


## Uninterruptible Power Supply (UPS/200-240V model)

**BU□002RWLG****An ideal UPS for building into industrial equipment**

- Equipped with an LCD panel.
- Standard-feature automatic shutdown software compatible with the latest virtual operating systems.
- Standard-feature I/O terminal block, CE Marking, and UL certification
- Ideal for systems that require stability (standard-feature bypass function).
- Three-year product warranty includes the battery.



 Refer to *Safety Precautions* on page 11.

**Ordering Information**

**Note:** For details on normal stock models, contact your nearest OMRON representative.

**Main body**

Input voltage	Output voltage	Output current/capacity	Model
200/208/220/230/240 VAC	200/208/220/230/240 VAC	2,000 VA/1,400 W	<b>BU2002RWLG</b>
		3,000 VA/2,100 W	<b>BU3002RWLG</b>
		5,000 VA/3,500 W	<b>BU5002RWLG</b>

**Replacement battery pack**

Rated voltage	Rated capacity	Weight	Model
48 VDC	9 Ah	11 kg	<b>BUB2002RW</b>
72 VDC	9 Ah	17 kg	<b>BUB3002RW</b>

**Communication Card**

Name	Communication protocol	Model
Contact signal communication card	Contact signal (PNP/NPN type)	<b>SC08G</b>
SNMP/Web communication card	SNMP	<b>SC20G2</b>

# Ratings, Characteristics, and Functions

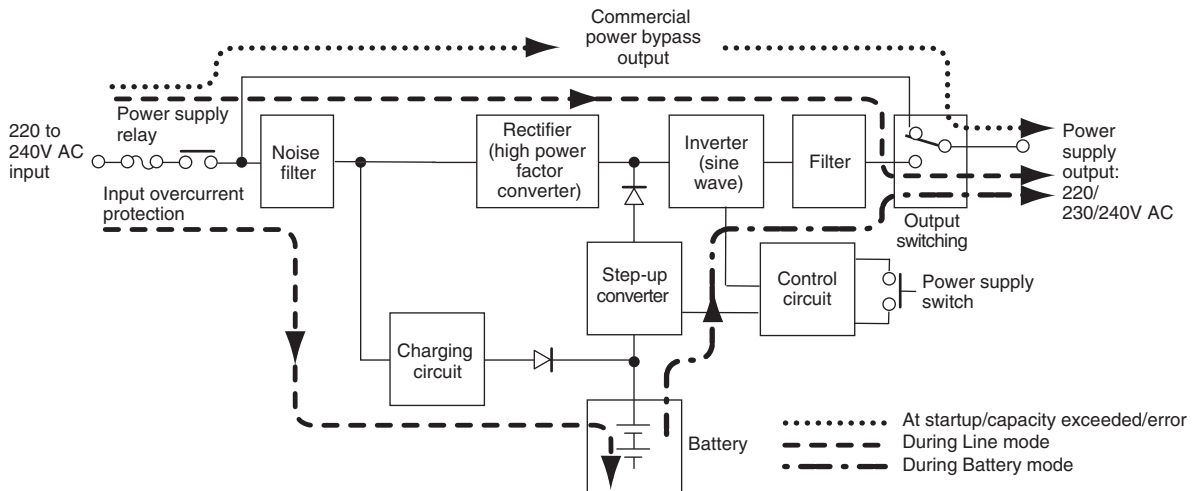
		BU2002RWLG	BU3002RWLG	BU5002RWLG
<b>Operation method</b>		Full-time inverter supply method (high efficiency)		
<b>AC input</b>	<b>Rated input voltage</b>	200/208/220/230/240 VAC		
	<b>Startup voltage range</b>	200 V mode: 160±2 to 288±2 VAC, 208 V mode: 167±2 to 278±2 VAC 220 V mode: 176±2 to 278±2 VAC, 230 V mode: 184±2 to 278±2 VAC 240 V mode: 192±2 to 278±2 VAC, 100 V mode: 160±2 to 288±2 VAC		
	<b>Input voltage range</b>	200 V mode: 170±2 to 278±2 VAC, 208 V mode: 177±2 to 278±2 VAC 220 V mode: 186±2 to 278±2 VAC, 230 V mode: 194±2 to 278±2 VAC 240 V mode: 202±2 to 278±2 VAC, 100 V mode: 170±2 to 278±2 VAC		
	<b>Input frequency</b>	50/60 Hz±1, 3, 5, or 14% (5% in the factory settings)		
	<b>Maximum current (at rated voltage/minimum input voltage)</b>	9 A/11 A	14 A /16 A	23 A /27 A
	<b>Phase</b>	Single-phase, two-wire (grounded)		
	<b>Input plug</b>	Terminal block		NEMA L6-30P / Terminal block
	<b>Input protection</b>	NFB		
<b>Input protection capacity</b>	16 A		30 A	
<b>AC output</b>	<b>Output capacity (upper limit)</b>	2000 VA/1400 W (1000 VA/700 W in 100 V mode)	3000 VA/2100 W (1500 VA/1050 W in 100 V mode)	5000 VA/3500 W (2500 VA/1750 W in 100 V mode)
	<b>Rated current (output rating voltage)</b>	10 A	15 A	25 A
	<b>Switching time</b>	Uninterrupted		
	<b>Commercial direct shipment (switching time)</b>	Uninterrupted		
	<b>Output voltage (commercial operation)</b>	200 V mode: 200 VAC±2%, 208 V mode: 208 VAC±2% 220 V mode: 220 VAC±2%, 230 V mode: 230 VAC±2% 240 V mode: 240 VAC±2%, 100 V mode: 100 VAC±5%		
	<b>Output voltage (backup operation)</b>	200 V mode: 200 VAC±2%, 208 V mode: 208 VAC±2% 220 V mode: 220 VAC±2%, 230 V mode: 230 VAC±2% 240 V mode: 240 VAC±2%, 100 V mode: 100 VAC±5%		
	<b>Output frequency (commercial operation)</b>	Synchronized with input frequency		
	<b>Output frequency (backup operation)</b>	50/60 Hz±0.5 Hz		
	<b>Output waveform (In Commercial Power Mode/ Battery Mode)</b>	Sine wave / Sine wave		
	<b>Waveform distortion rate</b>	7 % max. (Rectified load, at rated output), 3 % max. (Resistance load, at rated output)		
	<b>Phase</b>	Single-phase, two-wire		
<b>Output receptacles</b>	Terminal block		NEMA L6-30R × 2, terminal block	
<b>Battery</b>	<b>Sealed lead battery life expectancy</b>	5 years (ultralong operating life) (ambient temperature 25°C)		
	<b>Battery capacity (V/Ah) (× Quantity)</b>	12 VDC/ 9 Ah (× 4)	12 VDC/ 9 Ah (× 6)	12 VDC/ 9 Ah (× 12)
	<b>Charging time</b>	8 hours		
<b>Backup time (25°C, initial characteristics)</b>	5 min. (1400 W)	5 min. (2100 W)	5 min. (3500 W)	
<b>Environment</b>	<b>Vibration resistance</b>	10 to 55 Hz, half amplitude: 0.2mm, X, Y and Z directions for 60 minutes (Time coefficient: 2 min × coefficient factor 30 = total time 60 min)		
	<b>Shock resistance</b>	Free fall from 10 cm height with standard direction, left side down and right side down		
<b>Dimensions (W × D × H mm)</b>	430 × 660 × 88 (2U)		430 × 700 × 132 (3U)	
<b>Weight of unit</b>	Approx. 28 kg		Approx. 33 kg	Approx. 61 kg
<b>Operating environment temperature/humidity</b>	0°C to 40°C, 25 to 85%RH with no condensation			
<b>Storage environment temperature/humidity</b>	-15°C to 50°C, 10 to 90%RH (with battery fully charged, stored with no condensation)			
<b>Noise regulation</b>	VCCI Class A compliant			
<b>Insulation and withstand voltage</b>	<b>Withstand voltage</b>	1,500 VAC between AC input/output and case 1,500 VAC between AC input/output and DC control 1,500 VAC between DC control and case for 1 minute at a leakage current of 20 mA maximum		
	<b>Insulation resistance</b>	20 MΩ minimum between AC input/output and case 20 MΩ minimum between AC input/output and DC control 20 MΩ minimum between DC control and case at 500 VDC		
<b>Safety standard compliance</b>	UL1778/CE/RoHS compliance			
<b>Internal power consumption (normal/maximum)</b>	70W *1 /145W *2		148W *1 /265W *2	249W *1 /480W *2
<b>Noise</b>	45 dB max.		50 dB max.	
<b>Cooling method</b>	Forced air cooling			
<b>Serial communication (RS-232C) (interface)</b>	● (D-sub 9pin)			
<b>Contact signal (interface)</b>	● (D-sub 9pin)			
<b>Accessory functions</b>	Language setting; LCD setting; LCD Auto OFF setting; LCD Test setting; Audible Alarm setting; Calendar setting; UPS Life Count setting; Output Voltage setting; Frequency Range setting; Auto Reboot setting; Delay Time setting; Power SW OFF setting; Dry Contact			

\*1. Rated load/ Rated input voltage/ When fully charged.

