Uninterruptible Power Supply (UPS)
BL50T/BL75T/BL100T
Instruction Manual

This manual describes the significant points to be noted to maintain the safety while using the UPS. Therefore, ensure reading it carefully before installation and start using the UPS.

Store this manual near the UPS so it can be referenced whenever required. This instruction manual may not be reproduced in whole or in part without the prior permission of OMRON.

The contents of this instruction manual may change in the future, without notice.

A warranty is enclosed in the product package.
Introduction

Features of the Product

Thank you for purchasing OMRON's "Uninterruptible Power Supply (UPS)".

- The Uninterruptible Power Supply (UPS) is a device that protects such equipment as a computer from power outages, voltage fluctuations, instantaneous voltage drops, and voltage surges caused by lightning and so on (phenomena in which an extremely high voltage is generated suddenly).

- In normal operation, the UPS directly outputs commercial power input. When the input voltage becomes low or high, the UPS converts commercial power to a direct current, and then reconverts it to an AC voltage of stable sine waveform to output power. The UPS adopts the line-interactive power supply system (on-line type power supply system), which continues sine-wave output by switching to the power supply from the battery when an error in commercial power such as a power outage and voltage fluctuation is detected. The UPS is especially suitable for use in a place where the power supply environment is bad such as where the voltage fluctuates greatly.

- The output capacity of each model is as follows.
  - BL50T: 500VA/450W
  - BL75T: 750VA/680W
  - BL100T: 1000VA/900W

About the Usages of Uninterruptible Power Supply (UPS)

- The UPS is designed and manufactured for OA equipment. Never use this software for the following purposes, which require extremely high reliability and safety.
  - Medical devices that directly affect human lives.
  - Applications that may lead to human injury. (e.g. applications that directly affect the service, operation, and control of aircrafts, ships, trains, elevators, and others.)
  - Applications subject to vibration at all times, such as on a vehicle, on a ship.
  - Applications that may cause serious social or public damage or impact when the UPS fails (such as use for mission-critical computer systems, trunk line communication systems, and public transportation systems).
  - Any devices applicable to any of the above.

- For devices that are involved in human safety and significantly affect the maintenance of public functions, special consideration must be given to their operation and maintenance such as duplicating the system and providing emergency power generating equipment.

- Be sure to observe the conditions and environment for usage described in this instruction manual.

- Please contact OMRON Electronic Equipment Customer Support Center when using the UPS for a mission critical system that particularly requires reliability.

- Do not remodel or modify the equipment.

- The UPS complies with the specifications for the Japanese domestic market. Therefore, to export the UPS incorporated in another device, for example, contact us in advance.
  - You may require permission from the Ministry of Economy, Trade, and Industry in accordance with the Foreign Exchange and Foreign Trade Law when exporting this product (including the case in which it is carried by an individual person). Exporting without required permission can result in the punishment by the law.
  - If the voltage or frequency of the power supply is different from the specified one, a failure or fire may occur.
### About Disclaimers

We may not respond to the compensation for any damages even if they are caused by the use of our products, including the abnormalities and failures of the equipment, connection devices, and software.

- Please read the safety precautions described in the beginning carefully before use.
- To transfer or sell the UPS to a third party, attach all the documents and other accessories contained in the product package to the UPS.
  
  It is supposed that the UPS is to be used in accordance with the conditions specified in the attached documents.
  
  - The details related to safety are described in this document. Read them carefully before start using the UPS.

- Windows is a registered trademark of Microsoft Corporation in the USA and other countries.
- Other company names and product names are the trademarks, or registered trademarks belong to their respective owners.

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Procedure from installation to operation

Shows the procedure from installation to operation.

Start

Read “Safety precautions”
Page 8

Remove the product from the package and check the contents
1. Preparation

User Registration

Perform installation and connection
2. Installation and connection

Are you using either of the following functions?
- UPS monitoring software
- Contact signal
- Option card

Yes

5. Processing for the automatic shutdown of the connected devices
6. Contact signal functions
7. How to use optional cards

No

Check the operation
3. Check and start operation

(Charge the battery)

Operate
3. Check and start operation

Perform maintenance and inspection
4. Maintenance and Inspection

*The UPS has been charged prior to shipment. However, if it is left for a long period of time, it may have self-discharged. We recommend charging the UPS before using it.

Replace the battery
4.2 Replacing the battery

Perform maintenance and inspection

The battery must be replaced

Yes

No
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Safety Precautions

Safety Precautions

Describes important matters for safe use. Please read carefully before installing or using the unit.

- The symbols and their meanings regarding the safety of this Instruction Manual are as follows.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>!!!</td>
<td>Danger</td>
</tr>
<tr>
<td>!</td>
<td>Caution</td>
</tr>
</tbody>
</table>

This symbol indicates that incorrect use may cause death or severe injury.

This symbol indicates that incorrect use may cause injury or property damage.

※ Property damage represents extended damage to houses, household effects, livestock, and pets.

🚫: This indicates prohibition (what you must not do). For example, 🚫 indicates that disassembling is prohibited.

⚠️: This indicates obligation (what you must do). For example, ⚠️ indicates that an earth ground connection is required.

Note that even a point described with the Caution symbol could result in a serious event depending on the situation.

Make sure of paying attention to these symbols containing critical indications.

⚠️ Danger (product applications)

Never use this unit for applications that demand extremely high reliability and safety shown as follows.

- The UPS is designed and manufactured for OA equipment (including PC).

- Applications such as medical equipment and systems that are directly related to the safety of human life.

- Applications that directly impact on human safety. (E.g., applications that are directly related to the operation, driving, and control of vehicles, elevators, etc.)

- Applications that may cause serious social or public damage when they fail. (E.g., applications for mission-critical computer systems, or trunk line communication systems.)

- Other applications based on the above
Caution (For installation and connection)

When carrying the UPS, pay attention to its weight and balance, and when using it, put it in a stable and robust place.

- There is a risk of injury if the product falls or drops.
- Weight:
  - BL50T: Approximately 5.2kg
  - BL75T: Approximately 5.8kg
  - BL100T: Approximately 6.4kg
- In a case of dropping the UPS, stop using the unit and immediately ask for the inspection and repair.
  For information about repair, contact Omron Electronics Repair Center.
- Be careful about crush injury when your fingers are in between the installation surface and the bottom surface of the UPS.

Caution (For installation and connection)

Keep the plastic package bags away from children.

- Avoid the risk of a child playing with it to suffocate.

Be sure to connect the "AC input" of the UPS to a rated input voltage (100VAC) and frequency 50/60Hz commercial power supply.

- Connecting to a power outlet (commercial power supply) with a different voltage and frequency may cause a fire.
- The UPS may fail.

In case of an abnormality (abnormal noise/odor), stop the output by turning off the "Power" switch on the UPS and pull the "AC input" plug from the power outlet.

Install the "AC input" plug in such a way that it can be immediately pulled out from the power outlet.

- For safety, follow the above instructions when maintaining the connected equipment as well.

Do not connect the half-wave rectifier where the current flows only in a half cycle of AC power supply, such as dryer and some solenoid valves.

- Overcurrent may damage the Uninterruptible Power Supply.

Connect to the power outlet (commercial power supply) with the following current capacity.

- BL50T: 7.5A
- BL75T: 12A
- BL100T: 15A

- Power wiring can catch heat.
- When a device with the maximum output capacity is connected, the current flows as follows.
  - BL50T: 7.5A
  - BL75T: 12A
  - BL100T: 15A
## Safety Precautions

### Make sure of setting up the earth connection (grounding.)
- Check the shape of the power outlet’s plug, and insert the UPS's "AC input" plug as-is.
Without an earth connection, the unit can fail or cause an electric shock due to the electric leakage.

### Do not disassemble, repair, or modify.
- Electric shock or fire can occur.

### Do not install in an undesigned direction.
- There is a risk of injury if the product falls or drops.
- Do not install in the direction other than specified; otherwise, the battery leakage cannot be treated.

### Do not use the UPS in an environment where the highest temperature becomes more than 40°C.
- Otherwise, the battery may deteriorate rapidly and cause fires.
- The UPS may fail or malfunction.

---

### Caution (at installation and connection)

The use and storage environment should be in the specification scope.

### Do not install or store in the following places.
- Do not store at the places where the humidity is lower than 10% or higher than 90%.
- Do not use at the places where the ambient temperature is lower than 0 degrees Celsius or higher than 40 degrees Celsius. (No condensation)
- Do not use at the places where the humidity is lower than 25% or higher than 85%.
- Do not use or store at the following places: sealed places such as a cabinet without gap; places where a flammable gas or corrosive gas exists; places that are extremely dusty; places that are exposed to direct sunlight; places where vibrations or impacts may occur; places where sodium content and water droplets exist; outdoors; and others
- Failure to observe the above may cause an accident such as a fire.

### Do not connect the devices that exceed the output capacity of the UPS.
You can add a connected device by using a power strip. In such a case, make sure that when a connected device is added, the current capacity of the power strip is not exceeded.
- The UPS detects overload and stops its output operation.
- The table tap wiring may catch the heat and cause a fire.

### Do not pull a cable.
To use a cable, do not pinch or forcibly bend it.

### Do not use a folded cable.
- Electric shock or fire can occur due to the cable damage or overheat generation.
- Stop using the UPS if the cable has damage and immediately ask for the repair.
For information about repair, contact Omron Electronics Repair Center.

### All the accessories contained in the product package can be used for the UPS only. Do not use any of them for other devices.
- Make sure of observing the followings for the safe use of equipment.
<table>
<thead>
<tr>
<th>Safety Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Do not block the air vent holes (top, rear, and sides).</strong></td>
</tr>
<tr>
<td>● The internal temperature may rise, eventually damaging the UPS or deteriorating the battery.</td>
</tr>
<tr>
<td>● Keep the unit away from 5 cm or more from the wall.</td>
</tr>
</tbody>
</table>

| **Do not connect the voltage converter and insulating transformer to the output side.** |
| ● The Uninterruptible Power Supply (UPS) may fail or malfunction due to overcurrent. |
| ● The Uninterruptible Power Supply (UPS) may fail or malfunction even when the above devices are connected to the input side. Ensure to check the performance before use. |

| **Do not connect devices that don't run on the commercial power supply.** |
| ● When a device error occurs, the UPS performs bypass operation, so that commercial power is supplied to the connected devices as-is. |
Caution (for use)

Do not make it wet or put water on it.

When the UPS falls, stop using it.
- Electric shock or fire can occur.
- When the UPS becomes wet or drops, stop using it, pull out the AC input plug from the outlet, and ask for the inspection and repair.
- For details on repair, contact the Omron Electronic Device Repair Center.

Replace the battery as soon as it reaches end of life, or discontinue the use of the UPS.
- If the UPS continues to be used as-is, a battery leak or internal short-circuit may occur, causing fire or an electric shock.

<table>
<thead>
<tr>
<th>Ambient temperature</th>
<th>Expected life</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 degrees Celsius</td>
<td>10 years</td>
</tr>
<tr>
<td>30 degrees Celsius</td>
<td>8 years</td>
</tr>
<tr>
<td>40 degrees Celsius</td>
<td>5 years</td>
</tr>
</tbody>
</table>

※ The table on the left shows the expected life under the standard usage conditions, not the guaranteed values.

Wipe off dust on the "AC input" plug and the "power output outlet" occasionally with dry cloth.
- It may cause a fire if the dust residues for a long time.
- Stop all the connected equipment and the UPS and unplug the "AC input" plug from the power outlet (commercial power supply) before wiping off the dust.

Do not use it in a sealed place, and do not cover it.
- It may cause an abnormal heat or fire.
- Depending on your environment, hydrogen gas may be generated from the battery, which can cause burst or explosion. Keep ventilating around the UPS.

In case of unusual noise or odor, smoke, or liquid leaks from inside, immediately turn off the "Power" switch of the UPS.
- Use the UPS in a state where "AC input" plug can be unplugged from the power outlet (commercial power supply) immediately when an abnormality occurs.

If a liquid (liquid electrolyte) leaks from inside, do not touch it.
Doing so may cause blindness or burns.
In case the liquid is in touch with an eye or skin, clean it off with a large amount of clean water and see a doctor.

Do not place things on the top, nor drop heavy objects on it.
- It may cause a fire due to the distortion or breakage of the case, or internal circuit failure.
Caution (for use)

The UPS is equipped with a commercial power direct supply switching circuit that allows the unit to continue supplying power to the connected devices even when the internal control circuit function stops due to a failure or malfunction.

Stop the supply of "commercial power" or pull out the "AC input" plug if you want to stop output.
- Output continues even if all the indicators on the front panel are turned off.
- The ON/OFF operation for output by using the "Power" switch on the front is disabled.

Do not sit, ride, step, or lean on the top of the unit.
- Not only the unit may fail, but also there is a danger of fall injury.

Caution (for maintenance)

Always turn off the "Power" switch of the UPS and pull out the "AC input" plug before starting the maintenance of the connected devices.
- While the Uninterruptible Power Supply (UPS) is running, even if the commercial power supply stops, the output of the UPS does not stop and power is supplied from the outlet.

Do not disassemble, repair, or modify the unit.
- Electric shock or fire can occur.

If a fluid leaks from the battery, do not touch it.
- Doing so may cause blindness or burns.
- In case the liquid contacts your eye or clothes, wash it off with a large amount of clean water and see a doctor.

Do not throw the UPS into fire.
- A lithium-ion battery is incorporated in the UPS. There is a danger of battery explosion, liquid electrolyte leakage, or fire.

Do not insert a metal object in the "power output" outlet of the Uninterruptible Power Supply (UPS).
- It may result in electric shock.

Do not insert a metal object into the battery connection connector.
Prevent a short-circuit between connector terminals.
- It may result in electric shock.

Cautions (for battery replacement)

The battery pack should be replaced on a stable, flat place.
- Hold the battery pack firmly to prevent it from dropping.
- There is a danger of injury caused by a fall or burns caused by leakage (liquid electrolyte).
Cautions (for battery replacement)

Use only the specified battery for replacement.
- It may cause fire.
- Product models: Battery pack for replace:
  - For BL50T: BLB50T
  - For BL75T: BLB75T
  - For BL100T: BLB100T

Do not replace the battery pack in a place where combustible gas exists.
- Connecting the battery may bring to spark, causing explosion or fire.

