M0020760B

UNINTERRUPTIBLE POWER SUPPLY

SANUPS A11N

Uninterruptible power supply

LCD Panel

Operating Manual

SANYO DENKI

Introduction

Thank you for purchasing our **U**ninterruptible **P**ower **S**upply **System A11N** (hereinafter **UPS**).

SAVE THESE INSTRUCTIONS

This manual describes the menus, functions, and operation method of the LCD panel.
Be sure to read LCD Panel Operating Manual before operating the LCD panel. For details on UPS installation and operation, see the A11N instruction manual. Once you have read this manual, keep the manual in an easy-to-access location for future reference.

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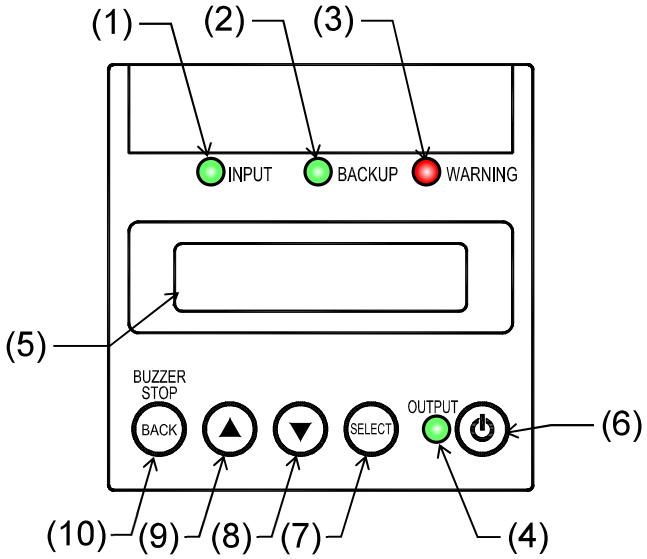
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1. NAMES AND FUNCTIONS OF LCD PANEL PARTS

1.1 Names of LCD Panel Parts

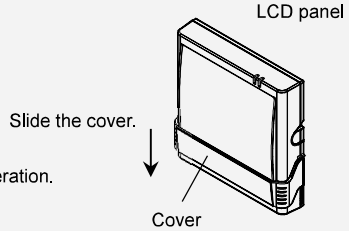


No.	Name	Label	Color	Function	
(1)	Input LED	INPUT	Green	Lit	When input power is normal
				Blinking	When input power is abnormal
(2)	Backup LED	BACKUP	Green	Lit	During battery operation
(3)	Warning LED	WARNING	Red	Lit	Caution/warning, malfunction, or end of battery discharge
(4)	Output LED	OUTPUT	Green	Lit	When supplying power by inverter operation
				Blinking	When supplying power by bypass operation
(5)	LCD screen	–	-	Displays UPS status information, measured values, maintenance support information, various setting values, operations, etc.	
(6)	ON/OFF button	⏻	-	Starts and stops inverter operation	
(7)	SELECT button	SELECT	-	Selects and accepts LCD display items or contents	
(8)	▼ button	▼	-	Move forward by one item displayed on the LCD	
(9)	▲ button	▲	-	Go back by one item displayed on the LCD	
(10)	BACK button	BACK	-	Cancels the selection and returns to the previous LCD display (menu) level Stops the buzzer when the buzzer is sounding	

Notes on the LCD panel

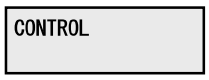
- LED indications
  The LEDs are indicated as [INPUT (green)] and [WARNING (red)] in the manual.
  The LED status is expressed as Lit: ☀ or blinking: ☀ .

- About the cover of the LCD panel operation section
  Slide the cover downwards to operate the buttons.
  After you finish the operation, return the cover to its original position to prevent accidental operation.



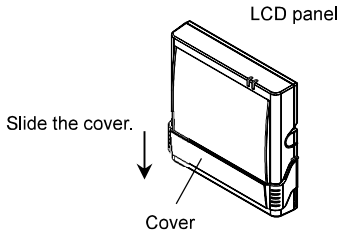
1.2 Home Menu Functions

The LCD panel provides the five Home Menus below. Each home menu has its own setting groups and settings. For details on the contents of the displayed characters and how to change the settings, read the corresponding items.

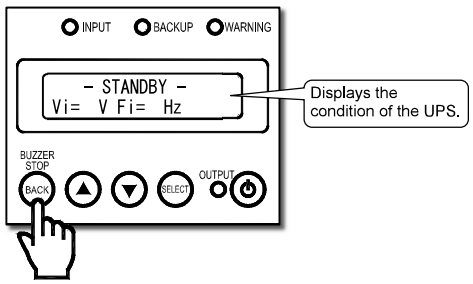
Home Menu	Function	Description
 See "2.1 Viewing the UPS Operation Status"	Status display Displays the condition of the UPS.	Displayed status items: Device operation mode, AC input, AC output, battery state, device internal errors, load level, etc.
 See "2.2 Viewing UPS Measurements"	Measurement display Displays the measured values of the UPS.	Displayed measurement items: Input (voltage, frequency) Output (voltage, current, load level, power, frequency) Battery (voltage, charging rate, remaining battery backup time, number of power outages, accumulated time of battery operation, battery life) Charger (voltage, current) Temperature (ambient temperature, battery temperature)
 See "3. SETTING UP THE UPS"	Setting change Allows you to change various UPS settings.	Settings: Input/output: Voltage, synchronous frequency tracking range, output frequency, voltage and current display Interface: Interface, baud rate Operation: Operation during power recovery, buzzer sounds, shutdown, overload recovery operation, operation when output stops, operation when input error occurs, transmission signal at minor malfunction, simulated transmission signal output for device error, simulated transmission signal output for low battery voltage Battery: Timing of low battery voltage warning Battery test time, test schedule Function: Operation period during power outage, RING signal, output voltage adjustment, EPO input logic, power outage signal logic, low battery voltage logic, inverter signal logic, bypass signal logic, error signal logic, remote switch input, power recovery check time, settings for air filter usage System: Time, display language, number of connected units, operation system
 See "4. OPERATING THE UPS"	UPS operation Allows you to operate the UPS.	Control items: Battery test, test result display UPS startup/shutdown Switch to bypass operation Release EPO latch state
 See "5. MAINTENANCE MENU (FOR SERVICE TECHNICIANS)"	Maintenance A menu for service technicians. Allows you to display or set maintenance information. Do not use this menu if you are not a service technician.	Displayed items: Malfunction history, operation history, battery information, operating status of each unit, measured values for each unit Settings: Battery backup time, battery type

1.3 How to Operate the LCD Panel

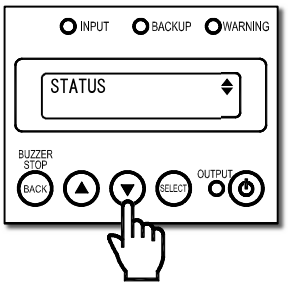
(1) Slide the cover downwards.



(2) Press BACK to display the LCD screen.

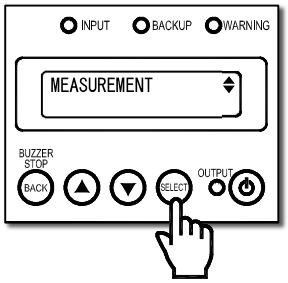


(3) Press ▼ or ▲ to change the screen.



Repeat steps (3) and (4) to display or set.

(4) Press SELECT to accept the item.



(5) Return to the desired level by pressing BACK. After the operation, return the cover to its original position.

Note

- If you press BACK while the buzzer is beeping, the buzzer stops. If a single press fails to stop the buzzer, keep pressing repeatedly until the buzzer stops. If you press BACK while the buzzer is not beeping, the menu will appear on the LCD screen.
- If you do not operate the LCD screen for 10 minutes or longer, the panel light turns off. About 30 seconds later, the UPS mode, input/output power measurement information, etc., appear randomly as a screen saver. After the screen saver appears, if there is no activity for 10 minutes or longer, the panel display turns off. Pressing any button displays the UPS status.
- The actual text that appears on the LCD screen may be different from the text and position described in the operating manual.

The menu contains several levels as shown below.

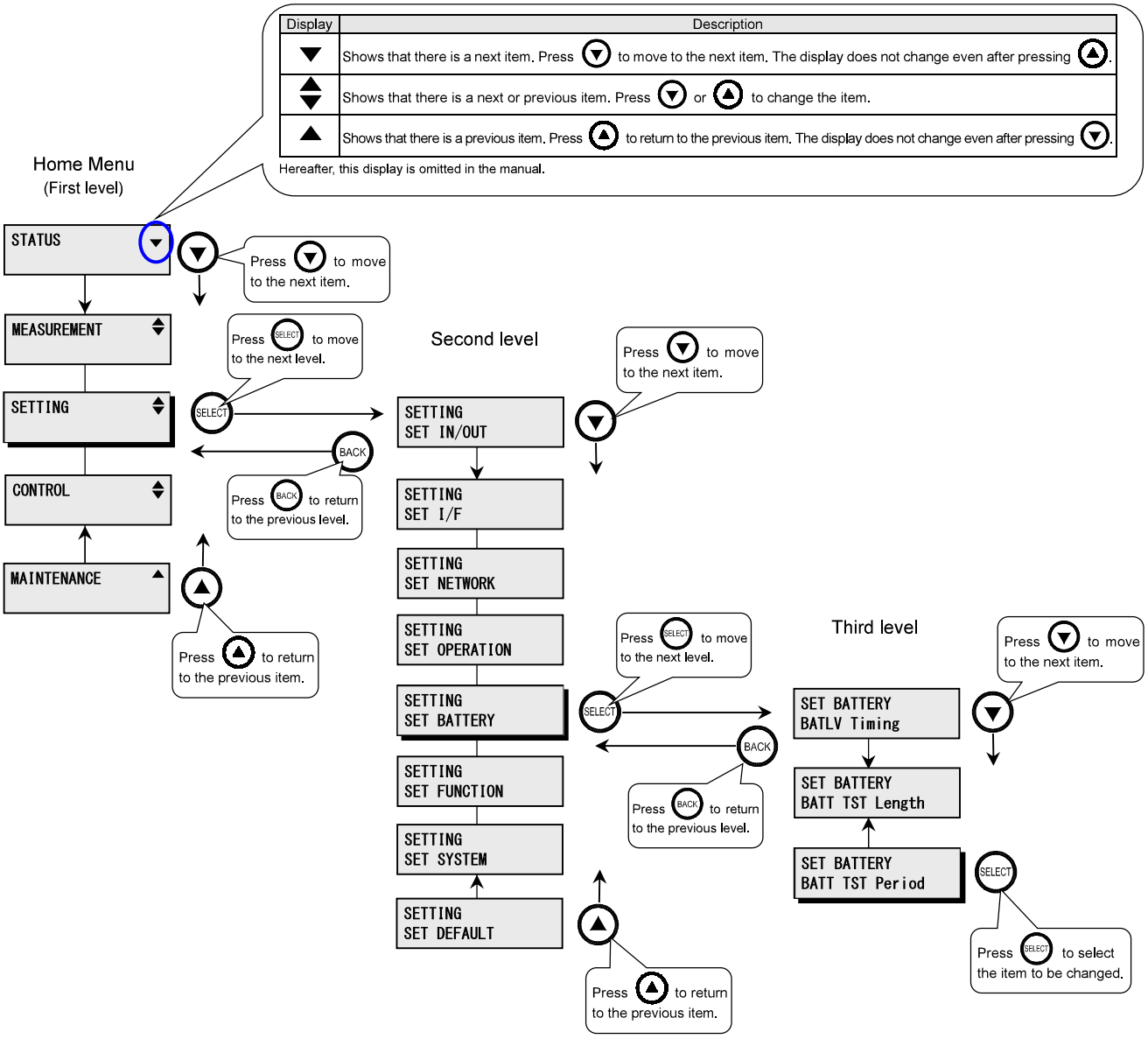
Press SELECT to move to the next level or press BACK to return to the previous level.

Each level has several items. Press ▼ to advance through the items and press ▲ to move back through the items.

When an item appears on the screen, pressing SELECT accepts the item and then moves to the next level.

The number of levels and items are different depending on the menu, but the procedure is the same.

Ex.: When progressing from the "SETTING" screen to the "BATT TST Period" (battery test period) for battery setting.

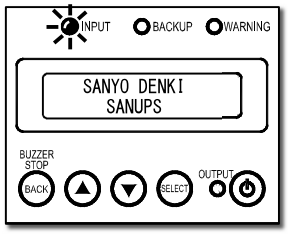
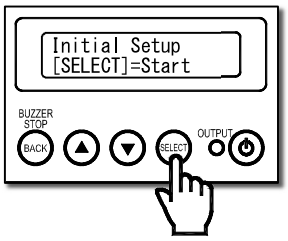
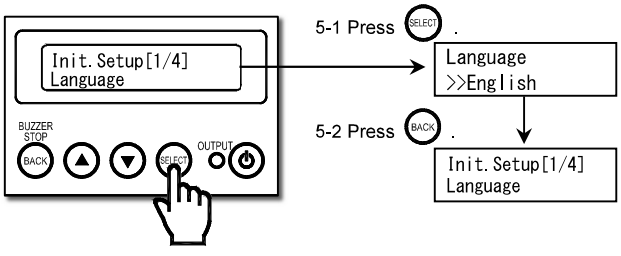


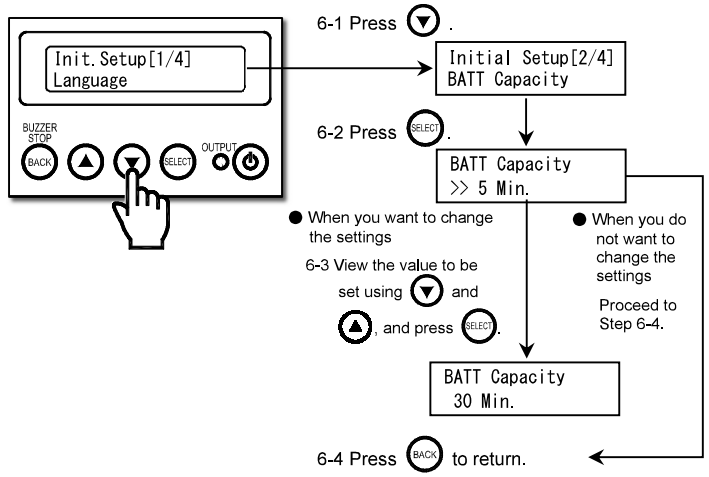
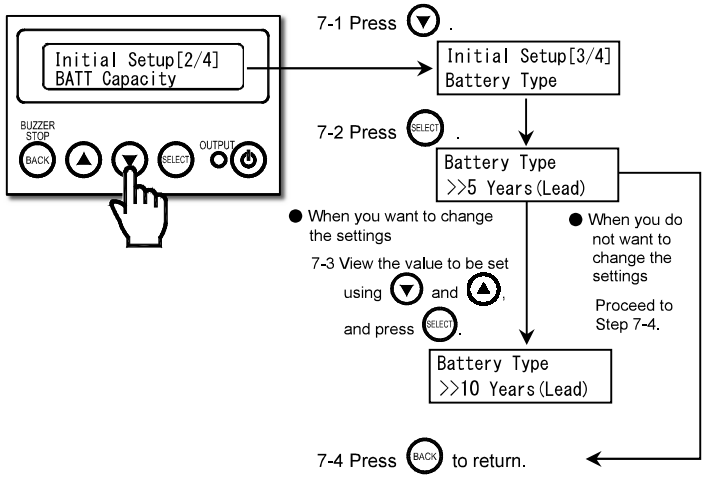
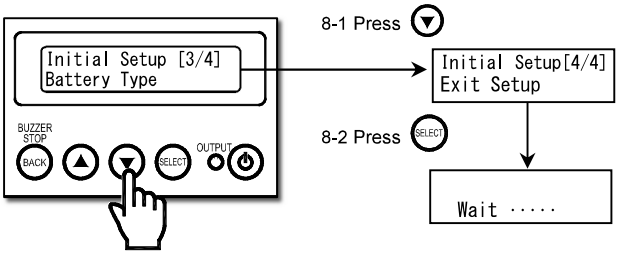
1.4 Initial settings

The Initial Settings screen is displayed on the LCD panel at the time of UPS startup.
Follow the instructions on the displayed screen to configure the initial settings.

Note

These are the settings at the time of initial startup. If you cannot set them correctly by this operation or if you want to change the settings, configure the settings by referring to "3.32 Setting the Display Language," "5.1 Setting the Backup Time" and "5.2 Setting the Battery Type."
However, the settings in sections "5.1" and "5.2" should be performed only by service technicians.

Step	Operation	Tip
1	Check the following items: 1. Has the UPS been installed and wired by a service technician? 2. Is the exterior of the UPS in any way damaged or deformed?	● For how to install and wire the UPS, see the UPS instruction manual.
2	Turn ON the MAIN MCCB when the power is ON.	● See the UPS instruction manual.
3	Check that the LCD screen is as shown below.  [INPUT (green)] Lit The screen for step 4 will appear after approximately 5 seconds.	
4	Check that the LCD screen is as shown below, and press SELECT.  	● This screen is displayed only at initial startup. If this screen does not appear, then the initial settings have already been configured. To change the settings, use the "SETTING" menu for the display language, and the "MAINTENANCE" menu for the backup time and battery type. ● At initial startup, set the three items in the table below. Setting / The LCD screen displays (Katakana / English) Display language: ﾋｮｳｼﾞｹﾞﾝｺﾞ / Language Backup time: ﾊﾞｯｸｱｯﾌﾟｼﾞｶﾝ / Backup time Battery type: ﾊﾞｯﾃﾘｼｭﾍﾞﾂ / Batt type ● At initial startup, the display is in English.
5	Set the display language.  	● Select Japanese (Katakana) or English as the language to be displayed on the LCD panel. Setting Value / Description English / English Japanese / 日本語 ● This manual provides explanations assuming that the language is set to English. Hereafter, the explanations in this manual will be given with the screen display language set to English. ● If you want to change the settings after the initial settings are complete, see "3.32 Setting the Display Language."

<table>
<tr><th>Step</th><th>Operation</th><th>Tip</th></tr>
<tr><td>6</td><td>Set the backup time.

