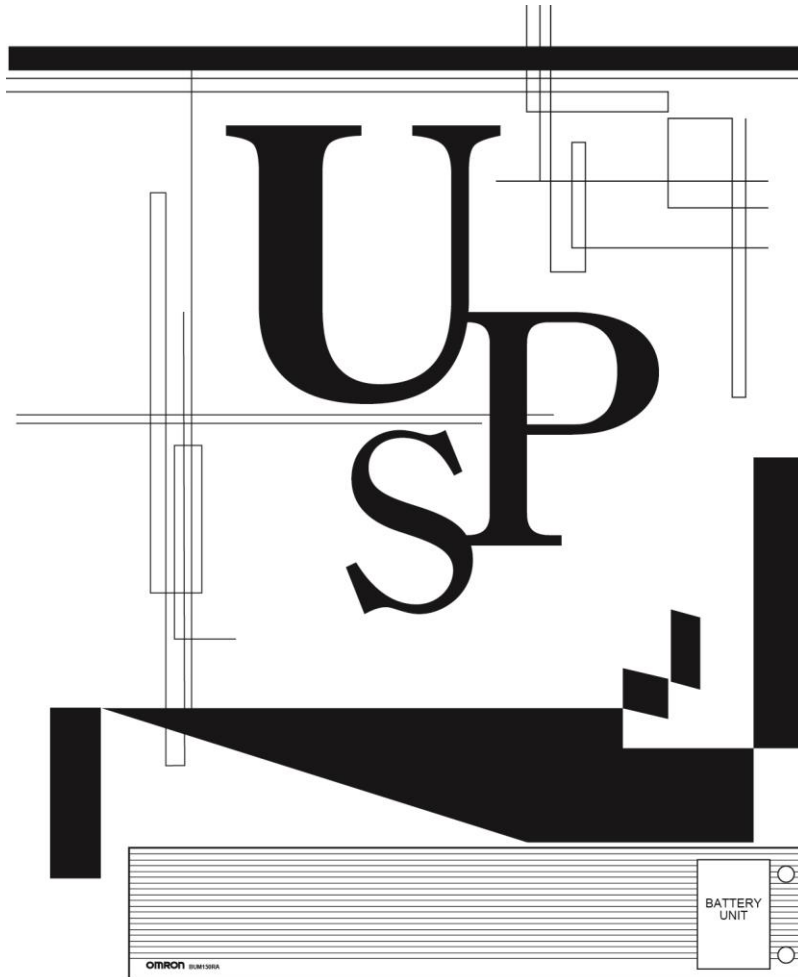


# OMRON

## Battery Unit

# BUM150RA Instruction Manual



- This manual provides important safety-related information. Thoroughly read and understand this manual before installing and using the product.
- Keep this manual in a convenient location so that you can refer to it whenever necessary.
- The contents of this manual are subject to change without notice.
- The warranty is included with the product.

# Introduction

---

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

This manual provides important safety-related information. Thoroughly read and understand this manual before installing and using the product.

## Disclaimers

We are not liable for any damage or secondary damage resulting from the use of our product, including malfunction and failure of equipment, connected devices, or software.

Make sure to read the safety precautions before using the unit.

- In the event you transfer or sell this unit to a third party, please include all of the documentation that came with this unit. This is to ensure that the unit is used in line with the conditions described in the included documentation.
- This manual contains important safety-related information. Please read and understand the contents of the manual before beginning operation.  
If you discover any omissions or errors in the manual, please contact the shop of purchase.
- Windows is the registered trademark of Microsoft Corporation in the United States and/or other countries
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# Safety Precautions

Important information for safe operation is described. Be sure to read it before installation and start of use.

The safety symbols and their meaning used in this manual are as follows:

|   |                |   |
|---|----------------|---|
|  | <b>Warning</b> | Misuse may cause death or serious injury.   |
|  | <b>Caution</b> | Misuse may cause injury or property damage. |

\* Property damage means damage to houses/household effects, livestock, and pets.

 : Indicates prohibition. For example,  indicates that disassembly is prohibited.

 : Indicates obligation. For example,  indicates that grounding is necessary.

Note that events categorized as a caution required matter also may cause more serious results under certain conditions.

## **Warning**

**Do not disassemble, repair, or modify the product.**

- Doing so may cause an electric shock or a fire.



**If liquid leaks from the product, do not touch it.**

- Doing so may cause blindness or burns.
- If it touches your eyes or skin, wash it out with lots of clean water and consult your doctor.



## **Warning (product use)**

**Do not use this product in applications which require an extremely high degree of reliability and safety, such as those listed below.**

**(This product is designed and manufactured for use for OA equipment such as personal computers.)**

- Medical equipment or system that may cause death directly
- Applications that directly affect the safety of people. (For example, the operation and control of cars and elevators.)
- Applications in which failure may significantly damage or impact the society and public. (For example, important computer systems or communication equipment.)
- Applications with the same level of importance as those described above.



**Caution (installation)**

**Two or more people should work together to carry, unpack and install.**

- Because the unit is heavy, you may injure yourself or drop the unit, or it may fall over.



**Carry the unit considering its weight and balance, and place it on a stable and robust base.**

- Dropping or toppling the unit may cause injury.
- The approximate weights of the units are 31kg.
- If you drop the unit, stop using it and have it inspected and repaired.



For repair, contact us; see at the lower right of this sheet.

**Keep plastic bags out of the reach of children.**

- Children may suffocate if they put their heads into plastic bags.



**Do not install the unit in other than specified orientations.**

- Dropping or toppling the unit may cause injury.
- If you install the unit in an orientation other than specified, the unit cannot be protected from a battery fluid leakage.
- Refer to "1-3 Installation" on page 11 for proper installation positions.



**Do not use the product where the maximum temperature exceeds 40°C.**

- The battery weakens rapidly, and may cause a fire.
- Doing so may cause the unit to fail or malfunction.



**Do not exceed the ranges specified for environmental conditions during use/storage.**

**Do not install or store the unit in the places listed below.**

- Do not store in places where the humidity is lower than 10% or higher than 90%.
- Do not use the unit in places where the ambient temperature is lower than 0°C or higher than 40°C.
- Do not use in places where the humidity is lower than 25% or higher than 85%.
- Do not install/store the unit in closed places such as cabinets with no clearance, places where there is flammable or corrosive gas, places with large amounts of dust, places exposed to direct sunlight, places exposed to shock or vibration, or outdoors.
- Installation or storing the unit in such a place may cause a fire.



**All of the included accessories are designed to be used exclusively with the unit. Do not use the accessories with other devices.**

- Doing so may compromise the safety of devices.



**When installing the unit on a rack, place it on the lowest shelf.**

- Injury may result if the unit falls.



**Make sure to use the mounting screws included with the brackets.**

- Mounting screws other than those included may not be strong enough to support the unit, causing it to fall.
- If you attach the case using long screws other than those included with the product, you may damage the internal parts of the unit.



 **Caution (use)**

**When the battery is dead, replace it immediately or stop using the unit.**

- Continuing the use of it may cause fire or electric shock due to liquid leaks.

| Ambient temperature | Expected life |
|---------------------|---------------|
| 40 °C               | 1.7 years     |
| 30 °C               | 3.5 years     |
| 25 °C               | 5 years       |

\* The values in the table are the expected life under standard use conditions and are not guaranteed.



**Do not place heavy objects on the unit, and do not drop metal objects onto the unit.**

- Doing so may cause distortion/damage to the case or a failure of the internal circuit, and may cause a fire.



**Do not use the product in a closed place and/or do not cover the product.**

- Doing so may cause abnormal heating or a fire.



**Do not pour water on the unit and do not allow it to become wet.**

- Doing so may cause an electric shock or a fire.
- If the unit becomes wet, immediately stop using it and have it inspected and repaired.



For information about repairs, contact us.

**Do not insert metal objects into the battery connectors.**

- Doing so may cause an electric shock.



**If you notice an abnormal sound or smell, smoke, or leaking fluid, immediately turn OFF the unit's "Power" switch and stop the supply.**

- Using the unit under such conditions may cause a fire.
- If you notice such a condition, stop using the unit and contact us for inspection and repairs.



**If fluid (dilute sulfuric acid) leaks from the interior, do not touch the fluid.**

- Doing so may cause blindness or burns.
- If the fluid contacts your eyes or skin, wash it out with lots of clean water and consult your doctor.



**Do not sit or stand on top of the product, use it as a step ladder, or lean against it.**

- Doing so may cause the unit to fail or to fall over and result in injury.



## Caution (for maintenance)

**When maintaining the connected equipment, turn OFF the unit's "Power" switch to stop the output, and stop the supply of commercial power.**

- Even if commercial power to the UPS is stopped while it is in operation, the power output of his unit does not stop and power is supplied from the receptacle.



**Do not disassemble, repair, or modify the unit.**

- Doing so may cause an electric shock or a fire.



**If fluid (dilute sulfuric acid) leaks from the interior, do not touch the fluid.**

- Doing so may cause blindness or burns.
- If the fluid contacts your eyes or skin, wash it out with lots of clean water and consult your doctor.



**Do not throw the unit into fire.**

- The lead battery in the unit may explode, or leak dilute sulfuric acid.



**Do not insert metal objects into the power supply output receptacle of the UPS.**

- Doing so may result in electric shock.



**Do not insert metal objects into the battery connectors.**

**Do not short between the connector terminals.**

- Doing so may result in electric shock.



### **Caution (for battery replacement)**

#### **Perform replacement on a stable and flat place.**

- Handle the battery carefully so that you do not drop it.
- Risk of injury due to falling, or burns due to fluid leakage (dilute sulfuric acid).



#### **Use a specified battery for replacement.**

- Not doing so may cause a fire.
- Product model: Battery pack : BUB150R (2 required)



#### **Do not replace the battery in a place where there is flammable gas.**

- Spark may occur when connecting the battery, which may cause an explosion or fire.



#### **If fluid (dilute sulfuric acid) leaks from the battery, do not touch the fluid.**

- Doing so may cause blindness or burns.
- If the fluid contacts your eyes or skin, wash it out with lots of clean water and consult your doctor.



#### **Do not disassemble or modify the battery.**

- Doing so could cause dilute sulfuric acid leak, which could cause blindness and burns.



#### **Do not drop the battery and do not expose it to strong impact.**

- Dilute sulfuric acid may leak.



