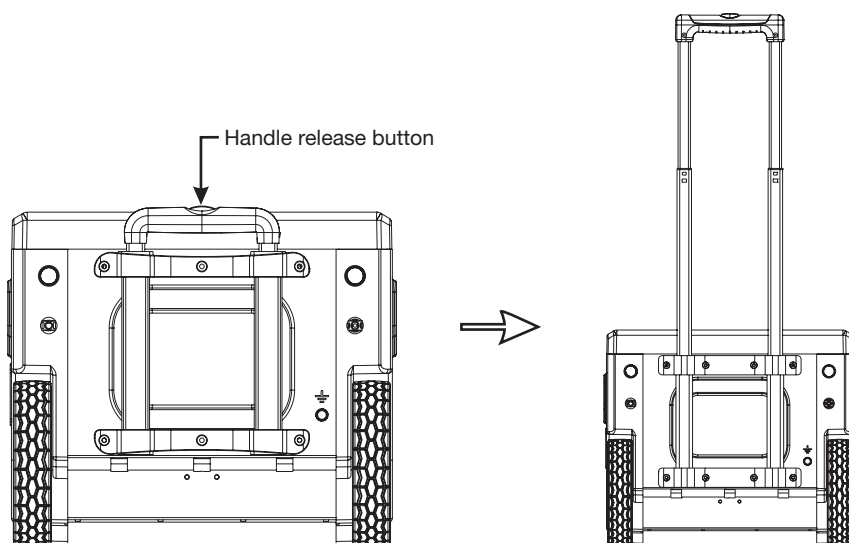
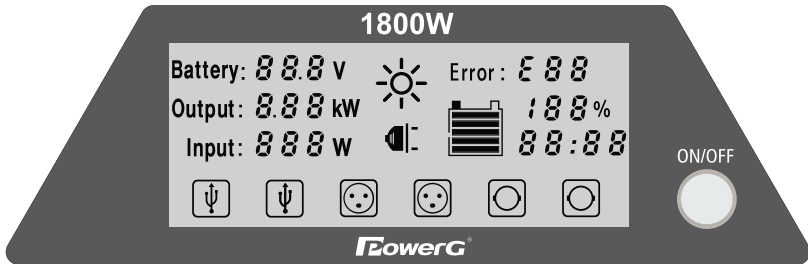


Figure 9 Telescopic handle

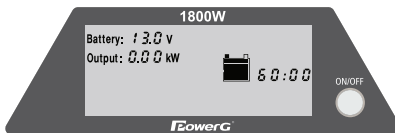
OPERATION

1. Working mode

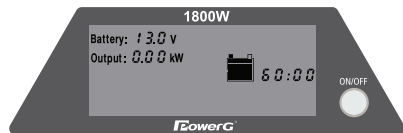
Output-Only Mode – When the PG1800WP is in output-only mode, no input power is connected, but loads/devices are connected to the system. To enter the output-only mode, power on the PG1800WP by pressing and holding the ON/OFF power button for approximately one-half second and release the button when the unit beeps.



The self-test display appears when the PG1800WP is initially powered on



Output-only mode display



Backlight dims after 10 seconds automatically

Figure 10 Output-only Mode

When the PG1800WP is in output-only mode, following indicators will be displayed:

- **Battery voltage:** 12.8 V
- **Output power:** 1.00 kW
- **Battery level**
- **Remaining work time** 78:00

Whenever a device / load is plugged in or unplugged, related output indicator will be illuminated or dimmed, the backlight will be illuminated for 5 seconds and the beeper will sound. If the PG1800WP detects an error, the LCD display's backlight will turn red and begin flashing. The relevant error code will be displayed and the beeper will sound every second.

If the PG1800WP's level falls below 10.5 V, the unit will automatically shut off.

Charging-Only Mode - Input power is connected (from either AC or solar) and no output loads / devices are connected.

When connecting to the solar panel or any sources of AC power, the PG1800WP will beep and all shaded indicators will be illuminated for approximately three seconds, the backlight will be illuminated for ten seconds and then dim.

OPERATION

While in charging-only mode, following indicators will be displayed:

- **Battery capacity** 100%
- **Input power** 100 w
- **Battery level** 

Depending on the energy input's source, the related charging indicators will also be illuminated:

- **Solar charging indicator** 
- **AC charging indicator** 

Simultaneous Charging and Output Mode - One or more loads/devices are connected to outlets and one or more sources of input power are connected.