</td><td>● Check the backup time to be set in the "Initial Setting Manual" provided with the UPS.
<table><tr><th>Setting Value</th><th>Description</th></tr><tr><td>5 Min.</td><td>5 minutes</td></tr><tr><td>10 Min.</td><td>10 minutes</td></tr><tr><td>15 Min.</td><td>15 minutes</td></tr><tr><td>25 Min.</td><td>25 minutes</td></tr><tr><td>30 Min.</td><td>30 minutes</td></tr><tr><td>35 Min.</td><td>35 minutes</td></tr><tr><td>45 Min.</td><td>45 minutes</td></tr><tr><td>60 Min.</td><td>60 minutes</td></tr><tr><td>120 Min.</td><td>120 minutes</td></tr><tr><td>180 Min.</td><td>180 minutes</td></tr><tr><td>360 Min.</td><td>360 minutes</td></tr></table>● Be sure to configure the settings according to the UPS specifications. Even if you select "60 Min." for a UPS that provides 30 minutes of backup, the actual backup time will not be 60 minutes. If the value is not set correctly, the battery information will not be displayed correctly or the battery will not charge properly.
● If you want to change the settings after the initial settings are complete, see "5.1 Setting the Backup Time." However, this setting should be performed only by service technicians.</td></tr>
<tr><td>7</td><td>Set the battery type.

</td><td>● Check the battery type to be set in the "Initial Setting Manual" provided with the UPS.
<table><tr><th>Setting Value</th><th>Description</th></tr><tr><td>5 Years(Lead)</td><td>5 Years (Lead battery)</td></tr><tr><td>10 Years(Lead)</td><td>10 Years (Lead battery)</td></tr><tr><td>13 Years(Lead)</td><td>13 Years (Lead battery)</td></tr><tr><td>Lithium-ion</td><td>Lithium-Ion Battery</td></tr></table>● Be sure to configure the settings according to the UPS specifications. When a "5 year (lead)" battery is installed, even if you configure the setting to "10 years (lead battery)," the actual battery life will not be 10 years. If the value is not set correctly, the battery information will not be displayed correctly.
● If you want to change the settings after the initial settings are complete, see "5.2 Setting the Battery Type." However, this setting should be performed only by service technicians.</td></tr>
<tr><td>8</td><td>Confirm the settings.


This completes the initial settings.</td><td></td></tr>
</table>

2. VIEWING UPS INFORMATION

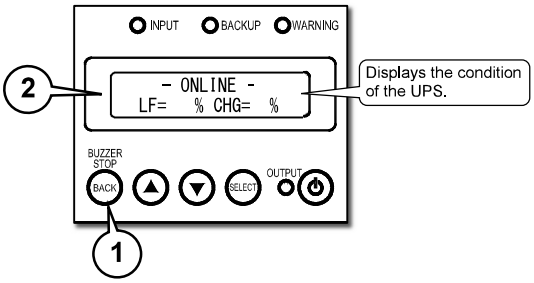
2.1 Viewing the UPS Operation Status

You can view the current operation status of the UPS.

If the LCD screen is OFF

(1) Press BACK to display the LCD screen.

(2) You can check the UPS status on the displayed LCD screen.

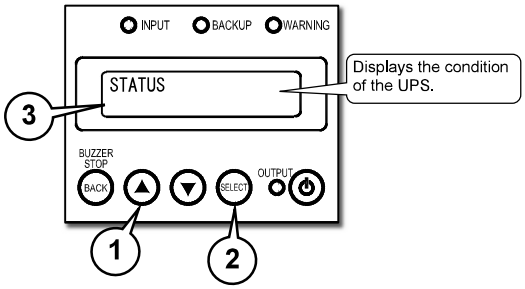


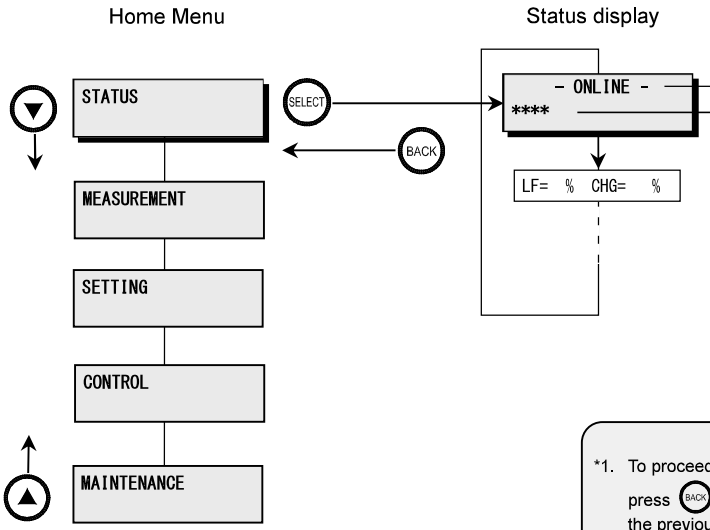
If any of the Home Menus are displayed

(1) Press ▲ to change the screen, and display STATUS .

(2) Press SELECT.

(3) You can check the UPS status on the displayed LCD screen.





- Upper line: UPS operation mode
- Lower line: Status display
  Measurements, warnings, malfunctions, etc.

If there are multiple sets of UPS status information, the information displayed on the lower line is automatically switched and cycled.
The status display that appears is as indicated in the table on the next page.

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.

*2. For details on the displayed content, contact your sales representative or SANYO DENKI. If a device error or malfunction information appears, contact your sales representative or SANYO DENKI.

The table below shows a list of displayed UPS status information.
Based on the state of the UPS, the UPS operation mode is displayed on the upper line and the status is displayed on the lower line on the screen. For details on the displayed state and how to take action, see “6. Status Display Explanation.”

UPS operation mode (Upper line)		Status (Lower line)	
Display	Details	Display	Details
STANDBY	Standby	AUX2 Error	Auxiliary power error (minor malfunction)
ONLINE	During online operation	BUS Error	Converter DC voltage error (serious malfunction)
BYPASS	During bypass operation	Batt Life Warn	Battery life notice (Six months in advance)
BATTERY	During battery operation	Batt Vol End	End of battery discharge
BATT TEST	Battery test in progress	Batt Vol Error	Battery voltage error
SYS FAILURE	During system malfunction	Batt Vol Low	Low battery voltage
		Batt. Error	Battery circuit error (serious malfunction)
		Battery Life	Battery life
		Check Air Filter	Air filter inspection period
		CHG Error	Charger error (serious malfunction)
		CHG Stop (Temp)	Charger shutdown due to the temperature exceeding the operating temperature range (minor malfunction)
		CHG Stop(Change)	Charger shutdown due to change in battery type
		COM Error	UPS internal communication error (minor malfunction)
		CONV Error	Converter error (serious malfunction)
		CPS Error	Control power (12 V) error (serious malfunction)
		CS Circuit Err	Battery startup switch short circuit (minor malfunction) *2
		ChgRate Wait	Waiting for charging rate startup Waiting for startup due to unclear battery charging rate
		DSP Error	Controller error (serious malfunction)
		EPO Latch	Operation stopping due to EPO latch
		EPO ON	Operation stopping due to EPO
		FIN Temp Error	Fin temperature error (serious malfunction)
		FT Disabled	Redundant operation not allowed (minor malfunction)
		Forced BYP ON	Bypass switch ON
		INV Vol Error	Inverter voltage detection circuit error (serious malfunction)
		INV Vol Hi	High inverter voltage (serious malfunction)
		INV Vol Low	Low inverter voltage (serious malfunction)
		Input Error	Input error
		Input Freq Err	Input frequency error
		Input Vol Hi	Input over-voltage
		Input Vol Low	Low input voltage
		LF= % CHG= %	Load level, battery charging rate (Online display)
		LF= % Tm= m	Load level, estimated discharge time (Battery operation display)
		Main MCCB OFF	Main breaker OFF or tripped
		Output Not Sync	Asynchronous operation
		Output Stop	Bypass output OFF (input voltage error)
		Overload	Overload
		Overload(Temp)	Overload (Temperature limitation)
		PDU Fan Error	PDU fan error (serious malfunction)
		PDU MCCB Off	PDU output breaker off (serious malfunction)
		Remote	Battery test by remote operation in progress
		Remote OFF	Operation stopped due to Remote OFF
		Req To Restart	Restart is necessary
		Setting Error	Setting error
		Shutdown= h m	Scheduled stop is delayed *1
		Test BatLV Sig.	Simulated transmission signal output for battery LV in progress
		Test Err Sig.	Simulated transmission signal output for device error in progress
		Testing m s	Remaining battery test time *1
		Total Unit# Err	Total number of units error (serious malfunction)
		Unit Comm Error	Communication error between units
		Vi= V Fi= Hz	Input voltage, input frequency (standby display)
		Vo= V Fo= Hz	Output voltage, output frequency (Bypass operation display)
		Wakeup Wait	Check time during power recovery is currently limited
		Wakeup= h m	Scheduled startup is delayed *1

*1. The display differs according to time.
*2. Depending on the UPS model number, some models may not have the functions to display these malfunctions.
*3. When the value in “3.30 Setting Air Filter Usage” is set to “Use,” “Check Air Filter” will be displayed. Also, the air filter inspection period warning is displayed, if the value set in “313 Setting Whether or Not to Output Transmission Signals During a Minor Malfunction” is “Output,” the “Device error” signal is output.

2.2 Viewing UPS Measurements

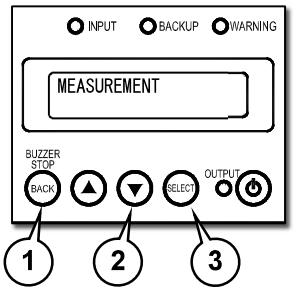
You can view various UPS measured values.

(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display MEASUREMENT .

(3) Press SELECT to confirm.

(4) In the same way, select the screens shown in the figure below at each level, and progress from "Home Menu"→ "Measurement Items"→ "Measured Value."

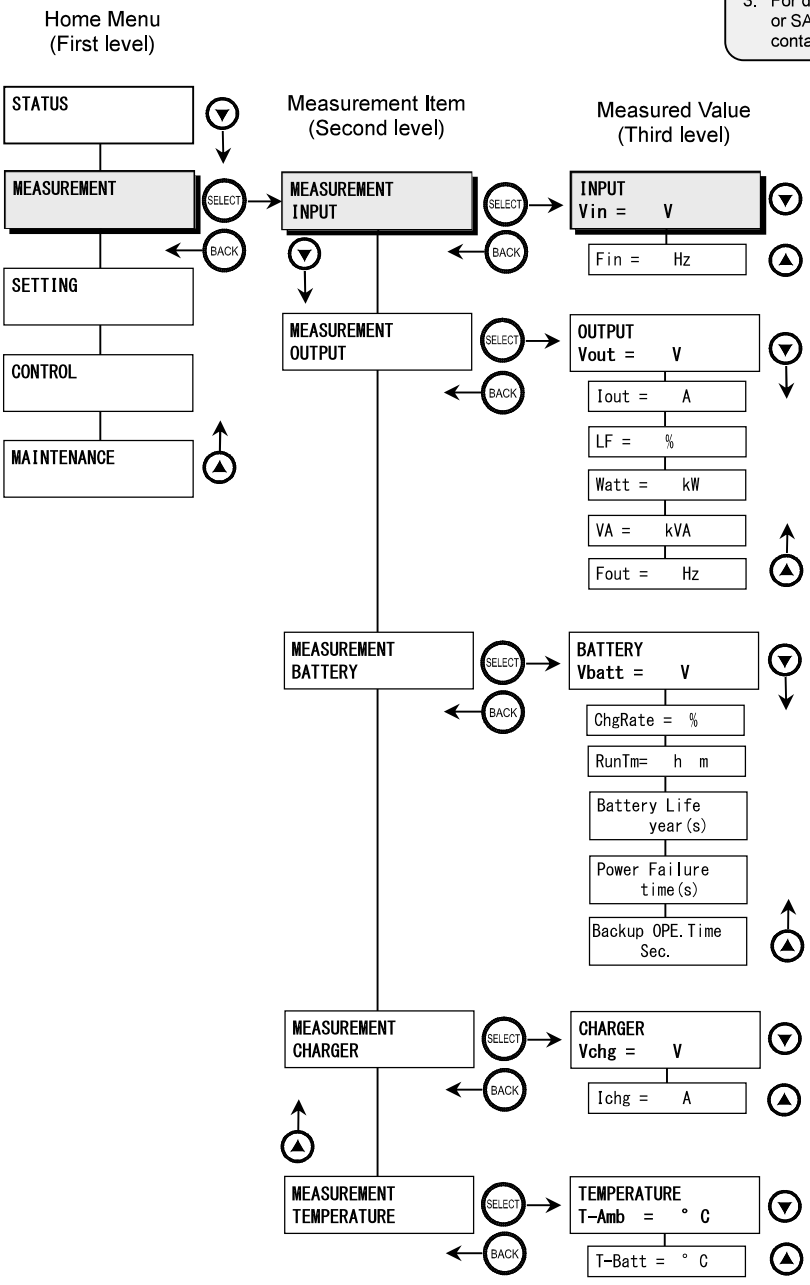


(5) Press ▼ or ▲ to change the measurement item and display the measured values that you want to view.

Ex.: Viewing the UPS input voltage

Tip

*1. Press ▼ to move to the next display, or press ▲ to return to the previous display.
*2. To return to the previous level, press BACK.
*3. For details on the displayed content, contact your sales representative or SANYO DENKI. If a device error or malfunction information appears, contact your sales representative or SANYO DENKI.



Measurement Item	Measured Value	
	Measured value Displayed	Details
INPUT	Vin = V	Input voltage
	Fin = Hz	Input frequency
OUTPUT	Vout = V	Output voltage
	Iout = A	Output current
	LF = %	Load factor
	Watt = kW	Output power (W)
	VA = kVA	Apparent power (VA)
	Fout = Hz	Output frequency
BATTERY	Vbatt = V	Battery voltage
	ChgRate = %	Battery charging rate
	RunTm = hm *1	Remaining battery backup time
	Battery Life year (s) *2	Battery life
	Power Failure time(s)	Number of power outages
	Backup OPE.Time Sec.	Accumulated time of battery operation
CHARGER	Vchg = V	Charger voltage
	Ichg = A	Charger current
TEMPERATURE	T-Amb = ° C	Ambient temperature
	T-Batt = ° C	Battery temperature

*1. Display format differs depending on the remaining backup time.
*2. Display format differs depending on the battery life.

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3. SETTING UP THE UPS

The setting menu contains seven setting groups by setting item. The factory default settings are the values marked with an asterisk (*) in the "Default Setting" column. Change the settings according to your environment and application. For details on how to change the settings and the set values, see the respective items in 3.1 to 3.35.
Once you have changed a setting, we recommend that you enter a check mark in the “Current Setting” column.

List of Settings

Home Menu: SETTING (Setting Change)

Setting group	Settings			Values		Default Settings	Current Settings	Reference Item	Reference page
	Display	Details		Display	Details				
SET IN/OUT (Input/output setting)	Voltage	Output voltage★ *1	Set the UPS output voltage. The output voltage and input voltage are the same.	200V	Output voltage 200 V	*		3.1	13
				220V	Output voltage 220 V				
				230V	Output voltage 230 V				
				240V	Output voltage 240 V				
				208V	Output voltage 208 V				
	FREQ Range	Synchronous frequency tracking range ★*1	Set the range (%) at which the output frequency tracks input frequency.	1%	±1%			3.2	14
				3%	±3%	*			
				5%	±5%				
	Frequency	Output frequency ★ *1	Set the output frequency.	Auto1	Automatic selection 1 (No asynchronous operation)			3.3	15
				Auto2	Automatic selection 2 (With Asynchronous operation)	*			
				50Hz	Fixed at 50 Hz				
				60Hz	Fixed at 60 Hz				
	Display	Voltage current display	Set the input/output voltage and current for measurement display, etc.	200V/200V(S) *3	200V/200V(S)	*2		3.4	16
				200V/100V	200V/100V				
				100V/200V	100V/200V				
				100V/100V	100V/100V				
				200V/200V	200V/200V				
SET I/F Interface setting	Interface	Interface	Set the interface for external interface connector use.	Standalone	Standalone			3.5	17
				WS	Workstation	*			
	Baud Rate	Baud rate	Set the baud rate for when a PC, LAN interface card, or workstation is connected.	9600	9600bps	*		3.6	18
				4800	4800bps				
				2400	2400bps				
SET OPERATION (Operation setting)	Start Condition	Operation upon power recovery	Set the UPS operation to be performed when the utility power recovers after the UPS stops due to end of battery discharge during a power outage.	Auto	Automatic recovery	*		3.7	19
				Any Condition	Always start				
				STOP	Stop				
				BATT>30%	Start when the charging rate reaches 30%				
				BATT>50%	Start when the charging rate reaches 50%				
				BATT>80%	Start when the charging rate reaches 80%				
	Buzzer	Buzzer sound	Set when the buzzer should beep.	ALL	All			3.8	20
				Group #0	Group 0	*			
				Group #1	Group 1				
				Group #2	Group 2				
				Silent	No buzzer				
	OFF OPERATION	OFF Operation	Set how to turn off ⏻ on the UPS unit control panel to stop the UPS.	1 Sec.	Turn OFF when pressed for 1 second	*		3.9	21
				3 Sec.	Turn OFF when pressed for 3 seconds				
				Unique	Turn off by special operation.				
	Overload	Overload operation	Set what to do after power supply switches to bypass due to overload.	Auto Ret BYP	Automatic recovery from bypass			3.10	22
				Stay on BYP	Bypass power supply during overload	*			
				Output OFF	Stop output				
	OUTPUT @OFF	Power supply during OFF ★ *1	Set the power supply state when the UPS stops.	OFF	Stop output	*		3.11	23
				BYPASS	Bypass power supply				
	BYP Op.@InputLV	Bypass power supply during input error	Set whether or not to enable bypass power supply during input error.	Enabled	Bypass power supply	*		3.12	24
				Disabled	No bypass power supply				
	MinorErr Sig.	Transmission signal at minor malfunction	Set whether or not to send a transmission signal when a minor malfunction occurs.	Output	Output	*		3.13	25
				None	Do not output				
	Test Err Sig.	Simulated transmission signal output for device error	Set whether or not to output a device error transmission signal for testing.	Output	Output			3.14	26
				None	Do not output	*			
	Test BatLV Sig.	Simulated transmission signal output for battery LV	Outputs a low battery voltage transmission signal for testing.	Output	Output			3.15	27
				None	Do not output	*			
SET BATTERY (Battery setting)	BATLV Timing	Timing of low battery voltage *4	Set when to issue a low battery voltage warning.	Voltage	When battery voltage threshold is detected.	*		3.16	28
				2 Min.	2 minutes are left in battery capacity				
				3 Min.	3 minutes are left in battery capacity				
				5 Min.	5 minutes are left in battery capacity				
				10 Min.	10 minutes are left in battery capacity				
	BATT TST Length	Battery test time	Set the battery test duration.	*** Min.	Run for *** (input any value)	2 minutes		3.17	29
	BATT TST Period	Battery test period *4	Set the interval (number of days) for running the battery test automatically.	180 days	Automatically test every 180 days	*		3.18	30
				90 days	Automatically test every 90 days				
				30 days	Automatically test every 30 days				
				None	No automatic testing				