#### **Do not short the battery with metal objects.**

- Doing so could cause an electric shock, fire or burn.
- Some electrical energy still remains inside the spent battery.



#### **Do not dispose of batteries in a fire.**

- The batteries may explode.
- Dispose of used batteries according to the instructions.



#### **Do not use a new battery and an old battery at the same time.**

- Dilute sulfuric acid may leak.
- A battery can present a risk of electrical shock and high short circuit current.
- Contact with any part of a grounded battery can result in electrical shock.
- The following precautions should be observed when working on batteries:
  - a. Remove watches, rings, or other metal objects.
  - b. Use tools with insulated handles.
  - c. Wear rubber gloves and boots.
  - d. Do not lay tools or metal parts on top of batteries.
  - e. Disconnect charging source prior to connecting or disconnecting battery terminals.
  - f. Remove battery grounds during installation and maintenance to reduce likelihood of shock. Remove the connection from ground if any part of the battery is determined to be grounded.



- Servicing of batteries should be performed or supervised by personnel knowledgeable of batteries and the required precautions.  
Keep unauthorized personnel away from batteries.



**Notes****Charge the battery (for at least 24 hours) immediately after purchase.**

- If you do not use the unit for a long time after purchase, the battery performance may deteriorate and it may become unusable.
- The battery can be charged once the AC input plug of the UPS is connected to a wall outlet (commercial power).

**When storing the UPS, charge the battery for at least 24 hours and turn OFF the power switch.**

- The battery discharges even when it not being used, and it goes into over discharge state if it is left for a long period of time.  
The backup time may become shorter or the battery may become unusable.
- We recommend keeping the temperature 25°C or less when storing the unit for long periods of time.  
Connect the AC input plug of the UPS to a wall outlet (commercial power) for at least 24 hours at the following intervals:
  - Every 6 months when storage temperature is 25°C or less
  - Every 2 months when storage temperature is 40°C or less
- Turn OFF the power switch of the UPS during storage.

**Do not install or store the unit in a place exposed to direct sunlight.**

- A rise in temperature may cause the built-in battery to deteriorate rapidly and become unusable.

**This unit uses a lead acid battery.**

- Lead acid batteries are a valuable recyclable resource. Please recycle.  
For information about recycling, please contact our Electronic Systems & Equipments repair center.



## 1 Preparation

### 1-1 Unpacking the product

# 1 Preparation

## 1-1 Unpacking the product



### Caution

**Product weights are 31 kg. Carefully consider the weight when unpacking/transporting this product.**

- Injury may result if the unit is dropped.

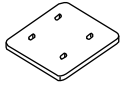


Open the package box and take out the main body and accessories.

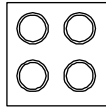
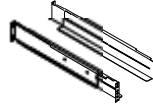
## 1-2 Checking the accessories

Make sure that all accessories are included and that there is no external damage. If you notice any defects, immediately contact us.

|  |          |
|--|----------|
| Rubber feet for landscape layout       | 1        |
| 19-inch racks support angle            | 1        |
| Fixing bracket                         | 1        |
| Screws for fixing bracket              | 4        |
| Precautions (Japanese/English/Chinese) | 1        |
| Battery replacement date label         | 1        |
| Serial number label                    | 2per set |
| Product warranty                       | 1        |
| User registration card                 | 1        |
| Guidance for user registration         | 1        |
| Guidance for replace service           | 1        |



Fixing bracket

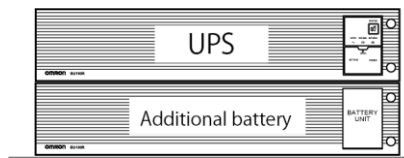
Screws for  
fixing bracketRubber feet  
for landscape  
layout19-inch racks  
support angleBattery  
replacement  
date labelSerial number  
labelProduct  
warrantyPrecautions  
(Japanese/Eng  
lish/Chinese)User  
registration  
cardGuidance for  
user  
registratiiorGuidance for  
replace  
service

## 1-3 Installation

When installing this device, this device permits the following installing methods

- Correct positions

< Installation by stacking the unit and the UPS >

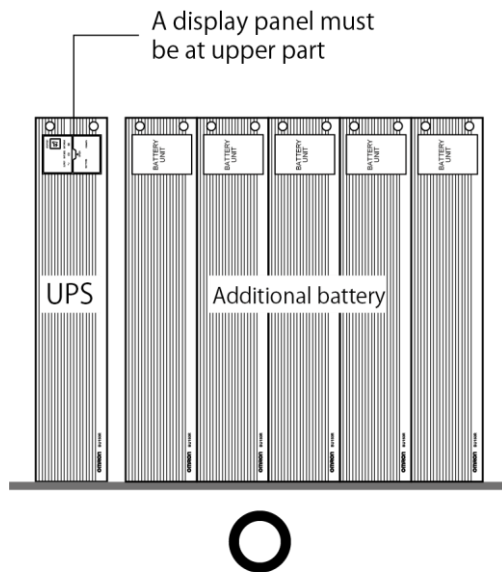


- Install the UPS on an additional battery.
- Do not install the unit upside down.
- It is possible to stack up to 2 devices (one UPS and one unit).
- When installing 3 or more devices (one UPS and 2 or more additional batteries), position them vertically such as the following picture or install them by the rackmount installation method.

# 1 Preparation

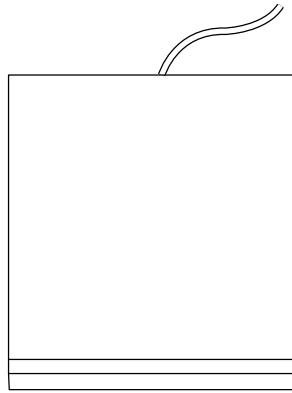
## 1-3 Installation

< Installation by positioning the unit and the UPS vertically >

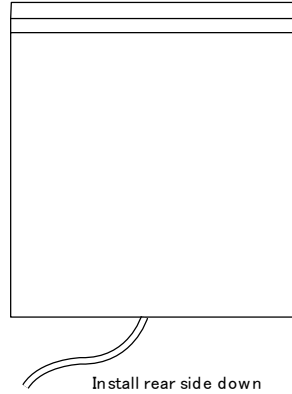


- A display panel must be at upper part.
- When installing them vertically, it is possible to install up to 6 additional batteries.

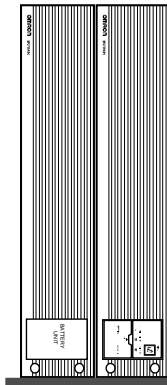
● Incorrect positions



Install front side down



Install rear side down



Install right side down



Install on UPS



Stacking 3 or more devices

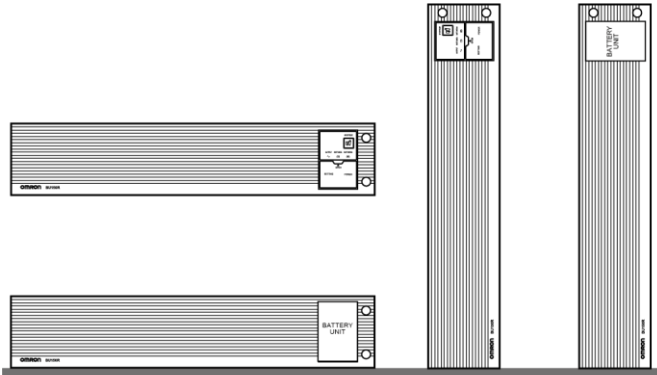


# 1 Preparation

## 1-3 Installation

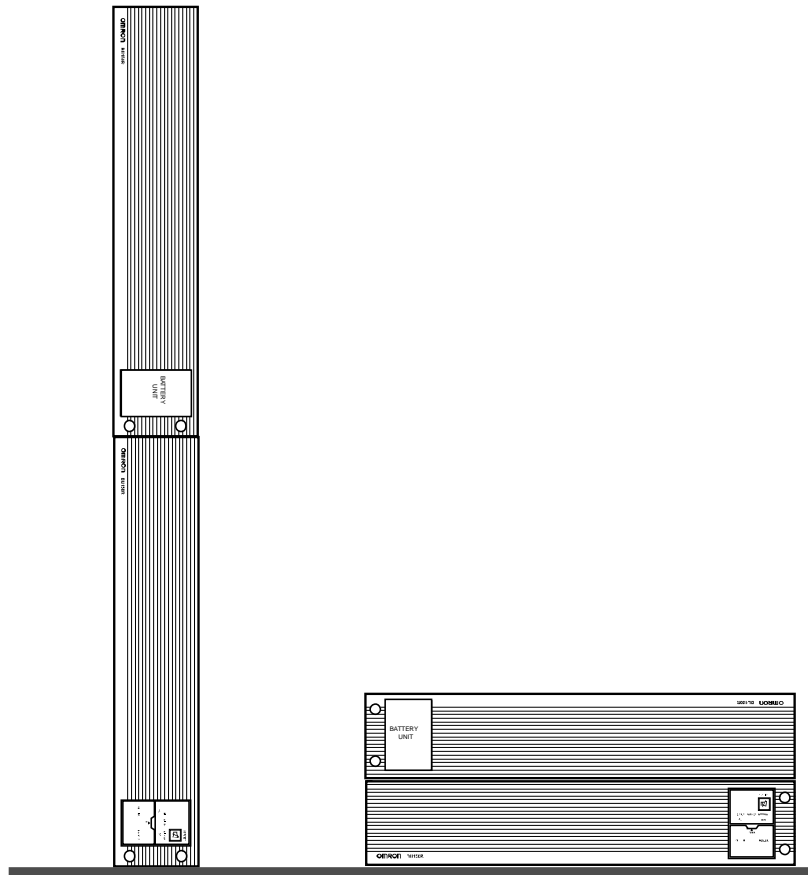


Positioning them horizontally (The cable does not reach)  
※The cable length is approximately 350mm



Installing them apart from each other (The cable does not reach)  
※The cable length is approximately 350mm





Stack on the vertical



Install upside down



## 2 Installation

2-1 Rackmount installation  
(EIA/JIS 19-inch rack/server rack)

# 2 Installation

## 2-1 Rackmount installation (EIA/JIS 19-inch rack/server rack)

Install on the EIA/JIS19 19-inch rack/server rack.