While in simultaneous charging and output mode, the following indicators will be displayed:

- **Battery capacity** 100%
- **Input power** 230 w
- **Battery level** 
- **Battery voltage** 12.8 v
- **Output power** 1.00 kW

Depending on the outlets being used, the related indicators will also be illuminated:

- **AC Output indicator** 
- **USB indicator** 
- **12 VDC car lighter indicator** 

Depending on the outlets being used, the related indicators will also be illuminated

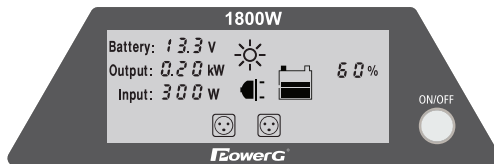


Figure 11 Simultaneous Charging and Output Mode with AC output

Depending on the outlets being used, the related indicators will also be illuminated:

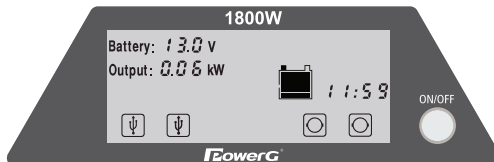


Figure 12 Simultaneous Charging and Output Mode with USB and car lighter output

OPERATION

2. Recharging Mobile Power Center

2.1 Charging Options

There are two charging options are possible with the PG1800WP:

- Charging with the built-in AC Charger.
- Charging with solar panels.

Charging with the Built-in AC Charger

To use the built-in AC charger, follow these steps:

- 1) Insert the AC charging cable into AC charging interface.
- 2) Plug the AC charging cable into a standard 120 VAC receptacle.

While the system is charging, the AC charging indicator will be illuminated, the backlight will be illuminated for five seconds and the beeper will sound. A full recharge may take up to 24 hours. The battery indicator will display the battery level during the charging stage.

➤ **NOTICE:** Battery Level Indicator readings will not be accurate until the batteries have “rested” for 15 minutes after charging.

Charging with Solar Panels

12 VDC solar panels rated to produce a maximum of 20 A can be used to charge the PG1800WP via the solar charging input. Please email us for solar panel kit purchase at support@sumec-na.com, or call our toll free hotline: 1-866-902-9690.

To charge with solar panels, follow these steps:

- 1) Plug the solar cables into the solar charging inputs (one-way connectors ensure the polarity is correct).
- 2) Plug the other end of the solar cables into the output of the solar panels.
- 3) While the system is charging, the solar charging indicator will be illuminated, the backlight will be illuminated for 5 seconds and the beeper will sound.
- 4) With direct sunlight, a typical 60 W solar panel may take up to 30 hours to fully recharge the PG1800WP depending on the intensity of the sunlight on the solar panel.
- 5) The battery indicator will display the battery level during the charging stage.

How to expand the solar panels?

Connecting solar panels in parallel up to 240 W for a 12 VDC system is recommended to shorten charging time. The maximum output current is limited to 20 A.

Using multi adapters (MC4-Y-adapter) to parallel connected solar panels is recommended. More information about multi adapters, please email us at support@sumec-na.com, or call our toll free hotline: 1-866-902-9690.

OPERATION

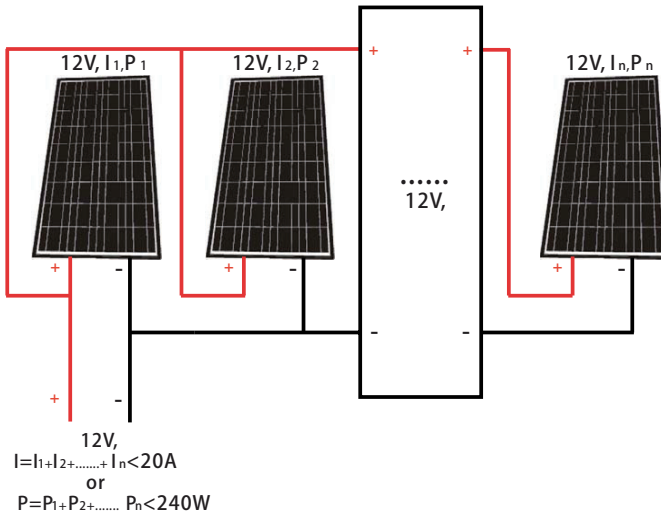


Figure 13 Parallel connected solar panels

➤ **NOTICE:** Solar input exceeding 20 A will trip the PG1800WP's solar charging fuse.