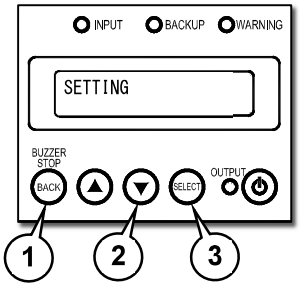
Setting group	Settings			Values		Default Settings	Current Settings	Reference Item	Reference page
	Display	Details		Display	Details				
SET FUNCTION (function setting)	Runtime @PF	Operation period during power outage	Set the time from when the UPS starts backup to when it stops output during a power outage.	BATT END	Until end of battery discharge	*		3.19	31
				10 Sec.	Stop output after 10 seconds				
				30 Sec.	Stop output after 30 seconds				
				1 Min.	Stop output after 1 minute				
				3Min.	Stop output after 3 minutes				
				5 Min.	Stop output after 5 minutes				
				10 Min.	Stop output after 10 minutes				
	RING Output	RING operation	Set whether or not to output a RING signal during UPS startup.	Output	Output			3.20	32
				None	Do not output	*			
	Out Vol Adj.	Output voltage adjustment	Set the adjusted value for rated voltage set in 3.1. Each increment of adjustment is about 1 V.	-5	Minus 5 increments	*2		3.21	33
				-4	Minus 4 increments				
				-3	Minus 3 increments				
				-2	Minus 2 increments				
				-1	Minus 1 increment				
				0 *3	No adjustment				
				+1	Plus 1 increment				
				+2	Plus 2 increments				
				+3	Plus 3 increments				
				+4	Plus 4 increments				
				+5	Plus 3 increments				
	EPO input logic	EPO input logic	Set the EPO input logic.	Positive	Positive logic	*		3.22	34
				Negative	Negative logic				
	Sig.Logic: PF	Power outage signal logic	Set the power outage signal logic for CARD I/F and SIGNAL I/F.	Positive	Positive logic	*		3.23	35
				Negative	Negative logic				
	Sig.Logic: BatLV	Battery LV signal logic	Set the low battery voltage signal logic for CARD I/F and SIGNAL I/F.	Positive	Positive logic	*		3.24	36
				Negative	Negative logic				
	Sig.Logic: INV	Inverter signal logic	Set the inverter output signal logic for SIGNAL I/F.	Positive	Positive logic	*		3.25	37
				Negative	Negative logic				
	Sig.Logic: BYP	Bypass signal logic	Set the bypass output signal logic for SIGNAL I/F.	Positive	Positive logic	*		3.26	38
				Negative	Negative logic				
	Sig.Logic:UFail	Device error signal logic	Set the device error signal logic for SIGNAL I/F.	Positive	Positive logic	*		3.27	39
				Negative	Negative logic				
	REMOTE SW Input	Remote switch input	Set the remote switch input method	ON/OFF	Remote ON/OFF Using both	*		3.28	40
				ON Only (POS)	Use remote ON only (Positive logic)				
				ON Only (NEG)	Use remote ON only (Negative logic)				
	Recov.CHK Time	Recovery check time	Set the time until the UPS recognizes utility power supply recovery when a power outage occurs.	0 Sec.	0 seconds	*		3.29	41
				10 Sec.	10 seconds				
				30 Sec.	30 seconds				
				60 Sec.	60 seconds				
	Air Filter	Air filter usage	Set whether or not to use the air filter.	Use	Use			3.30	42
				No Use	Do not use	*			
SET SYSTEM (System setting)	DATE/TIME	Date/Time	Set the date and time for the UPS.	DATE YY/MM/DD TIME HH: MM: SS	Date YY/MM/DD Time HH/MM/SS			3.31	43
	Language	Display language	Set the language displayed on the LCD panel.	English	English	*		3.32	44
				Japanese	日本語				
	ChA Total Unit#	ChA Set the number of UPS units in ChA system parallel connection .	Set the number of UPS units connected to form the UPS system.	1 *3	1 unit	*2		3.33	45
				2	2 units connected				
				3	3 units connected				
				4	4 units connected				
				5	5 units connected				
				6	6 units connected				
				7	7 units connected				
				8	8 units connected				
	ChB Total Unit#	Number of units Set the number of UPS units in ChB system parallel connection .	Do not change this setting.	1	Do not change this setting .	*			
				2					
				3					
				4					
				5					
				6					
				7					
				8					
	Redundancy	UPS operation system	Redundant operation or single/parallel operation .	N+1	Redundant operation			3.34	46
				None	Single/Parallel operation	*			
SET DEFAULT (Initialization)	SET DEFAULT	Reset to factory default setting.		-	-	-		3.35	47

Note

*1. For settings marked with "★," after you change the value, the value will not take effect until after you restart the UPS.
When you have changed a setting, see “3.36 Restarting the UPS” and start the UPS again.
For details on UPS operation, see the UPS instruction manual. Before shutting down the UPS, be sure to shut down the load equipment.
*2. Default setting differs according to UPS model number. The value is set at the time of shipment.
*3. If you reset the value using "SET DEFAULT," the value will not be reset to default, but to the setting indicated by "*3."
*4. If you are using a UPS management software or a LAN interface card, you cannot configure settings on the UPS. Configure the settings with the UPS management software or LAN interface card.

3.1 Setting the Voltage

Set the UPS voltage.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING.

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to "Setting Group"→ "Setting Item"→ "Setting Value."

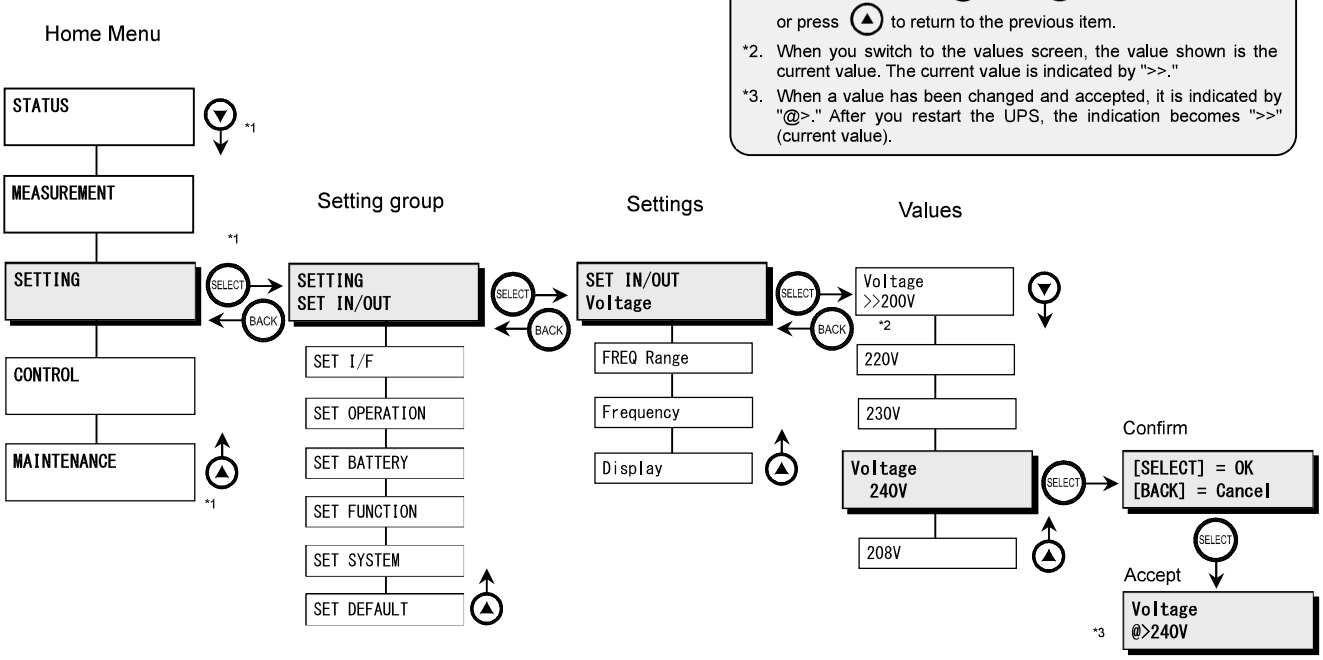
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Changing the output voltage to "240 V"

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by "@>." After you restart the UPS, the indication becomes ">>" (current value).



Note

- After changing a setting, see "3.36 Restarting the UPS" and start the UPS again. The change will not take effect until after you restart the UPS. Before shutting down the UPS, be sure to shut down the load equipment.
- If "**Req To Restart**" appears in the UPS status display, it means that changes have been made, but the UPS has not been restarted yet. See "3.36 Restarting the UPS" and start the UPS again.

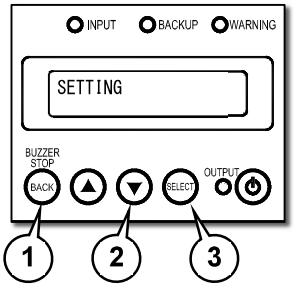
Details on settings and values

	Values	Description
Default Setting	200V	Specify the UPS output voltage. The input voltage and output voltage are the same. Check the input voltage and select the same voltage.
	220V	
	230V	
	240V	
	208V	

If W1 type or W2 type is used, do not change the value.
If you changed the value by mistake, use the procedure above to change it to 200V, and then restart the UPS.

3.2 Setting the Synchronous Frequency Tracking Range

Specify a tracking range for synchronizing the output frequency to the input frequency.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to "Setting Group"→ "Setting Item"→ "Setting Value."

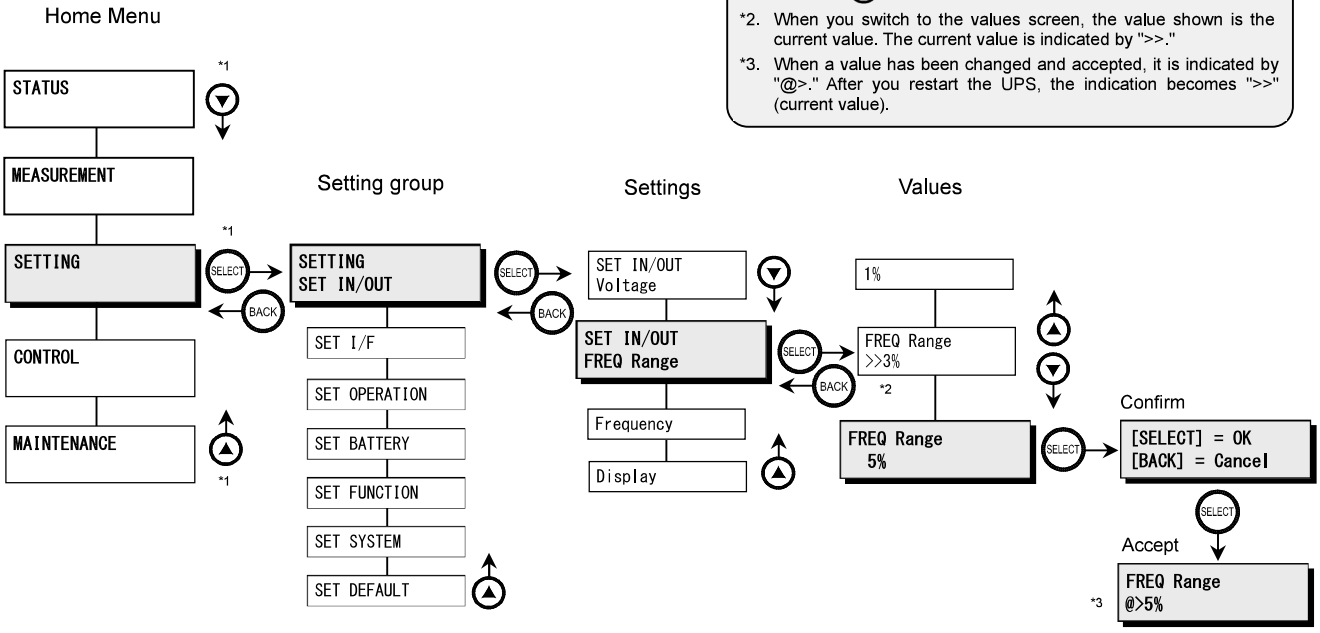
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Changing the synchronous frequency tracking range to "5%"

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by "@>." After you restart the UPS, the indication becomes ">>" (current value).



Note

- After changing a setting, see "3.36 Restarting the UPS" and start the UPS again. The change will not take effect until after you restart the UPS. Before shutting down the UPS, be sure to shut down the load equipment.
- If "**Req To Restart**" appears in the UPS status display, it means that changes have been made, but the UPS has not been restarted yet. See "3.36 Restarting the UPS" and start the UPS again.

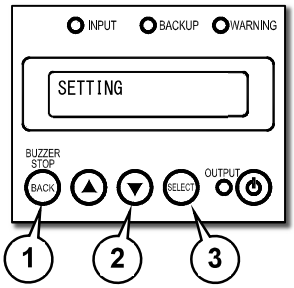
Details on settings and values

Values	Description
1 %	±1% of input frequency
3 % (Default Setting)	±3% of input frequency
5 %	±5% of input frequency

- A smaller value provides better output frequency precision. However, if the input frequency is unstable, the UPS tends to switch to asynchronous operation.
  To connect to the output of the engine power generator or the like, select "5%." During asynchronous operation, switching to bypass operation is performed with interruption.
- Even if the value is set to "50 Hz," "60 Hz," or "Auto" in "3.3 Setting the Output Frequency," the inverter will not start unless the input frequency is within the set value range (±1%, ±3%, ±5%).

3.3 Setting the Output Frequency

The factory setting for output frequency is “Auto 2. ”
Do not change the setting unless you are using the UPS in a special power supply environment.
If you have accidentally changed the setting, follow the procedure below and set the value to “Auto 2. ”



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

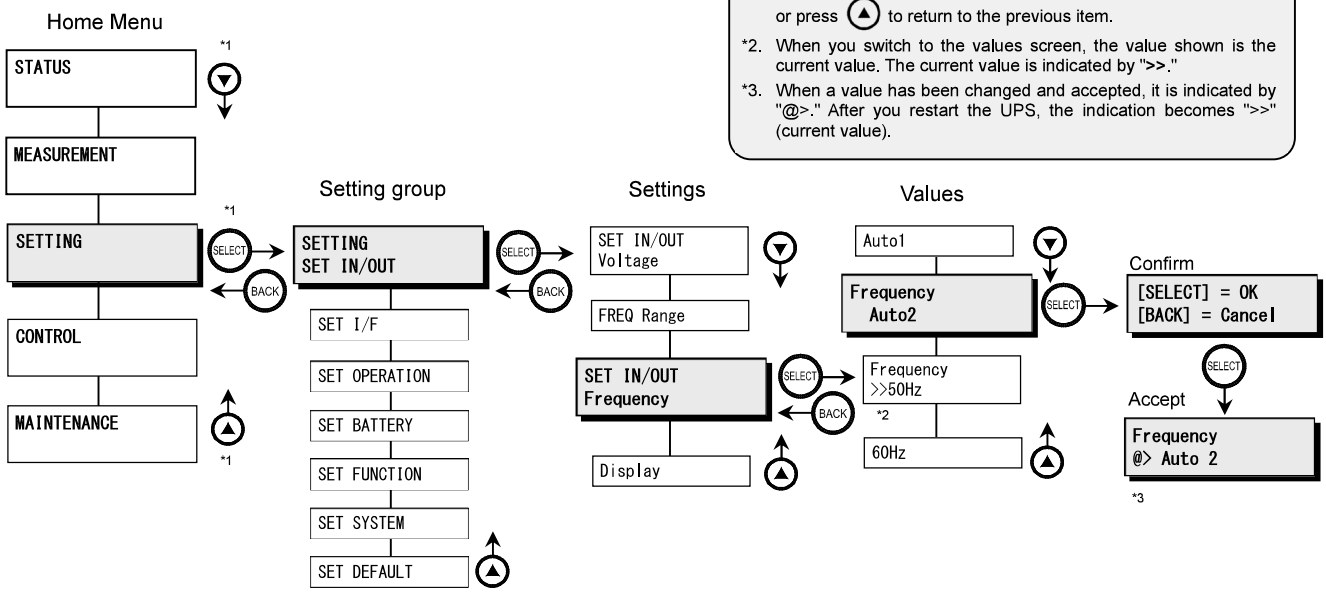
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by "@>." After you restart the UPS, the indication becomes ">>" (current value).

Ex.: Setting the output frequency to “Auto 2.”