### Caution

**When performing rack installation, ensure that the UPS is supported and stabilized by using both the support angles and the table clamps that were included.**

- When installing on a rack, make sure that the UPS is supported by the each unit individually.
- When installing on a rack, make sure to use the support angles and table clamps included with the product. Without the support angles, the front clamp alone cannot support the weight of the UPS.
- The mass of each unit: Approx. 31kg



**In a case where the UPS is to be mounted on a rack, place it on the low part of the rack.**

- Dropping it may result in injury.



**Be sure to use the supplied mounting screws.**

- Use of long screws other than those supplied for case mounting may damage inside the unit.
- Screws other than those supplied may not be strong enough to support the UPS, causing it to fall.



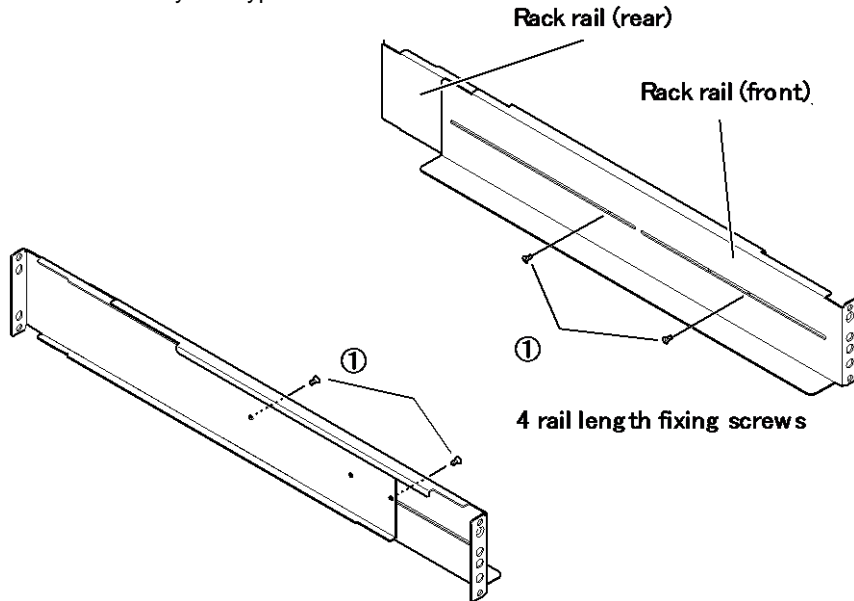
### ■ Items included in the 19-inch rack support angle set

|   |    |
|---|----|
| Rack rail (front) L                             | 1  |
| Rack rail (front) R                             | 1  |
| Rack rail (rear)                                | 2  |
| Ear brackets                                    | 2  |
| Rack fixing screws (8 x M4)                     | 4  |
| Ear bracket flush mounting screws (6 x M3)      | 8  |
| EIA/JIS Rack fixing screws (16 x M5)            | 10 |
| JIS Rack fixing flush mounting screws (14 x M5) | 2  |
| EIA rack fixing nuts (M5)                       | 10 |



## ■ Rack mounting procedure

1. Insert the 4 included rail length fixing screws and half-tighten them to hold the front and rear rack rails in place. 1) Front rack rail has two types, Left and Right. Rear rack rail has only one type.



2. Adjust the length of support angles to suit the server rack, and then securely tighten the screws that were half-tightened. 2)

### 3. <EIA standards>

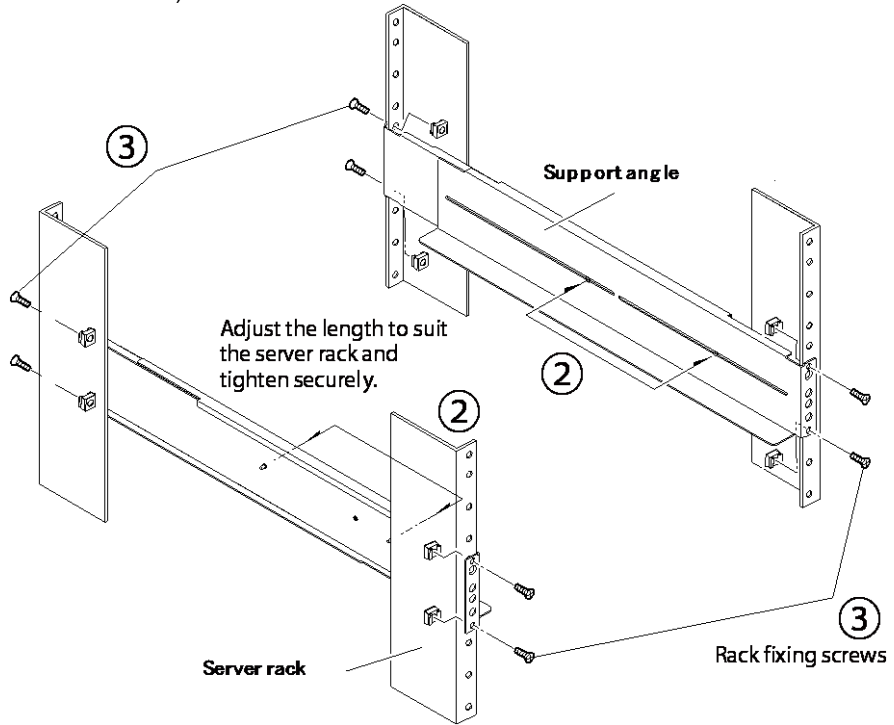
Use the 8 included rack fixing screws and nuts (medium-sized) to securely fasten the front (the side displaying "L" or "R") and back of the support angles to the server rack. The screw holes are located at the top and bottom for both front and rear.

### <JIS standards>

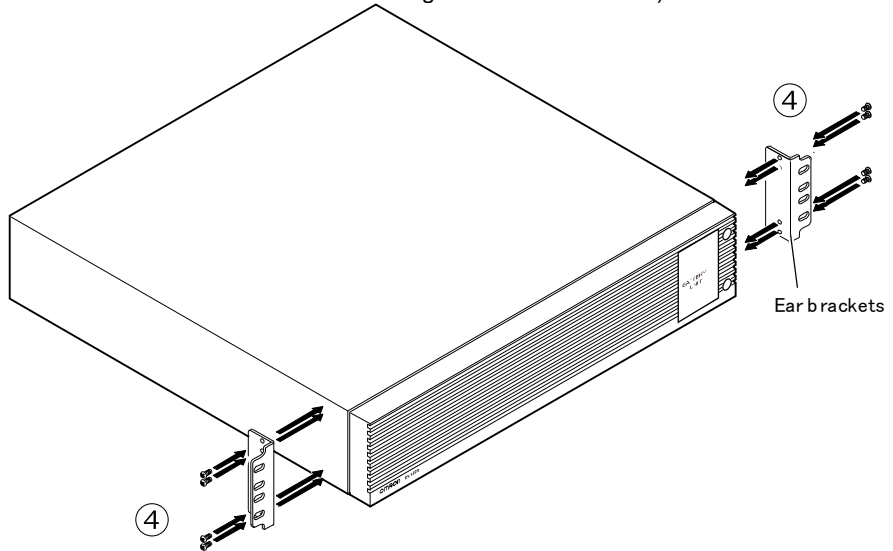
For JIS standards, use a total of 6 included screws to fix the rack; 1 JIS rack fixing flat-head screw (M5) at a front position of the each of right and left support angles, 2 EIA/JIS rack fixing screws (M5) at 2 rear positions. (③) The screw hole position for the front is at the second screw hole from the top, the rear is at the second screw hole from the bottom.

## 2 Installation

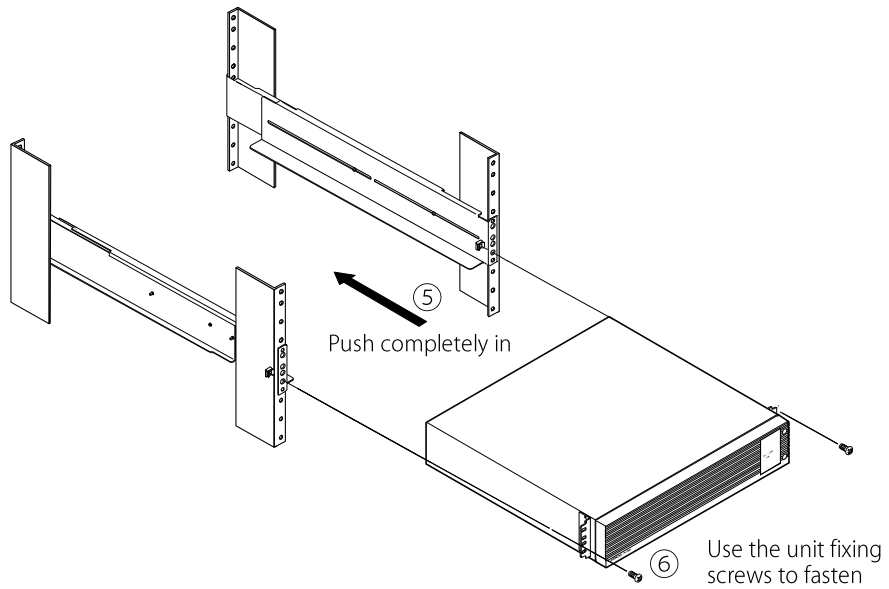
### 2-1 Rackmount installation (EIA/JIS 19-inch rack/server rack)



4. Use the 8 included ear bracket mounting screws (2 sets of 4 screws) to securely fasten the ear brackets to the left and right sides of the unit. 4)



5. Place the UPS on the support angles and push it completely into the rack 5), and use the 2 included EIA/JIS rack fixing screws (M5) and unit fixing nuts to securely fasten the ear brackets to the server rack. 6)



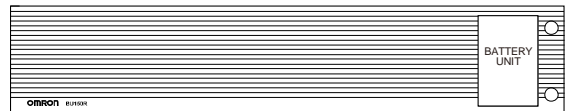
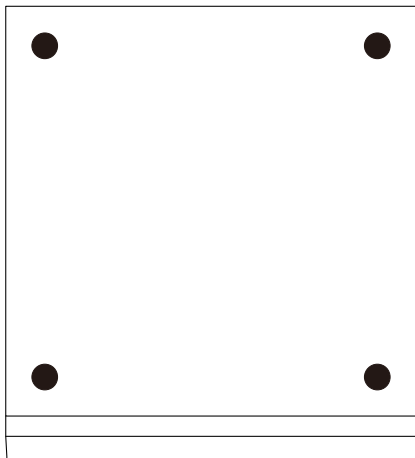
Note: Always use the support angles.