\*2. Rated load/ Rated input voltage/ When battery charge current is at maximum.

# Connections

## Block Diagrams



## I/O signal functions

The standard UPS connection signal is NPN. To use a PNP connection, use the SC08G option.

### Type of output signals

Signal	Description
Backup signal output (BU)	Stays ON during backup operation at a power failure.
Low battery level signal output (BL)	Goes ON when the battery becomes Low level during backup operation at a power failure.
Trouble signal output (TR)	Goes ON when an internal failure of the UPS occurs.
Battery replacement signal output (WB)	Goes ON when the test determines that battery replacement is necessary due to deterioration or when the battery life counter reaches the replacement period. (The life counter operates while input power is being supplied.)

### Type of input signals

Signal	Description
Input of the UPS stop signal (BS)	When the BS signal is ON (High), the output of the UPS is stopped after the time period specified in advance has elapsed. The time period can be set using the LCD. *
Remote ON/OFF signal	Remote ON/OFF signals can be used to start and stop the UPS, by using either an externally connected contact or the ON/OFF status of the open collector circuit.

\* BS signal delay time

It is possible to set the period of time from when a BS signal is received until the output of the UPS is stopped.

### Jumper settings (SC08G)

The jumper settings on the SC08G board are used to invert output signal.

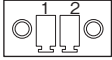
Use the jumper setting on the SC08G board to set the input voltage range 12 V to 24 V for the High state of the backup power stop signal. (BS signal)

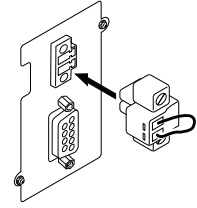
Use the jumper setting on the SC08G board to set how an uninterruptible power supply (UPS) is turned on/off by a remote ON/OFF signal.

### Contact signal I/O connector (female DSUB9P)

Pin assignments	Pin number	Item (main unit)	Signal name (SC08G)
<p>Front view Screw size: inch screw #4-40 UNC</p>	1	Battery LOW signal output (BL)	Backup signal output-1 (BU-1)
	2	Trouble signal output (TR)	Backup signal output-2 (BU-2)
	3	Backup stop signal input (BS)	Battery LOW signal output-1 (BL-1)
	4	NC	Battery LOW signal output-2 (BL-2)
	5	COMMON (COM)	Trouble signal output (TR)
	6	Remote ON/OFF input (-)	TR signal and WB signal COMMON (TR/WB-COM)
	7	Remote ON/OFF input (+)	Deteriorated battery signal output (WB)
	8	Backup signal output (BU)	Backup stop signal input + (BS+)
	9	Deteriorated battery signal output (WB)	Backup stop signal input - (BS-)

## Dedicated connector for remote ON/OFF (SC08G)

Pin assignments	Pin number	Signal name
 <p>Front view Screw size: inch screw #4-40 UNC</p>	1	Remote ON/OFF input (+)
	2	Remote ON/OFF input (-)



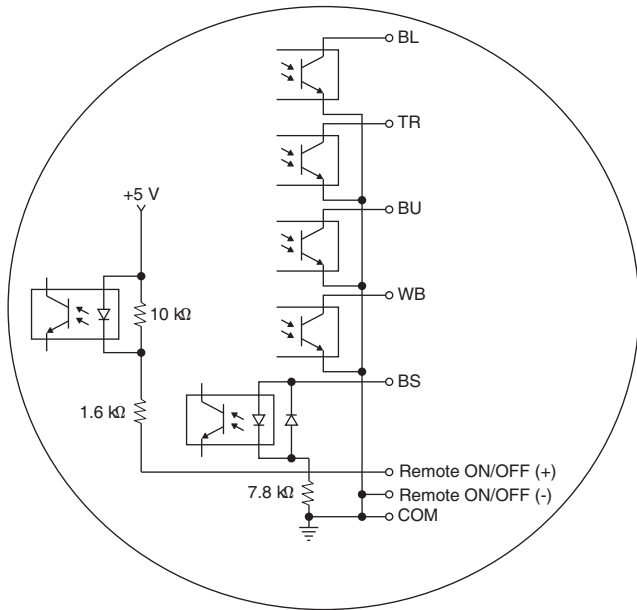
## Contact signal ratings (main unit)

Signal	Description
Signal output (BL, TR, BU, WB)	<ul style="list-style-type: none"> <li>Photo coupler ratings</li> <li>Applicable voltage: 35 VDC or less</li> <li>Maximum current: 50 mA</li> </ul>
Remote ON/OFF	<ul style="list-style-type: none"> <li>Voltage between terminals: 5 VDC</li> <li>Current when closed: 10 mA max.</li> </ul>
UPS Stop Signal input (BS)	<ul style="list-style-type: none"> <li>Input voltage: HIGH (ON) 5 to 24 VDC</li> <li>LOW (OFF) 0.7 VDC or less</li> </ul>

## Contact signal ratings (SC08G)

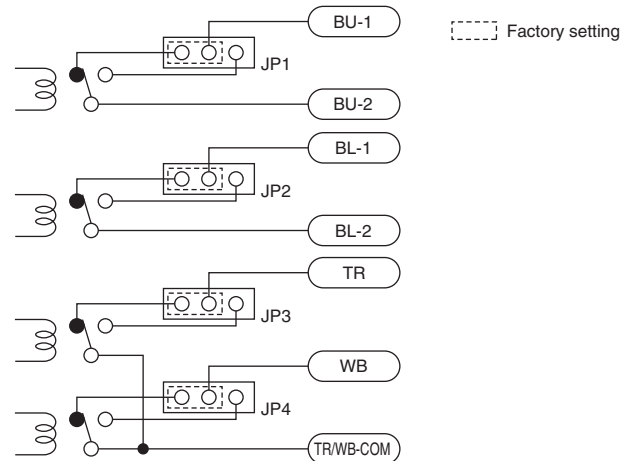
Signal	Description
Signal output ( <u>BU</u> , BU, <u>BL</u> , BL, <u>TR</u> , TR, <u>WB</u> , WB)	<ul style="list-style-type: none"> <li>Relay rating</li> <li>Applicable voltage: 30 VDC or less</li> <li>Maximum current: 2 A (resistive load) 1 A (inductive load)</li> </ul>
Remote ON/OFF	<ul style="list-style-type: none"> <li>Voltage between terminals: 5 VDC</li> <li>Current when closed: 10 mA max.</li> </ul>
UPS Stop Signal input (BS, BS)	<ul style="list-style-type: none"> <li>Input voltage: HIGH (ON) 8 to 24 VDC (when set to 24 V) 5 to 12 VDC (when set to 24 V)</li> <li>LOW (OFF) 0.7 VDC or less</li> <li>Sink current when High signal is input: 20 mA max.</li> </ul>