Details on settings and values

	Values		Description	
Auto1	Automatic selection 1 Asynchronous operation: No	The value is automatically set according to the input frequency. When the frequency is set to “Auto 1,” the UPS will start battery operation if the tracking range set in “3.2 Setting the Synchronous Frequency Tracking Range” is exceeded.		
Default Setting Auto2	Automatic selection 2 Asynchronous operation: Yes	The value is automatically set according to the input frequency. When the frequency is set to “Auto 2,” the UPS will start asynchronous operation if the tracking range set in “3.2 Setting the Synchronous Frequency Tracking Range” is exceeded. The UPS will switch to battery operation if the frequency exceeds ±8% of the set frequency.		
50Hz	Fix the output frequency to 50 Hz	When the frequency is set to “50 Hz” or “60 Hz,” the output frequency is not synchronized with the input frequency, and the set frequency is output. In this case, the allowable range for input frequency is 40 Hz to 120 Hz. The UPS will switch to battery operation if the frequency exceeds this set frequency range. When the UPS starts up and when it recovers from battery operation, the UPS operates in the same manner as when it is set to “Auto 2. ”	Contact SANYO DENKI for setting the frequency to “50 Hz” or “60 Hz.”	
60Hz	Fix the output frequency to 60 Hz			

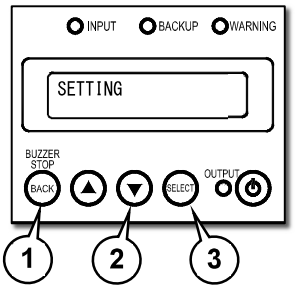
- For any of the above settings, you can select the synchronous frequency range from ±1%, ±3%, and ±5% in “3.2 Setting the Synchronous Frequency Tracking Range.” The inverter will not start if the input frequency is not within the range of the values (±1%, ±3%, or ±5%) set for the synchronous frequency tracking range.
- When the frequency is set to “50 Hz” or “60 Hz,” operation in “4.1 Running a Battery Test” cannot be performed. Even if the UPS is set to automatically test the batteries periodically as described in "3.18 Setting the Battery Test Duration," the battery test is not implemented.

Note

- After changing a setting, see “3.36 Restarting the UPS” and start the UPS again. The change will not take effect until after you restart the UPS. Before shutting down the UPS, be sure to shut down the load equipment.
- If “**Req To Restart**” appears in the UPS status display, it means that changes have been made, but the UPS has not been restarted yet. See “3.36 Restarting the UPS” and start the UPS again.

3.4 Setting the Voltage Displayed in Measurement Information

Set the input/output voltage displayed in measurement information.
If you connect a Power Distribution Unit, change the setting value according to the specifications of the Power Distribution Unit.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to "Setting Group"→ "Setting Item"→ "Setting Value."

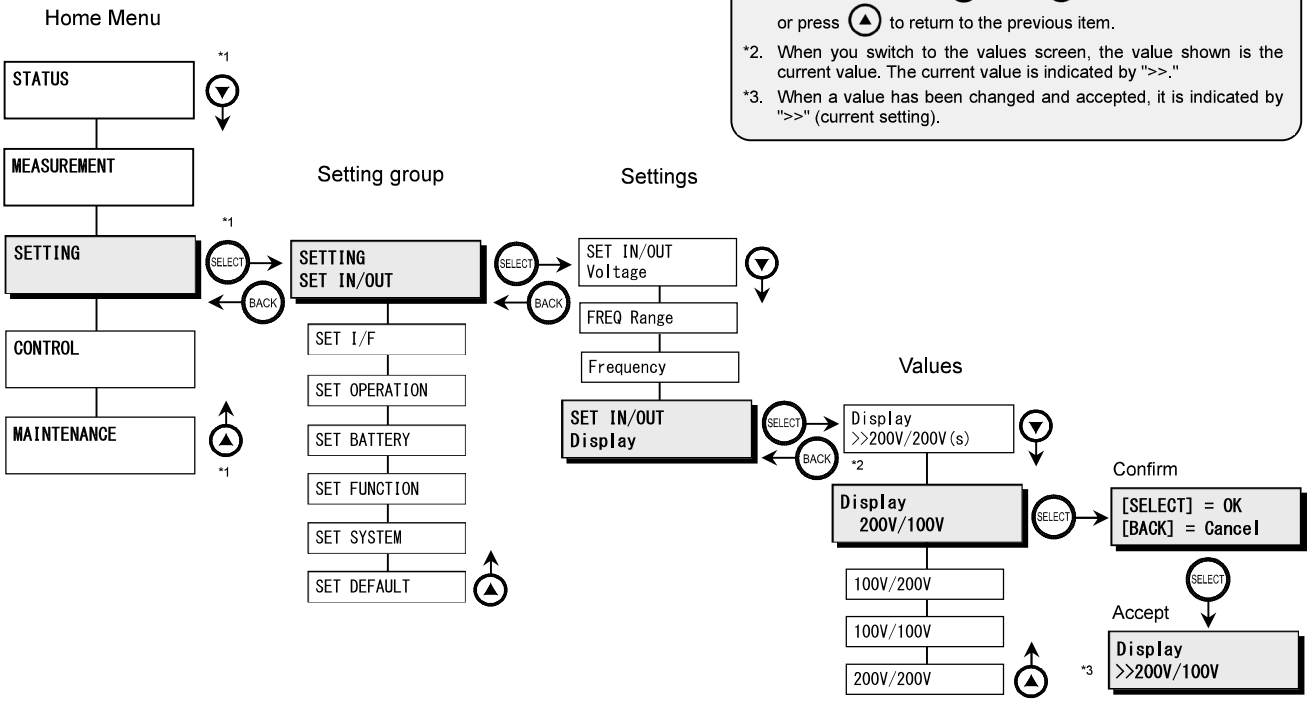
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Setting the display voltage to "200 V/100 V"

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).



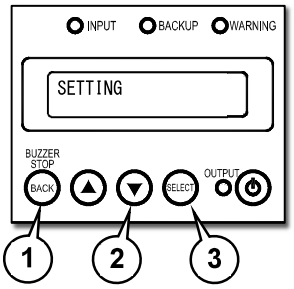
Details on settings and values

Values	Description	
200V/200V(S)	For rated input voltage 200 V models and output voltage 200 V models	Default settings for single unit type and S2 type. This setting value is used when the voltage is set either to 200 V, 220 V, 230 V, 240 V, or 208 V. Do not change the setting if your UPS is a single unit type or S2 type.
200V/100V	For rated input voltage 200 V and output voltage 100 V	The default value for W1, W2 and Z type differs according to the UPS model number. If you change the settings of the terminal block of the Power Distribution Unit, change the setting value according to the specifications. For details on terminal block settings and setting options, see the A11N instruction manual.
100V/200V	For rated input voltage 100 V and output voltage 200 V	
100V/100V	For rated input voltage 100 V and output voltage 100 V	
200V/200V	For rated input voltage 200 V and output voltage 200 V	

These are the settings of voltage and current values displayed on the LCD screen of the UPS measurement information display. Changing the voltage value setting also changes the current.
If the set value differs from the rated voltage of the UPS, the measurement information will not be displayed correctly.
The set value becomes "200 V/200 V (S)" when the operation described in "3.35 Resetting the Set Values" is performed.

3.5 Setting the Interface

Set the interface when using the PC I/F, CARD I/F, or REMOTE/EPO terminal on the back of the UPS.
For details, see “5. Using the UPS • • (Application)” in the UPS instruction manual.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

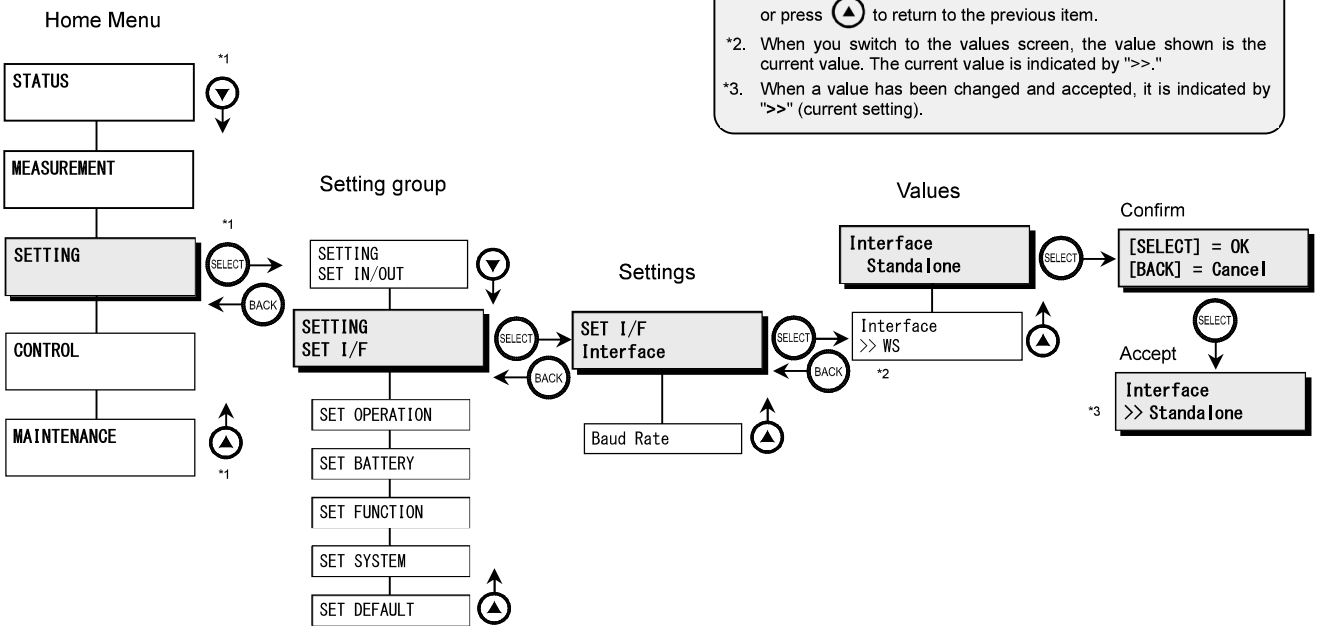
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Setting the interface to “Standalone”

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).



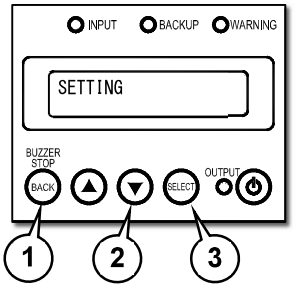
Details on settings and values

Values		Description
Standalone	Standalone	Select when you use the below. • Remote ON/OFF function of UPS by remote switch
WS (Default Setting)	Work station	Select when you use the below. • UPS management software • LAN interface card • Computer one-touch shutdown function by remote switch

The contact interface card can be used regardless of whether the value is set to “Standalone” or “WS.”

3.6 Setting the Baud Rate

Set the baud rate for when a workstation, PC, LAN interface card, or the like is connected.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to "Setting Group"→ "Setting Item"→ "Setting Value."

(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

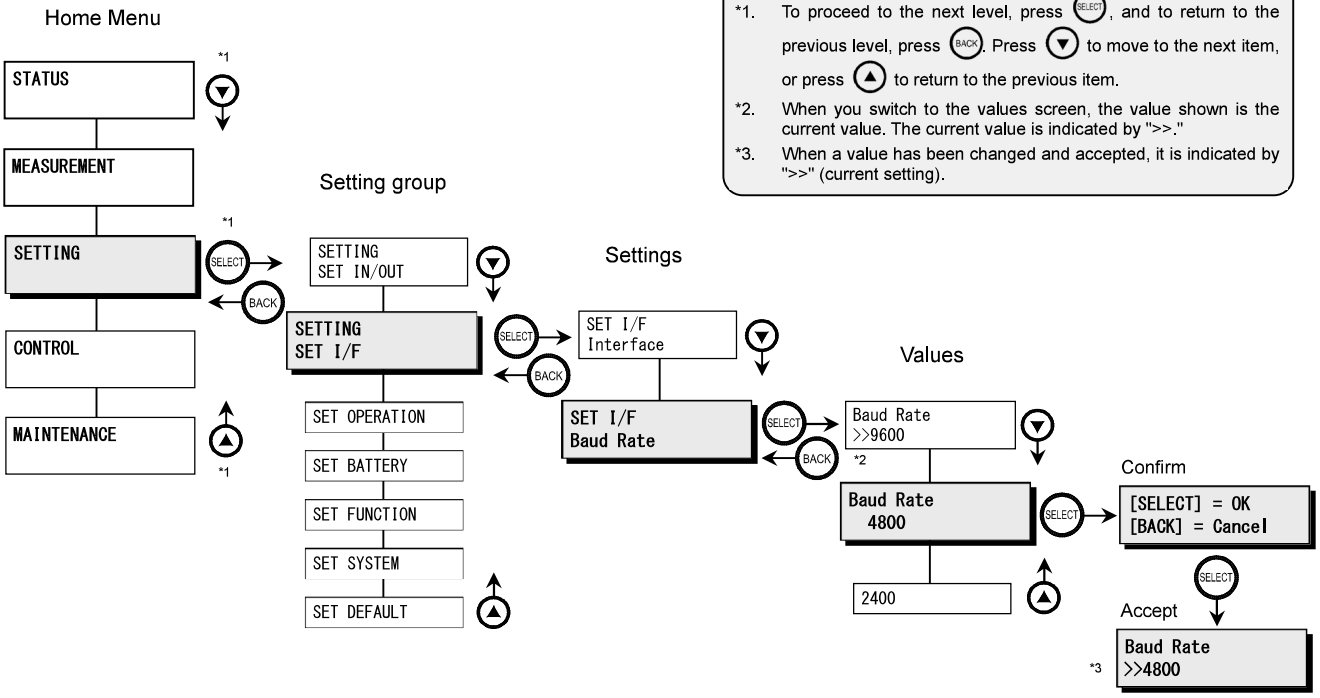
Ex.: Setting the baud rate to "4800"

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.

*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."

*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).



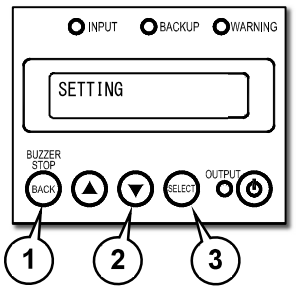
Details on settings and values

	Values	Description
Default Setting	9600	Baud rate 9600 bps
	4800	Baud rate 4800 bps
	2400	Baud rate 2400 bps

When a LAN interface card is used, set the baud rate to 9600 bps.

3.7 Setting UPS Operation Upon Power Recovery

Set the UPS operation to be performed when utility power recovers after the UPS stops due to end of battery discharge during a power outage.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to "Setting Group"→ "Setting Item"→ "Setting Value."

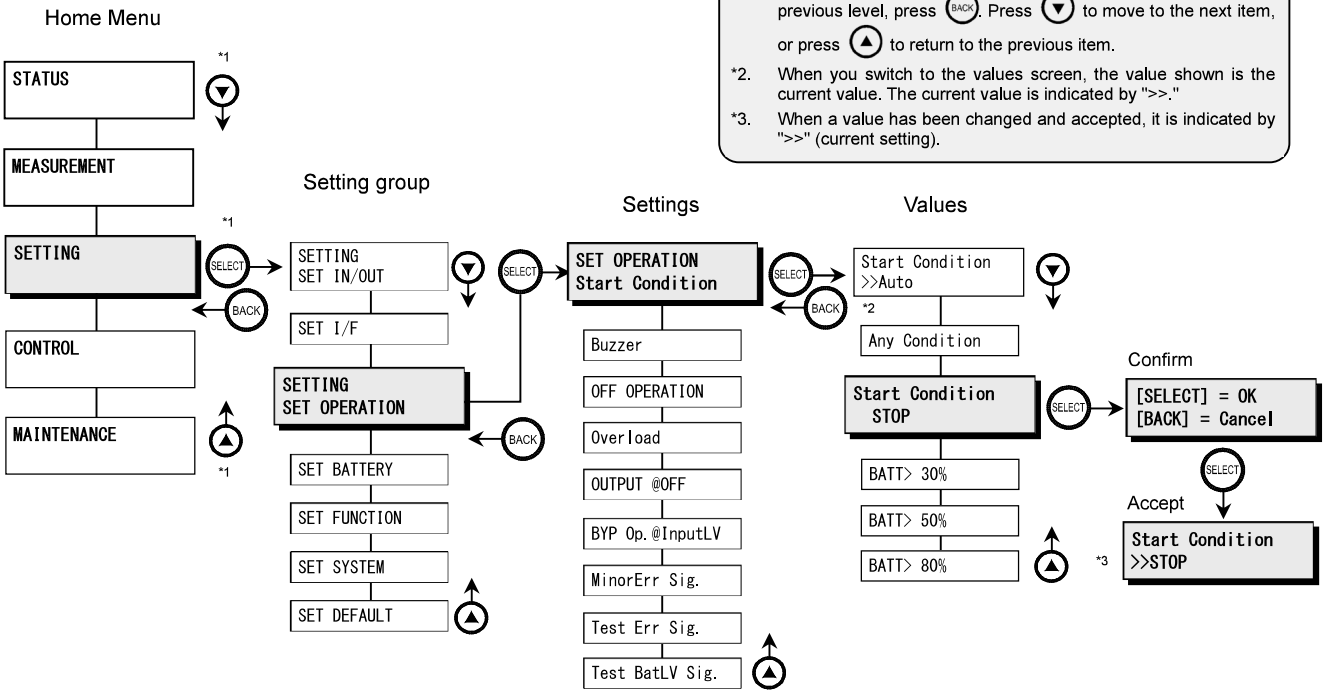
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Setting the UPS operation upon power recovery to "STOP"

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).



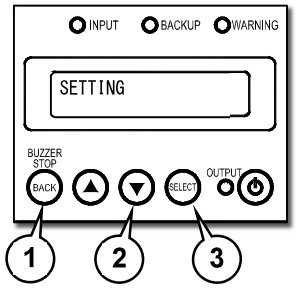
Details on settings and values

	Values		Description
Default Setting	Auto	Automatic recovery	The UPS automatically starts when the utility power recovers.
	Any Condition	Always start	The UPS will start automatically when it receives power regardless of conditions such as power recovery after power outage, and power input at initial startup.
	STOP	Stop	The UPS stays off even when the utility power recovers. However, power supply switches to bypass if "BYPASS" is selected in "3.11. "
	BATT> 30%	Charging rate is 30% or more	The UPS automatically starts when the utility power recovers and the battery charging rate reaches 30% or more.
	BATT> 50%	Charging rate 50% or more	The UPS automatically starts when the utility power recovers and the battery charging rate reaches 50% or more.
	BATT> 80%	Charging rate is 80% or more	The UPS automatically starts when the utility power recovers and the battery charging rate reaches 80% or more.

If you are using a UPS management software, the value set in the UPS management software will be considered to be valid. Even if a value is set with the above operation, the set value is not enabled. The value set with the UPS management software appears when the above operation is performed. In this case, "▼▲" is not displayed on the right side of the LCD screen and the setting value is not changed even if you press ▼ or ▲. Press SELECT or BACK to return.