## 2-2 Stationary installation

Perform installation only as shown in the diagrams below.

### ■ Horizontal installation

Attach the included rubber feet for horizontal installation and position the unit horizontally. Make sure that this product does not slide or fall.



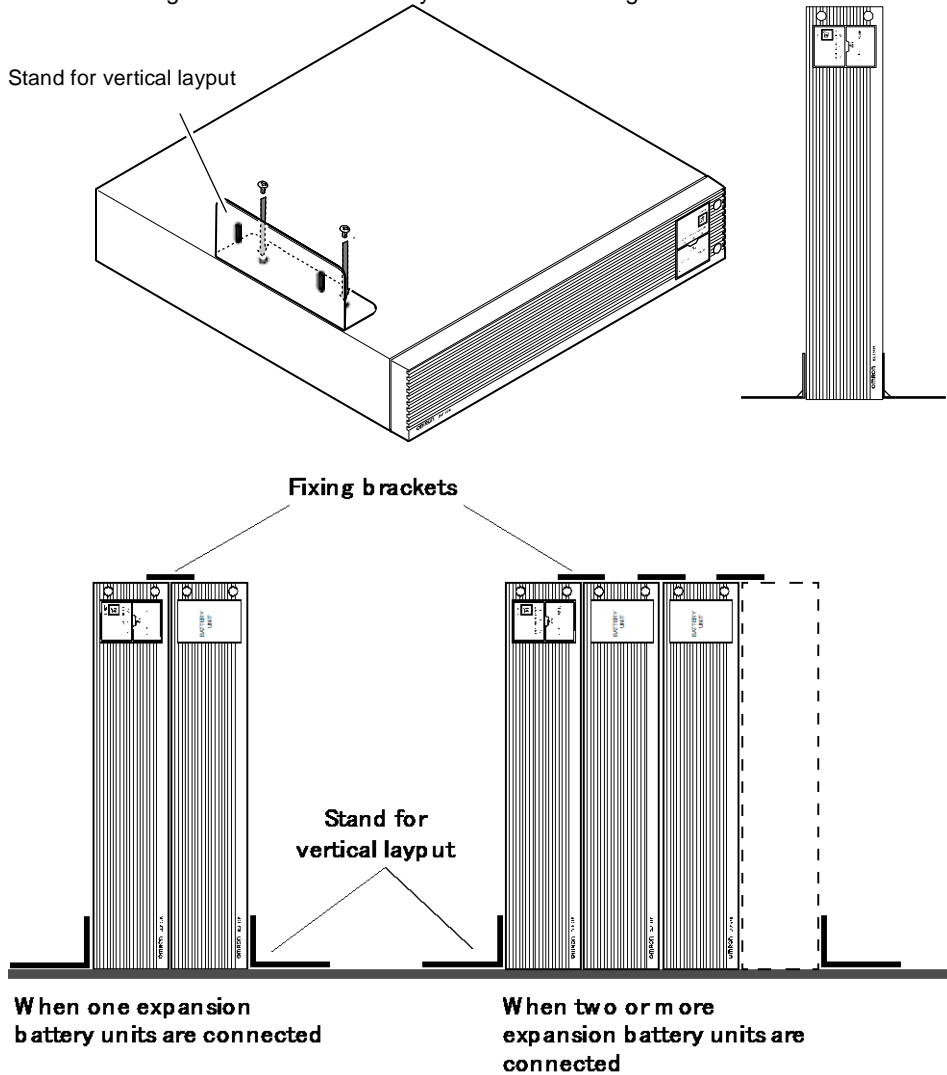
## 2 Installation

### 2-2 Stationary installation

#### ■ Upright installation

Attach the rack stands for vertical layout provided with the product to the UPS unit on the left and right sides with M4 binding head 4 screws.

Attach the fixing brackets for vertical layout with M4 binding head 4 screws.



## 3 Connection

### 3-1 Connecting the battery unit

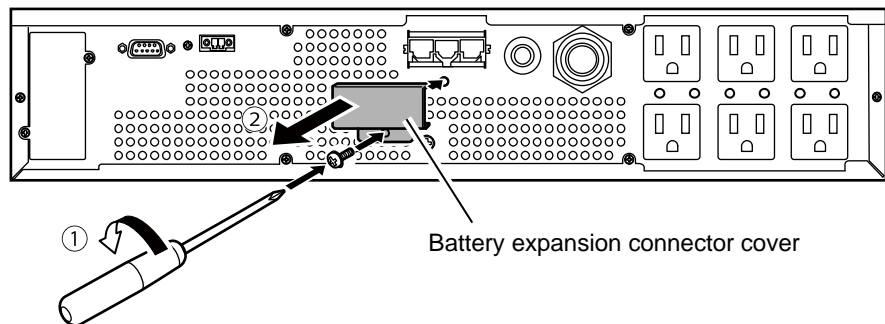
- When one or more expansion battery units are connected, the charging time become longer 16 hours per an expansion battery unit
  - For details on the backup time after expansion, see Instruction Manual of BU150R..
- Connect this unit with the UPS (BU 150R).

#### Caution (for connection)

- To connect an expansion battery unit, pull out the UPS's power cable to turn the power off.
- After expansion, set the number of expansion battery units in the operation mode settings.



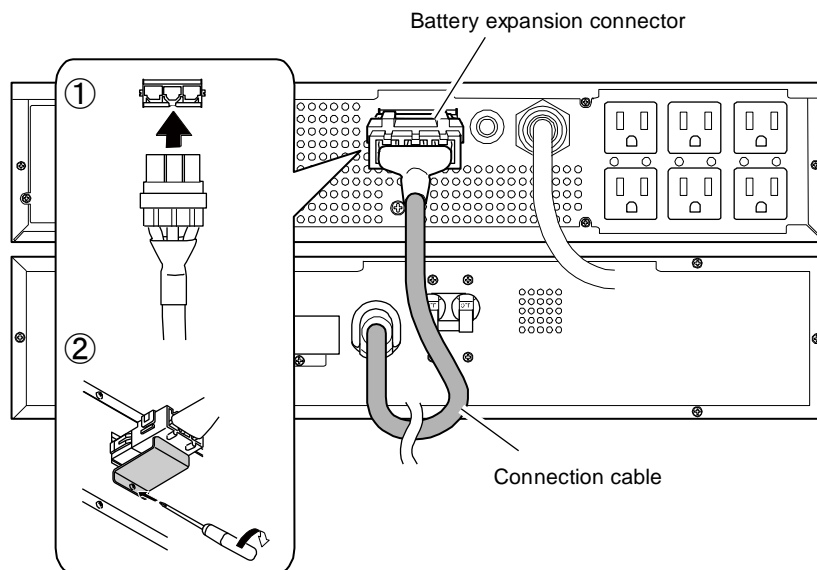
1. Detach the battery expansion connector cover on the back of the UPS unit.  
Loosen one screw at the bottom of the battery expansion cover when detaching.



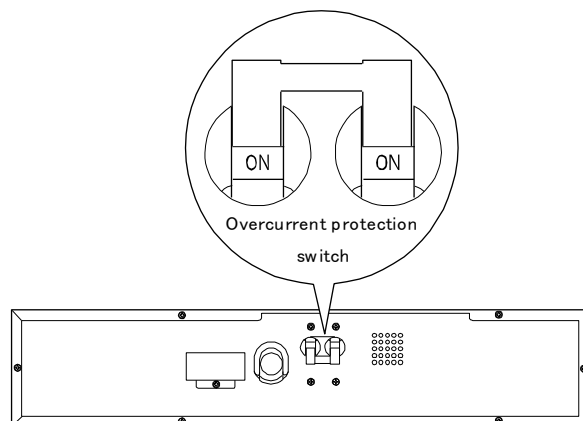
2. Connect the connection cable for the expansion battery unit to the battery expansion connector on the back of the UPS(①). And fix the connector cover of accessories(②).

### 3 Connection

#### 3-1 Connecting the battery unit



- 3** Turn ON the overcurrent protection switch on the back of the unit.



\* When the battery unit is connected correctly, the LED for checking expansion on the front of the expansion battery unit turns on.

If the LED does not turn on, check the connection condition.

- 4** Set the number of expansion batteries.  
For the setting procedure, refer to Instruction Manual of UPS.

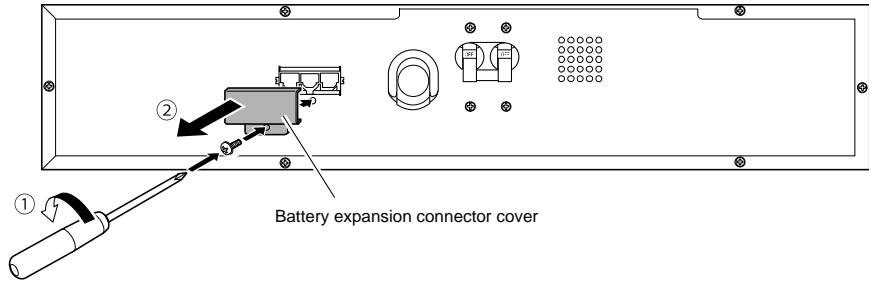
#### Additional information

- When one battery unit is connected with the UPS (BU150R), backup time is 55 minutes with 700w equipment (initial battery value at an ambient temperature of 20°C).
- When the battery is completely discharged, it takes 24 hours to charge. (UPS main unit 8 hours, this unit 16 hours)

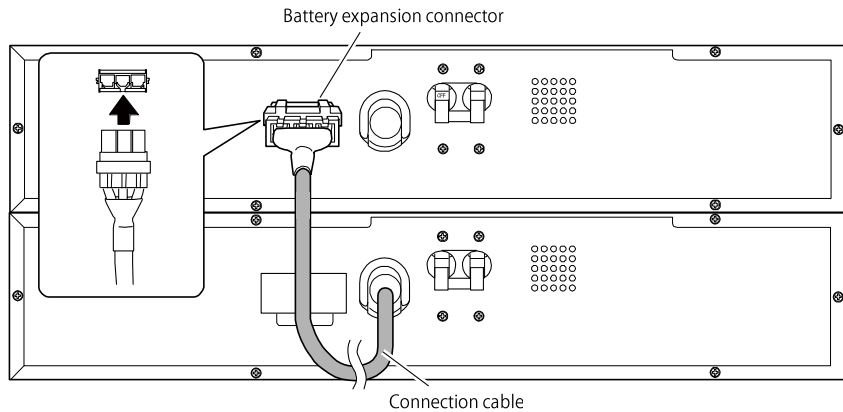
## 3-2 Connecting the additional battery unit

This unit can be also connected with the battery unit (BUM150RA).  
Six are maximum of the battery unit.