⚠ **CAUTION:** Risk of damage to battery pack

Polycrystalline or Monocrystalline modules for in 12 VDC system may be used for charging the PG1800WP. Using higher voltage panels or amorphous modules can damage the battery pack.

2.2 Battery Self-discharge and Shelf Life

All rechargeable batteries gradually discharge when left idle. Periodic charging is necessary to maintain maximum battery capacity. The AC charger built into the PG1800WP is designed to regulate the charging process, ensuring the battery pack is always fully charged, but never overcharged.

⚠ **CAUTION:** Risk of damage to battery

Due to inherent self-discharge, lead acid batteries must be charged at least every three (3) months, especially in a warm environment. Leaving a battery in a discharged state, or not recharging every 3 months, may cause permanent damage to the battery.

⚠ **CAUTION:** Risk of damage to battery

Do not attempt to charge the PG1800WP's battery if it is frozen. A frozen battery should be gradually warmed to 32°F (0°C) before charging.

TROUBLESHOOTING

This section will help you quickly identify the source of most problems that can occur with the PG1800WP.

If you have a problem with the PG1800WP, please review this chapter before contacting customer support.

If you are unable to solve a problem and need to contact customer support, record the details on the form “Your System’s Information” on page 30.

Error codes

The following error codes may be displayed on the LCD display if the described fault conditions occur.

Table 1 Error Codes for Troubleshooting the PG1800WP

Error Code Displayed	Description of Error	Description of Condition	Resolution
<i>ED1</i>	DC Input Under Voltage Shutdown	Unit shuts down. The input voltage has dropped to below the operation voltage limit of 10.7 VDC. An alarm continues to beep once every second until input voltage drops to 10.5 VDC. The backlight turns red and flashes. After the alarm continues for one minute, the backlight and alarm will turn off. Only the error code will be shown continuously.	The unit will automatically reset once the fault condition is removed. If this condition is not corrected and the unit powers down completely, it will be necessary to press the ON/OFF Button to turn the unit ON again. Charge the battery immediately.
<i>ED2</i>	DC Input Over Voltage Shutdown	Unit shuts down. An input voltage is greater than 15.5 VDC. The backlight turns red and flashes. After the alarm continues for one minute, the backlight and alarm will turn off. Only the error code will be shown continuously.	The unit will automatically reset once the fault condition is removed. Check if the DC input voltage is over the input voltage range.

TROUBLESHOOTING

<i>E03</i>	AC Output Overload Shutdown & AC Output Short-circuit Shutdown	Unit shuts down. An AC load applied to the system in Inverter-mode is above operation limit. Flashing backlight changes from pink to red. After the alarm continues for one minute, the backlight and alarm will turn off. Only the error code will be shown continuously.	Remove excess AC loads. Reset of unit is required. To reset the unit, turn it OFF and back ON.
<i>E04</i>	System Over Temperature Shutdown	Unit shuts down. System internal temperature is above operation limit. The alarm will continue to beep once every second. Flashing backlight changes from pink to red. After the alarm continues for one minute, the backlight and alarm will turn off. Only the error code will be shown continuously.	Remove excess AC loads. Reset of unit is required. To reset the unit, turn it OFF and back ON. Check the system ventilation and reduce the load applied to the system.
<i>E05</i>	DC input Under Voltage Warning	System is still operating but input voltage has dropped too close to the shutdown limit (11.0 to 10.7 VDC). Backlight turns pink color and flashes.	Unit continues to run. If the warning is ignored, the PG1800WP will eventually go into the <i>E01</i> fault condition.
<i>E06</i>	AC Output Overload Warning	System is still operating, but the AC load applied to the system is excessive and may cause the PG1800WP to shut down. Backlight turns pink color and flashes.	Unit continues to run. If the warning is ignored, the unit will eventually go into the <i>E03</i> fault condition.