3.8 Setting Buzzer Conditions

Set when the buzzer should beep.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

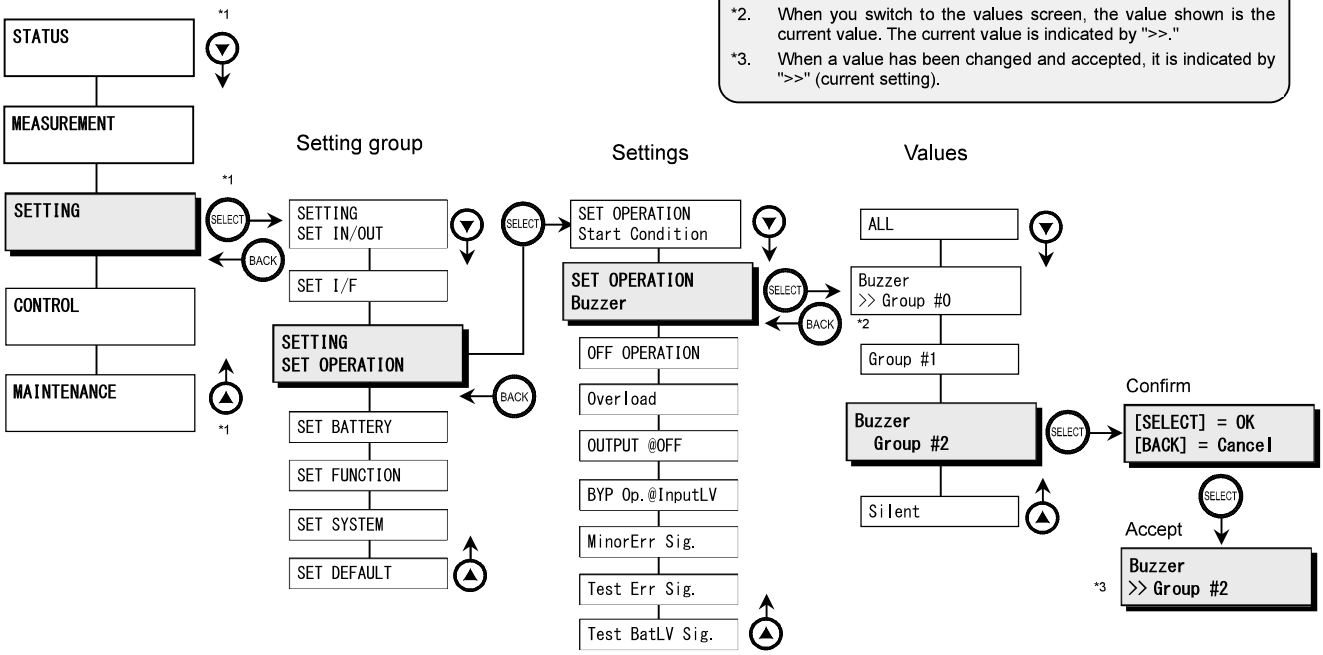
(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to "Setting Group"→ "Setting Item"→ "Setting Value."

(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Specifying "Group #2" as a condition for the buzzer to beep

Home Menu



Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.

*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."

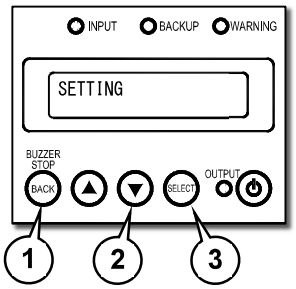
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

Details on settings and values

Values		Buzzer Condition
ALL	Beep under all conditions	• Key click sound • Serious malfunction • Low battery voltage • End of battery discharge • Minor malfunction • Overload (bypass operation) • Request for buzzer beep from UPS management software • During battery operation • During automatic, manual, or UPS management software battery testing • Battery voltage error • Automatic or manual battery test result error
Default setting Group #0	Group 0	• Key click sound • Serious malfunction • Low battery voltage • End of battery discharge • Minor malfunction • Overload (bypass operation) • Request for buzzer beep from UPS management software • During battery operation • During manual battery testing • Battery voltage error • Automatic or manual battery test result error
Group #1	Group 1	• Key click sound • Serious malfunction • Low battery voltage • End of battery discharge • Minor malfunction • Request for buzzer beep from UPS management software
Group #2	Group 2	• Key click sound • Serious malfunction • Request for buzzer beep from UPS management software
Silent	No buzzer	• Key click sound

3.9 Setting the UPS Shutdown Operation

Press the ⏻ button on the UPS unit control panel to set the UPS OFF operation. This function is for preventing the UPS from turning OFF by careless contact or mistaken operation.
This setting is valid only for the “OFF Operation” of the ⏻ button on the UPS unit control panel. The “ON Operation” does not change.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

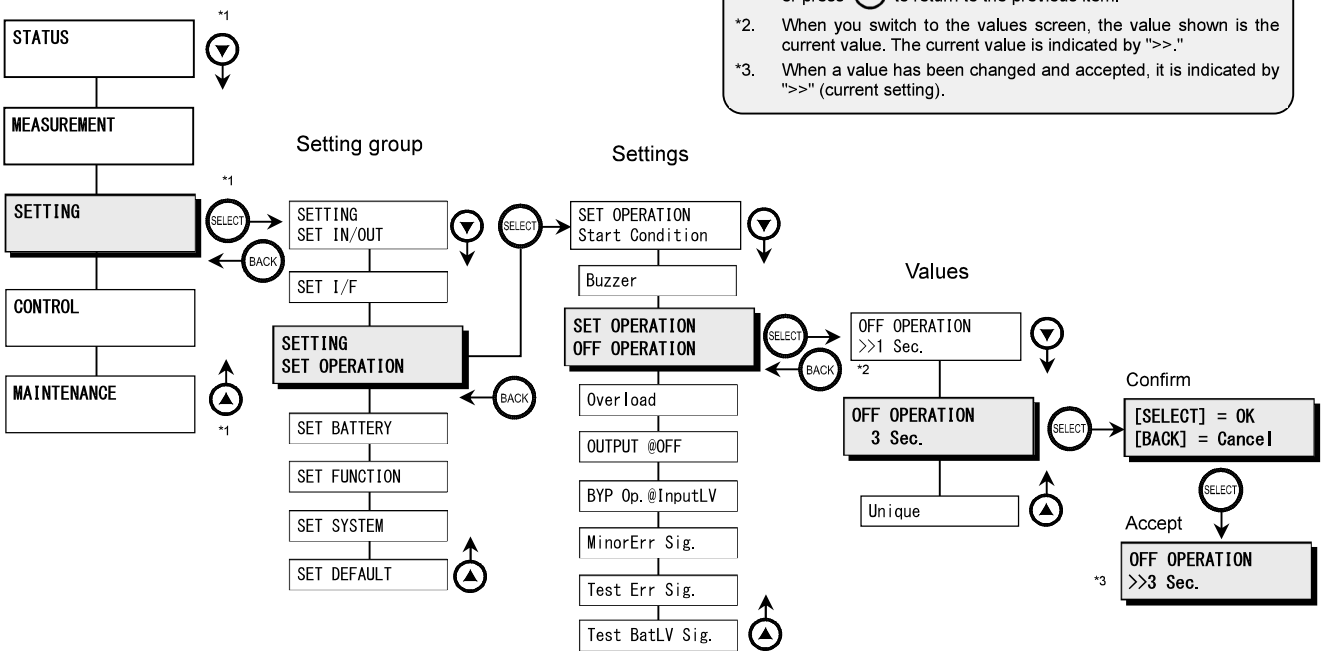
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Setting the value to “ 3 Sec.”

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

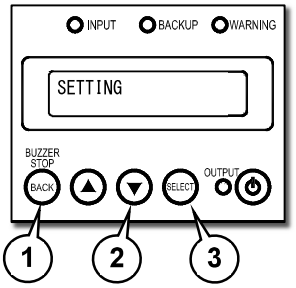


Details on settings and values

	Values		Description
Default Setting	1 Sec.	1 second	Press ⏻ button for 1 second and turn OFF.
	3 Sec.	3 seconds	Press ⏻ button for 3 seconds and turn OFF.
	Unique	Special operation	Hold down the ⏻ button for 3 seconds. Once the buzzer sounds, release your finger. Press and hold the ⏻ button for 3 seconds while buzzer is beeping. Turn OFF the UPS with these steps.

3.10 Setting the Overload Recovery Operation

Specify conditions for returning to UPS power supply after switching to bypass power because of overload.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

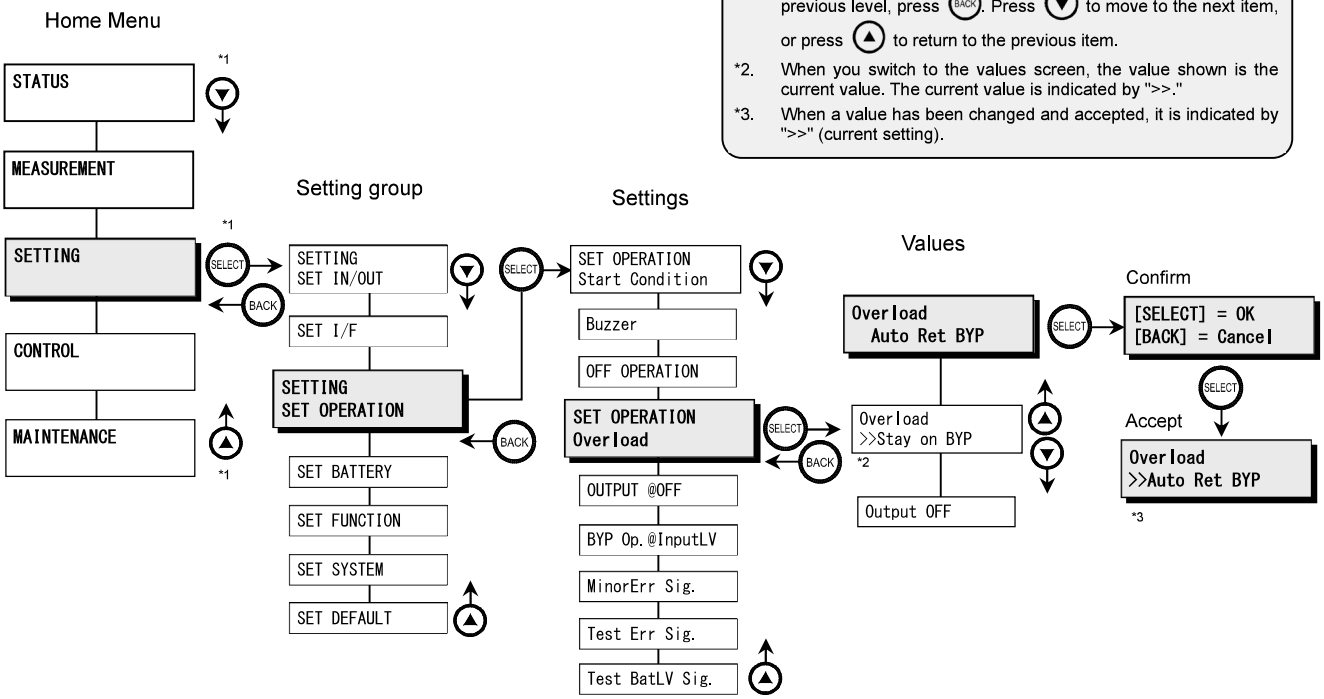
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: For setting to “Auto Ret BYP”

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).



Details on settings and values

Values		Description
Auto Ret BYP	Automatic recovery from Bypass	After overload causes a switch to bypass power supply, power supply switches back to the UPS automatically after a certain period of time. If the overload condition persists, the UPS switches to bypass power again, and this cycle is repeated.
Default Setting: Stay on BYP	Continue bypass power supply	If the overload continues, bypass power supply continues. When the overload conditions is resolved, the UPS switches to UPS power supply. The power may repeatedly switch between UPS power supply and bypass power supply depending on the utility power voltage value when the power switched to bypass power supply.
Output OFF	Stop output	Do not set this value.

- Even if either “Auto Ret BYP” or “Stay on BYP” is set, the UPS will not switch from bypass power supply to UPS power supply during asynchronous operation (when the input frequency is outside the values (±1%, ±3%, ±5%) set in “3.2 Setting the Synchronous Frequency Tracking Range”).
- When frequency in “3.3 Setting the Output Frequency” is set to “Auto 2” during asynchronous operation, the UPS switches to bypass power supply with interruption.
- If the set value is set to “50 Hz” or “60 Hz” in “3.3 Setting output frequency”, because the operation does not switch to the bypass power supply, the output will stop when overloaded.

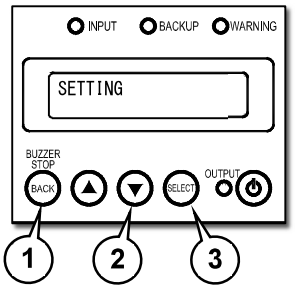
3.11 Setting UPS Operation at ⏻ OFF*

Specify the UPS operation when the UPS is stopped by operation of the ⏻ button.

What does at ⏻ OFF mean?

"At OFF" in this case means that the UPS is in the following state:

- Press the ⏻ button on the LCD panel to operate "INV OFF" and shutdown the UPS.
- "STANDBY" or "BYPASS" is displayed on the LCD screen and [INPUT (green)] lights up.
- MAIN MCCB of UPS is "ON."



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

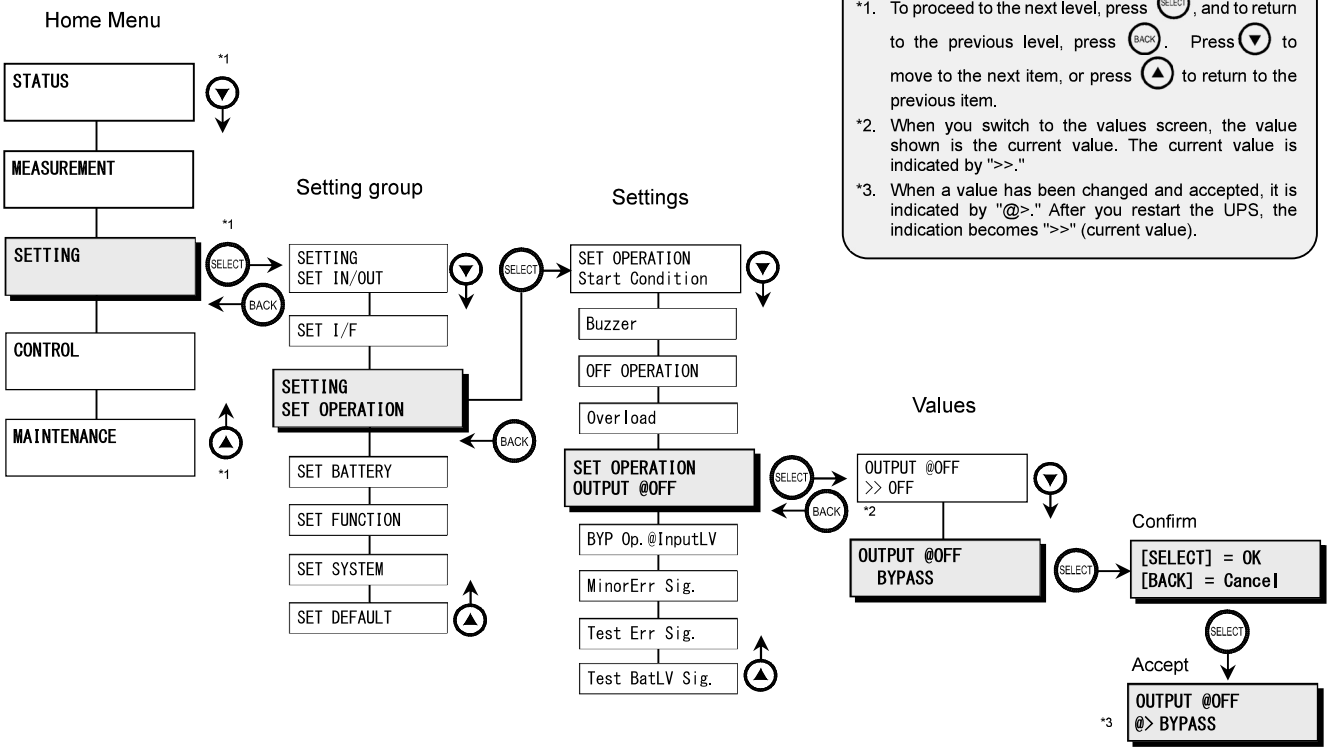
(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to "Setting Group"→ "Setting Item"→ "Setting Value."

(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Setting UPS operation at OFF to "BYPASS"



Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.

*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."

*3. When a value has been changed and accepted, it is indicated by "@>." After you restart the UPS, the indication becomes ">>" (current value).

Note

- After changing a setting, see "3.36 Restarting the UPS" and start the UPS again. The change will not take effect until after you restart the UPS. Before shutting down the UPS, be sure to shut down the load equipment.
- If "**Req To Restart**" appears in the UPS status display, it means that changes have been made, but the UPS has not been restarted yet. See "3.36 Restarting the UPS" and start the UPS again.

Details on settings and values

	Values		Description
Default setting	OFF	Stop output	The UPS stops and power is not supplied.
	BYPASS	Bypass power supply	The power switches to bypass power supply and power supply continues.

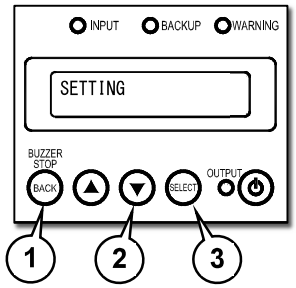
3.12 Enabling and Disabling Bypass Power Supply During Input Error

Set whether the UPS will switch to bypass power supply when an input error★1 occurs and the UPS changes to a state described below★2.

*Note

★1. An input error refers to the following two states.
- Low input voltage
- Input frequency error

★2. A "state described below" refers to the following three states.
- Overload
- UPS malfunction
- End of battery discharge



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING.