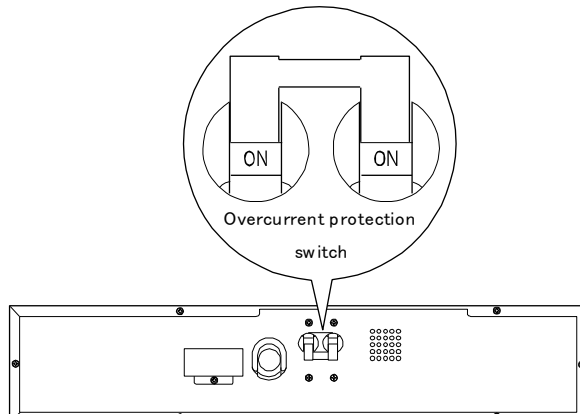
1. Remove the cover of the additional battery connector on the back of the unit.  
Loosen one screw at the bottom of the battery expansion cover when detaching.



2. Connect the connection cable for the expansion battery unit to the battery expansion connector on the back of this unit.



3. Turn ON the overcurrent protection switch on the back of the additional battery unit.



## 3 Connection

### 3-2 Connecting the additional battery unit

\* When the battery unit is connected correctly, the LED for checking expansion on the front of the expansion battery unit turns on.

If the LED does not turn on, check the connection condition.

#### **4** Set the number of expansion batteries.

For the setting procedure, refer to Instruction Manual of UPS.



#### Additional information

---

- Refer to "4-1-4 Estimated backup time" of the UPS manual (BU150R) about the backup time each expansion units.
  - When one or more expansion battery units are connected, the charging time become longer 16 hours per an expansion battery unit.
-



## 4 Replacing the battery

The battery can be replaced while the unit is stopped (power supply output stopped).

Refer to "10-3 Battery life" of the UPS unit manual (BU150R) for the details about the life of the battery.



### Caution

**Replace the battery of this unit and UPS at the same time.  
You cannot replace the battery of this unit only.**



**When the UPS is used in compliance with UL standards, do not replace the battery while in operation (while power is being output). Replacing the battery while in operation does not comply with UL standards. Replace the battery while the UPS operation is stopped.**



### Caution (for battery replacement)

**Risk of explosion if battery is replaced by an incorrect type.  
When replacing batteries replace with the same type and number of batteries or battery packs.**



4

### Notes

- Be sure to reset the battery life counter after replacing the battery.  
Press and hold the "Buzzer Pause/Test" switch of the UPS for 10 seconds or longer to reset the battery life counter. Resetting is complete when "bJ" is displayed.  
\* Reset the battery life counter with the "AC input" plug connected.
  - Stopping ("Power" switch OFF): When the beeper becomes a sustained beep, release the switch.
  - In Commercial Power Mode ("Power" switch ON): When the beeper changes from intermittent beeps to a sustained beep, release the switch.  
If you do not reset the battery life counter, a battery deterioration alarm may occur faster than the expected battery life.
- When the unit is used in compliance with UL standards, battery replacement should be performed or supervised by personnel familiar with the danger of batteries and the required precautions.
- If an input power supply error such as a power failure occurs when replacing the battery while in operation, backup cannot be performed and output stops.
- Do not replace the battery while the UPS is operating in backup mode. Output will stop.
- Write the battery replacement date in the attached battery replacement date sticker provided with the replacement battery pack, and attach the sticker to the UPS.
  - \* We are collecting replaced and unneeded batteries at no cost provided that the costs of shipment to us are borne by the customers. For details, see the attachment "Guidance for replace service" provided with the replacement battery pack.



### Additional Information

When the battery replacement LED of the UPS lights up/blinks and beeper sounds, press the "Buzzer Pause/Test" switch for 0.5 seconds to stop the beeper. (Lighting/blinking of "battery replacement" LED does not disappear.)

## Notification that the battery needs to be replaced

This Battery life counter function notifies you with LED of the UPS display and beep sound when the battery needs to be replaced.

The battery life is determined by the counter function. The battery life counter operates while commercial power is supplied after shipment. (When the ambient temperature of the battery is higher than 25°C, the value of the counter will be incremented at a faster pace.)

### Notes

The lead battery used in the unit has a limited lifespan. The life varies depending on your storage/use environment and backup frequency.

- The nearer the end of the life is, the more rapidly deterioration proceeds.
- Refer to the below-shown reference data " 10-3 Battery life " of the UPS manual (BU150R) for the details about the life of the battery.
- Even if battery is storage condition, deterioration proceeds. The higher the temperature is, the shorter battery life.

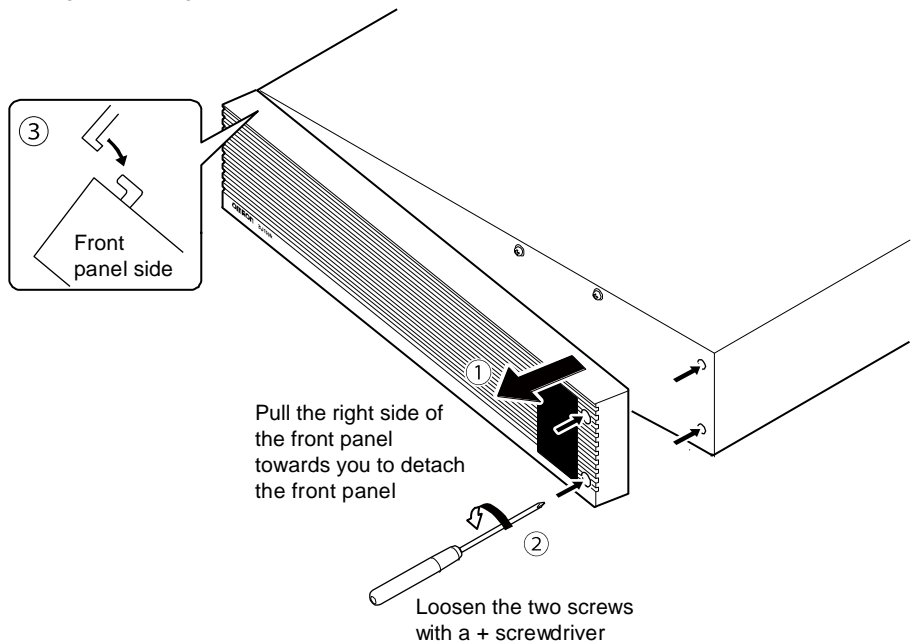
### ■ Guidelines for how often to check the battery

| Average ambient temperature | 6-month check                            | Monthly check                                       |
|-----------------------------|--|---|
| 40°C                        | For the first 1 years after starting use | When 1 years or more have passed after starting use |
| 30°C                        | For the first 3 years after starting use | When 3 years or more have passed after starting use |
| 25°C                        | For the first 4 years after starting use | When 4 years or more have passed after starting use |

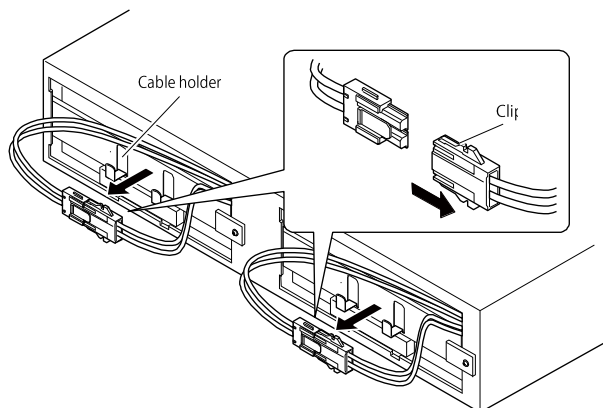
## Procedure for replacing the battery

For cautions when replacing the battery of the UPS, refer to "Caution for battery replacement)" shown in the "Safety precautions" of the beginning of this manual.

1. Loosen the two screws on the right side of the front panel with a + screwdriver (①). Pull the right side of the front panel towards you to detach the front panel (②).  
\* Do not pull the front panel strongly towards you. The clamp may be damaged. Pull the front panel towards you a little first, and detach the front panel while sliding it to the right(③).

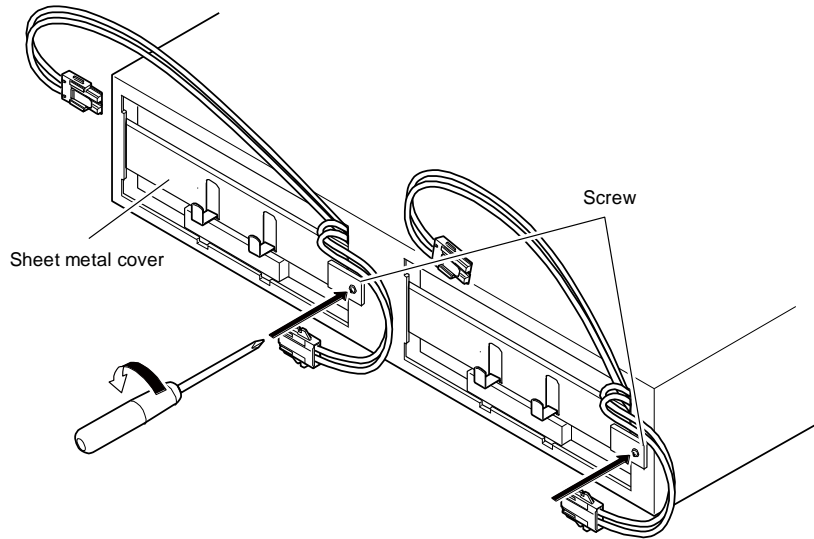


2. Remove the battery connectors from the cable holders. Remove the locking clip of connectors (①). Hold the battery connector, and pull the connectors apart (②).