If a fluid leaks from the battery pack, do not touch the fluid (liquid electrolyte).
- Doing so may cause blindness or burns.
- In case the liquid contacts your eye or clothes, wash it off with a large amount of clean water and see a doctor.

The battery should not be disassembled or modified.
- Touching a fluid leaked from the battery may cause blindness or burns.

The battery should not be dropped or given any strong impact.
- Overheating, smoke, explosion, or fire may occur in the battery.

Do not insert a metal object into the battery connection connector.
Prevent a short-circuit between connector terminals.
- That may cause electric shock, heat generation or burn injury.
- Electric energy may remain even in a used battery pack.

Do not throw the battery in the fire or break it.
- The battery may explode or leak.

The battery may cause an electrical shock or have a short-circuit. Be sure to observe the following precautions when replacing the battery.
- a. Do not wear jewelry such as a watch and ring.
- b. Use an insulated-grip screw driver.
- c. Wear insulated gloves and shoes.
- d. Do not put a tool or metal object on the battery.
- e. Power off the UPS before mounting or removing the battery.
  - Note: Only when using as a UL compliant product
- f. Do not ground the battery.

Ask a person who understands the danger and precautions regarding the battery to replace the battery, or replace the battery under the supervision of such a person.
**Cautions (for transportation)**

Do not drop or give any strong impact when transport it.

- Overheating, smoke, explosion, or fire may occur in the battery.

---

**Important notice**

**Before starting using the product**

After purchasing the UPS, charge the battery (for 8 hours or more) at your earliest.

- If not used for a long time after being purchased, the UPS may become unusable because the characteristics of its battery become inferior.
- Insert the "AC input" plug of the UPS into the outlet (commercial power supply) to charge the battery.

Wait for several hours before start using the UPS when it has been moved from a cold place to a warm place.

- If the UPS is suddenly moved to a warm place, water may adhere to it (condensation). In such a case, if power is supplied without checking the condition, the UPS may fail.

Prepare for an unexpected circumstance, such as the data protection and system redundancy.

- The Uninterruptible Power Supply (UPS) may stop its output due to failure.

**For Connection**

Do not connect a device with large maximum power consumption such as a laser printer to the UPS.

- Since a printer such as a laser printer has a large peak current, connected-capacity overload may be detected when the peak current is reached.

Do not use the UPS for an induction device such as an induction coil, motor, and transformer.

- Depending on the device type, the UPS does not operate correctly due to the influence of an inrush current and so on.

Make sure of checking the operation first before using the UPS in combination with the devices with large fluctuations in power frequency, such as a household power generator.

- When input power is supplied, the UPS automatically recognizes the input power frequency. Connecting the UPS in a state where the input power frequency is out of the specified value can cause the misrecognition of the power frequency, which may result in the abnormal operation. It is okay for the power to switch from the commercial power supply to the generator's power while the UPS is running. However, adjust the frequency of the generator to match with the commercial power supply.

Prevent the short circuit between the output lines of the UPS, or the output line on the earth (grounding.)

- The UPS may fail.
Make sure of all documents are attached to the UPS before transferring or selling the UPS to a third party. The UPS shall comply all the conditions stated in the attached documents.

- The details related to safety are described in this manual. Read them carefully before start using the UPS. Contact the dealer if you lose this manual.

**While using the UPS**

**Power OFF the UPS before disconnecting the commercial power supply.**

- When the commercial power supply stops, backup operation starts. If the frequency of backup operation becomes high, the battery life may be significantly reduced.

**Do not use the unit for the frequent backup operation.**

- The battery will deteriorate and become unable to last for the specified backup time.

**During backup operation, do not insert the "AC input" plug of the UPS into the "power output" outlet of the UPS.**

- The UPS may fail.

**A lithium-ion battery is used in this product.**

- To dispose of the UPS or battery, either request a waste-disposal service company handling lithium-ion batteries or contact the Omron Customer Service Center. Do not dispose of the UPS or battery as ordinary industrial waste. There is a danger of ignition.
  
  For details on recycling, either contact the Omron Electronic Device Replacement Service Center or download a replacement service form from the Omron Website, and send the filled-in form to Omron Replacement Service Center.

**Remove the "grounding terminal" screw on the back before conducting a withstand voltage test or insulation resistance test. When the test is completed, attach and tighten the "grounding terminal" screw firmly.**

- The power supply input line contains the surge absorbing elements, which are subject to destruction with the withstand voltage test.
- Conduct an insulation resistance test in the 250VDC range.

**For Storage**

**When storing the UPS for a long time, put the unit in an environment where the temperature is 25 degrees Celsius or lower, and recharge it for 15 to 30 minutes once a year.**

- Even if not used, the battery discharges itself, and if left unattended for a long time, the battery becomes over-discharged. In that case, the backup time may become shorter, or the battery itself cannot be used anymore.
- 25 degrees Celsius or below temperature is recommended for storing the UPS for a long term.
- Turn OFF the "Power" switch of the UPS during storage.
1 Preparation

1-1 Unpack the product

⚠️ Caution (for installation and connection)

The weight of the UPS by model is approximately 5.2kg for BL50T, approximately 5.8kg for BL75T, and approximately 6.4kg for BL100T. Be careful about the weight when handling the UPS such as when unpacking and transporting the product.

- There is a risk of injury if the product drops.

Open the package and bring out the Uninterruptible Power Supply (UPS) and accessories.

1-2 Check the accessories

Check that all the accessories are contained in the package, and no damage is visually found.

In case you find any defect or other problems, please contact OMRON Electronic Equipment Customer Support Center immediately.

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote ON/OFF connector</td>
<td>One</td>
</tr>
<tr>
<td>3P - 2P conversion plug</td>
<td>One</td>
</tr>
<tr>
<td>USB cable</td>
<td>One</td>
</tr>
<tr>
<td>Battery Replaced Date Label</td>
<td>One</td>
</tr>
<tr>
<td>Serial Number Label (4 per set)</td>
<td>One set</td>
</tr>
<tr>
<td>Label (How to determine operating status)</td>
<td>One</td>
</tr>
<tr>
<td>Product Warranty</td>
<td>One</td>
</tr>
<tr>
<td>User Registration Card</td>
<td>One</td>
</tr>
<tr>
<td>Precautions(Simple user manual)</td>
<td>One</td>
</tr>
<tr>
<td>Guidance for replace service</td>
<td>One</td>
</tr>
<tr>
<td>Guide to User Registration</td>
<td>One</td>
</tr>
<tr>
<td>For using a Shutdown Software</td>
<td>One</td>
</tr>
</tbody>
</table>
1 Preparation

1-2 Check the accessories

- Remote ON/OFF connector
- 3P - 2P conversion plug
- USB cable
- Battery Replaced Date Label
- Serial Number Label (4 per set)
- Product Warranty
- User Registration Card
- Guide to User Registration
- Guidance for replace service
- For using a Shutdown Software
- Label (How to determine operating status)
- Precautions (Simple user manual)
## 1-3 Related products (options)

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replacement Battery Pack</td>
<td>For BL50T: BLB50T</td>
</tr>
<tr>
<td></td>
<td>For BL75T: BLB75T</td>
</tr>
<tr>
<td></td>
<td>For BL100T: BLB100T</td>
</tr>
<tr>
<td>SNMP/Web Card</td>
<td>SC20G2</td>
</tr>
<tr>
<td>Contact Signal I/O Card</td>
<td>SC07</td>
</tr>
<tr>
<td>(Transistor Output)</td>
<td></td>
</tr>
<tr>
<td>Contact Signal I/O Card</td>
<td>SC08</td>
</tr>
<tr>
<td>(Relay Output Type)</td>
<td></td>
</tr>
<tr>
<td>RS-232C Card</td>
<td>SC10</td>
</tr>
<tr>
<td>RS-232C Connection Cable</td>
<td>Length: 2.2m BUC22</td>
</tr>
<tr>
<td>RS-232C Connection Extension Cable</td>
<td>Length: 4.5m BUC17</td>
</tr>
</tbody>
</table>
1-4 Name of Each Part

This section describes the names of parts in the Uninterruptible Power Supply (UPS). Also refer to "2 Installation and connection" (P.22) and "3 Check and start the operation" (P.27) for details on the function of each part.

- Front

- Operation and display sections

A: LCD

B: "Power Output" LED

C: "Battery Mode" LED

D: "Battery Replace" LED

E: "Up" "Down" switches

F: "ESC" switch

G: "Enter" switch

H: "Power" switch/switch cover
1 Preparation
1-4 Name of Each Part

Back

BL50T/BL75T

A: USB port
B: Remote ON/OFF dedicated port
C: Cooling fan
D: AC overcurrent protection switch

BL100T

A: USB port
B: Remote ON/OFF dedicated port
C: Cooling fan
D: AC overcurrent protection switch
E: Optional slot
F: AC input cable
G: Power output outlet
H: Grounding terminal
1-5 I/O circuit block diagram
Install the UPS.
For precautions on installation, refer to "Caution (for installation and connection) in "Safety precautions".

**Important notice**

- Before installing the UPS, be sure to write down the serial number of the product.
  This serial number is required when contacting us.
  For the serial number of the product, check the sticker attached to the back of the UPS or the serial number sticker enclosed in the product package.
- Make sure that there is enough room in the back of the UPS for the AC cables of the UPS and the connected devices.

Use the UPS only in the correct orientation specified in the following figure.
2 Installation and connection
2-1 Install

Do not install in any of the following ways.
2-2 How to connect the device to back up

For cautions on connection, refer to “Caution (for installation and connection)” shown in the “Safety precautions” in the beginning of this manual.

⚠️ Caution (for installation and connection)

Connect only a device whose rated voltage is 100VAC.
- The rated output voltage of the UPS is 100VAC.
- Overvoltage may damage a connected device.

1. Disconnect all the “AC input” plugs of the power backup target devices, such as a computer and peripheral, from the power outlet (commercial power supply).
2 Installation and connection
2-2 How to connect the device to back up

2. Connect the disconnected "AC input" plugs into "power output" outlets of the UPS.
※ If more power output outlets are required, use a device such as a power strip.

\[\text{BL50T/BL75T} \quad \text{BL100T} \quad \text{Computer peripheral devices}\]

[a] Even when the input plug shape of the connected device is 2P, it can also be connected to the UPS's "power output" outlet. However, [c] when the input plug shape is 2P and a ground wire is attached, connect the ground wire of the plug to the "grounding terminal.
[d] If the ground wire is not long enough to reach the "grounding terminal, use a conversion plug with ground terminal.
* To connect an AC adapter, connect it to a "power output" outlet around which there is enough room for its connection.

\[
\begin{align*}
\text{Connect it directly.} \quad & \quad \text{Connect it directly.} \quad & \quad \text{Connect the plug directly.} \quad & \quad \text{Connect the conversion plug.}
\end{align*}
\]

※ Connection [a] or [b] is not possible for use as a UL standards compliant product.

3. When using automatic shutdown software, connect the UPS and PC with a USB cable packaged with the product or an optional cable for UPS service support (model BUC26: UPS service (OS Standard) connection cable).
Refer to "5. Connected device automatic shutdown processing" (P.60) and "6. Contact input and output function" (P.67).
Note: The above is required only when using automatic shutdown software and contact signal inputs and outputs.
2-3 Connect the AC input

When the installation and device connection operation is completed, connect the "AC input" plug of the UPS into the outlet (commercial power supply).

⚠️ Caution (for installation and connection)

Be sure to connect the "AC input" plug to a rated input voltage (100VAC) commercial power supply.

- Connecting to a commercial power supply with a different rated voltage may cause a fire.
- The UPS may fail.

For other cautions on connection, refer to "CAUTION (for installation and connection)" described in "Safety precautions" in the beginning part of this manual.

Connect the "AC input" plug into a 100VAC outlet (commercial power supply).

References

- The UPS is shipped after being charged. However, when it is used for the first time, its backup time may have become shorter due to self-discharge. We recommend using the UPS after charging.
- "3-1-10 Disable screen savers" (P.37) can also be carried out before charging the battery.
3 Check and start the operation

3-1 Names and functions of parts in the operation and display sections

3-1-1 Name of each part

A: LCD
B: "Power Output" LED
C: "Battery Mode" LED
D: "Battery Replace" LED
E: ": "Up" "Down" switches
F: "ESC" switch
G: "Enter" switch
H: "Power" switch/switch cover

3-1-2 Meaning of each LED indicator

<table>
<thead>
<tr>
<th>Symbol</th>
<th>LED</th>
<th>Color</th>
<th>Name</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ON</td>
</tr>
<tr>
<td>B</td>
<td><img src="image" alt="Power Output LED" /></td>
<td>Green</td>
<td>Power Output LED</td>
<td>Outputting power</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OFF</td>
</tr>
<tr>
<td>C</td>
<td><img src="image" alt="Battery Mode LED" /></td>
<td>Orange</td>
<td>Battery Mode LED</td>
<td>In backup operation with the battery</td>
</tr>
<tr>
<td>D</td>
<td><img src="image" alt="Battery Replacement LED" /></td>
<td>Red</td>
<td>Battery Replacement LED</td>
<td>Battery replacement required due to battery deterioration or end of life of the battery or UPS</td>
</tr>
</tbody>
</table>

|        |     |       |                             | OFF                                         |
|        |     |       |                             | Not outputting power                        |
|        |     |       |                             | Not in backup operation with the battery    |
|        |     |       |                             | Battery replacement not required            |
3-1-3 Switch

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Shape</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td></td>
<td>Up switch</td>
<td>Move the selected cursor upward or increase the value.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Down switch</td>
<td>Move the selected cursor downward or decrease the value.</td>
</tr>
<tr>
<td>F</td>
<td>ESC</td>
<td>ESC switch</td>
<td>• Return to the menu&lt;br&gt;• Cancel&lt;br&gt;• Stop the buzzer sound (Hold down for 0.5 seconds or longer)</td>
</tr>
<tr>
<td>G</td>
<td>Enter</td>
<td>Enter switch</td>
<td>Select the menu item or determine the value.</td>
</tr>
<tr>
<td>H</td>
<td>Power</td>
<td>Power switch</td>
<td>ON: Hold this switch down for 2 seconds or longer to start&lt;br&gt; outputting power several seconds later.&lt;br&gt; OFF: When the switch is turned on, hold it down for 2 seconds or longer to stop outputting power.&lt;br&gt;Note:&lt;br&gt;As long as the AC input plug is connected to a commercial power supply, whether the power switch is turned ON or OFF, the battery is charged.</td>
</tr>
</tbody>
</table>

3-1-4 Buzzer sound

- Buzzer sound type
  - Intermittent
    - Intermittent, at intervals of 0.5 seconds
      - ON
      - OFF
    - Intermittent, at intervals of 2 seconds
      - ON
      - OFF
    - Intermittent, at intervals of 1 second
      - ON
      - OFF
    - Intermittent, at intervals of 4 seconds
      - ON
      - OFF
  - Continuous
    - ON
    - OFF

※For the operating condition of each buzzer sound, refer to "3-1-7 How to interpret icons, LED, and buzzer sounds" (From P.31)

References

For the condition for sounding the buzzer, you can set to OFF during backup operation or Always ON. In the LCD menu, set the condition by selecting [Settings] - [Local Setting] - [Audible Alarm].