## Signal I/O circuit (main unit)

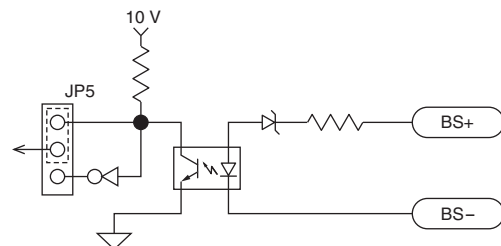


## Signal I/O circuit (SC08G)

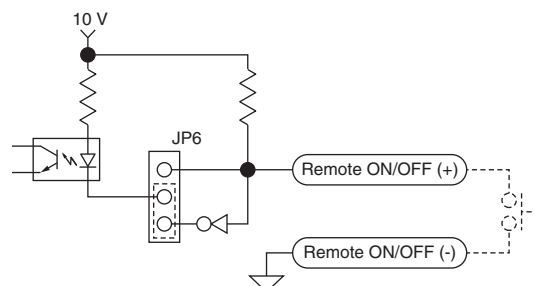
### Output signal circuit



### Input signal circuit

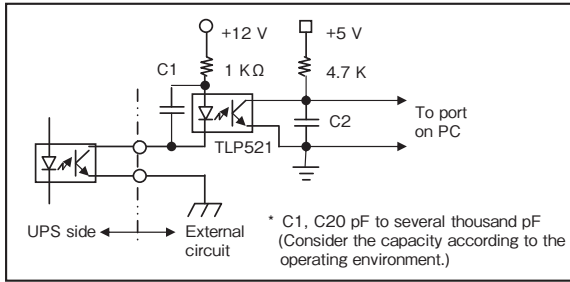


### Remote ON/OFF signal circuit

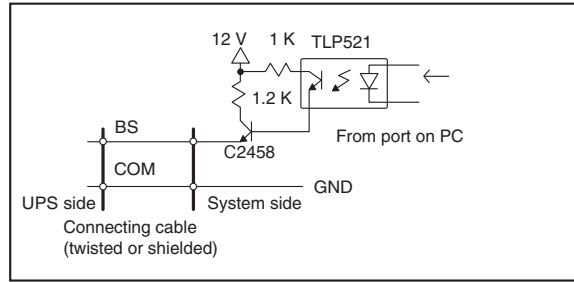


### Example of the use of the Contact Signal circuit (main unit)

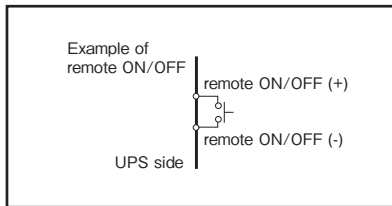
Example of BU signal output circuit and the connected circuit



Example of BS signal input circuit and the connected circuit

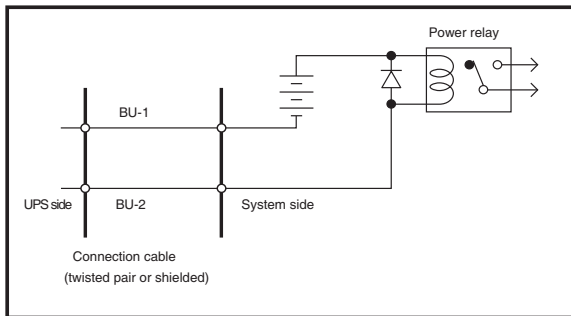


### Remote ON/OFF circuit

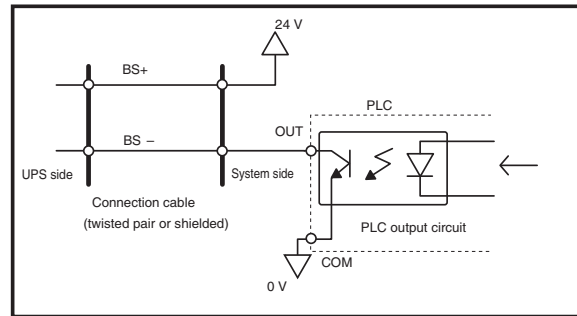


### Example of the use of the Contact Signal circuit (SC08G)

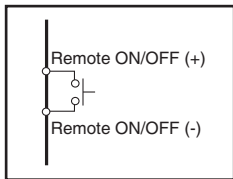
Example of BU signal output circuit and the connected circuit



Example of BS signal input circuit and the connected circuit



### Remote ON/OFF signal circuit

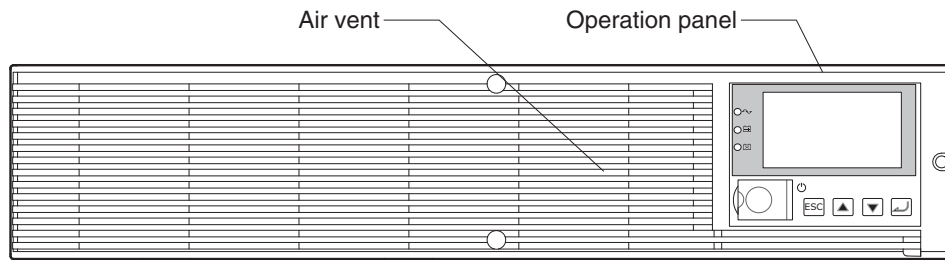


# BU□002RWLG

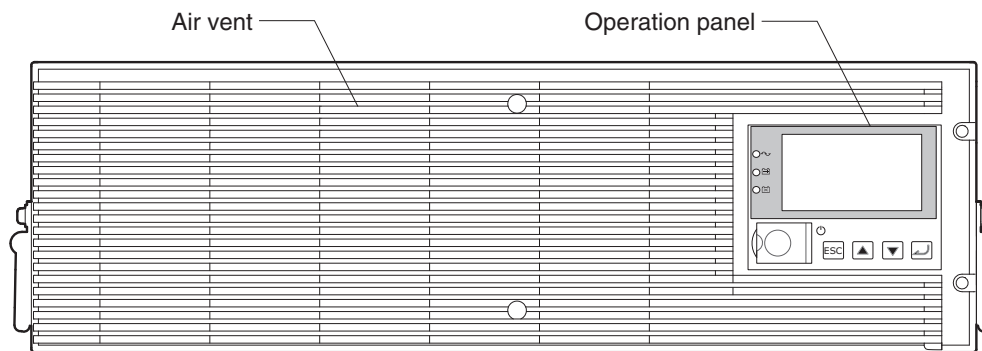
## Nomenclature

### Front view

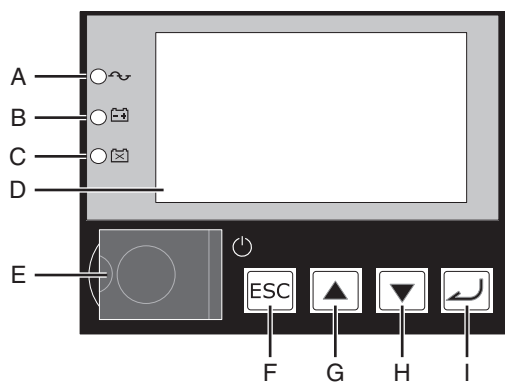
#### BU2002RWLG/BU3002RWLG



#### BU5002RWLG

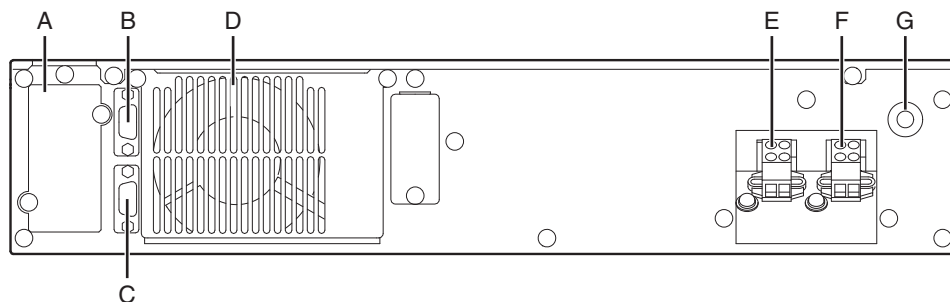


### Enlarged view of the operation panel

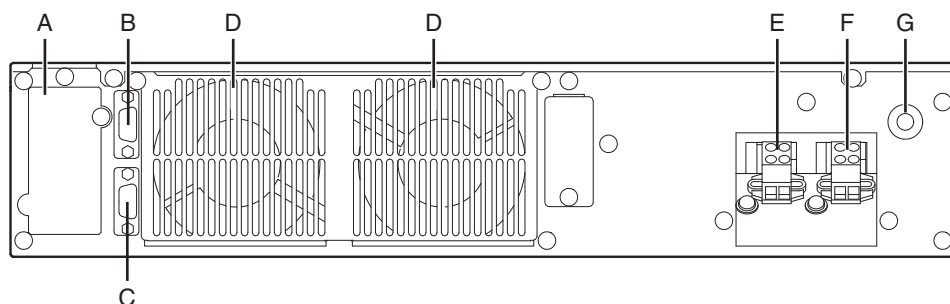


A.	Power supply output lamp
B.	Battery mode lamp
C.	Battery replacement lamp
D.	LCD for status and setting display
E.	Power switch
F.	ESC switch
G.	Up switch
H.	Down switch
I.	Enter switch