TROUBLESHOOTING

<i>E07</i>	System Over Temperature Warning	System is still operating, but the system's internal temperature is close to the shutdown limit. Backlight turns pink color and flashes.	Unit continues to run. If the warning is ignored, unit will eventually go to the <i>E04</i> fault condition.
<i>E08</i>	Car lighter port #1 fuse is tripped	DC car lighter output current is more than 15 A. Backlight turns pink color and flashes. Alarm continues until the fuse is replaced.	Reduce the load to DC car lighter outlet. Replace fuse.
<i>E09</i>	Car lighter port #2 fuse is tripped	DC car lighter output current is more than 15 A. Backlight turns pink color and flashes. Alarm continues until the fuse is replaced.	Reduce the load to DC car lighter outlet. Replace fuse.
<i>E10</i>	Car lighter port #1 and port #2 fuses are tripped	DC car lighter output current is more than 15 A. Backlight turns pink color and flashes. Alarm continues until the fuses are replaced.	Reduce the load to DC car lighter outlet. Replace fuse.

➤ **NOTICE:** If different errors occur at the same time, *E08*, *E09* and *E10* will be displayed with high priority. Other error codes will be displayed only after the highest priority error is resolved and the system is restarted.

SPECIFICATION

This chapter contains the electrical specifications of the PG1800WP.

Inverter

Parameter	Inverter
Input Voltage Range	10.7 - 15.5 VDC
Rated Input Voltage	12.5 VDC
Maximum Input Current	190 A
Output Voltage (at no load)	120 VAC / ± 5 VAC
Output Frequency	60 Hz / ± 1 Hz
Continuous Output Power	1440 W
Maximum Output Power	1800 W
Continuous Output Current	12 A
Surge Rating	3600 W
Surge Current	30 A
Output Waveform	Modified Sine Wave
Inverter Output Efficiency	> 85%
Storage Temperature	Ideal operating temperature is less than 77°F(25°C)
Protection	Eight 30 A / 32 VDC fuses protecting the DC input terminal

Built-in Charger

Parameter	AC Input charger
AC Input Voltage Range	90 - 130 VAC
Rated AC Input Voltage	120 VAC

SPECIFICATION

Maximum Charging Power		80 W / $\pm$ 10 W
AC Input Frequency		60 Hz / $\pm$ 1 Hz
Output Voltage	Bulk	14.7 VDC / $\pm$ 0.2 VDC
	Float	13.7 VDC / $\pm$ 0.2 VDC
	Recharge	12.6 VDC / $\pm$ 0.2 VDC
Charging Process		Three-Stage Charging Process: • Bulk Stage • Absorption Stage • Float Stage
Exchange Efficiency		> 75%
Protection		High temperature, input-limited protection

Solar Charger

Parameter		Solar charger
Solar Input Voltage Range		10 - 24.5 VDC
Maximum Output Current		20 A
Output Voltage	Bulk	14.7 VDC / $\pm$ 0.2 VDC
	Float	13.7 VDC / $\pm$ 0.2 VDC
	Recharge	12.6 VDC / $\pm$ 0.2 VDC
Charging Process		Three-Stage Charging Process: • Bulk Stage • Absorption Stage • Float Stage
Exchange Efficiency		> 95%
Protection		One 20 A / 32 VDC fuse protecting the DC input terminal

REPLACEMENT & INSTALLATION OF THE BATTERY

Use only batteries meeting the following criteria:

- a. Battery type: Sealed lead-acid, AGM.
- b. Nominal voltage: 12 VDC.
- c. Capacity: 60 Ah or 80 Ah or 90 Ah or 100 Ah.
- d. Battery should comply with UL1989 standard.
- e. When installing the battery, make sure the polarity connections are correct.

➤ **NOTICE:** Battery has to be recharged immediately once purchased. All rechargeable batteries gradually discharge when left standing. Periodic charging is necessary to maintain maximum battery capacity.

⚠ WARNING: Study all battery manufacturers' specific precautions and warnings in advance before assembly. Incorrect connection may cause a short circuit and personal injury. Follow all recommended guidelines. Refer to page 24 for more recommended information.

⚠ CAUTION: Risk of explosion if battery is replaced by an incorrect type. Dispose of used battery properly. Do not dispose of battery in a fire. The battery may explode.