- To pause the buzzer sound
When the buzzer is sounding, hold down the “ESC” switch for 0.5 seconds or longer to pause the buzzer sound.

### 3-1-5 Status screen on the LCD

- **Icon**
  - An icon representing the status of the UPS is displayed. Refer to "3-1-7 How to interpret icons, LED, and buzzer sounds".

- **Text displayed at top**
  - Displays a message indicating the status in conjunction with the icon.

- **Load level**
  - The load level gauge displays the connected capacity of the connected devices as a percentage.
  - The maximum connected capacity is shown as 100%.

<table>
<thead>
<tr>
<th>Model</th>
<th>Connected Capacity</th>
<th>INDICATED AS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL50T</td>
<td>500VA/450W</td>
<td>100%</td>
</tr>
<tr>
<td>BL75T</td>
<td>750VA/680W</td>
<td>100%</td>
</tr>
<tr>
<td>BL100T</td>
<td>1000VA/900W</td>
<td>100%</td>
</tr>
</tbody>
</table>
3 Check and start the operation
3-1 Names and functions of parts in the operation and display sections

- **Battery level**
  The battery level gauge indicates the battery level as a percentage.

- **Backup time**
  Displays the period of time for which the UPS can continue its output using power supplied from the battery in minutes.

- **Text displayed at bottom**
  A message prompting user action is displayed.

### 3-1-6 Status screen example

#### UPS running

```
UPS とちゅう...  
ヨウコソ！
しやくら おまちだサイ...
```

#### Standby screen

```
(1)キー：オシテクダサイ
0%
100% 25min
[Ent]キー：メニュー・ヒョウジ
```

#### Commercial operation mode

```
しやくモード
40%
100% 25min
[Ent]キー：メニュー・ヒョウジ
```

#### Shutting down

```
UPS テインシュウ...
シャットダウン停止中：999円
[Ent] シャットダウン キャンセル（1）キョウセイ シャットダウン
```
3-1-7 How to interpret icons, LED, and buzzer sounds

In normal operation

<table>
<thead>
<tr>
<th>UPS status</th>
<th>Icon</th>
<th>LED</th>
<th>Buzzer</th>
<th>Output</th>
<th>Charge</th>
<th>Message at top</th>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standby mode</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ON</td>
<td>The &quot;Power&quot; switch is turned off. Power output is stopped.</td>
<td>-</td>
</tr>
<tr>
<td>Commercial operation</td>
<td></td>
<td></td>
<td></td>
<td>ON</td>
<td>ON</td>
<td>Commercial operation mode</td>
<td>The &quot;Power&quot; switch is turned on. The UPS is in normal operation.</td>
<td>-</td>
</tr>
<tr>
<td>AVR mode</td>
<td></td>
<td></td>
<td></td>
<td>ON</td>
<td>ON</td>
<td>AVR mode</td>
<td>The UPS is operating normally in output voltage adjustment (step-up/down) mode.</td>
<td>-</td>
</tr>
</tbody>
</table>

In test operation

<table>
<thead>
<tr>
<th>UPS status</th>
<th>Icon</th>
<th>LED</th>
<th>Buzzer</th>
<th>Output</th>
<th>Charge</th>
<th>Message at top</th>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test mode</td>
<td></td>
<td></td>
<td></td>
<td>OFF/discharging</td>
<td></td>
<td>Test mode</td>
<td>A self-diagnostic test is running.</td>
<td>-</td>
</tr>
</tbody>
</table>

During a power outage

<table>
<thead>
<tr>
<th>UPS status</th>
<th>Icon</th>
<th>LED</th>
<th>Buzzer</th>
<th>Output</th>
<th>Charge</th>
<th>Message at top</th>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery mode</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Off/discharging</td>
<td>Battery mode</td>
<td>Stop the connected devices in use by shutting them down (end processing).</td>
</tr>
<tr>
<td>Battery low</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Off/discharging</td>
<td>Battery low (Note 1)</td>
<td>Stop the connected devices in use by shutting them down (end processing).</td>
</tr>
<tr>
<td>Battery discharge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>None</td>
<td>Output stopped due to low battery (displayed for a few seconds only).</td>
<td>Charge the battery.</td>
</tr>
</tbody>
</table>

Note 1: During normal operation, the displayed message alternates between "Commercial operation mode" and "AVR mode". During battery operation, the displayed message alternates among the battery mode messages.
3 Check and start the operation

### 3-1 Names and functions of parts in the operation and display sections

#### ■ Operation while the UPS is in use or AC input error

<table>
<thead>
<tr>
<th>UPS status</th>
<th>Icon</th>
<th>LED</th>
<th>Buzzer</th>
<th>Output</th>
<th>Charge</th>
<th>Message at top</th>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPS event</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>OFF</td>
<td>ON</td>
<td>Scheduled startup waiting</td>
<td>The USB is waiting for scheduled startup.</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>BS signal stopped</td>
<td>The BS signal is stopped.</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Remote signal stopped</td>
<td>The remote signal is stopped.</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Charge waiting</td>
<td>The UPS is waiting for charging.</td>
<td>The UPS cannot start up due to undercharge.</td>
</tr>
<tr>
<td>AC input error-VH</td>
<td>AC input voltage error-Voltage High</td>
<td>Use in the AC input voltage range and frequency described in the specification.</td>
<td>Note: You can check the input voltage by selecting &quot;Measurement&quot; menu - &quot;Input and Output&quot;.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC input error-VL</td>
<td>AC input voltage error-Voltage Low</td>
<td>Note: You can check the input voltage by selecting &quot;Measurement&quot; menu - &quot;Input and Output&quot;.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC input error-FH</td>
<td>AC input frequency error-Frequency High</td>
<td>Note: You can check the input voltage by selecting &quot;Measurement&quot; menu - &quot;Input and Output&quot;.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC input error-FL</td>
<td>AC input frequency error-Frequency Low</td>
<td>Note: You can check the input voltage by selecting &quot;Measurement&quot; menu - &quot;Input and Output&quot;.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### ■ Battery error

<table>
<thead>
<tr>
<th>UPS status</th>
<th>Icon</th>
<th>LED</th>
<th>Buzzer</th>
<th>Output</th>
<th>Charge</th>
<th>Message at top</th>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery deterioration</td>
<td>○</td>
<td>●</td>
<td>●</td>
<td>ON</td>
<td>ON</td>
<td>Intermittent, at intervals of 2 seconds</td>
<td>Fault-E10</td>
<td>The self-diagnostic test result indicates battery deterioration.</td>
</tr>
<tr>
<td>Battery end of life</td>
<td>○</td>
<td>●</td>
<td>●</td>
<td>ON</td>
<td>ON</td>
<td>Intermittent, at intervals of 2 seconds</td>
<td>Battery end of life</td>
<td>The battery reached end of life.</td>
</tr>
<tr>
<td>Battery temperature error (charge stop)</td>
<td>○</td>
<td>●</td>
<td>●</td>
<td>ON</td>
<td>ON</td>
<td>Intermittent, at intervals of 4 seconds</td>
<td>Fault-E12 (Note 3)</td>
<td>Charging is stopped because the battery temperature is high.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fault-E14</td>
<td>Charging is stopped because the battery temperature is low.</td>
</tr>
<tr>
<td>No battery connection</td>
<td>○</td>
<td>●</td>
<td>●</td>
<td>OFF</td>
<td>ON</td>
<td>Intermittent, at intervals of 2 seconds</td>
<td>Fault-E11</td>
<td>The battery is not connected.</td>
</tr>
</tbody>
</table>

Note 2: The power output is different depending on the operating condition.
Note 3: In power recovery immediately after backup operation ends, in rare cases, self-heating might occur in the battery, activating the protection function, and the error (Fault-E12) might be displayed.
In that case, the commercial power is output as-is (charging stopped). Then, the battery temperature drops, the error display is automatically canceled, and the charging operation resumes.
Note 4: Different depending on the operating condition.
### Error other than a battery error

<table>
<thead>
<tr>
<th>UPS status</th>
<th>Icon</th>
<th>LED</th>
<th>Buzzer</th>
<th>Output</th>
<th>Charge</th>
<th>Message at top</th>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overload</td>
<td>○</td>
<td>○ ○ ○</td>
<td>Intermitting, at intervals of 0.5 seconds</td>
<td>ON</td>
<td>ON or discharging</td>
<td>Fault-E9 (Note 1)</td>
<td>The load amount of the connected devices is excessive.</td>
<td>Turn OFF all the Power switches on the UPS and connected devices, reduce connected devices, and turn ON the “Power” switches on the UPS and remaining connected devices. Note: You can check the load amount by selecting the &quot;Measurement&quot; menu - &quot;Load Amount&quot;.</td>
</tr>
<tr>
<td>UPS end of life</td>
<td>○</td>
<td>○ ○ ○</td>
<td>Intermitting, at intervals of 2 seconds</td>
<td></td>
<td></td>
<td>UPS end of life</td>
<td>The UPS reached end of life as a product.</td>
<td>Replace the UPS.</td>
</tr>
<tr>
<td>UPS failure</td>
<td>●</td>
<td>○ ○ ○</td>
<td>Continuous</td>
<td>ON or OFF</td>
<td></td>
<td>UPS failure</td>
<td>A UPS failure occurred.</td>
<td>Turn on only the power switch again. If the displayed content does not change, the UPS is faulty. Contact your dealer or OMRON Electronic Equipment Customer Support Center.</td>
</tr>
<tr>
<td>Bypass mode</td>
<td>○</td>
<td>○ ● ○</td>
<td>Depending on the failure condition(s)</td>
<td>ON</td>
<td>ON or discharging</td>
<td>By-pass mode</td>
<td>Commercial power is being output as is in bypass mode.</td>
<td>Refer to the displayed message. Enable the BMS setting.</td>
</tr>
</tbody>
</table>

Note 1: During normal operation, the displayed message alternates between “Commercial operation mode” and “AVR mode”. During battery operation, the displayed message alternates among the battery mode messages.

Note 2: The power output is different depending on the operating condition.
### UPS failure details

<table>
<thead>
<tr>
<th>Message at top</th>
<th>Fault details</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fault-EO</td>
<td>Overload stop</td>
<td>Due to an error caused by overload, the UPS shifts to bypass operation when in commercial operation, and stops outputting power when in backup operation. (Note 5)</td>
</tr>
<tr>
<td>Fault-ES</td>
<td>Output short-circuit</td>
<td>The UPS stops due to a short-circuit on the connected device side or due to significant connected capacity overload.</td>
</tr>
<tr>
<td>Fault-E1</td>
<td>Output voltage overvoltage</td>
<td>Due to an error in the output voltage (overvoltage), the UPS shifts to bypass operation when in commercial operation, and stops outputting power when in backup operation. (Note 5)</td>
</tr>
<tr>
<td>Fault-E2</td>
<td>Output voltage undervoltage</td>
<td>Due to an error in the output voltage (undervoltage), the UPS shifts to bypass operation when in commercial operation, and stops outputting power when in backup operation. (Note 5)</td>
</tr>
<tr>
<td>Fault-E3</td>
<td>Battery voltage overvoltage</td>
<td>Due to an error in the battery charging voltage (overvoltage), the UPS shifts to bypass operation when in commercial operation, and stops outputting power when in backup operation. (Note 5)</td>
</tr>
<tr>
<td>Fault-E4</td>
<td>Battery voltage undervoltage</td>
<td>Due to an error in the battery charging voltage (undervoltage), the UPS shifts to bypass operation when in commercial operation, and stops outputting power when in backup operation. (Note 5)</td>
</tr>
<tr>
<td>Fault-E5</td>
<td>Abnormal internal temperature</td>
<td>Due to an abnormal internal temperature, the UPS shifts to bypass operation when in commercial operation, and stops outputting power when in backup operation. (Note 5)</td>
</tr>
<tr>
<td>Fault-E6</td>
<td>Bus capacitor fault</td>
<td>A breakdown of an internal component or internal circuit has been detected. The UPS shifts to bypass operation when in normal operation, and stops outputting power when in backup operation. If in backup operation, output will stop.</td>
</tr>
<tr>
<td>Fault-E7</td>
<td>FAN Fail</td>
<td>Due to an internal cooling fan abnormality, the UPS shifts to bypass operation when in commercial operation, and stops outputting power when in backup operation. (Note 5)</td>
</tr>
<tr>
<td>Fault-E8</td>
<td>Over Load</td>
<td>The load of the connected device is exceeding the rated capacity.</td>
</tr>
<tr>
<td>Fault-E9</td>
<td>Battery Weak</td>
<td>Either battery deterioration or end of battery life has been detected.</td>
</tr>
<tr>
<td>Fault-E10</td>
<td>Internal CPU communication error</td>
<td>Due to an error in communication between the CPU in the battery pack and the CPU in the UPS, the UPS shifts to bypass operation when in commercial operation, and stops outputting power when in backup operation. (Note 5)</td>
</tr>
<tr>
<td>Fault-E11</td>
<td>Battery temperature high</td>
<td>Charging is stopped because the battery temperature is high.</td>
</tr>
<tr>
<td>Fault-E12</td>
<td>Battery life expired</td>
<td>The life of the product has expired.</td>
</tr>
<tr>
<td>Fault-E13</td>
<td>Battery temperature low</td>
<td>Charging is stopped because the battery temperature is low.</td>
</tr>
<tr>
<td>Fault-E14</td>
<td>BMS Over Current</td>
<td>The CPU in the battery pack (BMS) has detected overcurrent.</td>
</tr>
<tr>
<td>Fault-E15</td>
<td>BMS Internal Error</td>
<td>The CPU in the battery pack (BMS) has detected fault of the battery.</td>
</tr>
<tr>
<td>Fault-E16</td>
<td>Charging system failure</td>
<td>A failure occurred on the battery charging system. The UPS shifts to bypass operation when in normal operation. (This fault is not detected during backup operation.)</td>
</tr>
<tr>
<td>Fault-E17</td>
<td>BMS Cell Over Volt</td>
<td>The CPU in the battery pack (BMS) has detected overvoltage.</td>
</tr>
<tr>
<td>Fault-E18</td>
<td>BMS Cell Under Volt</td>
<td>The CPU in the battery pack (BMS) has detected undervoltage.</td>
</tr>
<tr>
<td>Fault-E19</td>
<td>Internal circuit fault</td>
<td>A breakdown of an internal component or internal circuit has been detected. The symptoms when this fault occurs vary depending on the cause, so check the methods of resolution on the right.</td>
</tr>
<tr>
<td>Fault-E20</td>
<td>Battery improper connection error</td>
<td>The UPS has detected battery improper connection.</td>
</tr>
</tbody>
</table>

(Note 5) The UPS shifts to bypass operation when in normal operation, and stops outputting power when in backup operation. If in backup operation, output will stop.
3 Check and start the operation

3-1 Names and functions of parts in the operation and display sections

Note 5: Commercial power is output as-is during bypass operation. If the UPS cannot shift to bypass operation, or if a power outage occurs (AC input turned OFF) during bypass operation, a maximum of 2 types of messages may be displayed on the LCD.