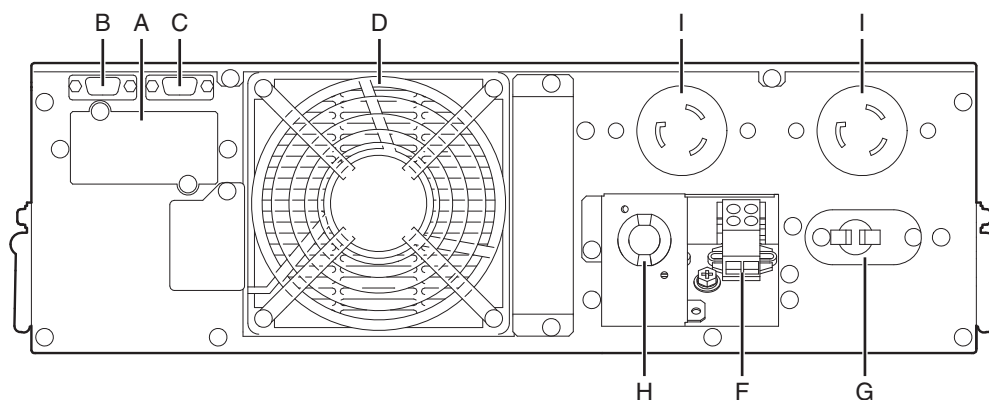
**Rear view**  
**BU2002RWLG**



**BU3002RWLG**



**BU5002RWLG**



A.	Option slot
B.	Contact signal port
C.	RS-232C port
D.	Cooling fan
E.	AC input terminal block
F.	AC output terminal block
G.	AC input overcurrent protection switch
H.	AC input cable
I.	AC output receptacle

# BU□002RWLG

## Engineering Data

- Convert the total capacity (power consumption) of the connected devices to watts (W).  
For the indication of connected devices, check your computer and the rear of the display.  
The indicator can show values in three different ways: volt-amperes (VA), amperes (A), and watts (W).

Example 1) 200 VAC, 50/60Hz, 145 W  
 Example 2) 200 VAC, 50/60Hz, 1.8 A  
 Example 3) 200 VAC, 50/60Hz, 150 VA

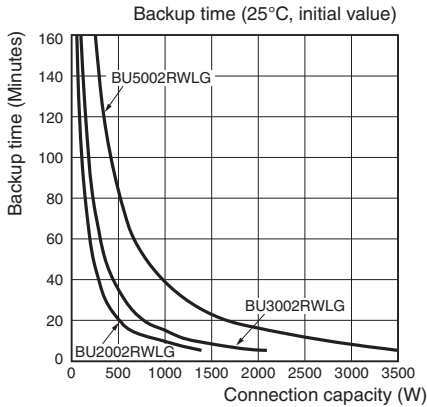
Indication	Value
VA	$\times \text{power factor} = W$
A	$\times \text{power factor} \times \text{power supply voltage} = W$

For devices that use the VA or A indication, convert the capacity into W. Multiply the value indicated on devices by the value in the right table for conversion.

(When the power factor is unknown, enter 1. The power factor usually ranges between 0.6 and 1.)

- Add the values converted into W to obtain the total capacity of the connected devices.
- Calculate the initial value of the backup time for the total capacity of the connected devices from the graph below.
  - Graph of backup time (graph of initial values for products that have not been used at 25°C)  
The backup time becomes shorter than the graph (table) below when temperature is lower.
  - The smaller the capacity of connected devices becomes, the longer the backup time becomes.

### Estimated backup time



#### Backup time table

(Time unit: minutes)

##### BU2002RWLG

Connection capacity (W)	20	50	100	200	300	400	600	800	1000	1200	1400
Backup time (Minutes)	360	190	110	60	39	27	16	12	9.5	7	5

##### BU3002RWLG

Connection capacity (W)	20	50	100	200	300	400	600	800	1000	1200	1400	1600	1800	2000	2100
Backup time (Minutes)	450	260	165	93	63	45	28	19	15	11	9	7.5	6	5.2	5

##### BU5002RWLG

Connection capacity (W)	20	50	100	200	300	400	600	800	1000	1200	1400	1600	1800	2000	2100	2700	3000	3500
Backup time (Minutes)	660	480	320	200	140	106	68	50	39	31	25	21	18	16	15	10	8	5

\* These backup times are for reference only. Times may vary according to battery life and external environmental conditions (temperature, etc.).

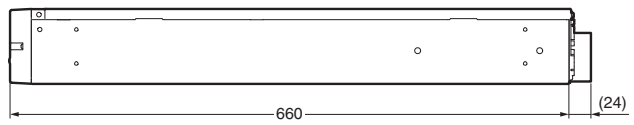
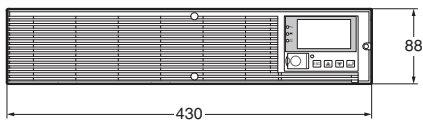


Dimensions

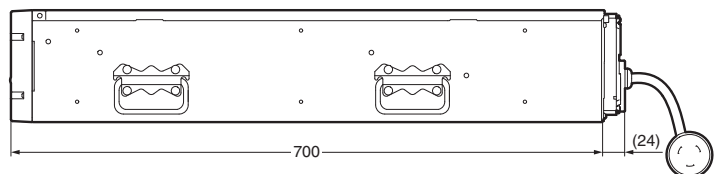
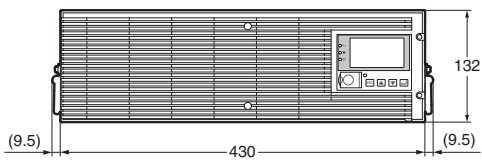
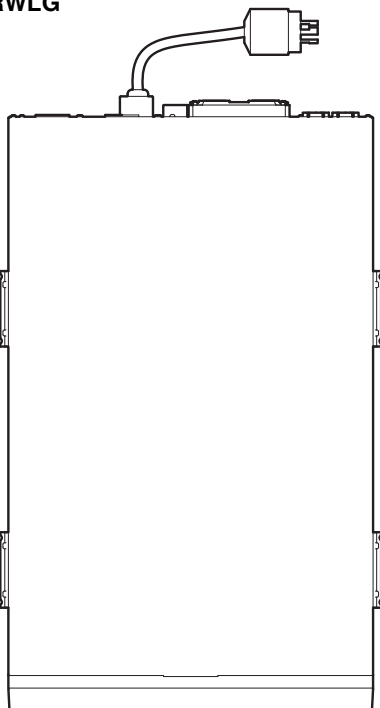
(Unit: mm)