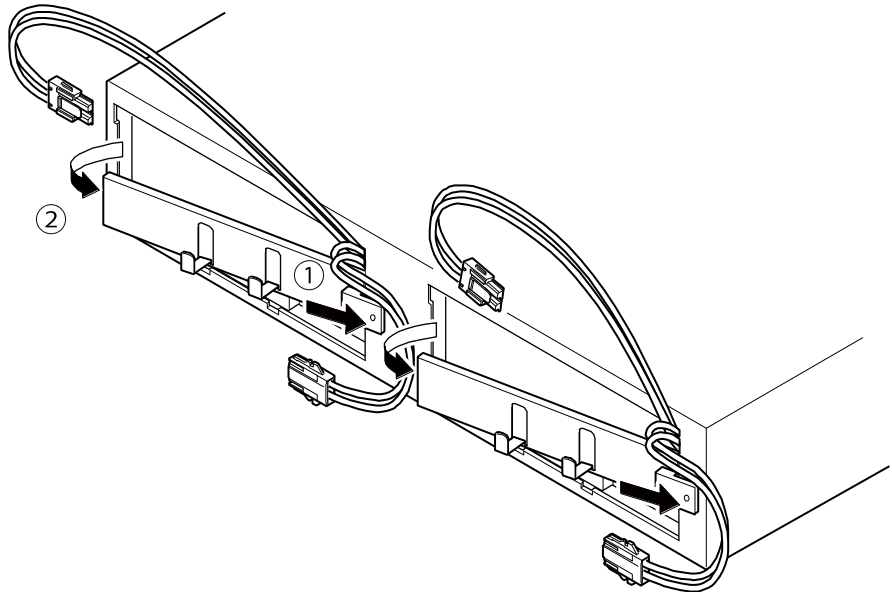


## 4 Replacing the battery

- 3.** Remove the screw on the sheet metal cover (①).

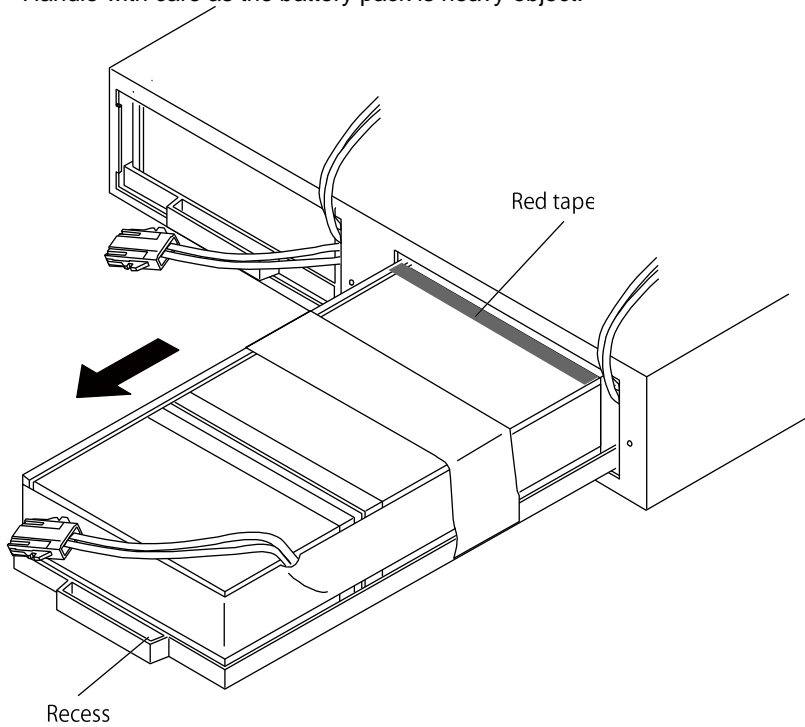


- 4.** Lightly push in the sheet metal cover to the right (①) first, and pull the left side towards you to detach it (②).



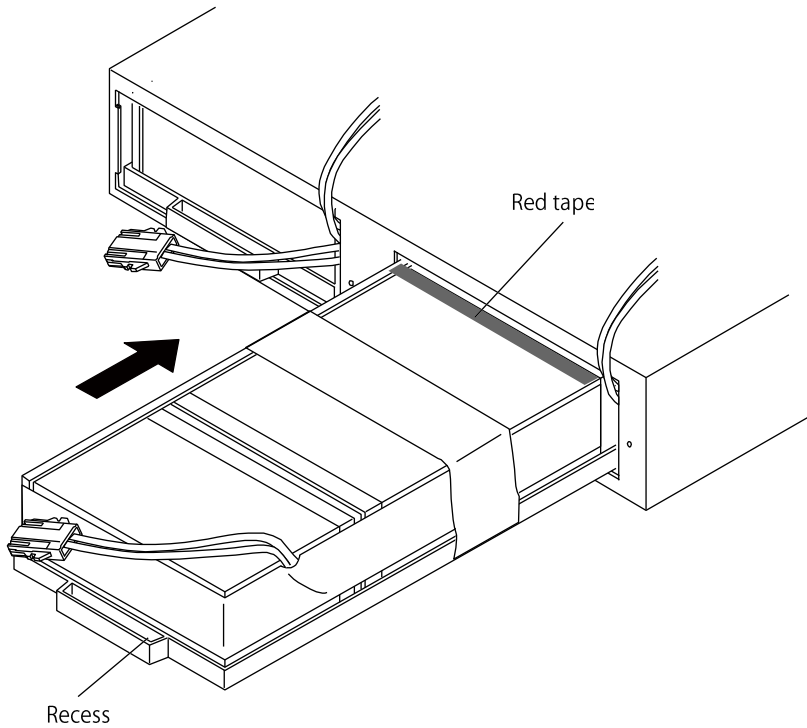
- 5.** Put your finger into the recess at the bottom of the battery pack and pull the battery pack out. When the red tape attached to the top of the battery pack appears, you can completely remove the battery by pulling it towards you 10cm more. Hold the battery tight with both hands and be careful not to drop the battery.

- \* To pull out the battery pack, do not take hold of its connector or cable.
- \* Handle with care as the battery pack is heavy object.

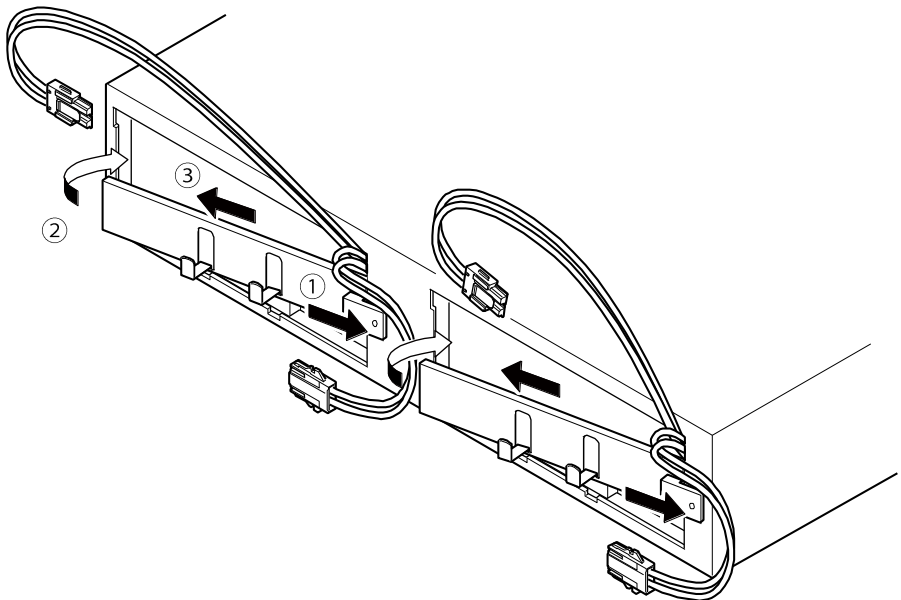


## 4 Replacing the battery

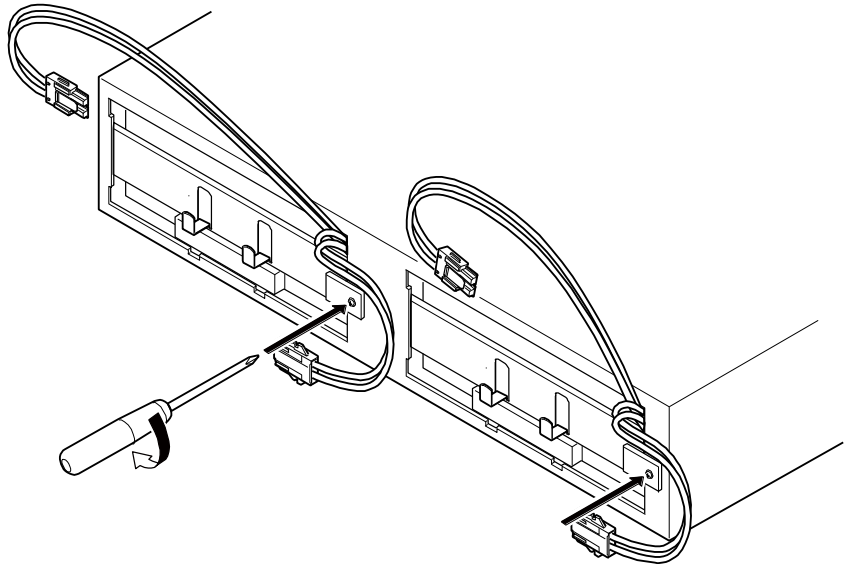
- 6.** Insert a new battery into the UPS as far as it will go.  
• Replacement battery pack : model : BUB150RA



- 7.** Insert the right end of the sheet metal cover into the UPS unit (①), push the left side in (②), and attach it by sliding it to the left (③).



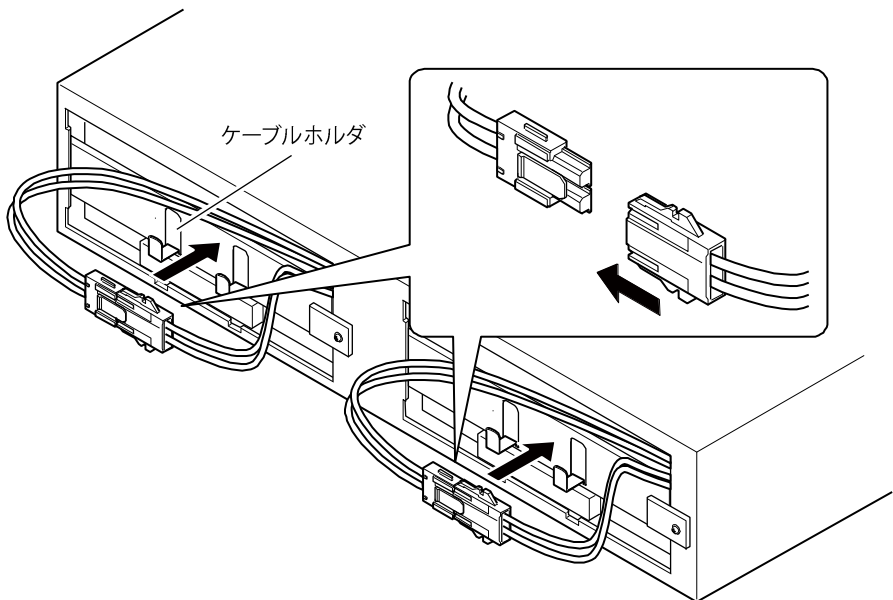
8. Fix the sheet metal cover with a screw.