⚠ CAUTION: Servicing of battery should be performed only by a factory-authorized service center. When replacing the battery, replace with the same type of battery.

⚠ CAUTION: Do not open or mutilate battery. Released chemical is harmful to the skin and eyes and is toxic.

⚠ CAUTION: A battery can present a risk of electrical shock.

The following precautions should be observed when working on battery:

- 1) Remove watches, rings, or other metal objects.
- 2) Use tools with insulated handles.
- 3) Wear rubber gloves and boots.
- 4) Do not lay tools or metal parts on top of battery.
- 5) Disconnect charging source prior to connecting or disconnecting battery terminals.
- 6) Determine if battery is inadvertently grounded. If inadvertently grounded, remove source from ground. Contact with any part of a grounded battery can result in electrical shock. The likelihood of such shock can be reduced if such grounds are removed during installation and maintenance.

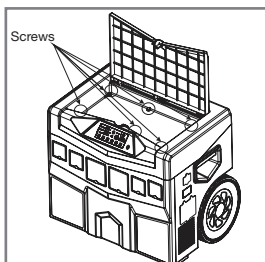
What's required for install?

- Phillips Screwdriver
- Small Slot Screwdriver
- Electrical Tape

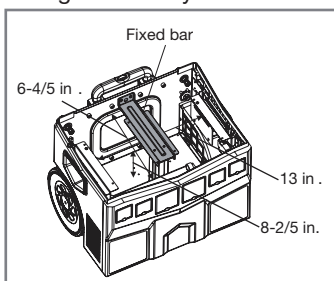
REPLACEMENT & INSTALLATION OF THE BATTERY

The replacement steps of the battery are as follows:

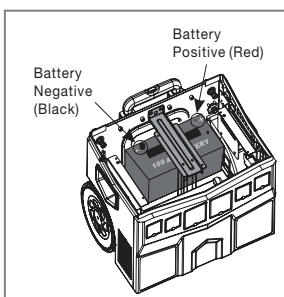
- 1) Remove the six screws and open the upper cover.



- 2) Remove the fixed bar securing the battery.



- 3) Remove the connection of the POSITIVE (RED) cable from the battery, wrap the lug of the cable with electrical tape.



- 4) Remove the connection of the NEGATIVE (BLACK) cable from the battery, wrap the lug of the cable with electrical tape.

- 5) Remove the battery.

- 6) Put into the new battery and make it be in right position. If the new battery is smaller than the previous one, place the new battery in the center position. This will help to stabilize the unit's center of gravity, making it easier to pull.

- 7) Confirm the batteries positive and negative terminals are aligned with the

REPLACEMENT & INSTALLATION OF THE BATTERY

PG1800WP's positive and negative batteries.

8) Unwrap POSITIVE (RED) lug, connect the cables to the POSITIVE (RED) terminal of the battery and tighten.

9) Unwrap NEGATIVE (BLACK) lug, connect the cables to the NEGATIVE (BLACK) terminal of the battery and tighten.

USED BATTERY DISPOSAL

Batteries contain materials that are hazardous to the immune system, such as mercury, which can lead to health damage.

Improper Battery Storage & Disposal:

The following list consists of things not to do with batteries:

- Do not bury batteries.
- Do not burn batteries.
- Do not store them with metal, or different types of batteries.

Proper Battery Storage & Disposal:

Storage

Unused batteries contain the same chemicals as those of used batteries and therefore pose the same threat of contamination and fire. If a battery comes into contact with another object, in particular metal or objects that contain moisture, the possibility of that battery to leak acid or cause a fire is increased. It is important to store batteries (new and used) in a clean, dry enclosed area with their terminals protected from contact with other objects.

Disposal

There are several options for properly disposing of used batteries:

- Return the batter to the place of purchase.
- Most stores that sell car batteries will also accept them for recycling. There may be a fee for this service.
- A metal recycler may pay you for your car battery. Look in the yellow pages or internet under "Recycling Centers" for a list of metal recyclers in your area.

BATTERY OPERATING TIME

PG1800WP output 120 VAC can be used to drive electrical appliances such as lamps, computers, electric tools, etc.

USB output 5 VDC can supply power to cellular phone and digital products such as MP3 players, tablets, etc.

Car lighter plug output 12 VDC can supply power to electrical products using 12 VDC.