Main body

BU2002RWLG/BU3002RWLG



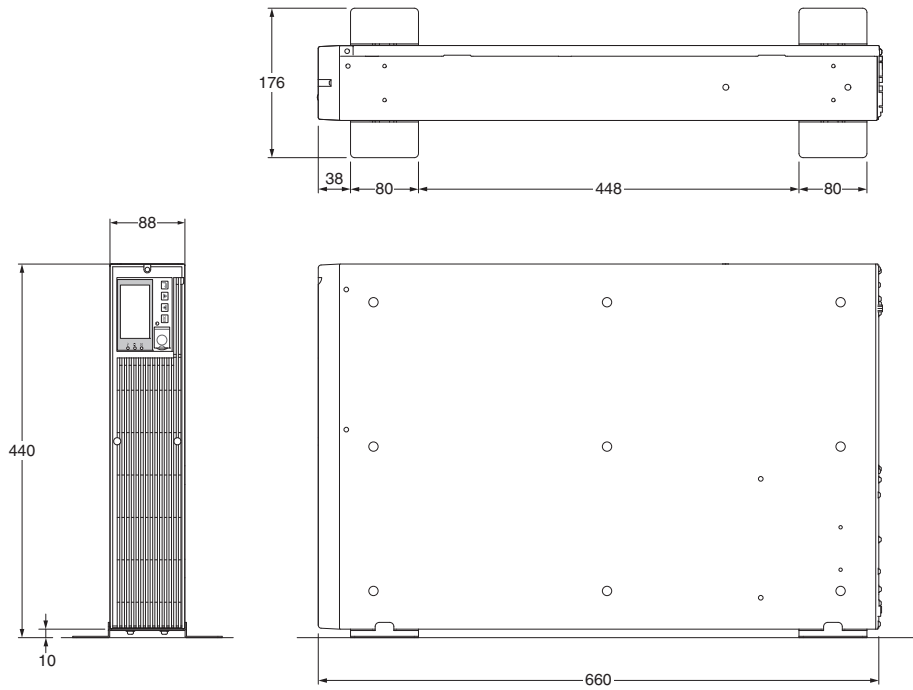
BU5002RWLG



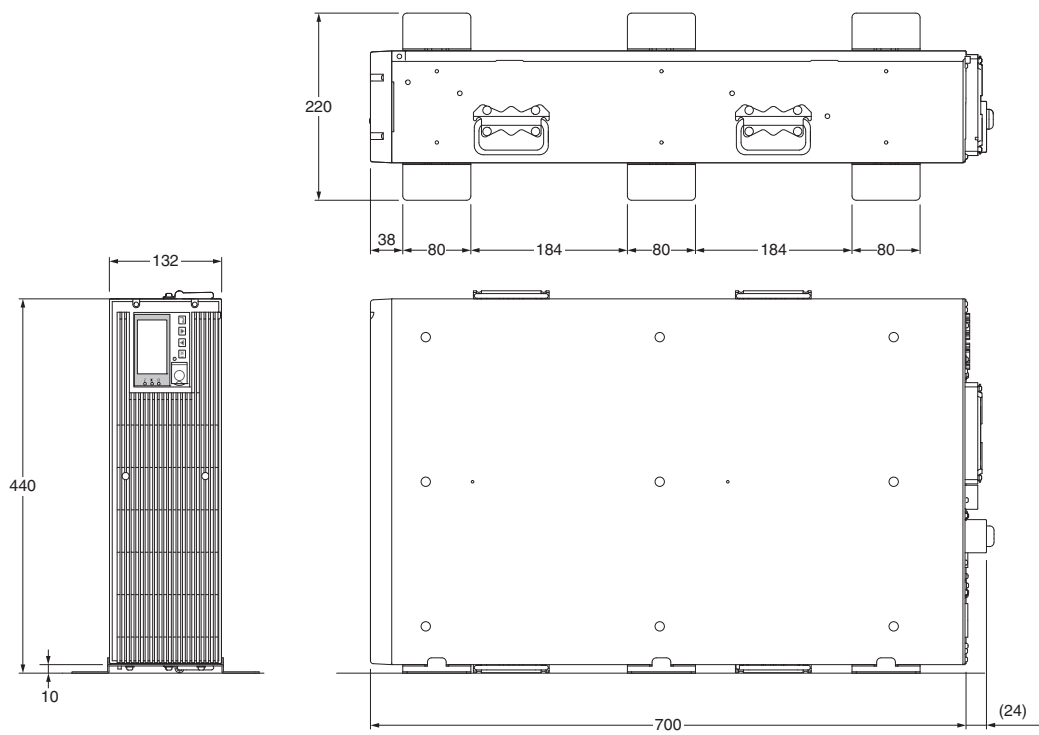
# BU□002RWLG

## Upright stand

BU2002RWLG/BU3002RWLG

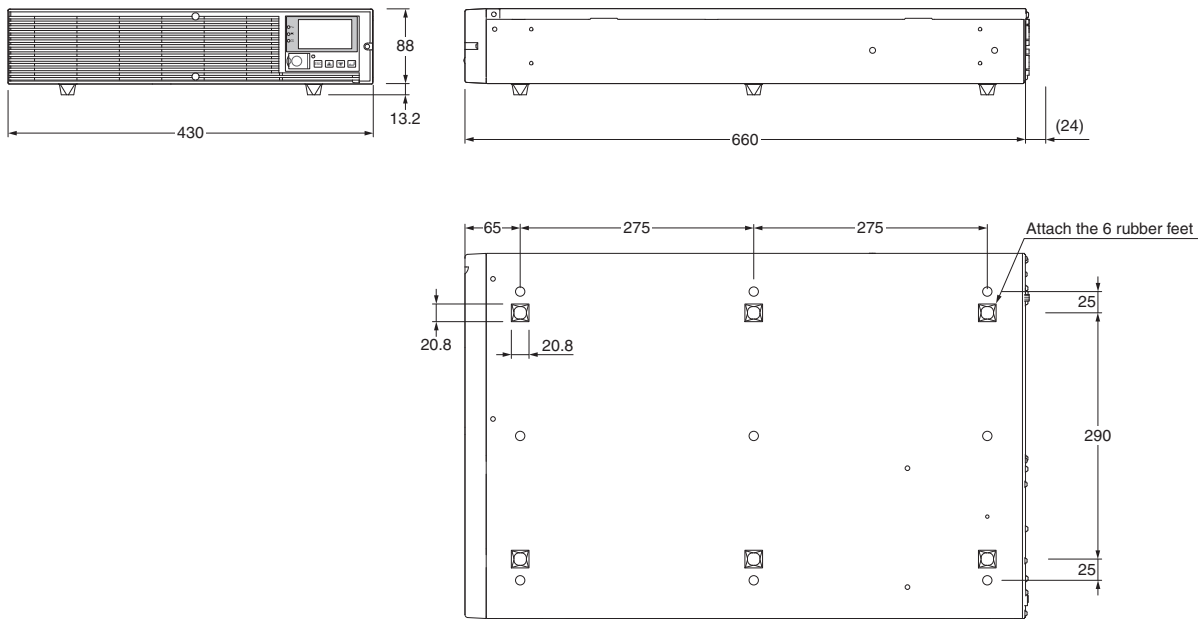


## BU5002RWLG

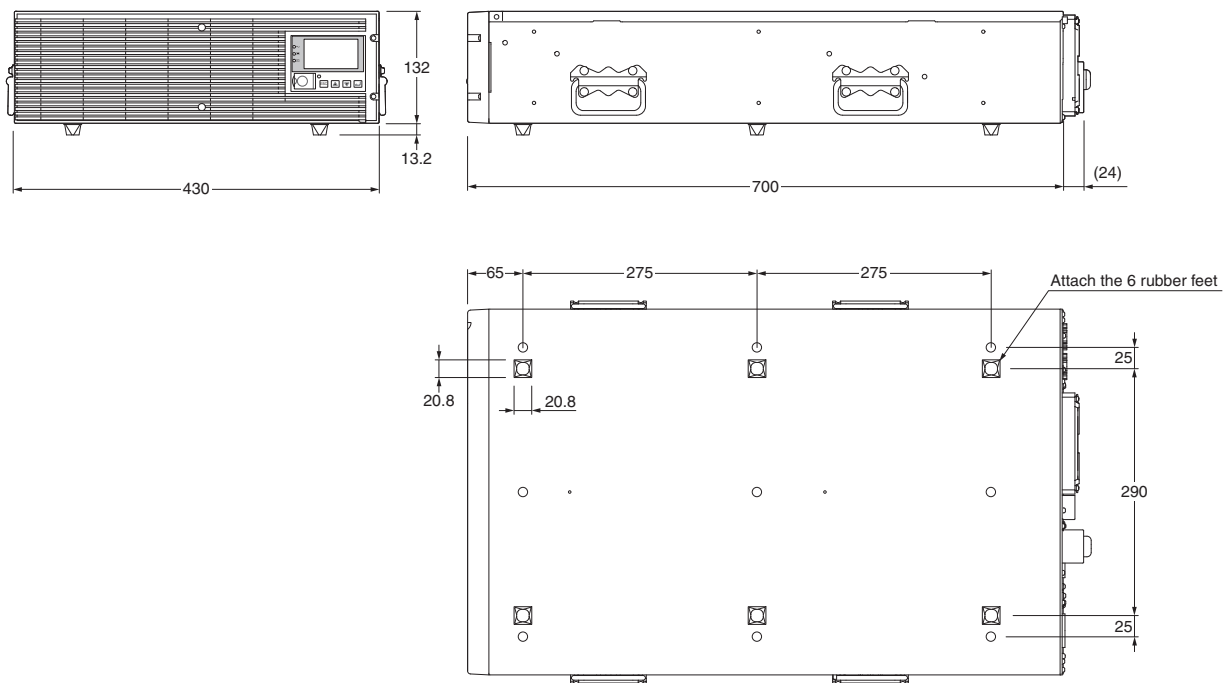


Rubber feet

BU2002RWLG/BU3002RWLG

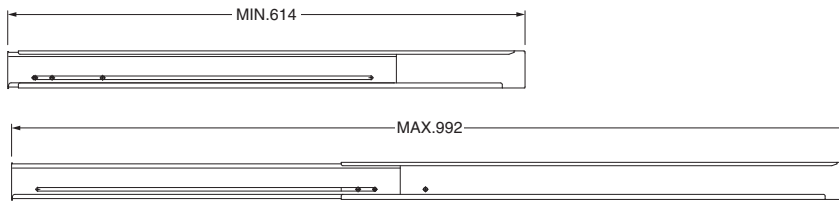


BU5002RWLG

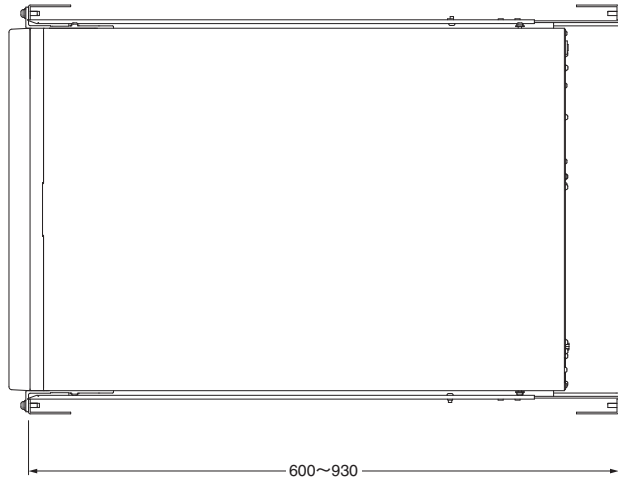


Support angles

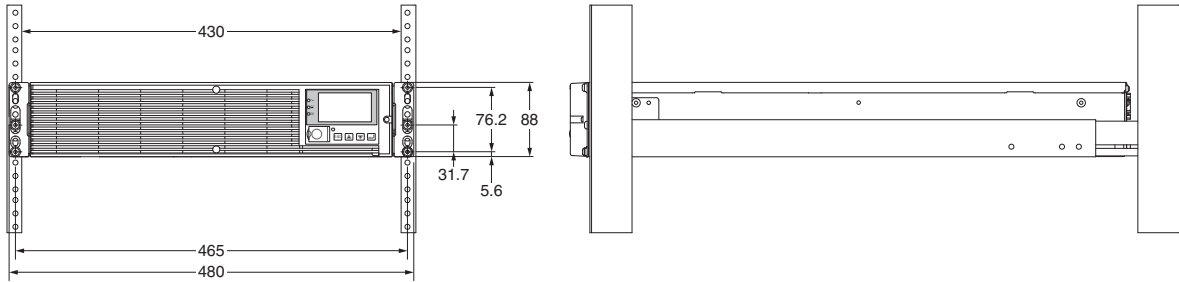
Rack rail



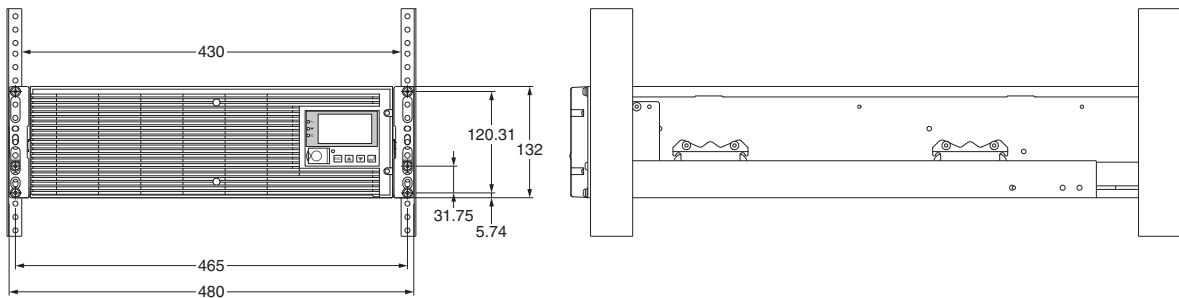
After rackmont installation



BU2002RWLG/BU3002RWLG





BU5002RWLG








# Safety Precautions


## Warning Indications

 <b>Warning</b>	Indicates a potentially hazardous situation that, if not avoided, could result in serious injury or death. Additionally there may be significant property damage.
 <b>Caution</b>	Indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury or property damage.

## Meaning of Product Safety Symbols

	<b>General inhibition</b> Notice prohibiting an unspecified general action.
	<b>General instruction</b> Notice instructing an unspecified general action.
	<b>Do-not-disassemble prohibition</b> Notice prohibiting disassembly because disassembling the device may cause such an accident as an electric shock.
	<b>Prohibition of use in locations subject to water such as a bathroom and shower room</b> Notice prohibiting installation of the device in locations subject to water, because if a device not made water-proof is used in such locations, injury may occur due to an electric leak.
	<b>Do-not-touch prohibition</b> Notice prohibiting disassembly because disassembling the device may cause such an accident as an electric shock.


### **Warning**

Do not use this unit when very high reliability and safety are required as listed below. This unit is designed and manufactured for use with FA or 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).
- Applications in which a failure of the unit may cause significant damage to the society and public (For example, essential computer systems and main communication equipment.)
- Applications with the same level of importance.

### **Caution**


#### (for installation and connection)


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 28kg (BU2002RWLG), 33kg (BU3002RWLG) and 61kg (BU5002RWLG).
- If you drop the unit, stop using it and have it inspected and repaired.
- For repair, contact OMRON representatives.


Do not hold the side of the front panel when lifting. 

- Injury may result if the panel comes off and falls.

Keep plastic package bags out of reach of children.  
 • Children may suffocate if they place their heads into plastic bags. 


Make sure to connect the unit's AC input plug to a commercial power source with rated input voltage (200/208/220/230/240VAC) and 50/60 Hz frequency. 