3-1-8 Message at bottom

According to the status of the UPS, a message is displayed at the bottom of the LCD. Use it as reference information for operation.

3-1-9 Change the language

When the menu type is "Standard" and the language setting is changed from Japanese to English, operate according to the following procedure.

1. Connect the AC input cable to the outlet, and press the \( \text{[} \downarrow \text{]} \) switch.

2. Select [3. Settings] and press the \( \text{[} \downarrow \text{]} \) switch.

3. Select [Local Setting] and press the \( \text{[} \downarrow \text{]} \) switch.

4. Select [Language] and press the \( \text{[} \downarrow \text{]} \) switch.
5. Select [English] and press the ← switch.

6. Press the [ESC] switch to check that the language has been changed.
3-1-10 Disable screen savers

When "Press [ESC] key" is displayed, press the [ESC] switch.

3-2 Check the operation

When the UPS has been connected, check that backup operation is performed correctly by using the following procedure.

1. Hold down the "Power" switch of the UPS for 2 seconds or longer to turn the power on.
   The buzzer sounds, and a self-diagnostic test automatically starts.

2. When the self-diagnostic test is completed normally, the mode shifts to commercial power operation and the display condition becomes as follows.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Icon]</td>
<td>&quot;Power&quot; switch turned ON Normally operating</td>
</tr>
</tbody>
</table>

   References
   When the battery voltage is low, without conducting a self-diagnostic test, output is immediately started by commercial power operation.

3. Activate all connected devices (including the equipment connected to the service outlet of the PC.)
   However, perform operation in a state in which there is no problem even if the connected devices are powered off in the middle of operation.

   Important notice
   - The UPS is shipped after being charged. However, when it is stored for a long time, its backup time may become shorter due to self-discharge. So, we recommend charging the battery before using the UPS.
3 Check and start the operation

3-2 Check the operation

4. Check that the LCD display and buzzer sound are as described in the following table.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Buzzer sound <em>Power output</em> outlet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Output the power (in a state where connected equipment is conducted)</td>
</tr>
</tbody>
</table>

Displayed as above → The operation is normal. Move on to step 5.
Not displayed as above → It is abnormal. Take action according to the solutions shown in "3-1-7 How to interpret icons, LED, and buzzer sounds", and then move on.

5. Pull out the AC input plug of the UPS from the power outlet (commercial power supply.)
It goes in the backup operation state.

6. Check the LCD display and buzzer sound of the UPS when in backup operation.
Does one of the following states arise?

<table>
<thead>
<tr>
<th>Icon</th>
<th>Buzzer</th>
<th>Output</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Intermittent Buzzer" /></td>
<td>Intermittent A1 intervals of 4 seconds</td>
<td>ON</td>
<td>The UPS is in backup operation due to a power failure or AC input error. Output stops if backup operation is continued.</td>
</tr>
<tr>
<td><img src="image" alt="Intermittent Buzzer" /></td>
<td>Intermittent A1 intervals of 1 second</td>
<td>ON</td>
<td>The UPS is in backup operation due to a power failure or AC input error. The battery level is low. Output stops soon.</td>
</tr>
<tr>
<td><img src="image" alt="None" /></td>
<td>None</td>
<td>OFF</td>
<td>The battery has run out. Output stopped.</td>
</tr>
</tbody>
</table>

Not displayed as 6. above → It is abnormal. Check the display and buzzer conditions, and hold down the "Power" switch for 2 seconds or longer to turn the power off.
Take action according to the solutions shown in "3-1-7 How to interpret icons, LED, and buzzer sounds", and then go back to step 1 again for operation.
• If the UPS and the connected devices stop without any backup operation, the battery is suspected not to be charged adequately.
Connect the "AC input" plug to the commercial power supply, charge the battery adequately, and resume the operation from step 5 on the previous page.
• If the problem cannot be solved by checking the above two points, contact Omron Electronic Equipment Customer Support Center.

References
In the LCD menu, set the buzzer ON/OFF condition by selecting [Settings] - [Local Setting] - [Audible Alarm] (buzzer setting).
7. Connect the "AC input" plug into the commercial power supply again.
The original status display condition is restored and the buzzer stops sounding
(the state in the following figure arises).

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&quot;Power&quot; switch turned ON</td>
</tr>
<tr>
<td></td>
<td>In normal operation</td>
</tr>
</tbody>
</table>

That’s all for the operation check.

Then, the installation and connection processes are all completed.
3 Check and start the operation
3-3 Basic operations including running and stopping the unit

3-3 Basic operations including running and stopping the unit

3-3-1 How to run and stop the UPS

For cautions when using the UPS, including running and stopping the UPS, refer to "CAUTION (for use)" shown in the "Safety precautions" in the beginning of this manual.

■ Action when starting operation

1. With the "Power" switch turned "OFF", connect to a commercial power supply. When commercial power is supplied to the UPS, the icon changes to "O". Power output stops, and automatic charging starts for the battery. The following standby screen appears on the LCD screen.

   
   Standby screen

   ![Standby screen]

2. Hold down the "Power" switch of the UPS for 2 seconds or longer. Power output starts after several seconds. The icon changes to "P", and the mode shifts to backup operation, which lasts for approx. 10 seconds, and a self-diagnostic test is automatically conducted.

   References
   - If the battery voltage is low, a self-diagnostic test is not conducted. After the battery is charged, a self-diagnostic test is automatically conducted.

3. When the self-diagnostic test is completed normally, the status becomes the following normal operation.
   - If a self-diagnostic test is not conducted, the status immediately becomes the following normal operation.

   Normal operation (Commercial operation mode screen)

   ![Normal operation screen]

■ Operation while the UPS is running

It does not matter whether the "Power" switch is kept turned on (in operation) or turned off every time the connected system stops. Operate the UPS as you like.

We recommend turning the "Power" switch off if not using the connected equipment for a long time.

Insert the "AC input" plug of the UPS into a commercial power supply to charge the battery.

■ Operation when a power outage occurs

1. If a power outage or AC line failure occurs, the operation automatically switches to backup operation to continue the power output by using electrical power from the battery (this is called "backup operation").
The following battery mode screen is displayed.

In the state of backup operation (battery mode screen)

![Battery Mode Screen]

By displaying the following status and sounding the buzzer intermittently, the user is notified about backup operation in progress.

<table>
<thead>
<tr>
<th>Icon</th>
<th>Buzzer</th>
<th>Output</th>
<th>Charge</th>
<th>Description</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Intermittent Icon]</td>
<td>![Intermittent Icon]</td>
<td>ON</td>
<td>OFF</td>
<td>Discharging</td>
<td>The UPS is in backup operation due to a power failure or AC input error. If the backup operation continues, when the battery runs out, output stops.</td>
</tr>
<tr>
<td>![Intermittent Icon]</td>
<td>![Intermittent Icon]</td>
<td>ON</td>
<td>OFF</td>
<td>Discharging</td>
<td>The battery has run out. Output stopped.</td>
</tr>
<tr>
<td>![None Icon]</td>
<td>![None Icon]</td>
<td>OFF</td>
<td>OFF</td>
<td>Discharging</td>
<td></td>
</tr>
</tbody>
</table>

References

In the LCD menu, set the buzzer ON/OFF condition by selecting [Settings] - [Local Setting] - [Audible Alarm] (buzzer setting).

- **Operation when recovery is made from a power outage**
  
  - When the battery power still remains
    1. When recovery is made from a power outage or AC line failure while the UPS is outputting power, output from the commercial power supply is automatically restored. The consumed battery is charged automatically.
  
  - When the battery has run out
    1. After the power output stops because the battery power has been used up, when recovery is made from a power outage or AC line failure, the UPS automatically restarts and resumes the power output. The consumed battery is charged automatically.

References

When recovery from a power outage is made, by factory default, the UPS automatically restarts and supplies power. If you do not want to activate the connected devices, either turn off their switches or disable the automatic start setting for recovery from a power outage ([Settings] - [Boot Settings] - [Auto Reboot]).
To stop running the UPS

Important notice

Turn OFF the "Power" switch of the UPS before turning OFF the commercial power supply.
- When the commercial power supply stops, backup operation starts. If the frequency of backup operation becomes high, the battery life may be significantly reduced.

1. When the "Power" switch on the UPS is held down for 2 seconds or longer, the Power switch is turned off. At the same time, the icon changes to "Ø". Then, the power output coming from the UPS stops.

References
Even if the "Power" switch is turned off, as long as AC power is supplied from the commercial power supply, the battery is charged automatically.
3-4 Operation by using the LCD menu

3-4-1 UPS setting change menu screen

- Basic operation of the menu screen

<table>
<thead>
<tr>
<th>Switch</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[▲] [▼]</td>
<td>Move the selected cursor upward/downward or increase/decrease the value.</td>
</tr>
<tr>
<td>[ ]</td>
<td>Select the menu item or determine the value.</td>
</tr>
<tr>
<td>[ESC]</td>
<td>Return to the menu or cancel.</td>
</tr>
</tbody>
</table>
3 Check and start the operation
3-4 Operation by using the LCD menu

### 3-4-2 LCD menu item list

- Japanese (factory default) or English can be selected for the display language.
- The displayed items differ depending on the menu type set. The standard type and the advanced type are available. The standard type (factory default) is intended for general users. The advanced type is intended for the administrator.

### References

- To set English for the display language, select [Settings] - [Local Setting] - [Language].
- To display the advanced type menu, select [Settings] - [Local Setting] - [Menu Type].

☆: Displayed only when the UPS is stopped. Not displayed while the UPS is running.

<table>
<thead>
<tr>
<th>Menu item</th>
<th>Description</th>
<th>Value</th>
<th>Menu type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measurements</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Load Meter</td>
<td>Display the load amount in VA and W.</td>
<td>Load amount:&lt;br&gt;0 to xxxx W&lt;br&gt;0 to xxxx VA</td>
<td>Standard</td>
</tr>
<tr>
<td>Input/Output Meter</td>
<td>Display the input and output voltages/frequencies of the UPS.</td>
<td>Input/output:&lt;br&gt;Input: 0 to xxx.x V, 0 to xx.x Hz&lt;br&gt;Output: 0 to xxx.x V, 0 to xx.x Hz</td>
<td></td>
</tr>
<tr>
<td>Battery Meter</td>
<td>Display the status of the built-in battery.</td>
<td>Battery:&lt;br&gt;Charged level: 0 to 100% Voltage: 0.9 to xxx.xV&lt;br&gt;Operating time (backup time): 0.0 to xxx min</td>
<td></td>
</tr>
<tr>
<td>Longevity</td>
<td>Display the expected life of the UPS in five levels.</td>
<td>Life:&lt;br&gt;UPS: Displays as level ☐ in five levels.&lt;br&gt;Battery: Displays as level ☐ in five levels.</td>
<td></td>
</tr>
<tr>
<td>Cumulat. Power Usage</td>
<td>Display the amount of electric power used so far and the number of elapsed days.</td>
<td>Cumulative power usage:&lt;br&gt;Total: 0 to xxxx kWh&lt;br&gt;Number of days: 0 to xxxx days</td>
<td>Advanced</td>
</tr>
<tr>
<td>Average Power Usage</td>
<td>Display the average of the amounts of electric power used so far.</td>
<td>Average power usage:&lt;br&gt;0 to xxx Wh</td>
<td></td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start Function Test</td>
<td>Conduct a simple self-diagnostic test on battery deterioration and show its result.</td>
<td>Start self-diagnostic test&lt;br&gt;- Battery test: Pass&lt;br&gt;- Battery test: Fail (Battery not connected, battery deteriorated)&lt;br&gt;- Battery test: Cancel (Operating in battery mode, not charged adequately)</td>
<td>Standard</td>
</tr>
<tr>
<td>Reset B. life counter</td>
<td>Reset the battery life counter.</td>
<td>Execute battery life counter reset</td>
<td></td>
</tr>
<tr>
<td>Reset Power Usage</td>
<td>Reset the values for the cumulative power usage and average power usage.</td>
<td>Execute cumulative power usage reset</td>
<td>Advanced</td>
</tr>
<tr>
<td><strong>Dry Contact Test</strong></td>
<td>Conduct a contact test when using a contact signal I/O card (SC07/SC08).</td>
<td>Execute a contact signal test&lt;br&gt;BU: ON/OFF&lt;br&gt;BL: ON/OFF&lt;br&gt;TR: ON/OFF&lt;br&gt;WB: ON/OFF</td>
<td></td>
</tr>
<tr>
<td>Initialization</td>
<td>Restore the factory default settings of the UPS.</td>
<td>Execute settings initialization</td>
<td></td>
</tr>
<tr>
<td>Maintenance Bypass</td>
<td>Forcibly shift to the bypass mode.</td>
<td>Execute maintenance bypass</td>
<td></td>
</tr>
<tr>
<td><strong>Settings</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local Setting</td>
<td>Set the language displayed on LCD.</td>
<td>Display language:&lt;br&gt;Japanese (factory default), English</td>
<td></td>
</tr>
<tr>
<td>LCD Setting</td>
<td>Change the contrast for LCD.</td>
<td>Set the LCD (contrast bar)&lt;br&gt;LCD Auto OFF: Always ON (factory default), Auto OFF 30 seconds, Auto OFF 3 minutes</td>
<td></td>
</tr>
<tr>
<td>LCD Auto OFF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LCD Test</td>
<td>Check that the LCD and LEDs turn on.</td>
<td>Execute LCD test</td>
<td></td>
</tr>
</tbody>
</table>
### 3-4-3 Operation by using the LCD menu

☆: Displayed only when the UPS is stopped. Not displayed while the UPS is running.