Working time of load: using 100 Ah battery as example (these data are for reference only).

Office area	Watts	Operating time
Laptop computer	65 W	15 Hrs
17" LCD Monitor	35 W	28 Hrs
Mobile telephone	2.5 W	360 Hrs
Table lamp (40 W)	40 W	22 Hrs
Emergency area		
13" CRT TV	50 W	18 Hrs
20" LCD TV	370 W	2 Hrs
Home area		
18 cu. ft. fridge	120 W	7 Hrs
Microwave	1000 W	35 min
Coffee Maker	1200 W	30 min

WARRANTY

What does this warranty cover?

This Limited Warranty is provided by Sumec North America and covers defects in workmanship and materials in your PG1800WP.

This warranty period lasts for 12 months from the date of purchase by the original purchaser. You will be required to demonstrate proof of purchase to make warranty claims.

This Limited Warranty is transferable to subsequent owners but only for the unexpired portion of the Warranty Period. Subsequent owners also require original proof of purchase as described above (e.g., a copy of your original sales receipt).

What will Sumec North America do?

Sumec North America will, at its option, repair or replace the defective product free of charge, provided that you notify Sumec North America of the product defect within the Warranty Period and provided that Sumec North America, through inspection, establishes the existence of such a defect and that it is covered by this Limited Warranty.

Sumec North America will, at its option, use new and/or reconditioned parts in performing warranty repair and building replacement products. Sumec North America reserves the right to use parts or products of original or improved design in the repair or replacement. If Sumec North America repairs or replaces a product, its warranty continues for the remaining portion of the original Warranty Period or 90 days from the date of the return shipment to the customer, whichever is greater. All replaced products and all parts removed from repaired products become the property of Sumec North America.

How do you get service?

If your product requires troubleshooting or warranty service, contact Sumec North America at:

- Telephone: 1-866-902-9690
- E-mail: support@sumec-na.com

RETURN POLICY

Should you need to return your PG1800WP, the following information will help you process your return:

No returned merchandise will be accepted without a Return To Vendor (RTV) number. Please call our toll free number and speak with a customer service representative to obtain an RTV# along with shipping instructions.

Unopened Merchandise:

There is a 30-day money-back guarantee on unopened products or accessories.

RETURN POLICY

Return using your preferred shipping method.

➤ **NOTICE:** some products include free shipping, so if you return one of these products, the actual outbound shipping costs will be deducted from your return refund.

Opened Merchandise:

There is a 30-day return policy with a 25% restocking fee to cover testing, cleaning and repackaging expenses for products that have been opened. Opened returns must be in sellable condition with original materials and packaging.

➤ **NOTICE:** some products include free shipping, so if you return one of these products, the actual outbound shipping costs will be deducted from your return refund.

Defective Products:

We encourage you to test your product(s) within 15 days of receipt so we can quickly remedy any mechanical problems. If you believe you have a defective product, please contact one of our service technicians toll-free at 1-866-902-9690. Please have your model number and serial number available for fastest service. In most cases, simple troubleshooting instructions or mailed replacement parts will quickly resolve the issue.

Cancelled Orders:

An order that has shipped cannot be cancelled. If an order has shipped, it can be returned under our standard return policy.

Damaged Products:

Please inspect the products for obvious signs of damage prior to signing the delivery receipt from the carrier.

Customer Suspects Damage:

On occasion, the outer carton may look damaged, but the product inside the box is perfectly fine. If you suspect concealed damage, please write "Possible Freight Damage" on the delivery receipt while the driver is present. In this way, if you later discover that the product is damaged, the freight claim can be resolved quickly.

Obvious Damage:

Do not sign for damaged products. If your product arrives clearly damaged, please (a) REFUSE DELIVERY and (b) Call Us Immediately, so we can process the appropriate claims and coordinate a speedy exchange for you.

YOUR SYSTEM'S INFORMATION

As soon as you open your Mobile Power Center package, record the following information and be sure to keep your proof of purchase.

Serial Number _____

Model Number PG1800WP

Purchased From _____

Purchase Date _____

If you need to contact Customer Service, please record the following details before calling. This information will help our representatives give you better service.

Alarm sounding? _____

Error Codes _____

Appliances operating when problem occurred _____

Description of problem _____