- Connecting to a commercial power source with a different rated input voltage or frequency may result in a fire.
- The unit may fail.


For BU5002RWLG, when an abnormality (unusual sound or smell) occurs, disconnect the AC input plug from the wall outlet, or turn OFF the INPUT PROTECTION switch (input overcurrent protection switch) on the back of the unit. The socket-outlet shall be installed near the equipment and shall be easily accessible. 

For BU2002RWLG and BU3002RWLG, turn OFF the external breaker installed on the input side.


- When performing maintenance on the connected devices, follow the above instructions to ensure safety.

Do not connect devices such as dryers, some solenoid valves, etc., which have a half-wave rectifier that allows only half-cycle AC power to flow through. 


- Overcurrent may damage the UPS.

Connect the unit to a wall outlet (commercial power) with the appropriate capacity (11A or greater for BU2002RWLG, 16A or greater for BU3002RWLG and 27A or greater for BU5002RWLG). 


- Otherwise, the power cord may be heated.
- When equipment with the maximum output capacity is connected, a maximum current of 11A (BU2002RWLG), 16A (BU3002RWLG), or 27A (BU5002RWLG) flows.

When changing the input cable, make sure to perform the connection as specified. 


- When connecting a cable to the terminal block, use a cable that complies with the input current specification of the UPS.
- Failure to do so may result in electric shock or ground fault.

When in use, make sure the output terminal block cover is attached. Do not turn ON the power switch when it is detached. 


- Voltage is applied to the output terminal block when the power switch is ON, which can result in electric shock.

Provide secure grounding. 

- For AC input plug connection, connect the plug directly to a commercial power source. For terminal block connection, connect the cable to a commercial power source and ground it. A failure or leak that occurs when the unit is not properly grounded may result in electric shock.

Do not disassemble, repair, or modify the unit. 

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

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.
- Use the included vertical stand when positioning the unit vertically.

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

- The battery deteriorates rapidly.
- Doing so may cause a failure or malfunction of the unit.



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. (With no condensation)
- Do not use in places where the humidity is lower than 10% or higher than 90%.
- 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, salty or wet places, or outdoors.
- Installation or storing the unit in such a place may cause a fire.

Do not connect equipment that exceeds the output capacity of the unit. You can use plug strip to connect additional devices, but do not connect devices that exceed the current capacity of the plug strip.