<table>
<thead>
<tr>
<th>Menu item</th>
<th>Description</th>
<th>Value</th>
<th>Menu type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Settings</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audible Alarm</td>
<td>Set the condition for the buzzer to sound.</td>
<td>Buzzer setting: ON (factory default), OFF during backup operation, Always OFF</td>
<td>Standard</td>
</tr>
<tr>
<td>Calendar Setting</td>
<td>Set calendar information for the UPS.</td>
<td>Calendar settings: Year, month, day, hour, minute</td>
<td></td>
</tr>
<tr>
<td>UPS Installation</td>
<td>Set the date when the use of the UPS started.</td>
<td>UPS usage start date: Year, month, day (Factory default: 2018/1/1)</td>
<td></td>
</tr>
<tr>
<td>UPS Life Count</td>
<td>Set the operation of the UPS life counter.</td>
<td>UPS life counter: Enabled (factory default), Disabled</td>
<td></td>
</tr>
<tr>
<td>Menu Type</td>
<td>Select the menu to be displayed. When &quot;Standard&quot; is selected, only the frequently used items are displayed.</td>
<td>Menu type: Standard (factory default), Disabled</td>
<td></td>
</tr>
<tr>
<td><strong>In/Out Settings</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC Input Sensitivity</td>
<td>Set the input voltage sensitivity. (Note 1)</td>
<td>Input voltage sensitivity: Standard (factory default), High sensitivity, Low sensitivity</td>
<td>Standard</td>
</tr>
<tr>
<td>Frequency Range</td>
<td>Switch the frequency range mode.</td>
<td>Frequency range: Normal range (factory default), Wide range</td>
<td>Advanced</td>
</tr>
<tr>
<td>Transfer Sensitivity</td>
<td>Set the sensitivity by which the operation is switched to backup operation.</td>
<td>Transfer sensitivity: Standard (factory default), High sensitivity</td>
<td></td>
</tr>
<tr>
<td><strong>Boot Settings</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auto Reboot</td>
<td>Set automatic reboot from a power outage.</td>
<td>Automatic reboot: Enabled (factory default), Disabled</td>
<td>Standard</td>
</tr>
<tr>
<td>Cold Start</td>
<td>Set whether to enable the &quot;Cold Start&quot; function, which can start up the UPS without &quot;AC input&quot;</td>
<td>Cold start: Disabled (factory default), Enabled</td>
<td></td>
</tr>
<tr>
<td>Reboot Delay Time</td>
<td>Set the delay time for recovery from a power outage.</td>
<td>Reboot delay time: 0 to 999 seconds (Factory default: 15 seconds)</td>
<td>Advanced</td>
</tr>
<tr>
<td>Reboot Batt level</td>
<td>Set the battery level for reboot.</td>
<td>Reboot battery level: 0 to 100% (Factory default: 0%)</td>
<td></td>
</tr>
<tr>
<td>Auto Reboot Mode</td>
<td>Set the mode for reboot.</td>
<td>Auto boot mode: Mode A (factory default), mode B</td>
<td></td>
</tr>
<tr>
<td><strong>Battery Settings</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Function Test</td>
<td>Set the interval of self-diagnostic test execution.</td>
<td>Function test: At startup/every four weeks (factory default),</td>
<td>Standard</td>
</tr>
<tr>
<td>Battery Life Counter</td>
<td>Set whether to notify the user about the battery's end of life. (Note 2)</td>
<td>Battery life counter: Enabled (factory default), Disabled</td>
<td></td>
</tr>
<tr>
<td>Battery Install</td>
<td>Set the date when the battery was replaced.</td>
<td>Battery installation date: Year, month, and day (Factory default: 2018/1/1)</td>
<td></td>
</tr>
<tr>
<td>Max backupTime</td>
<td>Set the output of the UPS to stop after a specified period of time.</td>
<td>Maximum backup time: Disabled (factory default) Enabled: 10 to 9999 seconds Enabled: 1 to 9999 minutes</td>
<td>Advanced</td>
</tr>
</tbody>
</table>
☆: Displayed only when the UPS is stopped. Not displayed while the UPS is running.

<table>
<thead>
<tr>
<th>Menu item</th>
<th>Description</th>
<th>Value</th>
<th>Menu Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery Settings</td>
<td>Low Battery Warning</td>
<td>Set the level at which a low battery warning can be detected.</td>
<td>Low battery warning level: Initial setting (factory default), Level change: 0 to 100%</td>
</tr>
<tr>
<td>Dry Contact</td>
<td>BMS setting (Note 3)</td>
<td>Temporarily stop communication between the CPU in the battery pack (BMS) and the CPU in the CPU when replacing the battery.</td>
<td>BMS mode: enabled/disabled (factory default) Enabled</td>
</tr>
<tr>
<td></td>
<td>BS Signal Valid Range</td>
<td>Set the condition for BS signal reception.</td>
<td>BS signal valid range: Always enabled (factory default), Only for backup operation</td>
</tr>
<tr>
<td></td>
<td>BS Signal Delay Time</td>
<td>Set the delay time for a BS signal.</td>
<td>BS signal delay time: 0 to 9999 seconds, or 9999 seconds (factory default: 0 second)</td>
</tr>
<tr>
<td></td>
<td>BU Signal Delay Time</td>
<td>Set the delay time for a BU signal.</td>
<td>BU signal delay time: 0 to 188 seconds (factory default: 0 second)</td>
</tr>
<tr>
<td></td>
<td>Dry Contact Logic</td>
<td>Set the dry contact logic.</td>
<td>Dry Contact logic: BU, BL, TR, WB: Normal (factory default)/ Reverse</td>
</tr>
<tr>
<td></td>
<td>Remote ON/OFF Logic</td>
<td>Set the remote signal logic. This setting is common to a contact signal I/O card and remote ON/OFF dedicated connector.</td>
<td>Remote ON/OFF logic: OFF when short-circuited (factory default), OFF when opened, Disabled</td>
</tr>
<tr>
<td>Identification</td>
<td>Type</td>
<td>Display the names of the UPS and battery pack.</td>
<td>Type name: UPS: Model, Battery: Model</td>
</tr>
<tr>
<td></td>
<td>Serial Number</td>
<td>Display the serial number of the UPS.</td>
<td>Serial number: S/N: xxxxxxxxxxxxxxxG</td>
</tr>
<tr>
<td></td>
<td>Firmware Version</td>
<td>Display the firmware version of the UPS.</td>
<td>Firmware version: UPS: M:x.xx USB: S:x.xx</td>
</tr>
<tr>
<td></td>
<td>Memorandum</td>
<td>Information up to 20 alphanumeric characters can be viewed.</td>
<td></td>
</tr>
<tr>
<td>Log</td>
<td>Fault Log</td>
<td>Display up to 10 logs of faults that occurred in the past (time of occurrence and fault details).</td>
<td>Fault log: Year/month/day/hour/minute, message</td>
</tr>
<tr>
<td></td>
<td>Shutdown Log</td>
<td>Display up to 10 reasons for UPS shutdown.</td>
<td>Shutdown log: Year/month/day/hour/minute, message</td>
</tr>
<tr>
<td></td>
<td>AC Input Log</td>
<td>Display up to 10 logs of events that occurred in the past.</td>
<td>AC Input log: Year/month/day/hour/minute, message</td>
</tr>
<tr>
<td></td>
<td>Reset All Log Data</td>
<td>Clear each piece of log data.</td>
<td>Execute Reset All Log Data</td>
</tr>
</tbody>
</table>

Note 1: Refer to "9-4 Input voltage sensitivity settings".
Note 2: Refer to "9-3 Battery life".
Note 3: BMS stands for Battery Management System.
A lead battery UPS does not require the BMS.
A lithium battery UPS always are safely managed a battery condition using the BMS.
4 Maintenance and inspection

For cautions when performing maintenance, refer to "Caution (for maintenance)" shown in the "Safety precautions" of the beginning of this manual.

4-1 Checking the battery

The life of the battery used in the UPS is limited. The life varies depending on your storage/use environment and backup frequency. ※As the battery life comes closer to its end, the battery deteriorates more rapidly. Be careful.

4-1-1 Expected battery life

<table>
<thead>
<tr>
<th>Ambient temperature</th>
<th>Battery life expectancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 degrees Celsius</td>
<td>10 years</td>
</tr>
<tr>
<td>30 degrees Celsius</td>
<td>8 years</td>
</tr>
<tr>
<td>40 degrees Celsius</td>
<td>5 years</td>
</tr>
</tbody>
</table>

※The expected life is not a guaranteed value.

4-1-2 Methods for checking the battery

A self-diagnostic test performs fault diagnosis and conducts a test on battery deterioration. It helps check a circuit failure inside the UPS and the necessity of battery replacement. A self-diagnostic test can be conducted either automatically or manually.

■ Automatic self-diagnostic test

When the battery is fully charged, a self-diagnostic test is automatically conducted in any of the following cases. Your particular operation is not required.

- When the "Power" switch is turned ON.
- With the "Power" switch turned ON (powered on), once every 4 weeks

If the battery is not fully charged, the self-diagnostic test is not executed immediately. A self-diagnostic test is executed automatically when the battery is fully charged.
Manual self-diagnostic test

You can also conduct a self-diagnostic test manually by selecting in the LCD menu as [Control] - [Start Function Test]. When a self-diagnostic test is executed, backup operation starts automatically. At that time, the buzzer does not sound. After the test is completed, the state of normal operation is automatically restored. If an error message is displayed on the LCD screen, take action according to the solutions previously described in "3-1-7 How to interpret icons, LED, and buzzer sounds".

References

- For the condition for conducting a self-diagnostic test, one of the following can be selected by selecting in the LCD menu [Settings] - [Battery Setting] - [Function Test]. At startup/every four weeks (factory default), At startup, Every four weeks, Disabled
- A self-diagnostic test can be conducted using automatic shutdown software as well. For detailed explanation, refer to the automatic shutdown software setting guide (operation manual).

4-1-3 How to measure backup time

1. Connect the “AC input” plug into an outlet (commercial power supply) and charge the battery for 8 hours or longer.

2. Turn on all the connected devices including those connected to the AC output connector of your PC.
   ※ Perform operation in a state in which there is no problem even if the connected devices are powered off in the middle of operation.
   ※ For Windows Server 2003/Vista/XP/Me/2000/Windows NT/Linux/Mac, execute when the HDD is stopped.

3. Pull out the AC input plug and measure backup time.
   Measure the time from when the UPS automatically stops until all the indicators turn off.

The backup time measured for the first time after purchasing the product is first set as the "initial value for the backup time".
※ In power recovery immediately after backup operation ends, in rare cases, self-heating might occur in the battery, activating the protection function, and the error (Fault-E12) might be displayed.
   In that case, the commercial power is output as-is (charging stopped).
   Then, the battery temperature drops, the error display is automatically canceled, and the charging operation resumes.
**4-1-4 Estimated backup time**

The backup time changes depending on the capacities of the connected devices. After calculating the sum of the capacities of the connected devices, use the backup time chart as reference for setting the initial value for the backup time (do the same for a battery check).

1. Unify all the units of capacity (power consumption) expressed for the connected devices into Watts.
   - For an indication provided on a connected device, check the PC's main body and the back of the display.
   - There are 3 types of indication: VA (Volt·Ampere) indication, A (Ampere) indication, and W indication.
   - Example:
     - 100VAC, 50/60Hz, 145W
     - 100VAC, 50/60Hz, 1.8A
     - 100VAC, 50/60Hz, 150VA

<table>
<thead>
<tr>
<th>Indication</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>( W = A \times 100 \times \text{power factor} )</td>
</tr>
<tr>
<td>VA</td>
<td>( W = VA \times \text{power factor} )</td>
</tr>
</tbody>
</table>

For a device with indication in VA or A, convert VA or A into W. For conversion, multiply the value indicated for the device by one of the values in the above table. If you do not know the power factor, set it as "1". Normally, the power factor is a value in the range 0.6 to 1.

2. Calculate the sum of the values converted into W to obtain the sum of the capacities of the connected devices.

3. Using the chart below, calculate the initial value for the backup time according to the sum of the capacities of the connected devices.
   - If the temperature is low, the backup times become shorter than the corresponding values in the chart (table) on the next page.
   - The backup time becomes long when the sum of the capacities of the connected devices is small.
Backup time chart (When the ambient temperature is 25 degrees Celsius, and the battery is in the default state)

The above backup times are for reference only. They may change depending on the battery life and external environment (such as temperature).