9. Connect the battery connector (①) and insert the connector's groove into the holder (②).

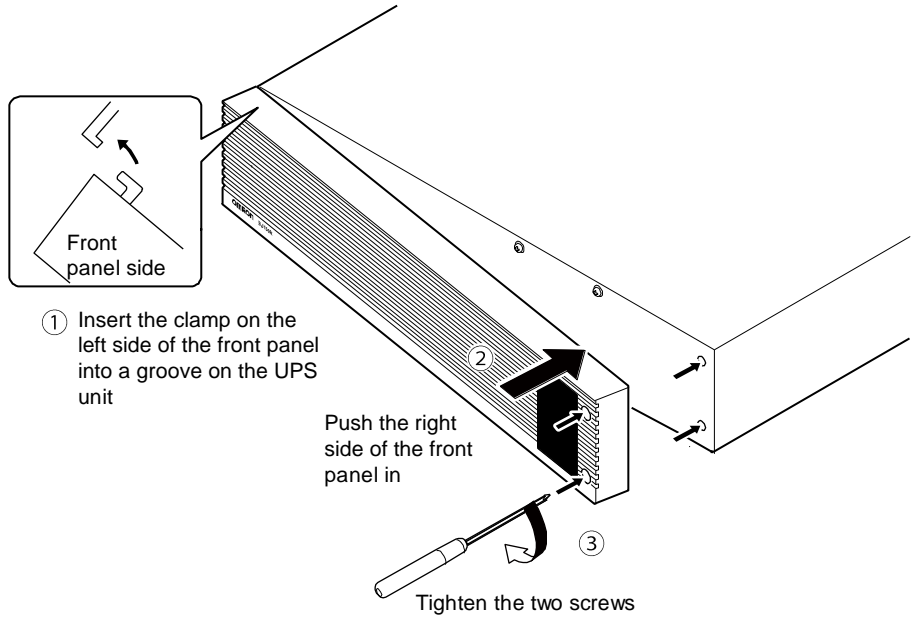
Attach the battery cable to the cable holder.

Note : You may hear a “pop” sound when you connect the battery if it is replaced after the unit’s operation is stopped, but this sound is not abnormal.



## 4 Replacing the battery

- 10.** Attach the front panel to the unit.  
Insert the clamp on the left side of the front panel into a groove on the UPS unit (①), and push the right side of the front panel in (②).  
Securely tighten the two screws on the right side of the front panel with a + screwdriver (③)



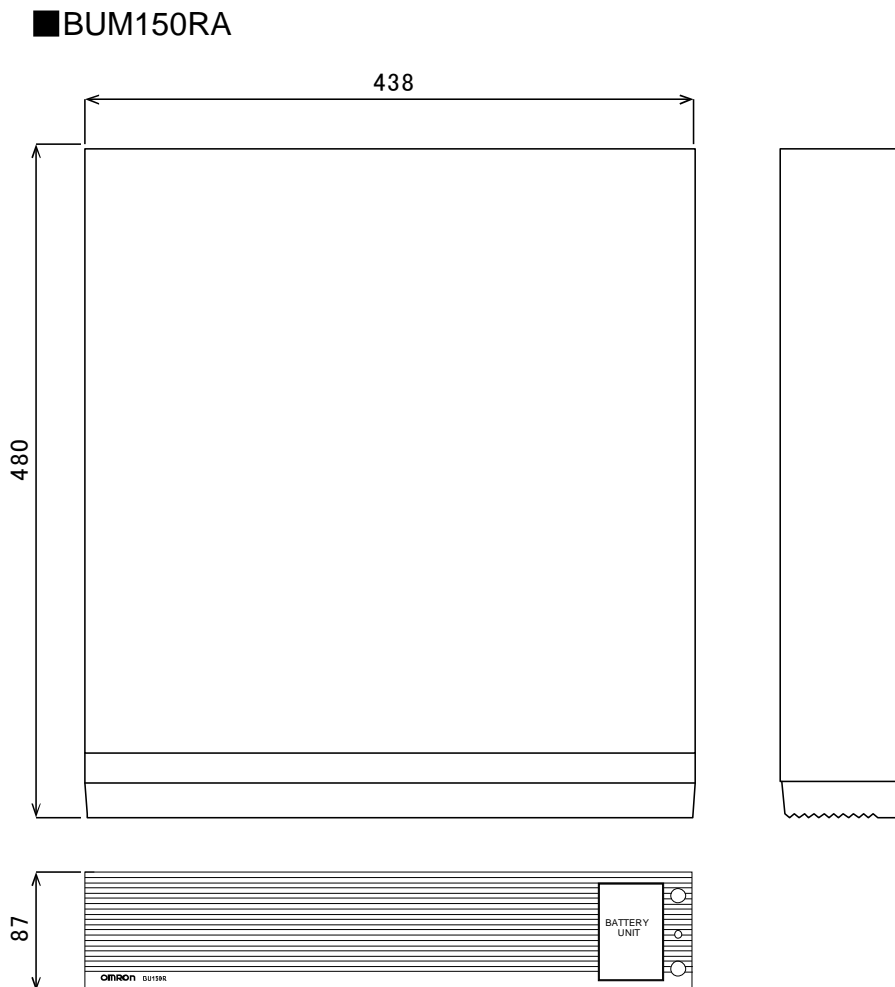
Battery replacement is now complete.