- The current protection of the unit may operate, which may stop the output.
- The wiring of the plug strip heats up, which may cause a fire.

Do not pinch or sharply bend the cable. Do not fold or knot the cable.



- Doing so may cause the cable to be damaged or heated, which may cause an electric shock or a fire.
- If the cable is damaged, stop using the unit and have the cable repaired.
- For repair, contact OMRON representatives.

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.

Do not block the air vents (front and rear).



- Doing so will cause the internal temperature to rise, which may cause the unit to fail and the battery to deteriorate.
- Leave at least 5 cm of space between the front vent and the wall, and at least 10 cm of space between the rear vent and the wall.

Do not connect devices that cannot be used with commercial power supply.



- When the unit's power switch is turned ON and an error occurs with the connected device, bypass operation is performed and commercial power supply is supplied as is to the connected devices.

When installing the unit on a rack, place it on the lower 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.

When using the unit in the 100V output mode, check that the output voltage is set to 100V, and then turn ON the power switch.



- Connecting a 100V device to the unit while outputting in the 200V mode may cause a failure of the device or a fire.
- The output voltage can be set with "Settings" - "In/Out Settings" - "Output Voltage" in the menu on the LCD.

**(for use)**

Do not allow the unit to come in contact with water. If you drop the unit, stop using it.



- Doing so may cause an electric shock or a fire.
- If the unit becomes wet or is dropped, immediately stop using it, disconnect the AC input cable from commercial power and have the unit inspected and repaired.
- For repair, contact OMRON representatives.

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
25°C	5 years
35°C	2.5 years

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

Using a dry cloth, periodically wipe the dust from the AC input plug, input terminal block and power supply output receptacles.



- Accumulated dust may cause a fire.

Do not use the unit in a closed place and do not cover the unit.



- Doing so may cause abnormal heating or a fire.
- Depending on the operating environment, hydrogen gas may be generated from the battery, resulting in a rupture or explosion. Ventilate the area around the unit.

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



- Using the unit under such conditions may cause a fire.
- If you notice such a condition, stop using the unit and contact OMRON representatives for inspection and repairs.
- Position the unit in such a way that you can immediately disconnect the AC input plug from the wall outlet (commercial power) in the event a problem occurs.

If fluid leaks from the unit, 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 place objects heavier than 25 kg on the unit, and do not drop heavy objects onto the unit.



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

The unit is equipped with a bypass circuit which is able to supply electric power to connected devices even when the inner control circuit is broken down by defects or malfunctions.



- Output is continuing even when all indicators of the front panel are off.
- If you want to stop the output, either stop the source of commercial power or disconnect the AC input plug from the wall outlet (commercial power).

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.

#### (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 this 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 leaks from the unit, 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 create a short between the connector terminals.



- Doing so may result in electric shock.

#### (for battery replacement)

Perform replacement on a stable and flat place.



- Handle the battery carefully so that you do not drop it.
- Not doing so could cause injury or burns due to liquid (acid) leakage.

Use a specified battery for replacement.



- Not doing so may cause a fire.
- Replacement battery pack for  
BU2002RWLG: BUB2002RWG  
BU3002RWLG: BUB3002RWG  
BU5002RWLG: BUB3002RWG (2PCS.)

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 it 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 put the battery into fire and do not break it.



- The battery may explode or leak dilute sulfuric acid.

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



- Dilute sulfuric acid may leak.

### Precautions for Safe Use

When moving the unit from a cold place to a warm place, leave it for several hours before using it.

- If the unit is promptly turned ON after being moved to a warmer place, condensation may form inside the unit and cause it to fail.

Charge the battery soon after purchasing the unit.

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

Recharge the battery for at least 8 hours every 6 months when the storage temperature is 25°C or less, or every 2 months when the storage temperature is 40°C or less.

- The battery self-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.
- Turn OFF the unit's power switch when storing it.

Do not short the output lines of the unit to each other, and do not short the output lines to the ground.

- The unit may fail.

Do not connect the AC input terminal of the unit to its Power Supply Output terminal during the Battery Mode.

- The unit may fail.

Do not connect a page printer (such as a laser printer) to the unit.

- The unit repeatedly and frequently switches between Commercial Power Mode and Battery Mode, which may shorten the life of the battery.
- The page printer has a large peak current, so an excess of the connection capacity or a power failure due to instantaneous voltage drop may be detected.

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

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

Do not perform withstand voltage tests.

- Performing withstand voltage tests may damage the surge absorption element built into the power supply input circuit.
- When performing an insulation resistance test, use the 400 VDC range.

Before stopping the commercial power to the unit, turn OFF the power switch of the unit.

- The unit enters Battery Mode when commercial power is stopped. If you frequently use the unit in Battery Mode, the battery life may be significantly shortened.

If this unit is used for an inductive device such as a coil or motor, check the operation beforehand.

- With some types of devices, the effect of inrush current may cause this unit to stop operating properly.

Check system operation beforehand if the unit is used in combination with a device whose power supply voltage and frequency fluctuate widely, such as a generator.

- If the generator's output voltage/frequency falls out of the input voltage/frequency range, the unit will enter Battery Mode.
- Even if the input frequency is within the range, the unit will enter Battery Mode when a rapid change (5 Hz/sec or greater) occurs.

In the event you transfer or sell this unit to a third party, please include all of the documentation that came with the 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.

This unit uses lead acid batteries,

- Which are a valuable recyclable resource. Please recycle.



Take measures for handling unforeseen accidents, such as data backup and system redundancy.

- The output may stop when there is a circuit failure in the UPS.

## Precautions for Correct Use

### Usual operation

- You may either leave the power switch of the unit ON (operation status) or turn it OFF each time when stopping the connected system. Choose whichever operation method is more convenient. We recommend turning OFF the power switch when you do not use connected devices for a long time.
- The battery can be charged once the unit is connected to a commercial power source.

### Quitting Battery Mode

- If a power failure lasts for an extended period of time, the battery discharges completely and power output from the unit stops. Shut down your computer after performing appropriate procedures (for example, saving data) while the unit is still supplying power.

### Rebooting

- If the battery discharges completely during a power failure, the output stops. After recovery from the power failure, the unit automatically restarts and output begins. If you do not want to restart the connected devices, disable the "Settings" - "Boot Settings" - "Auto reboot" setting in the menu on the unit's LCD, or turn OFF the power switch of the connected devices.

### Scheduled operation using the UPS monitoring software

- When performing scheduled operation in which the UPS is stopped and a device such as a breaker is used to stop the UPS at the same time that commercial power stops, specify a period of no more than 3 months for the start of the next operation.
- If you specify a period longer than 3 months, the internal timer is reset and the scheduled operation does not start. Note that this period reduces to approximately half when the battery needs to be replaced. If a period of 3 months is exceeded, you start operation by supplying commercial power and pressing the start switch. However, if the battery needs to be replaced, you may not be able to start operation.
- In this case, replace the battery.

## Installation Method

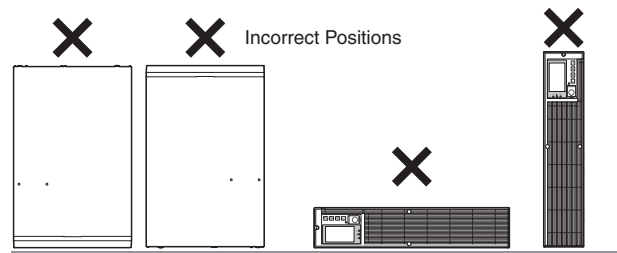
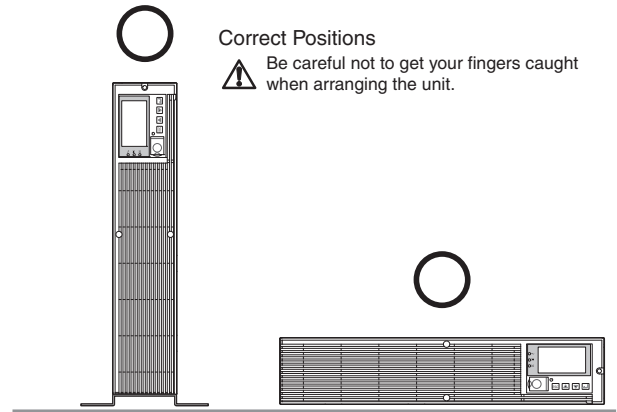
Do not use this unit in any position other than the correct positions indicated in the illustration below.