Backup time table (Unit of time: minutes)

<table>
<thead>
<tr>
<th>Load (W)</th>
<th>20</th>
<th>50</th>
<th>100</th>
<th>200</th>
<th>300</th>
<th>400</th>
<th>500</th>
<th>600</th>
<th>700</th>
<th>800</th>
<th>900</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL50T</td>
<td>80</td>
<td>45</td>
<td>26</td>
<td>14</td>
<td>10.5</td>
<td>7</td>
<td>6</td>
<td>(450W)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BL75T</td>
<td>120</td>
<td>68</td>
<td>40</td>
<td>21</td>
<td>15</td>
<td>10.5</td>
<td>8</td>
<td>6.4</td>
<td>(680W)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BL100T</td>
<td>160</td>
<td>90</td>
<td>54</td>
<td>30</td>
<td>20</td>
<td>15</td>
<td>12</td>
<td>10</td>
<td>7.5</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>
4-2 Replacing the battery

The battery can be replaced either while the unit is stopped (power output stopped) or while it is in operation (outputting power). After replacing the battery, reset the battery life counter as follows.

⚠️ Caution (for installation and connection)

If the battery is replaced with a battery of an improper type, there is a danger of explosion. Replace the battery pack with a battery pack of the same type and with the same number.

Important notice

- After replacing the battery, conduct a self-diagnostic test and reset the battery life counter.
  - This operation is available in both the power ON and OFF.
  1. Press the Enter switch ( ) to open the LCD menu.
  2. Press the Down switch ( ), select [2. Control], and press the Enter switch ( ).
  3. Press the Down switch ( ), select [Receive Test Start], and press the Enter switch ( ).
  4. A self-diagnostic test will start.
  5. Check that the self-diagnostic test is completed, press the Down switch ( ), select [Reset Battery Life Counter], and press the Enter switch ( ).
  6. Select [Yes] and press the Enter switch ( ) to reset the battery life counter.
  - If you do not reset the battery life counter, a battery deterioration alarm may occur earlier than the expected battery life.
  - Write the battery replacement date in the battery replace date sticker enclosed with the replacement battery pack and attach it to the main unit.

- To use the UPS as a UL compliant product, ask a person who understands the danger and precautions regarding the battery to replace the battery, or replace the battery under the supervision of such a person.
- While the UPS is running, if an AC line failure such as a power outage occurs during battery replacement, backup operation cannot be performed and the output stops.
- Do not replace the battery during backup operation. Otherwise, the output stops.
  ※ OMRON is collecting an unneeded replaced battery, with only transportation charges borne by the customer. For details, refer to the attachment "Replacement Service Leaflet".

References

When the “Battery Replace” LED is lit on/flashing and the buzzer is sounding, hold on the ESC switch for 0.5 seconds and the buzzer sound stops (the “Battery Replace” LED remains to be lit on/flashing).

4-2-1 Battery replacement alert

The user is notified about the necessity of battery replacement with the status display and buzzer sound based on the battery life counter. The battery life counter is activated when commercial power is supplied after the product is shipped. When the ambient
temperature exceeds 25 degrees Celsius, the battery life counter is incremented quickly.

<table>
<thead>
<tr>
<th>Ambient temperature</th>
<th>6-month inspection</th>
<th>1-month inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 degrees Celsius</td>
<td>For the first 3.5 years from the date of purchase</td>
<td>After 3.5 years from the usage start date</td>
</tr>
<tr>
<td>30 degrees Celsius</td>
<td>For the first 5 years from the date of purchase</td>
<td>After 5 years from the usage start date</td>
</tr>
<tr>
<td>25 degrees Celsius</td>
<td>For the first 6 years from the date of purchase</td>
<td>After 6 years from the usage start date</td>
</tr>
</tbody>
</table>
4-2-2 Replace the battery

Before and after battery replacement, the BMS settings must be changed.

1. Press the Enter switch ( ) to open the LCD menu.


3. Select [Local Setting] and press the Enter switch ( ).

4. Press the Down switch ( ), select [Menu Type], and press the Enter switch ( ).

5. Press the Down switch ( ), select [Advanced], and press the Enter switch ( ).
   Check that ✓ is displayed to the right of [Advanced] (The menu type is set for [Advance]).

6. Press the ESC switch twice to return the screen display to [3. Settings].

7. Press the Down switch ( ), select [Battery Setting], and press the Enter switch ( ).

8. Press the Down switch ( ), select [BMS Setting], and press the Enter switch ( ).

9. Press the Down switch ( ), select [Disabled], and press the Enter switch ( ).
   The yellow LED starts flashing.

10. Loosen the screws on the front panel (two locations) with a Phillips screwdriver.
11. Detach the front panel by pulling it toward you (The screws remain on the front panel).

12. Pull and detach the battery cable connectors (two pieces).

13. Remove the cable on the left from the holder.
14. Remove one screw on the metal cover.

15. Pull the metal cover toward you (①) and remove it while lifting it up (②)

16. Grip the label and pull out the battery pack.
※ Do not grip the connector or cable when pulling the battery pack out.
※ The battery pack is heavy. Be careful not to drop it.
17. Put a new battery pack in place by inserting it as far as it goes. ※Be sure to insert a battery pack in the orientation shown in the following figure.

- Replacement Battery Pack
  Model
  BLB50T/BLB75T/BLB100T

![Battery pack and label diagram]

18. Insert the protrusion on the lower side of the metal cover into a groove on the main body (①), and align the protrusion on the upper side into another groove on the main body (②).
19. Fix the metal cover with a screw.

20. Set the cable for the left side into the holder.

21. Connect the cable connectors (two pieces).
22. Attach the front panel into the main body.

23. Tighten the screws on the front panel with a Phillips screwdriver. (Two locations)

24. Press the Down switch ( ), select [Enabled], and press the Enter switch ( ).

※ When the battery cable connector is detached, the buzzer sounds, and “Fault-E11” is displayed on the LCD screen. When this occurs after battery replacement, it is not an error. Connect the battery cable connector to the connector on the UPS side, and the buzzer automatically stops sounding and “Fault-E11” is canceled.
### Important notice

After battery replacement, be sure to reset the battery life counter.
- After replacing the battery, from the screen displayed by selecting [Control] - [Reset B.life counter] in the LCD menu of the UPS, reset the battery life counter.
- If the battery life counter is not reset, a battery replacement alarm may occur before the expected life of the battery expires.

Write the battery replacement date in the enclosed battery replace date sticker and attach it to the main body.
Alternatively, the battery replacement date can be also entered on the screen displayed by selecting [Settings] - [Battery Setting] - [Battery Installation] (battery replacement date) in the LCD menu.

※OMRON is collecting an unneeded replaced battery, with only transportation charges borne by the customer.
For details, refer to the attached "UPS Replacement Service" pickup request.

### 4-3 Cleaning

Remove dust from the "AC input" plug and "power supply output" receptacles of the UPS.
Stop all the connected devices and the UPS and disconnect the "AC input plug" from a wall outlet (commercial power).
Then, remove dust with a dry cloth and connect again.
When you are not sure about the connection method: Refer to "How to connect the device to back up".
5 Processing for the automatic shutdown of the connected devices

5-1 Overview of the automatic shutdown software functions

When an input power supply abnormality (power failure, etc.) occurs, UPS monitoring software can be used for shutting down connected computers.

**Important notice**

**Restrictions on the commercial power supply stop time for a schedule action by automatic shutdown software**
- With a schedule action set, if the UPS is not connected to commercial power for a long time, the internal timer will be reset. To retain the internal timer setting, connect the UPS to commercial power within approx. 3 months*.
  ※Due to battery deterioration over time, the period for which the internal timer setting can be retained becomes shorter.

**When manually starting during the scheduled operation using the UPS monitoring software**
- When manually starting the UPS stopped by a schedule action, turn off the "Power" switch once, and turn it on again. To manually stop the unit during the scheduled operation, turn OFF the power switch.

**Under the setting of auto stop the UPS after OS closing processing, when the power is restored while auto shutdown processing is being performed**
- Even if a power outage occurs and power is restored during the execution of automatic shutdown processing, the output of the UPS stops once after the set time elapses. After shutdown is finished, do not turn on the computer until the UPS has finished restarting.
## 5-1-1 Automatic shutdown software function list

The UPS is compatible with automatic shutdown software. Use necessary software by downloading it from our Website as needed.

<table>
<thead>
<tr>
<th>Functions of softs</th>
<th>Descriptions</th>
<th>General use (Single function, stand-alone)</th>
<th>Use for network management (High function, supporting network)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Simple Shutdown Software</td>
<td>PowerAct Pro</td>
</tr>
<tr>
<td>Auto shutdown</td>
<td></td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>UPS monitoring (operating status)</td>
<td></td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td>UPS monitoring (data)</td>
<td></td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td>Pop-up notification</td>
<td></td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td>Shutdown OS in hibernate</td>
<td></td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td>Auto file save</td>
<td></td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td>Schedule Action</td>
<td></td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td>UPS setting change</td>
<td></td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td>External command execution</td>
<td></td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Event log save</td>
<td></td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td>Datalog save</td>
<td></td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td>Redundant power supply support</td>
<td></td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td>Remote UPS management</td>
<td></td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td>Mail send</td>
<td></td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td>Telnet connection</td>
<td></td>
<td>-</td>
<td>●</td>
</tr>
<tr>
<td>SYSLOG support</td>
<td></td>
<td>-</td>
<td>●</td>
</tr>
</tbody>
</table>

*This function is available only for Windows. Mac and Linux are NOT available.*
## References

### Explanation of the software functions

<table>
<thead>
<tr>
<th>Function name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Auto shutdown</td>
<td>When an AC line failure occurs, the computer can be shutdown automatically.</td>
</tr>
<tr>
<td>2. UPS monitoring (operating condition)</td>
<td>The operating condition of the UPS (in commercial operation/in backup operation) can be monitored.</td>
</tr>
<tr>
<td>3. UPS monitoring (data)</td>
<td>Data such as input and output voltage values, connected capacity, and battery level can be monitored.</td>
</tr>
<tr>
<td>4. Pop-up notification</td>
<td>When an abnormality such as a power outage occurs, a pop-up window appears, providing notification of the details of the abnormality (depending on the OS).</td>
</tr>
<tr>
<td>5. Shutdown when OS is inactive</td>
<td>The computer can be shutdown in the hibernate state. The operating status is retained at shutdown in inactive state, so operation details are not lost.</td>
</tr>
<tr>
<td>6. Schedule action</td>
<td>A schedule can be set to start/stop the UPS.</td>
</tr>
<tr>
<td>7. UPS setting change</td>
<td>The UPS settings (such as turning the buzzer ON/OFF) can be changed (settable items differ depending on the UPS).</td>
</tr>
<tr>
<td>8. External command execution</td>
<td>By executing a command at shutdown, an application program can be started.</td>
</tr>
<tr>
<td>9. Event log save</td>
<td>Information about events that occurred in the UPS (such as an AC line failure, setting change, and failure occurrence) is saved into a log.</td>
</tr>
<tr>
<td>10. Datalog save</td>
<td>Data of input/output voltage value, connection capacity, etc. are periodically saved as a log (the save frequency can be set).</td>
</tr>
<tr>
<td>11. Linked shutdown</td>
<td>When an AC line failure occurs, multiple computers connected to the UPS can be linked together to automatically shut down.</td>
</tr>
<tr>
<td>12. Outlet control</td>
<td>Outlets in the UPS can be turned OFF/ON on an individual outlet basis.</td>
</tr>
<tr>
<td>13. Redundant power supply support</td>
<td>Two or more UPS units can be connected to a computer provided with redundant power supply. When an AC line failure occurs in only one of the two UPS units, shutdown operation is not performed. Only when an AC line failure occurs in both UPS units, shutdown operation is performed. Therefore, the system availability can be improved.</td>
</tr>
<tr>
<td>14. Remote UPS management</td>
<td>The UPS can be managed remotely from a computer on the network.</td>
</tr>
<tr>
<td>15. Mail send</td>
<td>When a problem such as a power outage occurs, a notification email describing the problem can be sent to the system administrator.</td>
</tr>
<tr>
<td>16. SNMP management</td>
<td>UPS management information can be sent to SNMP Manager.</td>
</tr>
<tr>
<td>17. Telnet connection</td>
<td>Settings such as shutdown parameters can be made via the Telnet connection.</td>
</tr>
<tr>
<td>18. SYSLOG support</td>
<td>UPS management information can be recorded in SYSLOG form.</td>
</tr>
</tbody>
</table>
### 5-1-2 The supported OS of the UPS monitoring software

<table>
<thead>
<tr>
<th>Compatible OSs</th>
<th>Communication method</th>
<th>UPS monitoring software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows Server 2016</td>
<td></td>
<td>Power Attendant Lite</td>
</tr>
<tr>
<td>Windows Storage Server 2016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows 8.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows 8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows Server 2012 R2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows Storage Server 2012 R2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows Server 2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows Storage Server 2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows 7</td>
<td>Serial (USB 1.1) RS232C</td>
<td>PowerAct Pro</td>
</tr>
<tr>
<td>Windows Vista</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Ultimate/Business/Home Premium/Home Basic)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows Server 2008 R2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows Storage Server 2008 R2</td>
<td></td>
<td></td>
</tr>
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<td>Windows Server 2008</td>
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</tr>
<tr>
<td>Windows Storage Server 2008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serial (USB 1.1) RS232C</td>
<td></td>
<td>Simple Shutdown Software*2</td>
</tr>
<tr>
<td>Windows Server 2003</td>
<td></td>
<td>PowerAct Pro</td>
</tr>
<tr>
<td>Windows Server 2003 x64 Editions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows XP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows XP Professional x64 Edition</td>
<td></td>
<td>Simple Shutdown Software</td>
</tr>
<tr>
<td>Linux</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cent OS Ver.7.x/Ver.6.x/Ver.5.x</td>
<td></td>
<td>Power Attendant Lite</td>
</tr>
<tr>
<td>Red Hat Linux Ver.7.x/Ver.6.x/Ver.5.x</td>
<td></td>
<td>PowerAct Pro*1</td>
</tr>
<tr>
<td>Asianux Server 3</td>
<td></td>
<td>Simple Shutdown Software<em>1</em>4</td>
</tr>
<tr>
<td>macOS 10.13/10.12</td>
<td></td>
<td>Power Attendant Lite</td>
</tr>
<tr>
<td>Mac OS X</td>
<td>Serial (USB 1.1) RS232C</td>
<td>PowerAct Pro*3</td>
</tr>
<tr>
<td>v10.11/v10.10/v10.9/v10.8/v10.7/v10.6/v10.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mac OS X Server</td>
<td></td>
<td></td>
</tr>
<tr>
<td>v10.11/v10.10/v10.9/v10.8/v10.7/v10.6/v10.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 Files cannot be automatically saved.
*2 Windows Storage Server 2008 R2/Windows Storage Server 2008 are not supported.
*3 PowerPC version is not supported When using macOS 10.12/Mac OS X 10.11 and Mac OS X Server v10.11 in Ver.4.7, it is necessary to set OS. For details, refer to our homepage.
*4 Cent OS Ver.6.x, Red Hat Linux Ver.5.x, Asianux Server 3 is not supported.
5 Processing for the automatic shutdown of the connected devices

5-2 How to use automatic shutdown software

5-2-1 PowerAct Pro

By using the automatic shutdown software "PowerAct Pro", you can process the shutdown of your PC when a power outage occurs.
- Multiple computers on the network can be shut down.
- The UPS can be operated according to the customer's request, such as automatically starting and stopping the UPS by setting a schedule.
※ Set the time from when a power outage occurs until the PC is shut down by referring to "4-1-4 Estimated backup time" (P.49) so that the processing can be completed within the backup time.
For details, see the manual for the above software.