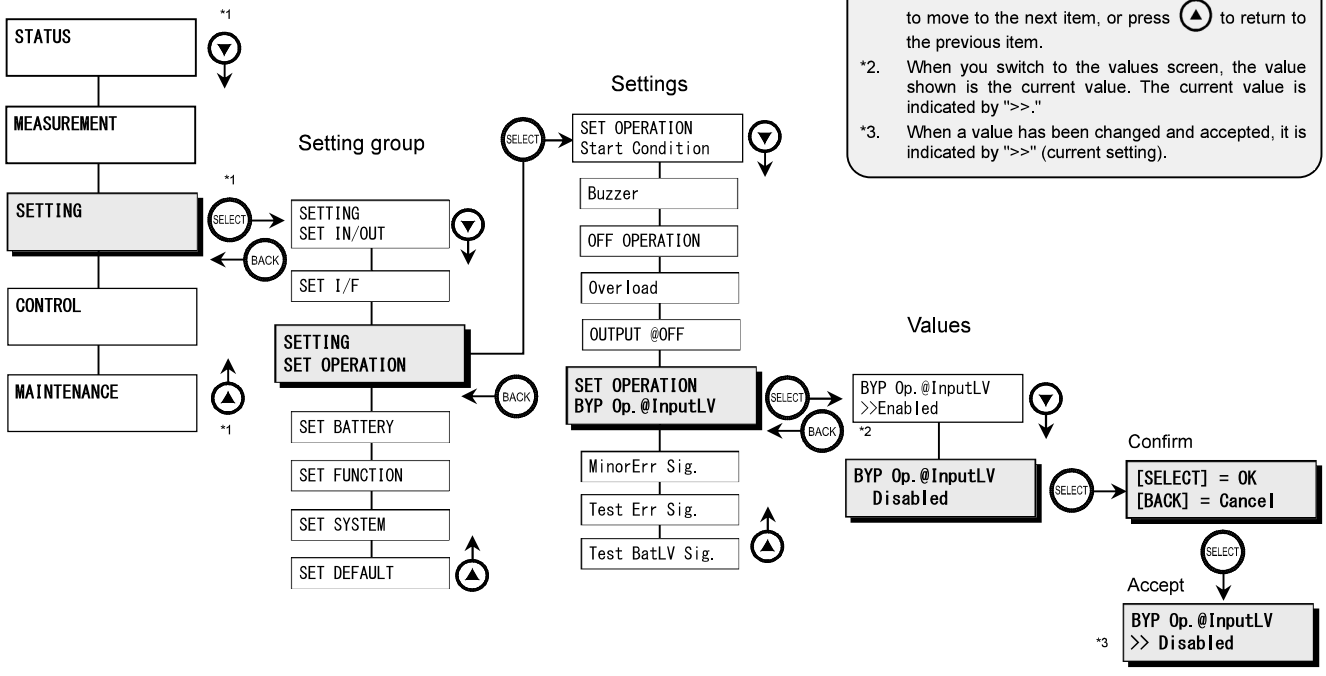
(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to "Setting Group"→ "Setting Item"→ "Setting Value."

(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Setting to "Disabled" during input error



Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.

*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."

*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

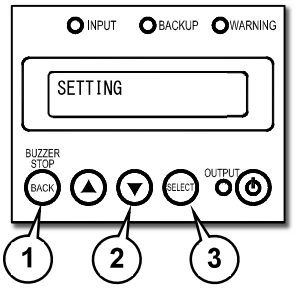
Details on settings and values

	Values		Description
Default Setting	Enabled	Power supply	When input error (low input voltage or input frequency error) occurs, the UPS switches to bypass power supply and power supply continues.
	Disabled	No power supply	When an input error (low input voltage or input frequency error) occurs, the UPS cannot switch to bypass power supply. When the value is set to this value, power supply stops when a low input voltage or input frequency error occurs during bypass power supply.

High input voltage is not included in input errors in this case.
When high input voltage occurs, the power does not switch to bypass power supply regardless of whether this value is set to "Enabled or Disabled ."
Even when set to "Enabled", if the input voltage falls below the UPS starting voltage (100 V), the power supply will stop.

3.13 Enabling and Disabling to Output Transmission Signal During Minor Malfunction

Set whether to output a “Device error” transmission signal from the “SIGNAL I/F” connector when a minor malfunction occurs.



(1) Press (BACK) to display the LCD screen.

(2) Press (▼) to change the Home Menu, and display SETTING .

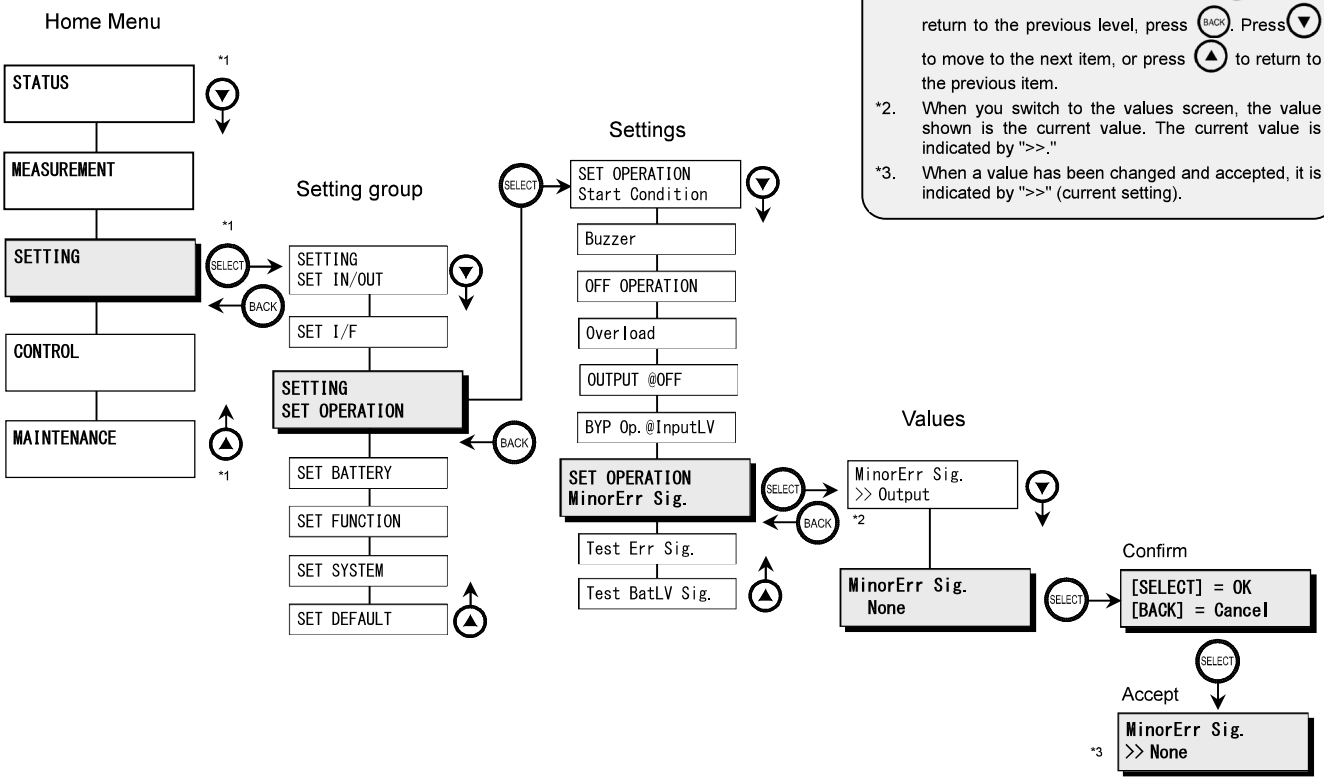
(3) Press (SELECT) to confirm.

(4) Use (▼) or (▲) to switch display values, and then press (SELECT) to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

(5) Use (▼) or (▲) to switch values, and then press (SELECT) to select a desired value.
When the confirmation screen appears, press (SELECT) again to accept the value.

(6) Press (BACK) to return.

Ex.: Setting the device error transmission signal to “None” during minor malfunction



Tip

*1. To proceed to the next level, press (SELECT), and to return to the previous level, press (BACK). Press (▼) to move to the next item, or press (▲) to return to the previous item.

*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."

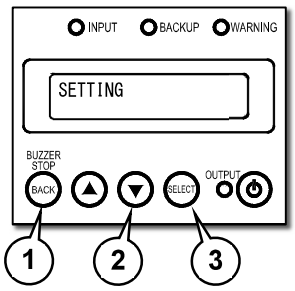
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

Details on settings and values

	Values		Description
Default Setting	Output	Output signal	Minor malfunctions are included in the “Device error” transmission signal output from the “SIGNAL I/F” connector. The transmission signal is output when a minor malfunction occurs. Serious and minor malfunctions are indistinguishable.
	None	Do not output signal	A “Device error” signal of the “SIGNAL I/F” connector is not be output when a minor malfunction occurs.

3.14 Outputting the “Device Error” Transmission Signal for Testing

A simulated “Device error” transmission signal from the “SIGNAL I/F” connector is output for equipment testing. After the testing is completed, be sure to return the setting to its original value.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

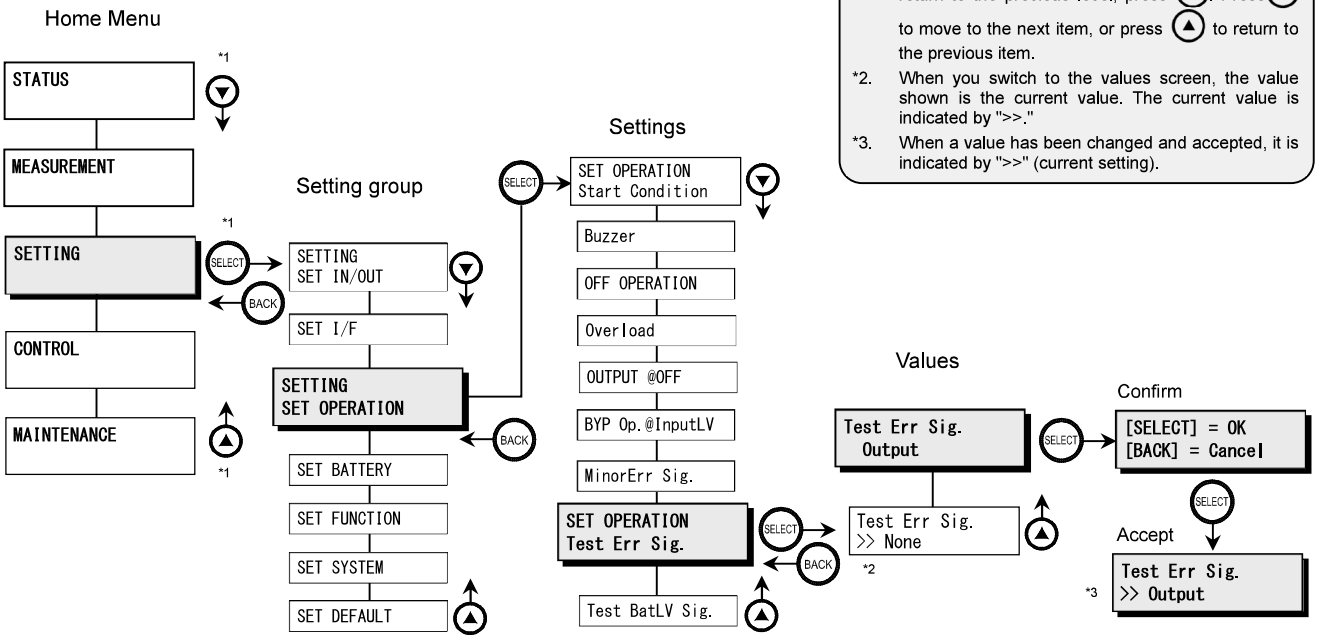
(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: To output a “Device error” transmission signal for testing



Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.

*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."

*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

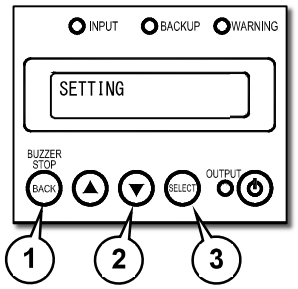
Details on settings and values

	Values		Description
	Output	Output signal	The simulated “Device error” signal is output from the “SIGNAL I/F” connector of the external interface area. A serious malfunction is notified when the UPS management software or LAN interface card is used. Set this value when testing equipment, etc. The signal is continuously output during the period that this value is set. Once testing or other work is complete, be sure to set the value to “NONE.” The logic of the output signal can be set in “3.27 Setting the SIGNAL I/F Device Error Signal Logic.”
Default Setting	None	Do not output signal	The signal is not output. Always set this value except when implementing testing, etc.

Even if the value is set to “Output,” when the UPS is stopped after the input power is turned OFF, the value returns to the default setting “None” at UPS startup.

3.15 Outputting the “Low Battery Voltage” Transmission Signal for Testing

Output a simulated “Low battery voltage” transmission signal from the “CARD I/F” connector and “SIGNAL I/F” connector for equipment testing. After the testing is completed, be sure to return the setting to its original value.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

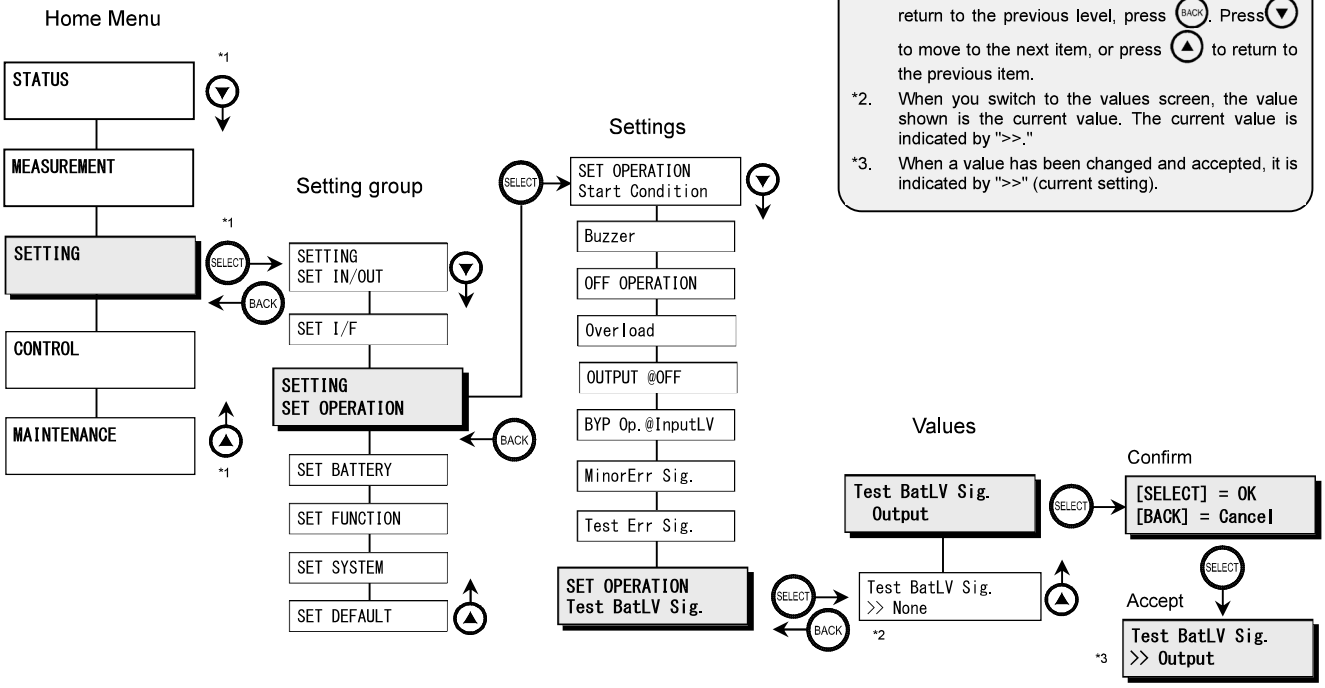
(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: To output the “Low battery voltage” transmission signal for testing



Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.

*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."

*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

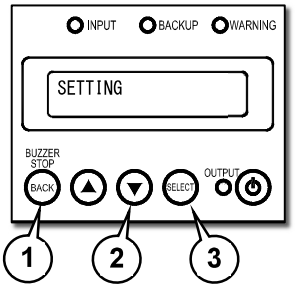
Details on settings and values

	Values		Description
	Output	Output signal	The simulated “Low battery voltage” signal is output from the “CARD I/F” connector and “SIGNAL I/F” connector of the external interface area. “Low battery voltage” is notified when the UPS management software or LAN interface card is used. Set this value when testing equipment, etc. The signal is continuously output during the period that this value is set. Once testing or other work is complete, be sure to set the value to “NONE.” The logic of the output signal can be set in “3.24 Setting the CARD I/F and SIGNAL I/F Low Battery Voltage Signal Logic.”
Default Setting	None	Do not output signal	The signal is not output. Always set this value except when implementing testing, etc.

Even if the value is set to “Output,” when the UPS is stopped after the input power is turned OFF, the value returns to the default setting “None” at UPS startup.

3.16 Setting the Timing for Low Battery Voltage Warnings

Set the timing for issuing a low battery voltage warning.
This setting cannot be configured using the UPS if you are using the UPS management software. Use the UPS management software to configure the settings. Refer to the User Guide of the UPS management software for details.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to "Setting Group"→ "Setting Item"→ "Setting Value."

(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

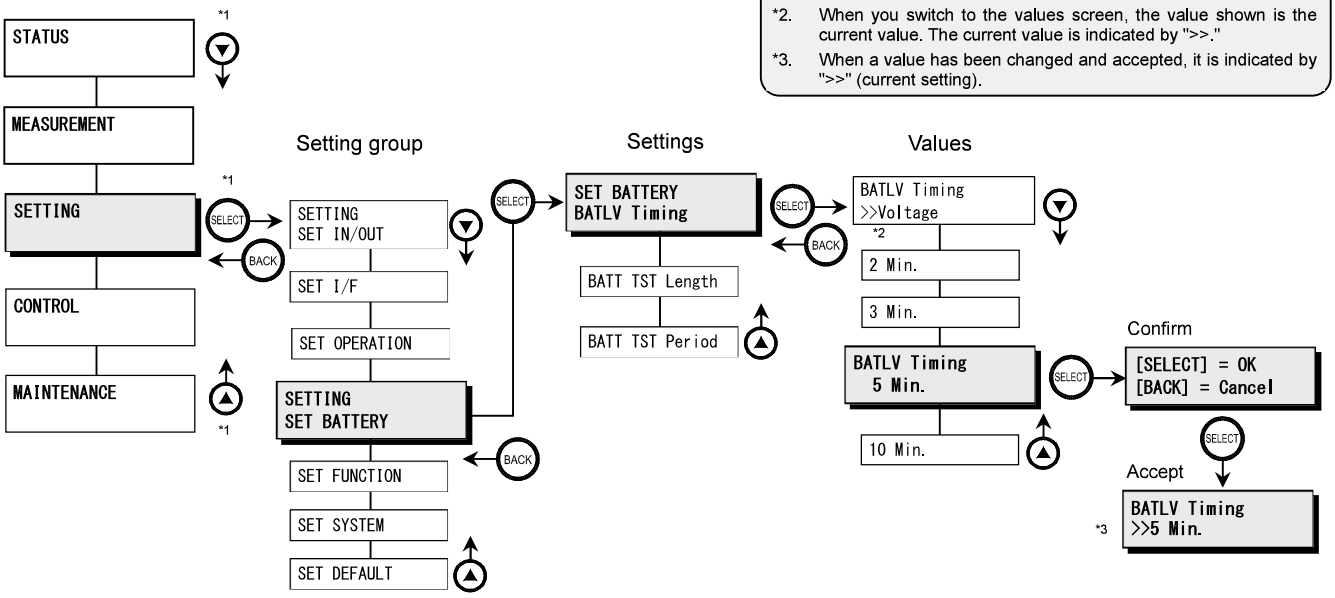
(6) Press BACK to return.