**Note:** Before installing this device, make a record of the serial number of this device.

The product serial number is required when contacting us about the device.

The serial number (S/N) is inscribed on the bottom left side of the rear panel.

The product serial number is inscribed on the bottom left side of the rear panel. The product serial number label is also included.



## Rackmount installation (EIA /JIS 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: BU2002RWLG: Approx. 28kg  
BU3002RWLG: Approx. 33kg  
BU5002RWLG: Approx. 61kg

In a case where the UPS is to be mounted on a rack, place it on the lower 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.

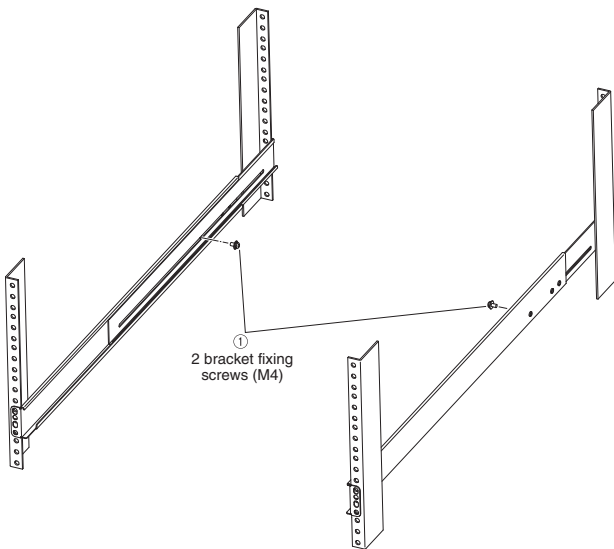


**Items included in the 19-inch rack support angle mounting bracket set**

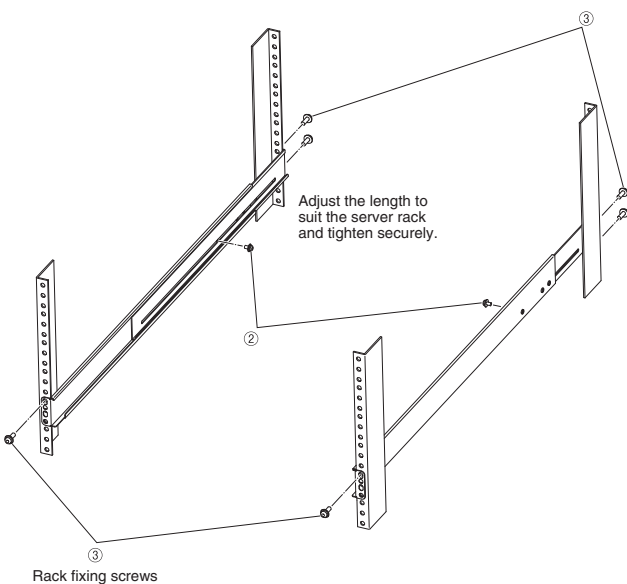
Rack rail (front) L/R .....	1 each	
Rack rail (rear) L/R .....	1 each	
Unit guide rail L/R .....	1 each	
Ear bracket L/R .....	1 each	
Spacers .....	2	
Bracket mounting screws (M4) .....	10	
EIA/JIS rack fixing screws (M5) .....	10	
EIA rack fixing nuts (M5) .....	10	

**Rack mounting procedure**

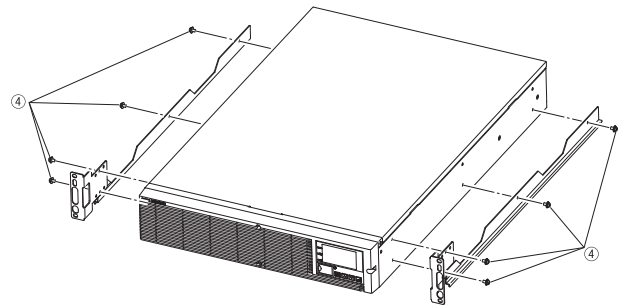
1. Insert the 2 included bracket mounting screws (M4) and half-tighten them to hold the front and rear rack rails in place. (1) There are two types of front and rear rack rails: left (L) and right (R).



2. Adjust the length of support angles to suit the server rack, and then securely tighten the screws that were half-tightened in step 1. (2)
3. For EIA standard-compliant installation, use the included EIA rack fixing nuts (M5) and EIA/JIS rack fixing screws (M5) to securely fasten the front and the back of the rack rails to the server rack. (3) The screw hole positions are as follows.
  - EIA rack: Topmost one for the front, topmost and bottommost ones for the rear
  - JIS rack: One at the second from the bottom for both front and rear

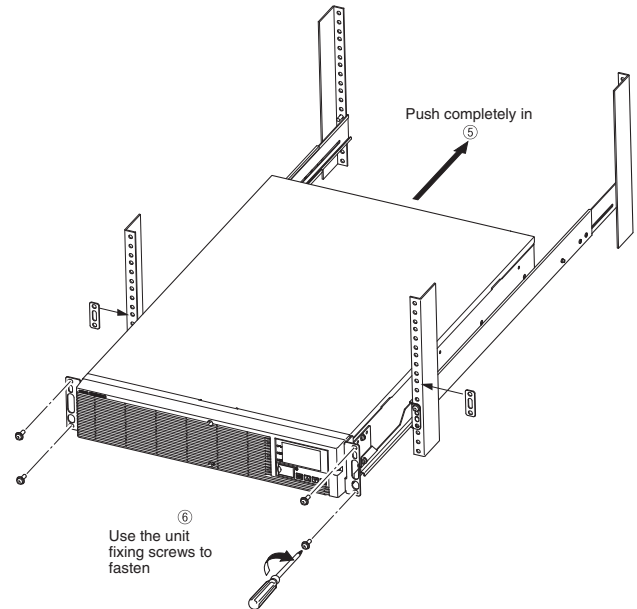



4. Use the 8 included bracket fixing screws (M4) (2 sets of 4 screws) to securely fasten the ear brackets and unit guide rails to the left and right sides of the UPS. (4) (Installation is possible without removing the handles on the sides of BU5002RWLG; do not remove them.)



**The support angles cannot be attached to special EIA/JIS racks.**

1. Place the UPS on the support angles and push it completely into the rack (5), and use the included EIA/JIS rack fixing screws (M5) and spacers to securely fasten the ear brackets to the server rack. (6) The screw hole positions are as follows.
  - EIA rack: Topmost and bottommost ones on the front
  - JIS rack: One at the second from the top on the front



 Always use the support angles.

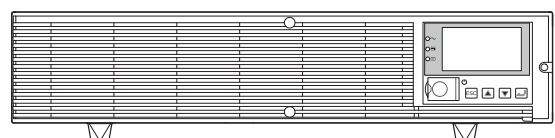
**Note:** The batteries for BU5002RWLG are in a separate package. Attach the batteries to the unit before installation.

**Stationary installation**

Perform installation only as shown in the diagrams below.

**Horizontal installation**

Attach the included rubber feet for horizontal installation with the included M3 screws and position the unit horizontally. For stationary horizontal installation, make sure that this product does not slide or fall. (Installation is possible without removing the handles on the sides of BU5002RWLG; do not remove them.)



## Upright installation

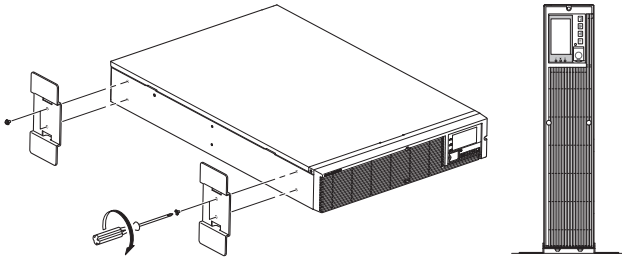
### 1. Upright installation

Use the upright stands included with the product.

Attach the two upright stands (front and back) for BU2002RWLG and BU3002RWLG, and three (front, center, and back) for BU5002RWLG with the included screws.

Keep a space of 250 mm or more above the UPS.

(Installation is possible without removing the handles on the sides of BU5002RWLG; do not remove them.)



**Note:** The batteries for BU5002RWLG are in a separate package. Attach the batteries to the unit before installation.

# Terms and Conditions Agreement

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**Cat. No. U704-E1-03**

Printed in Japan  
0517(0815)