5-2-2 Simple Shutdown Software

By using "Simple Shutdown Software", you can automatically process the shutdown of your PC when a power outage occurs.
For details, see the manual for the above software.
You can download this software and its detailed manual from our website:
https://www.oss.omron.co.jp/ups/support/download/download.html

5-2-3 PowerAttendantLite

Using the included "PowerAct Pro" UPS monitoring software allows you to automatically shut down your computer when a power failure occurs.
Also, you can perform the desired operation by setting the automatic start/stop of the battery mode operation based on the scheduled setting.
For details, see the manual for the above software.
You can download this software and its detailed manual from our website:
https://www.oss.omron.co.jp/ups/support/download/download.html
※ The user name and password are required for downloading PowerActPro (MasterAgent).
For details, refer to the attached document "About the Use of Shutdown Software".
5-2-4 Connection method

1. Connect the UPS to your computer.
   Cable to be used: USB cable provided with the product

To connect two or more computers to the Uninterruptible Power Supply (UPS) (PowerAct Pro only)
2. Install "PowerAct Pro", "Simple Shutdown Software", or "PowerAttendantLite" to the PC you want to shut down.

<Installation procedure>
Refer to the "PowerAct Pro "installation guide.
"Simple Shutdown Software" "PowerAttendantLite": Refer to the manual for the applicable software.

<table>
<thead>
<tr>
<th>Important notice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restrictions on the commercial power supply stop time for a schedule action by automatic shutdown software</td>
</tr>
<tr>
<td>- To perform a schedule action for simultaneously stopping the UPS and the commercial power supply by using a device such as a circuit breaker, specify a period of 3 months or shorter (*) for the start of the next operation.</td>
</tr>
<tr>
<td>If you specify a period longer than 3 months, the internal timer is reset and the scheduled operation does not start.</td>
</tr>
<tr>
<td>If commercial power is not supplied for more than 3 months, start supplying commercial power and then press the &quot;Power&quot; switch to start operation. However, if the battery needs to be replaced then, you may not be able to start operation. In that case, replace the battery according to &quot;4-2 Replacing the battery&quot;.</td>
</tr>
<tr>
<td>※Note that when the battery needs to be replaced, this period is reduced to a half.</td>
</tr>
</tbody>
</table>

To manually start operating the UPS while it is running based on a schedule action set by automatic shutdown software, or to manually start up the UPS while it is stopped based on a schedule action, turn off the "Power" switch once, and then turn it on again. On the contrary, to manually stop the UPS while it is running based on a schedule action, turn off the "Power" switch.

When "Automatically stop UPS after OS shutdown" is set, if power is restored during the execution of automatic shutdown processing |
| - Even if a power outage occurs and power is restored during the execution of automatic shutdown processing, the output of the UPS stops once after the set time elapses. |
| In that case, do not turn on the computer until the UPS has finished restarting after power recovery. |

<table>
<thead>
<tr>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>After the UPS has automatically stopped during a power outage, if recovery is made from the power outage, the UPS automatically reboots and starts supplying power.</td>
</tr>
<tr>
<td>If you do not want to activate the connected devices, either turn off their switches or disable the automatic start setting for recovery from a power outage ([Settings] - [Boot Settings] - [Auto Reboot])</td>
</tr>
</tbody>
</table>
6 Contact signal functions

6-1 Contact signal I/O details

The customer can automate processing in the event of a power outage by developing a system on their own with contact signal inputs and outputs in accordance with the following specifications. It is possible to perform processing for a power outage by detecting a backup signal and perform system exit processing by detecting a low battery level signal.

In addition, by inputting a backup stop signal from the system, it is possible to stop the UPS while the battery still remains, and become ready for the next occurrence of power outage.

With an optional contact I/O card, contact signal inputs and outputs can be used. For details on how to handle optional cards, refer to "How to use optional cards" (P.71).

6-1-1 Types of signal outputs

The UPS has the following four types of signal outputs. The output circuit consists of an open collector circuit using a photo coupler (a kind of electronic switch).

<table>
<thead>
<tr>
<th>Signals</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backup Signal output (BU)</td>
<td>Stays ON during backup operation at a power failure.</td>
</tr>
<tr>
<td>Low Battery Level Signal output (BL)</td>
<td>Turns ON when the battery level becomes low during backup operation.</td>
</tr>
<tr>
<td>Trouble Signal output (TR)</td>
<td>Goes ON when an internal failure of the UPS occurs or when the battery life counter expires.</td>
</tr>
<tr>
<td>Battery Replacement Signal output (WB)</td>
<td>Turns ON when the deterioration of the battery and the necessity of its replacement are detected by a test, or when the the battery life counter reaches the end of count value.</td>
</tr>
</tbody>
</table>
### 6-1-2 Types of signal inputs

The UPS has the following two types of signal inputs.

<table>
<thead>
<tr>
<th>Signals</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backup Power Supply Stop Signal (BS) input</td>
<td>When the BS signal is turned ON (High), after the pre-set time elapses, stops the output of the UPS (Note 1).</td>
</tr>
<tr>
<td>Remote ON/OFF signal</td>
<td>Runs or stops the UPS according to the status of the contact connected to outside or the ON/OFF status of the open collector circuit. Operates the UPS when the status is OFF, and stops the UPS when the status is ON. By factory default, stops operation when a short circuit occurs. Note that to use this function, it is necessary to have the &quot;Power&quot; switch of the UPS turned on (Note 2).</td>
</tr>
</tbody>
</table>

Note 1: For the BS signal and the stop of the UPS output, when a voltage signal continuing for 10 seconds or longer (High) is input during backup operation, the output of the UPS stops. The time from reception of the BS signal to the stop of the output can be set (refer to "3-5-2 Setting method" (P.56)).

Note 2: There are two connection terminals: one at pin numbers 6-7 of the contact signal I/O port and the other at the remote ON/OFF dedicated port. Use one of them according to usage.

### 6-1-3 Contact Signal I/O port (DSUB9P female)

<table>
<thead>
<tr>
<th>Pin assignment</th>
<th>Pin number</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front view</td>
<td>1</td>
<td>Low Battery Level Signal output (BL)</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Trouble Signal output (TR)</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Backup Power Supply Stop Signal input (BS)</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>NC</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>COMMON (COM)</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Remote ON/OFF input (-)</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Remote ON/OFF input (+)</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Backup Signal output (BU)</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>Battery Replacement Signal output (WB)</td>
</tr>
</tbody>
</table>

※To fix a connector screw at the contact signal I/O port, manually tighten the screw without using an electric screwdriver.
6-1-4 Remote ON/OFF dedicated port

<table>
<thead>
<tr>
<th>Pin assignment</th>
<th>Pin number</th>
<th>Signal name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front view</td>
<td>1</td>
<td>Remote ON/OFF (-)</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Remote ON/OFF (+)</td>
</tr>
</tbody>
</table>

Screw size: Inch screw thread #4-40UNC

6-1-5 Signal I/O ratings

- Signal output (BL, TR, BU, WB)
- Backup Power Supply Stop Signal input (BS)

Photocoupler ratings
Applicable voltage: 50VDC or less
Input voltage:
  - High (ON): 5 to 15VDC
  - Low (OFF): 0.5VDC or less
Input current:
  - 2 to 18mA

Remote ON/OFF
Voltage between terminals: 5VDC
Current when the circuit is closed: max.10mA

6-1-6 Signal I/O circuit

- Signal output (BL, TR, BU, WB)
- Backup Power Supply Stop Signal input (BS)
- Remote ON/OFF signal
6-1-7 Signal I/O circuit usage example

- Example of BU signal output circuit and connection circuit
  ![BU Signal Output Circuit Diagram]

- Example of connection circuit for BS signal input circuit
  ![BS Signal Input Circuit Diagram]

- Remote ON/OFF signal
  ![Remote ON/OFF Connection Diagram]

6-1-8 Important notice for using signal inputs and outputs

When connecting a device where the counter electromotive force is generated such as a relay to the signal output circuit, attach a diode preventing the counter electromotive force to both ends of the device.

<Explanatory note>

After the UPS has automatically stopped due to a power outage, if recovery is made from the power outage, the UPS automatically reboots and starts supplying power. If you do not want to activate the connected devices, either turn off their switches or enable the automatic start setting for recovery from a power outage (No Auto Boot).
7 How to use optional cards

For the UPS, to control external devices, a contact I/O card, SNMP/Web card, and RS232C card are available as options.

7-1 Mounting an optional card

Mount the option card in the back of the main body.

1. Turn the power of the main body off.
   Detach the optional card cover in the back by removing two screws.

2. Insert the optional card into the main body as far as it goes so that it fits into the connector of the main body.
7-2 Contact signal I/O card

7-2-1 Main features

The customer can automate processing in the event of a power outage by developing a system on their own with contact signal inputs and outputs. It is possible to perform processing for a power outage by detecting a backup signal and perform system exit processing by detecting a low battery level signal.

In addition, by inputting a backup stop signal from the system, it is possible to stop the UPS while the battery still remains, and become ready for the next occurrence of power outage.
7-2-2 Specifications

(Relay output type: SC08)

- Signal output (BU, BU, BL, BL, TR, TR, WB, WB)
  Relay ratings
  Applicable voltage: 30VDC or less
  Maximum current: 2A (for resistive load)
  1A (for inductive load)

- Backup Power Supply Stop Signal input (BS, BS)
  Input voltage: High (ON)
  8 to 24VDC (for the 24V setting)
  5 to 12VDC (for the 12V setting)
  Low (OFF) 0.7VDC or less

- Remote ON/OFF
  Voltage between terminals: 5VDC
  Current when the circuit is closed max. 10mA

(Photocoupler type: SC07)

- Signal output (BL, TR, BU, WB, BU)
  Photocoupler ratings
  Applicable voltage: 35VDC or less
  Maximum current: 20mA

- Backup Power Supply Stop Signal input (BS)
  Input voltage: High (ON)
  5 to 12VDC
  Low (OFF) 0.7VDC or less

- Remote ON/OFF
  Voltage between terminals: 10VDC
  Current when the circuit is closed max. 10mA

※For details, see the manual that comes with the contact I/O card.
7-3 SNMP/Web card

How to use optional cards
7-3 SNMP/Web card
7-3-1 Main features

Connecting the UPS and the network directly
The UPS can be directly connected to the LAN. The UPS can be managed from a computer connected to the network.

Remote UPS management
By using commercially available SNMP Manager or Web browser software, the UPS can be managed from a computer connected to the network.

Possible to set the functions for the UPS and SNMP/Web card from a computer on the LAN
The parameters for the UPS and SNMP/Web card can be set via SNMP Management station or Web browser. The functions as SNMP Agent can be set through Telnet or Serial connection.

Reinforced security function
For HTTP and SNMP connections, access control can be imposed on an IP basis.

Linked shutdown
Multiple UPS units can be linked to shut down.

Log function
The statuses of the UPS such as the power status and the battery status can be saved into the flash memory in the card. SYSLOG is supported.

Automatic shutdown function
Shutdown operation is automatically performed in the event of a power outage or at the pre-set time. A schedule action (auto start, auto stop) can be executed via network.

UPS standard MIB (RFC1628) and proprietary MIB (swc mib) installed
By using a JAVA applet, the power status can be displayed in graph form and visually checked.
7-3-2 Specifications

<table>
<thead>
<tr>
<th>LAN port</th>
<th>10Base-T or 100Base-TX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network protocol</td>
<td>SNMP v1/v3, HTTP, SSHv2, ARP, RARP, TFTP, TCP/IP, UDP, Telnet, SNTP, SMTP, DHCP, BOOTP, IPv4</td>
</tr>
<tr>
<td>Other communication channels</td>
<td>Asynchronous serial connection (setting only)</td>
</tr>
<tr>
<td>No. of controllable computers</td>
<td>Max. 32 (when linked shutdown is enabled, a slave UPS is included)</td>
</tr>
<tr>
<td>Supported MIB</td>
<td>UPSMIB (RFC1628) OMRON MIB</td>
</tr>
<tr>
<td>Other</td>
<td>Realtime clock installed</td>
</tr>
</tbody>
</table>

- For details, see the manual that comes with the SNMP/Web card.
- The latest firmware can be downloaded from the OMRON Website (https://www.oss.omron.co.jp/).
- For the latest specifications, check the OMORN Website (https://www.oss.omron.co.jp/).

7-4 RS232C card

7-4-1 Main features

Automatic shutdown software (such as Power Act Pro) can be used through RS232C communication.
Prepare a BUC22 optional cable together.
8 If you suspect a problem...

If the UPS does not operate correctly, check as shown in the table below. If the problem cannot be solved by taking the relevant action in the table, contact [OMRON Electronic Equipment Customer Support Center](#).