Ex.: Setting the timing for issuing a warning to "5 Min."

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

Home Menu



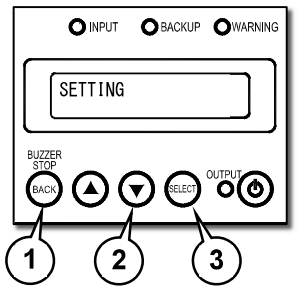
Details on settings and values

	Values	Description		
Default Setting	Voltage	Warning when low battery voltage level is detected: The warning display "Batt Vol Low" appears on the LCD screen, and the buzzer sounds "Beep-beep-beep-beep-beep • •."		
	2 Min.	The warning occurs when the battery retention time is less than 2 minutes.	Warning when low set voltage level is detected: LCD screen displays "Batt Vol Low," and the buzzer beeps repeatedly. The value (minute) or (%) is only an approximation. See "7. NOTES ON MEASUREMENT INFORMATION DISPLAYS."	Do not set this value when a UPS having non-standard battery specifications (5 minutes, 10 minute backup specifications) is used and the load factor is 30% or less.
	3 Min.	The warning occurs when the battery retention time is less than 3 minutes.		
	5 Min.	The warning occurs when the battery retention time is less than 5 minutes.		
	10 Min.	The warning occurs when the battery retention time is less than 10 minutes.		

- When "Silent" or "Group #2" is set in "3.8 Setting Buzzer Conditions," the buzzer does not sound.
- If you are using a UPS management software, the value set in the UPS management software will be considered to be valid. Even if a value is set with the above operation, the set value is not enabled. The value set with the UPS management software appears when the above operation is performed. In this case, "▼▲" is not displayed on the right side of the LCD screen and the setting value is not changed even if you press ▼ or ▲. Press SELECT or BACK to return.

3.17 Setting the Battery Test Duration

Set the duration of the battery test implemented periodically or manually.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to "Setting Group"→ "Setting Item"→ "Setting Value."

(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

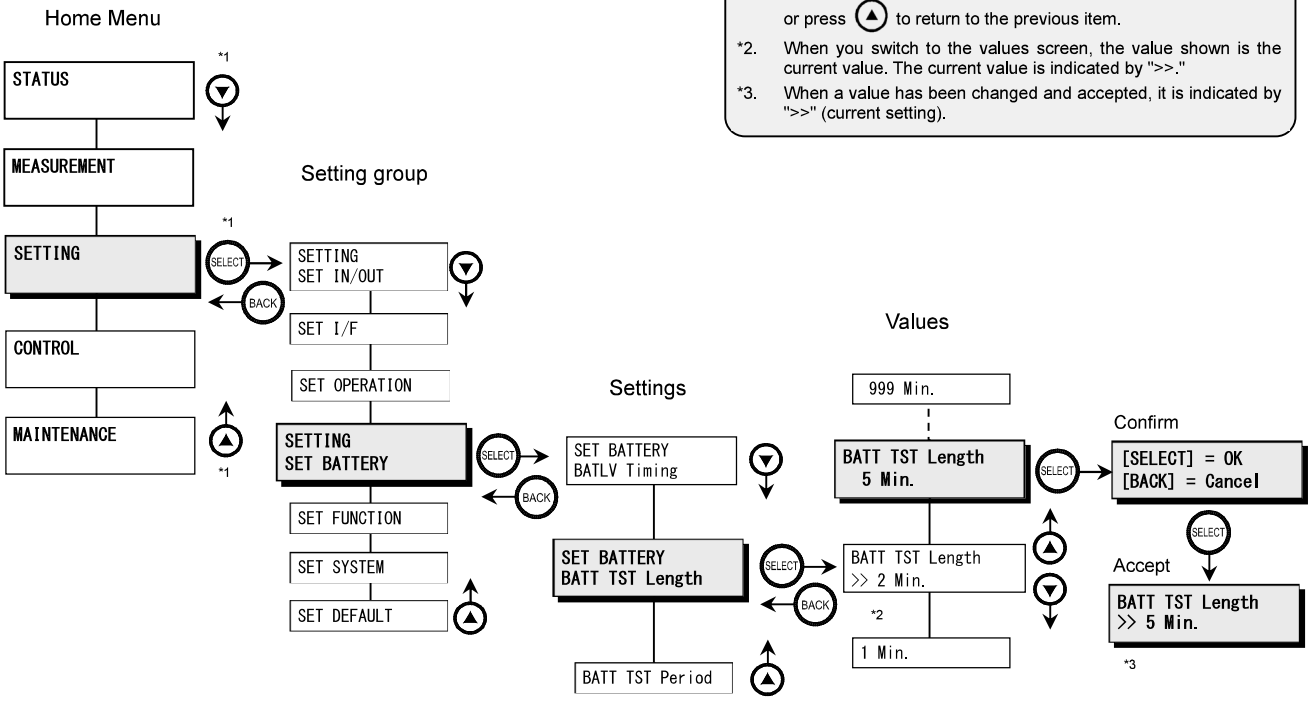
Ex.: Setting the battery test duration to "5 Min."

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.

*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."

*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

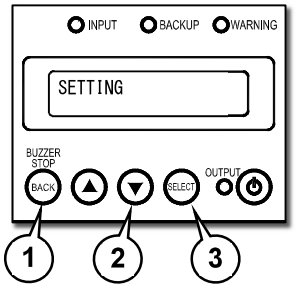


Details on settings and values

Values		Description
1 to 999 Min.	1 to 999 minutes	Default Settings: 2 minutes Set any value in 1min.increments. Set the battery test duration in accordance with the load capacity connected to the UPS and the battery capacity. The battery test is performed for the set amount of time.

3.18 Setting the Battery Test Schedule

Set the interval (number of days) by which you want to run the battery test automatically. The battery test is implemented automatically when the set number of days elapses.
This setting cannot be configured using the UPS if you are using the UPS management software. Use the UPS management software to configure the settings. Refer to the User Guide of the UPS management software for details.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

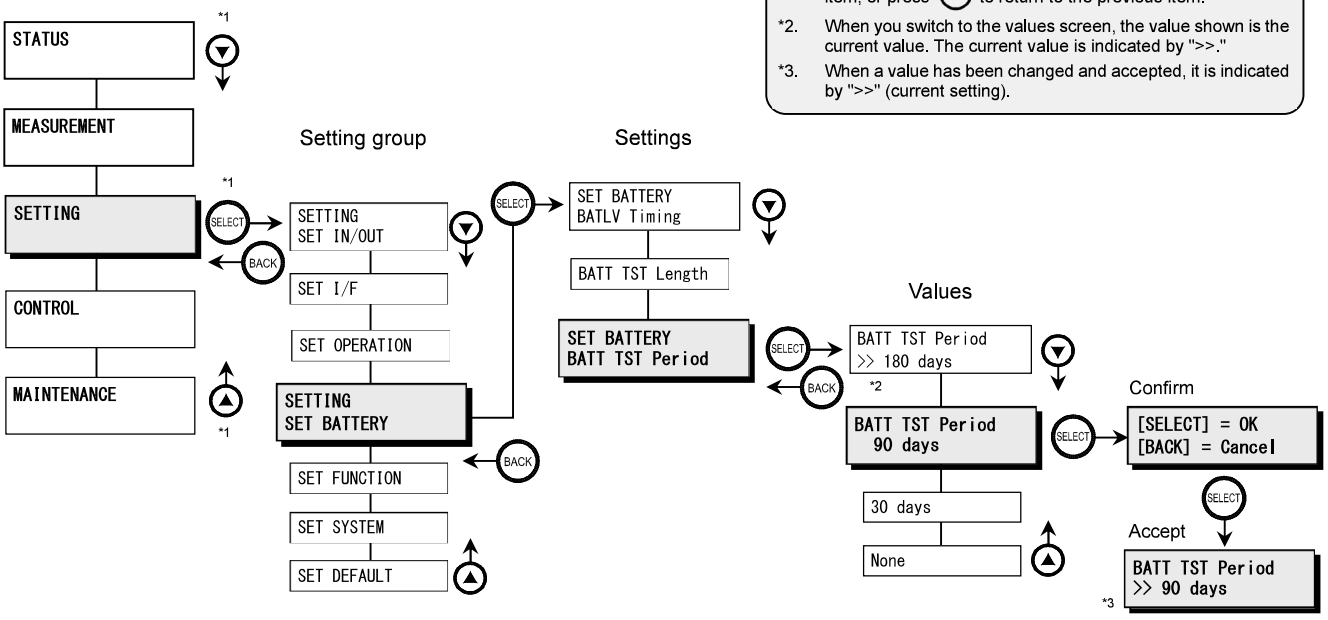
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Setting the battery test schedule to “90 days”

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).



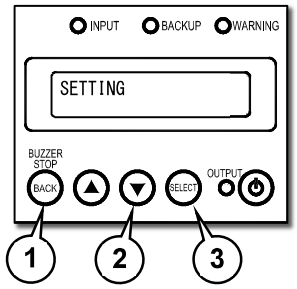
Details on settings and values

	Values		Description
Default Setting	180 days	Every 180 days	The battery test is implemented automatically every 180 days.
	90 days	Every 90 days	The battery test is implemented automatically every 90 days.
	30 days	Every 30 days	The battery test is implemented automatically every 30 days.
	None	No automatic testing	The battery test is not automatically implemented.

- When using this function, set the value in “3.3 Setting the Output Frequency” to “Auto 1” or "Auto 2." If the frequency is set to “50 Hz” or “60 Hz,” the battery test is not implemented.
- When the UPS management software is used, the battery test is implemented based on the schedule set in UPS management software. When the value is configured to a setting different from that in the UPS management software, the setting temporarily changes, but then appears as the setting in the UPS management software.

3.19 Setting the Operating Time During Power Failure

Set the time from when the UPS starts backup to when it stops output during a power outage.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to "Setting Group"→ "Setting Item"→ "Setting Value."

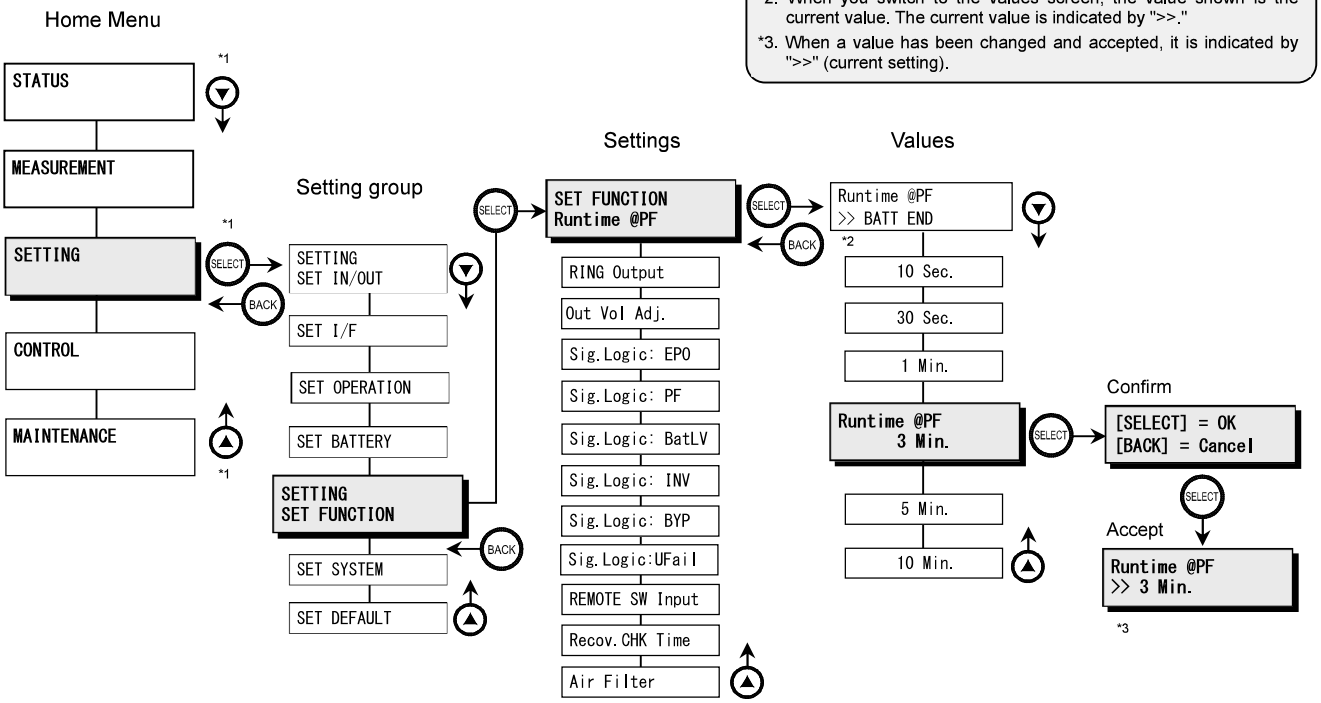
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Setting the operating time during power failure to "3 Min."

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).



Details on settings and values

	Values		Description
Default Setting	BATT END	Until end of battery discharge	Output power supply continues until the battery is completely discharged. Select to use the maximize battery capacity.
	10 Sec.	Stops after 10 seconds	Output power supply stops after backing up for 10 seconds.
	30 Sec.	Stops after 30 seconds	Output power supply stops after backing up for 30 seconds.
	1 Min.	Stops after 1 minute	Output power supply stops after backing up for 1 minute.
	3 Min.	Stops after 3 minutes	Output power supply stops after backing up for 3 minutes.
	5 Min.	Stops after 5 minutes	Output power supply stops after backing up for 5 minutes.
	10 Min.	Stops after 10 minutes	Output power supply stops after backing up for 10 minutes.

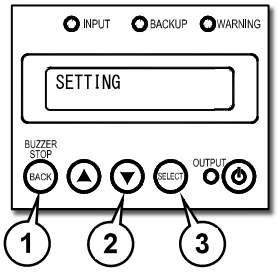
- Output power supply stops the moment that the set period of time elapses. The UPS returns to normal operation when utility power is restored within the set time period. When using this function, configure the setting value in "3.5 Setting the Interface" to "Standalone." The function remains disabled when the setting is configured to "WS. " When the UPS is shipped from the factory, this is set to "WS. "
- Even if the value is set to "** Sec." or "** Min.," the UPS may not be able to provide output power supply for the specified time due to conditions such as battery configuration, load factor, insufficient battery charge, battery deterioration, and ambient temperature.

3.20 Setting the RING Signal *

Set whether or not to output the RING signal during UPS startup.

*** What is a RING signal?**

The RING signal automatically starts the connected computer at UPS startup.
This function is enabled when the UPS is connected to a computer compatible with the "Wake Up on Ring" function by an optional communication cable.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to "Setting Group"→ "Setting Item"→ "Setting Value."

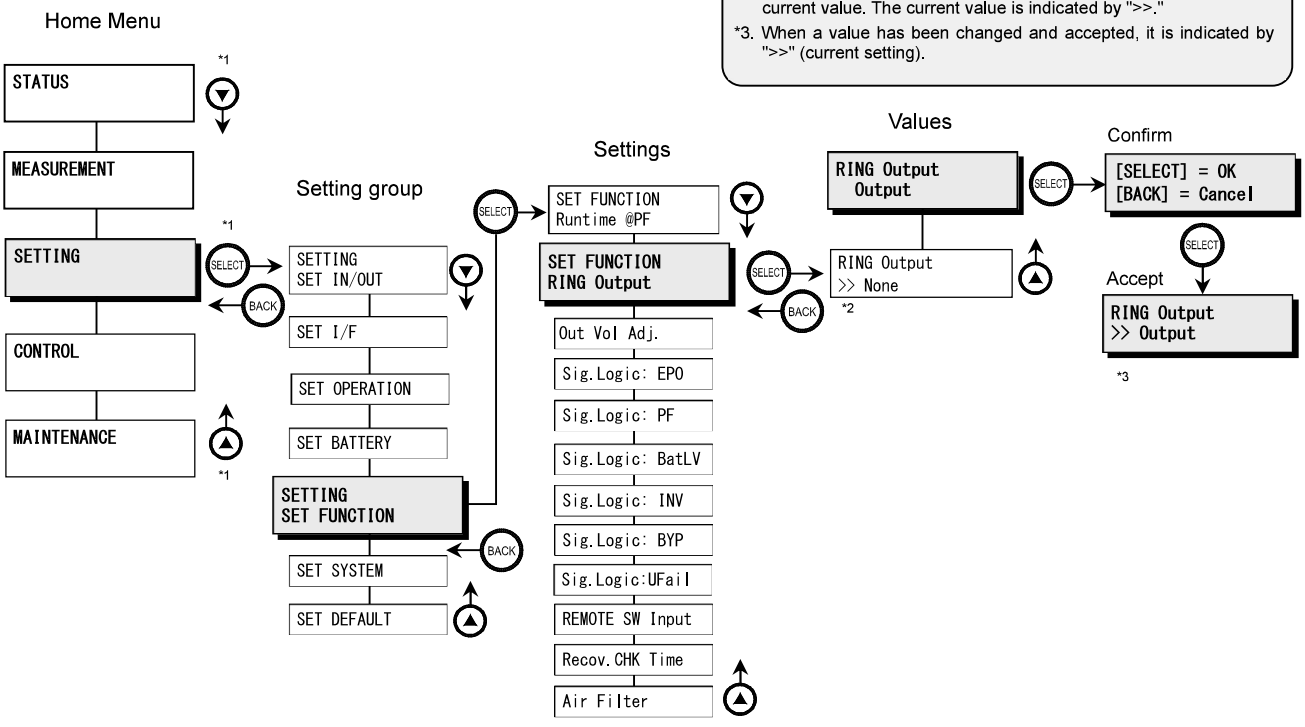
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

Ex.: Setting the RING signal to "Output"



Details on settings and values

	Values		Description
	Output	Output	The RING signal is output at UPS startup.
Default setting	None	Do not output	The RING signal is not output.