# 5 References

## 5-1 Dimensions

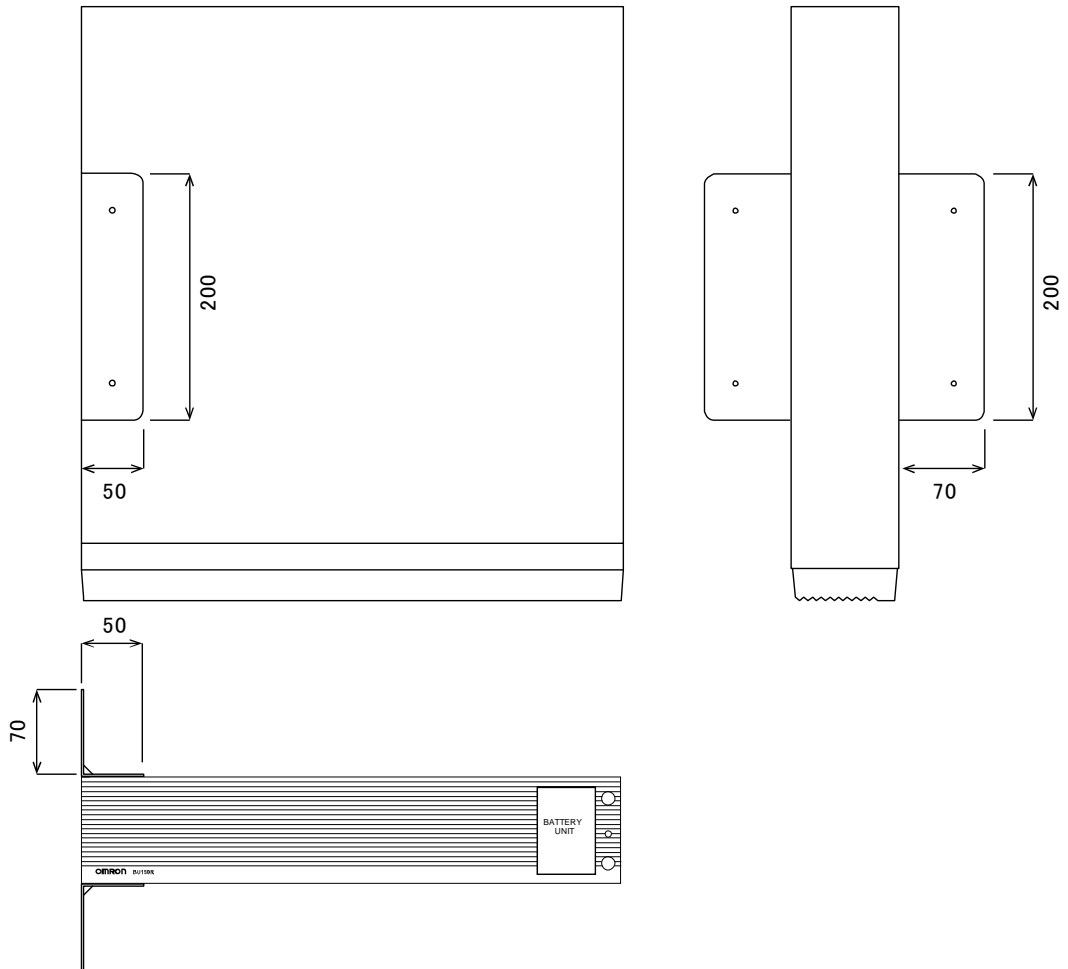
\* Unit: mm/ Tolerance:  $\pm 2$ mm



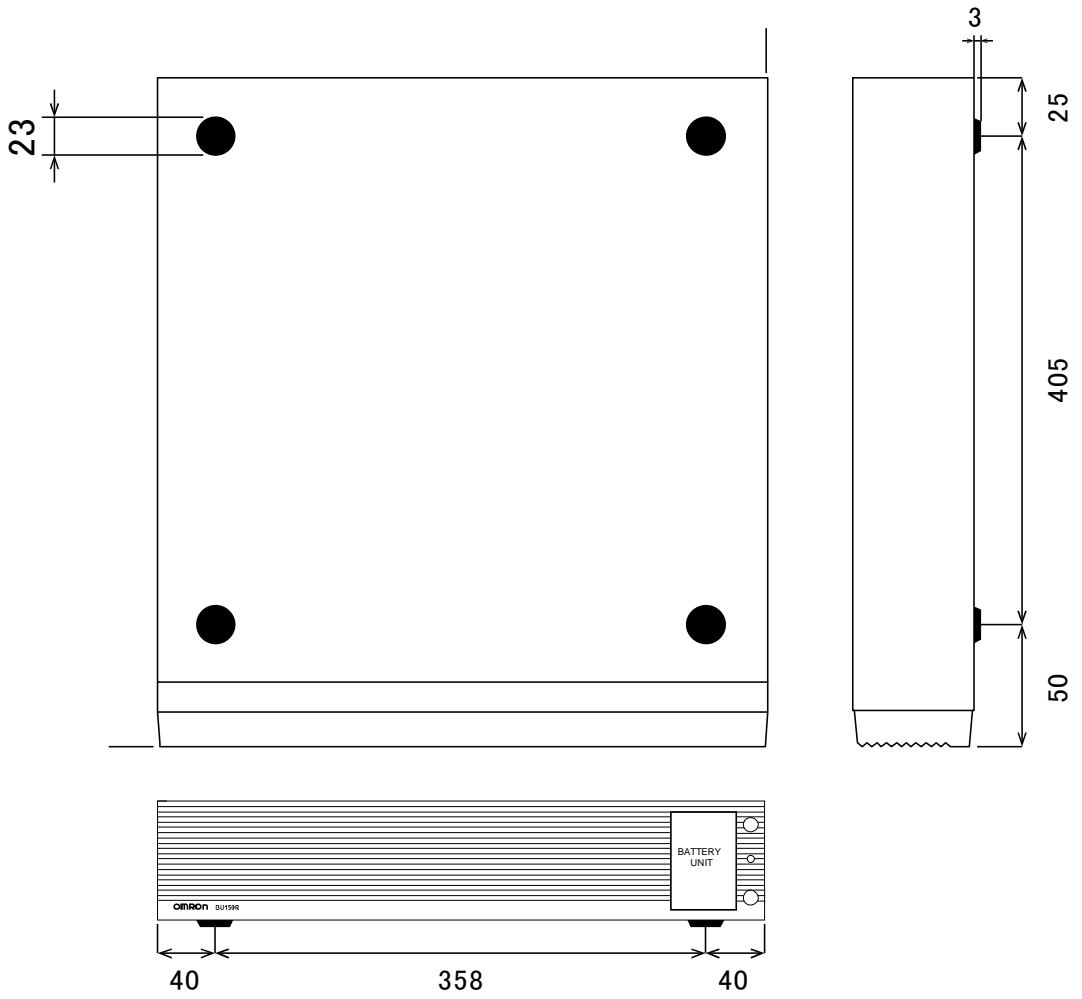
## 5 References

### 5-1 Dimensions

#### ■ Stand for vertical layout



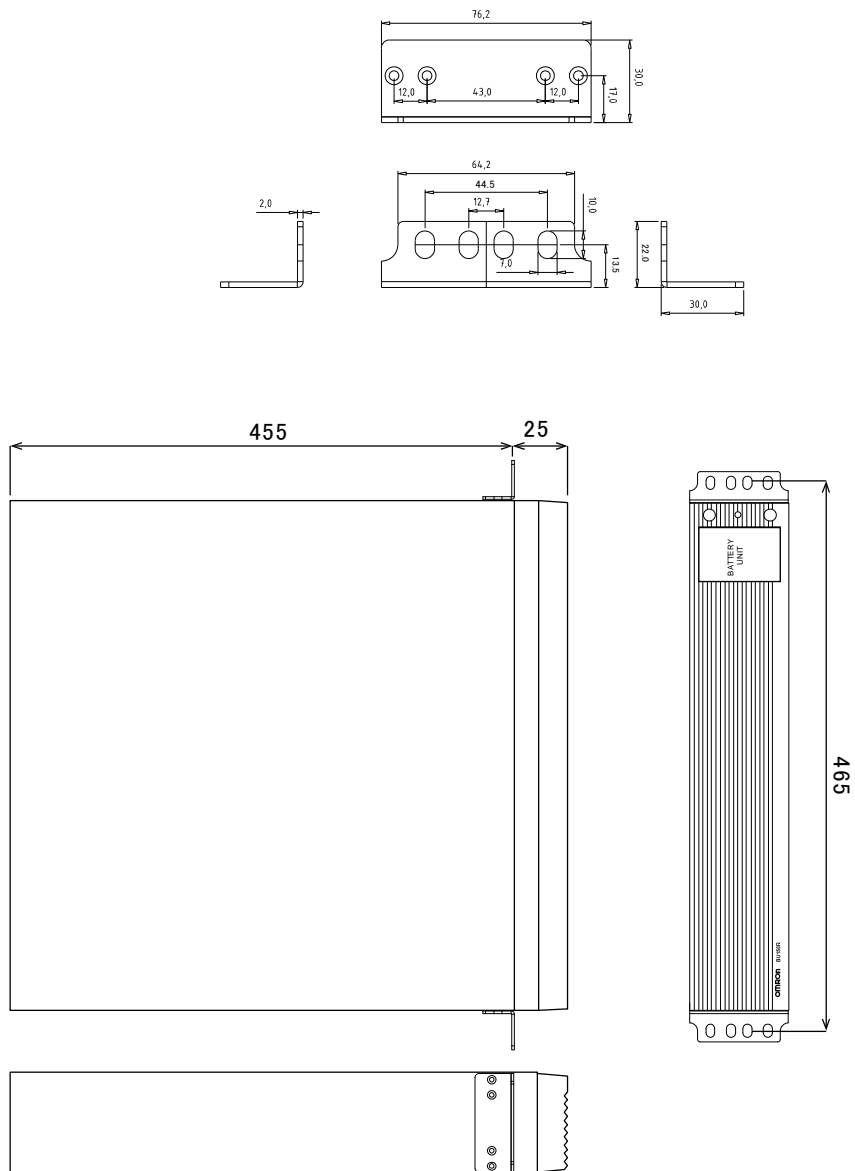
■ Rubber feet



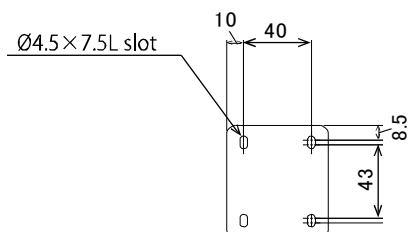
## 5 References

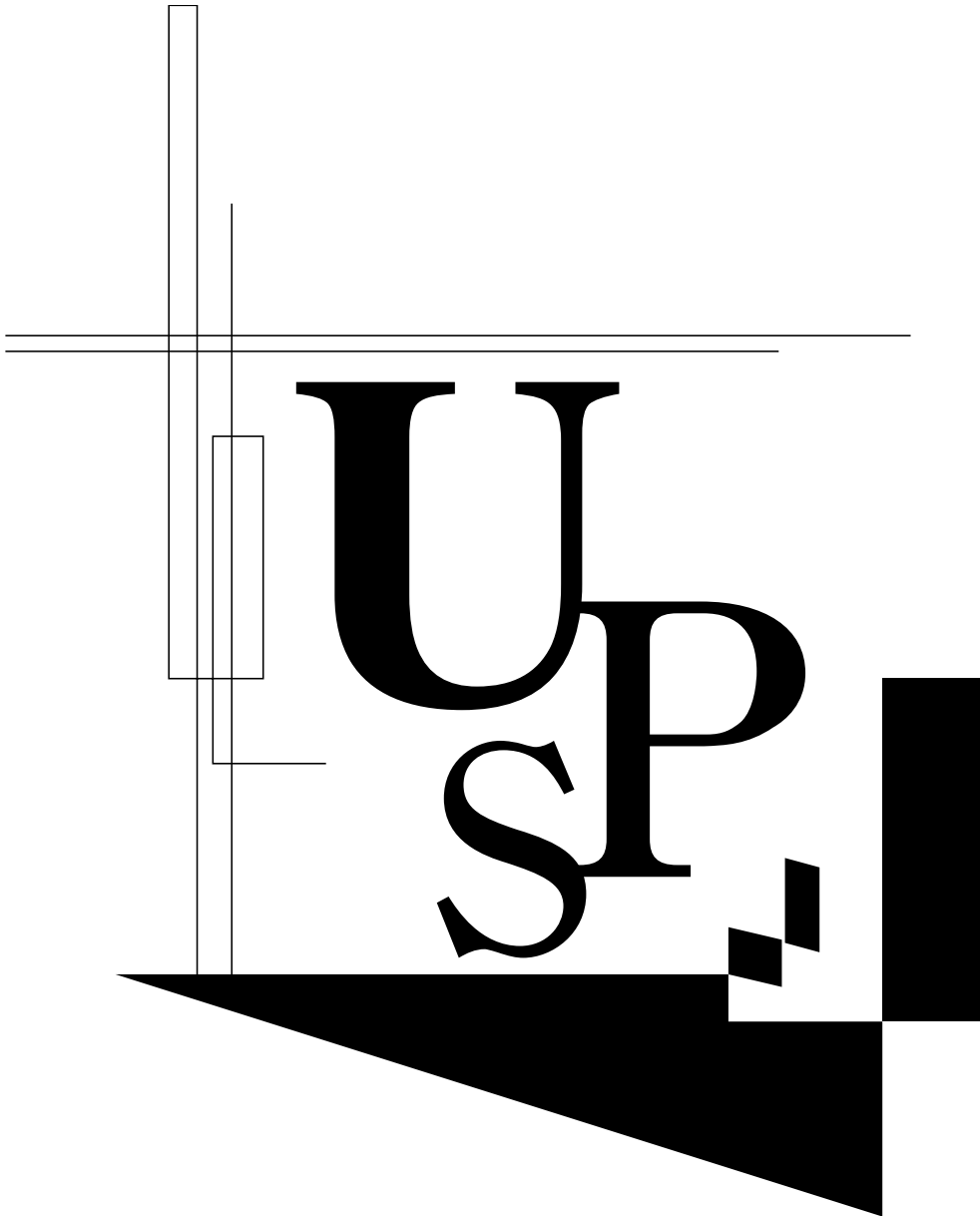
### 5-1 Dimensions

#### ■ Using Ear brackets



#### ■ Fixing bracket





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