### 8-1 If you suspect a problem...

<table>
<thead>
<tr>
<th>Problem</th>
<th>Buzzer</th>
<th>Output</th>
<th>Charge</th>
<th>LCD displayed message (Note 2)</th>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buzzer sounding intermittently</td>
<td>4-second intermittent sound</td>
<td>ON</td>
<td>OFF/ Discharging</td>
<td>Battery mode</td>
<td>The UPS is in backup operation due to a power failure or AC input error. Output stops if backup operation is continued.</td>
<td>Hold down the “ESC” switch for 0.5 seconds or longer to stop the buzzer. Stop the connected devices in use by shutting them down (and processing).</td>
</tr>
<tr>
<td></td>
<td>2-second intermittent sound</td>
<td>ON</td>
<td>ON</td>
<td>Fault-E10 (Battery Replace LED III)</td>
<td>Battery deterioration is detected.</td>
<td>Hold down the “ESC” switch for 0.5 seconds or longer to stop the buzzer. Replace the battery. Get an optional replacement battery, and you can replace the battery on your own.</td>
</tr>
<tr>
<td></td>
<td>1-second intermittent sound</td>
<td>ON</td>
<td>OFF/ Discharging</td>
<td>Battery low</td>
<td>(Same as above) Output stops soon because the battery level is low.</td>
<td>Same as above</td>
</tr>
<tr>
<td></td>
<td>0.5-second intermittent sound</td>
<td>ON</td>
<td>ON/ Discharging</td>
<td>Fault-E9</td>
<td>Too many devices are connected. The rated capacity is exceeded. If this state continues, the mode shifts to bypass operation (Note 1).</td>
<td>Hold down the “ESC” switch for 0.5 seconds or longer to stop the buzzer. Reduce connected devices until the warning sound stops.</td>
</tr>
<tr>
<td>Buzzer sounding continuously</td>
<td>Continuous sound</td>
<td>OFF</td>
<td>Undefined (Note 3)</td>
<td>Fault-E3</td>
<td>The UPS is stopped due to a short circuit on the connected device side or due to significant connected-capacity overload.</td>
<td>Hold down the “ESC” switch for 0.5 seconds or longer to stop the buzzer.</td>
</tr>
<tr>
<td></td>
<td>Continuous sound</td>
<td>ON</td>
<td>Undefined (Note 3)</td>
<td>Fault-EO</td>
<td>The mode shifts to bypass operation due to overload (Note 1).</td>
<td>Hold down the “ESC” switch for 0.5 seconds or longer to stop the buzzer.</td>
</tr>
<tr>
<td></td>
<td>Continuous sound</td>
<td>ON</td>
<td>Undefined (Note 3)</td>
<td>Fault-E1</td>
<td>The mode shifts to bypass operation due to an output voltage abnormality (overvoltage) (Note 1).</td>
<td>Hold down the “ESC” switch for 0.5 seconds or longer to stop the buzzer.</td>
</tr>
<tr>
<td></td>
<td>Continuous sound</td>
<td>ON</td>
<td>Undefined (Note 3)</td>
<td>Fault-E2</td>
<td>The mode shifts to bypass operation due to an output voltage abnormality (undervoltage) (Note 1).</td>
<td>Hold down the “ESC” switch for 0.5 seconds or longer to stop the buzzer. Turn OFF all the Power switches on the UPS and connected devices. Reduce connected devices, and turn ON the Power switches on the UPS and remaining connected devices.</td>
</tr>
<tr>
<td></td>
<td>Continuous sound</td>
<td>ON</td>
<td>Undefined (Note 3)</td>
<td>Fault-E3</td>
<td>The mode shifts to bypass operation due to an output voltage abnormality (overvoltage) (Note 1).</td>
<td>Hold down the “ESC” switch for 0.5 seconds or longer to stop the buzzer.</td>
</tr>
<tr>
<td></td>
<td>Continuous sound</td>
<td>ON</td>
<td>Undefined (Note 3)</td>
<td>Fault-E4</td>
<td>The mode shifts to bypass operation due to a charging voltage abnormality (undervoltage) (Note 1).</td>
<td>Hold down the “ESC” switch for 0.5 seconds or longer to stop the buzzer.</td>
</tr>
<tr>
<td></td>
<td>Continuous sound</td>
<td>ON</td>
<td>Undefined (Note 3)</td>
<td>Fault-E5</td>
<td>The mode shifts to bypass operation due to an abnormal internal temperature (Note 1).</td>
<td>If the displayed content does not change, the UPS is faulty. Contact your dealer or OMRON Electronic Equipment Customer Support Center. Note: You can check the output voltage by selecting “Measurement” menu → “Input and Output”. You can check the battery voltage by selecting “Measurement” menu → “Battery”.</td>
</tr>
<tr>
<td></td>
<td>Continuous sound</td>
<td>ON</td>
<td>Undefined (Note 3)</td>
<td>Fault-E9</td>
<td>The mode shifts to bypass operation due to an internal cooling fan abnormality (Note 1).</td>
<td>Hold down the “ESC” switch for 0.5 seconds or longer to stop the buzzer.</td>
</tr>
</tbody>
</table>

- The UPS cannot be powered on.
- Power is not output to the secondary side (connected device side).
- No response even when the power switch is pressed.
- The UPS immediately starts.

### Notes

1. (Same as above) Output stops soon because the battery level is low.
2. The mode shifts to bypass operation due to a short circuit on the connected device side.
3. The UPS is not operating due to an internal cooling fan abnormality.
### Problem

- The UPS cannot be powered on.
- Power is not output to the secondary side (connected device side).
- No response even when the power switch is pressed.

### Buzzer

<table>
<thead>
<tr>
<th>Problem</th>
<th>Buzzer</th>
<th>Output</th>
<th>Charge</th>
<th>LCD displayed message (Note 2)</th>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>OFF</td>
<td>ON</td>
<td>AC input error-VH</td>
<td>The input voltage or frequency is low or high.</td>
<td>Select [Measurement] - [Input and Output] and check the voltage/frequency of the input power supply.</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>OFF</td>
<td>ON</td>
<td>AC input error-VL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>OFF</td>
<td>ON</td>
<td>AC input error-FH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>OFF</td>
<td>ON</td>
<td>AC input error-FL</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Output

Remote signal stopped

- The remote ON/OFF terminal has a short-circuit or the setting for "Remote ON/OFF Logic" on the LCD menu is changed to "OFF when opened".

### Charge

<table>
<thead>
<tr>
<th>Problem</th>
<th>Buzzer</th>
<th>Output</th>
<th>Charge</th>
<th>LCD displayed message (Note 2)</th>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>OFF</td>
<td>ON</td>
<td>Remote signal stopped</td>
<td>The remote ON/OFF terminal has a short-circuit or the setting for &quot;Remote ON/OFF Logic&quot; on the LCD menu is changed to &quot;OFF when opened&quot;.</td>
<td>Refer to &quot;6 Using the contact I/O functions&quot;.</td>
<td></td>
</tr>
</tbody>
</table>

### Unable to back up

- On
- ON
- OFF
- Undefined (Note 3)

### The connected devices stop when a power outage occurs.

- 2-second intermittent sound
- 4-second intermittent sound

### An error occurs in power recovery after a power outage.

- None
- Undefined (Note 3)

### The sound of the fan became annoying (the rotation speed increased).

- None
- Undefined (Note 3)

### - Clicking noise occurs.
- Clicking noise is originating from the UPS, though a power outage does not occur.

### Cause

- AC input error-VH
- AC input error-VL
- AC input error-FH
- AC input error-FL

### Action

- Connect the UPS to commercial power and charge it for 4 hours or longer.
- Hold down the "ESC" switch for 0.5 seconds or longer to stop the buzzer.
- Replace the battery.
- Get an optional replacement battery, and you can replace the battery on your own.
- Check the environment in which the UPS is installed.
- (Such as whether a thin extension cable is used and whether the UPS and a device with large power consumption are connected to the same commercial power supply outlet.)

### Note

1. Commercial power is output as-is during bypass operation. When the mode cannot shift to bypass operation, or when a power outage (AC input turned OFF) occurs during bypass operation, output stops.

2. A maximum of two types of messages may be displayed alternately on the LCD.

3. The output (charging, LCD display message) is different depending on the situation.
## 9 References

### 9-1 Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Operation method</th>
<th>BL50T</th>
<th>BL75T</th>
<th>BL100T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method</td>
<td>Line-interactive system</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling method</td>
<td>Forced air-cooling</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Input

<table>
<thead>
<tr>
<th></th>
<th>BL50T</th>
<th>BL75T</th>
<th>BL100T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated input voltage</td>
<td>AC100V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input voltage range</td>
<td>80±2 to 118±2 VAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>50/60Hz±5.5Hz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum current (*1)</td>
<td>7.5A</td>
<td>12A</td>
<td>15A</td>
</tr>
<tr>
<td>Phase</td>
<td>Single-phase, two-wire (grounded)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input protection</td>
<td>Overcurrent protection device</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input plug</td>
<td>NEMA5-15P</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Output

<table>
<thead>
<tr>
<th></th>
<th>BL50T</th>
<th>BL75T</th>
<th>BL100T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated output capacity</td>
<td>500V/450W</td>
<td>750V/680W</td>
<td>1000V/900W</td>
</tr>
<tr>
<td>Voltage</td>
<td>For commercial operation: AC92±2 to 108±2V※2 / AC89±2 to 110±2V※3 / AC94±2 to 106±2V※4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>For both AVR operation and backup operation: 100V±3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wave form</td>
<td>For commercial operation: Sine wave</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>For backup operation: Sine wave</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distortion rate</td>
<td>Below 20% (Rectified load, Rated output)</td>
<td>Below 15% (Resistive load, Rated output)</td>
<td></td>
</tr>
<tr>
<td>Phase</td>
<td>Single-phase, two-wire (grounded)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power output outlet</td>
<td>NEMA5-15R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Switching time</td>
<td>Within 10ms</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Battery

<table>
<thead>
<tr>
<th></th>
<th>BL50T</th>
<th>BL75T</th>
<th>BL100T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Lithium ion battery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage/capacity x count</td>
<td>DC25.2V/3900mAh x 1</td>
<td>DC25.2V/5850mAh x 1</td>
<td>DC25.2V/7800mAh x 1</td>
</tr>
<tr>
<td>Backup time (25 degrees Celsius, initial characteristic)</td>
<td>6 minutes (450W)</td>
<td>5 minutes (680W)</td>
<td>5 minutes (900W)</td>
</tr>
<tr>
<td>Charging time</td>
<td>8 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life of battery</td>
<td>Ambient temperature 25 degrees Celsius</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Life expectancy: 10 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>BL50T</td>
<td>BL75T</td>
<td>BL100T</td>
</tr>
<tr>
<td>----------------</td>
<td>-------</td>
<td>-------</td>
<td>--------</td>
</tr>
<tr>
<td>Usage environment/temperature/humidity</td>
<td>0 to 40 degrees Celsius/25 to 85% RH (no condensation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-15 to 50 degrees Celsius/10 to 90% RH (no condensation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety standards</td>
<td>UL 1778/UN 38.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environment</td>
<td>VCCI Class A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emission AC power supply radiated electromagnetic field emissions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal power consumption</td>
<td>Without load Normal operation/maximum</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>With rated load Normal operation/maximum</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(For conversion into kilojoule/hour [kJ/h], use &quot;internal power consumption (W) x 3.6&quot; for calculation.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise</td>
<td>50dB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions (WxDxH)</td>
<td>140mm × 330mm × 167mm</td>
<td>140mm × 330mm × 167mm</td>
<td>155mm × 330mm × 167mm</td>
</tr>
<tr>
<td>Weight of unit</td>
<td>Approximately 5.2kg</td>
<td>Approximately 5.8kg</td>
<td>Approximately 6.4kg</td>
</tr>
</tbody>
</table>

*1 100V mode, minimum input voltage: 70V, load: 90%
*2 When standard sensitivity is set
*3 When low voltage sensitivity is set
*4 When high voltage sensitivity is set
*5 Rated load/rated input voltage
9-2 Dimensions

- BL50T/BL75T

- BL100T

* Unit: mm/Tolerance: ±2mm
9-3 Battery life

■ Battery life

The lithium battery used for the battery unit has a limit. Check the battery periodically. For details on how to check the battery, refer to "4-1 Checking the battery" (P.47). We recommend replacing the battery before it reaches end of life.

Battery life
(Trickle life: Life of the battery when it is not frequently charged and discharged and when it is discharged about once or twice per month)

<table>
<thead>
<tr>
<th>Battery type</th>
<th>Battery life expectancy (Ambient temperature 40 degrees Celsius)</th>
<th>Battery life expectancy (Ambient temperature 30 degrees Celsius)</th>
<th>Battery life expectancy (Ambient temperature 25 degrees Celsius)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long life battery</td>
<td>5 years</td>
<td>8 years</td>
<td>10 years</td>
</tr>
</tbody>
</table>

※ Basically, the ambient temperature greatly affects the life of the battery.
The relationship between the input voltage sensitivity settings and the input/output voltages of the Uninterruptible Power Supply (UPS) is as shown in the following table. Select the input voltage sensitivity setting that suits the range of the input voltage specifications of the connected devices.

<table>
<thead>
<tr>
<th>Input voltage sensitivity</th>
<th>UPS input voltage range</th>
<th>UPS output voltage range</th>
<th>How to select an input voltage sensitivity setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>High sensitivity setting</td>
<td>94 to 106VAC</td>
<td>94 to 106VAC</td>
<td>If you want to narrow the output voltage range as much as possible</td>
</tr>
<tr>
<td></td>
<td>More than 106VAC or less than 94VAC</td>
<td>100VAC± 3 %</td>
<td></td>
</tr>
<tr>
<td>Standard setting</td>
<td>92 to 108VAC</td>
<td>92 to 108VAC</td>
<td>When using in an ordinary environment</td>
</tr>
<tr>
<td></td>
<td>More than 108VAC or less than 92VAC</td>
<td>100VAC± 3 %</td>
<td></td>
</tr>
<tr>
<td>Low sensitivity setting</td>
<td>89 to 110VAC</td>
<td>AC89V to 110V</td>
<td>If you want to operate the UPS by keeping the frequency of fan operation low</td>
</tr>
<tr>
<td></td>
<td>More than 110VAC or less than 89VAC</td>
<td>AC100V± 3 %</td>
<td></td>
</tr>
</tbody>
</table>
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