When the value is set to "Output," a computer that does not start by power supply alone can be automatically started at UPS startup.
This function is effective only with computers compatible with the Wake Up on Ring function.

3.21 Setting the Adjustment Value for the Output Voltage

Set the adjustment value for the output voltage set in “3.1 Setting the Output Voltage.”
The output voltage can be adjusted in a range of five negative increments and five positive increments (approximately -5 V to +5 V).

(1) Press BACK to display the LCD screen.

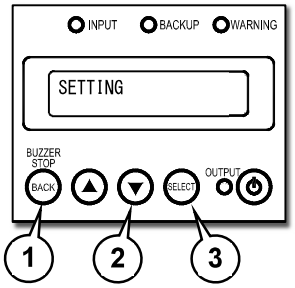
(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

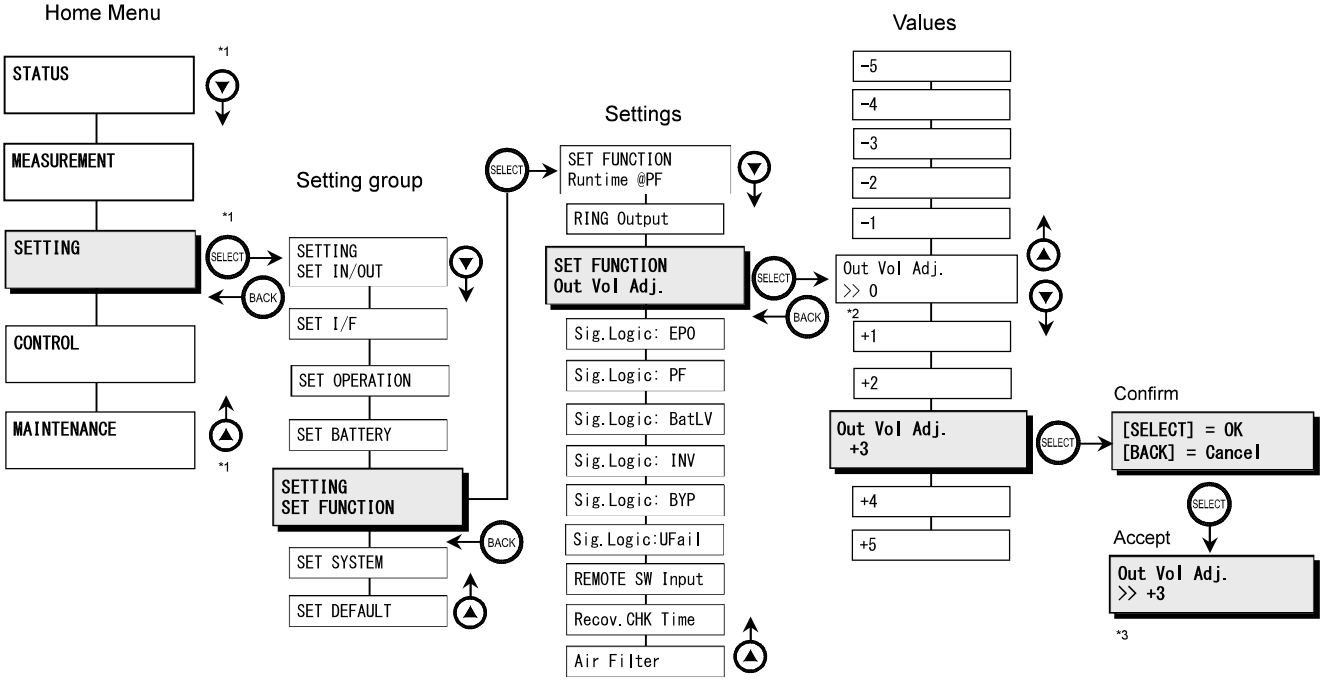
(6) Press BACK to return.



Ex.: Setting the adjustment value to “+ 3”

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK.Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).



Details on settings and values

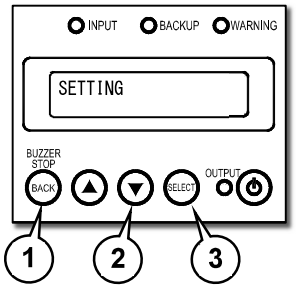
Values	Description	
-5	The value is set five increments lower on the negative side	Default setting differs according to UPS model number. The value is set at the time of shipment.
-4	The value is set four increments lower on the negative side	
-3	The value is set three increments lower on the negative side	
-2	The value is set two increments lower on the negative side	
-1	The value is set one increment lower on the negative side	
0	The set voltage is output as is.	
+1	The value is set one increment higher on the positive side	
+2	The value is set two increments higher on the positive side	
+3	The value is set three increments higher on the positive side	
+4	The value is set four increments higher on the positive side	
+5	The value is set 5 increments higher on the positive side	

One adjustment increment is approximately 1 V.
The selected value is adjusted with respect to the output voltage set in “3.1 Setting the Output Voltage.”
Set the value in accordance with the connected load state and installation environment.
Note that this adjustment value is applied only to output voltage. The voltage range of AC input does not change.
The set value becomes "0" when the operation described in “3.35 Resetting the Set Values” is performed.

3.22 Setting the EPO Input Logic

Set the input logic for the EPO terminal * at the back of the UPS.
See “5.6 Connecting the UPS Emergency Stop Switch” in the UPS instruction manual.

* EPO stands for Emergency Power Off.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

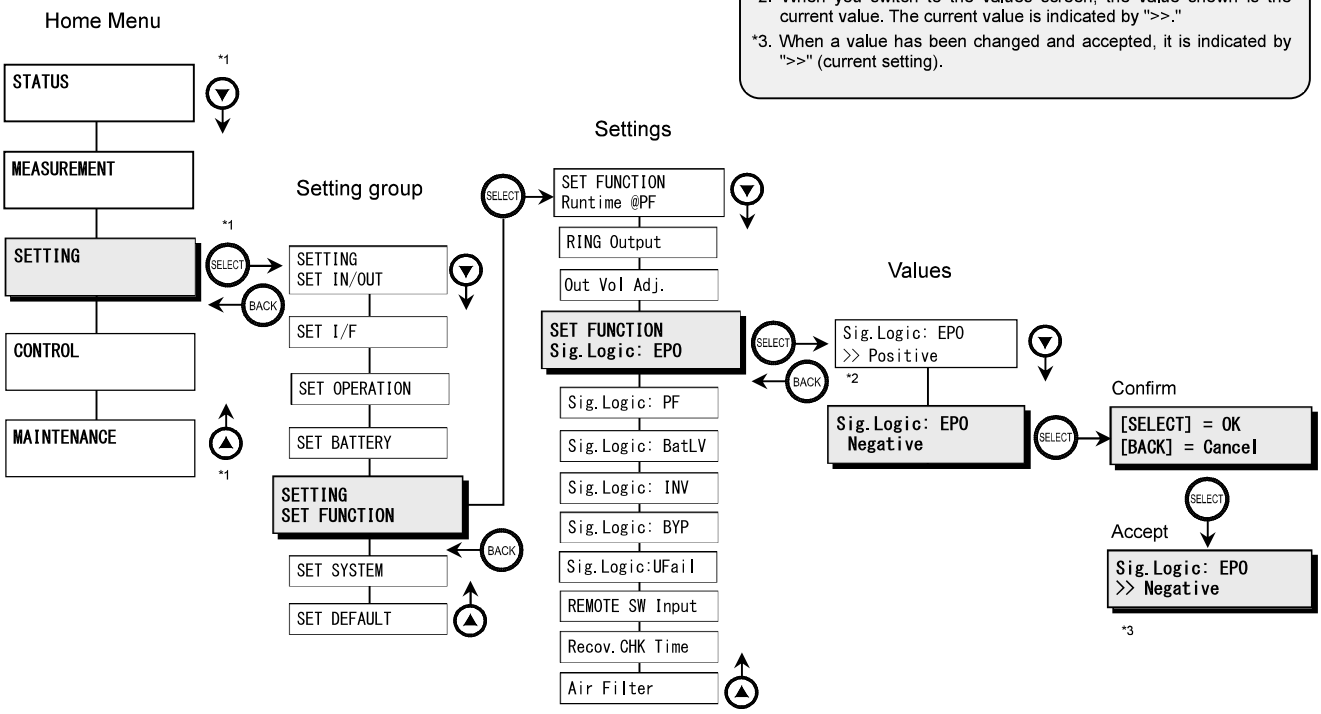
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

Ex.: Setting the EPO terminal logic to “negative logic”



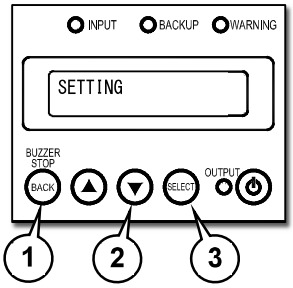
Details on settings and values

	Values		Description
Default Setting	Positive	Positive logic	When the UPS emergency stop switch connected to EPO terminal is “ON,” the UPS output stops.
	Negative	Negative logic	When the UPS emergency stop switch connected to the EPO terminal is “OFF, ” the UPS output stops.

See “5.6 Connecting the UPS Emergency Stop Switch” in the UPS instruction manual.

3.23 Setting CARD I/F and SIGNAL I/F Power Outage Signal Logic

Set the logic of the power outage signal output from the “CARD I/F” connector and “SIGNAL I/F” connector on the back of the UPS.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

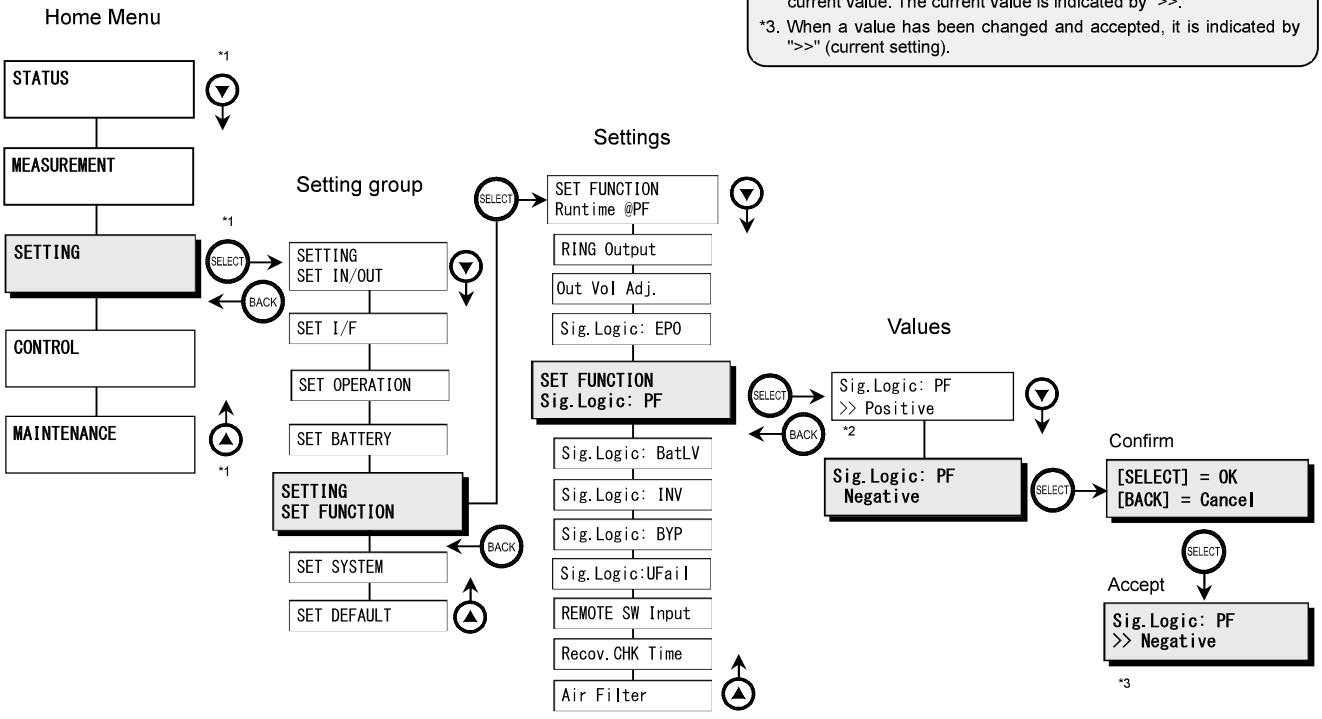
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

Ex.: Setting the logic of the power outage signal to “negative logic”



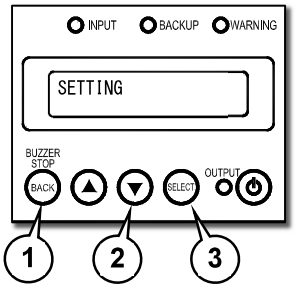
Details on settings and values

	Values		Description
Default Setting	Positive	Positive logic	This signal is output when there is a power outage.
	Negative	Negative logic	This signal is output when there is no power outage.

See “5.4 Using UPS External Transmission Signals” or “5.7 Operating the UPS with a Computer Connected to the CARD I/F RS-232C Connector” in the UPS instruction manual for details.

3.24 Setting the CARD I/F and SIGNAL I/F Low Battery Voltage Signal Logic

Set the logic of the low battery voltage signal output from the “CARD I/F” connector and “SIGNAL I/F” connector on the back of the UPS.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

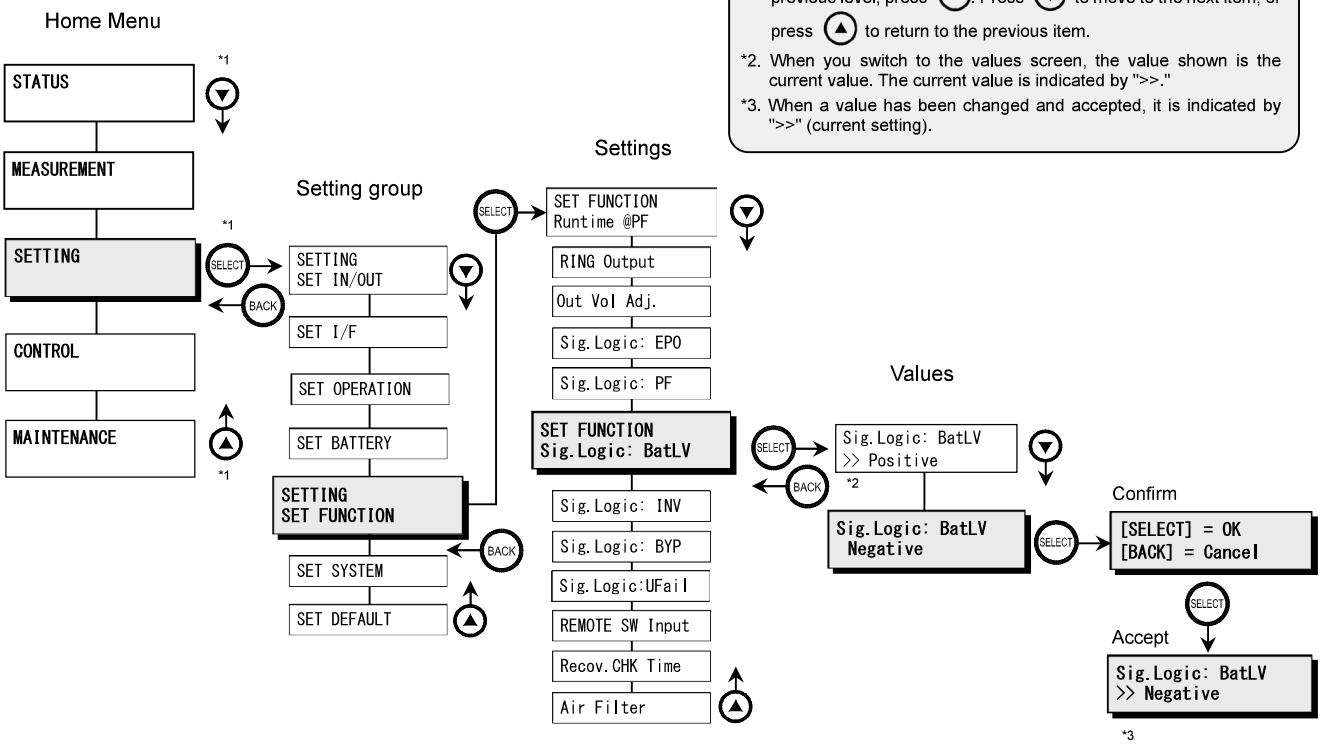
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Setting the low battery voltage signal logic to “negative logic”

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).



Details on settings and values

	Values		Description
Default Setting	Positive	Positive logic	This signal is output when the battery voltage is low.
	Negative	Negative logic	This signal is output when the battery voltage is not low.

See “5.4 Using UPS External Transmission Signals” or “5.7 Operating the UPS with a Computer Connected to the CARD I/F RS-232C Connector” in the UPS instruction manual for details.

3.25 Setting the SIGNAL I/F Inverter Output Signal Logic

Set the logic of the inverter output signal output from the “SIGNAL I/F” connector on the back of the UPS.

(1) Press BACK to display the LCD screen.

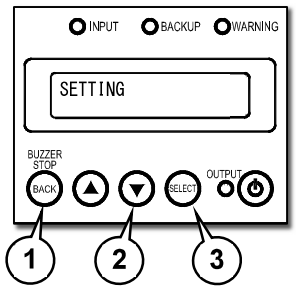
(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

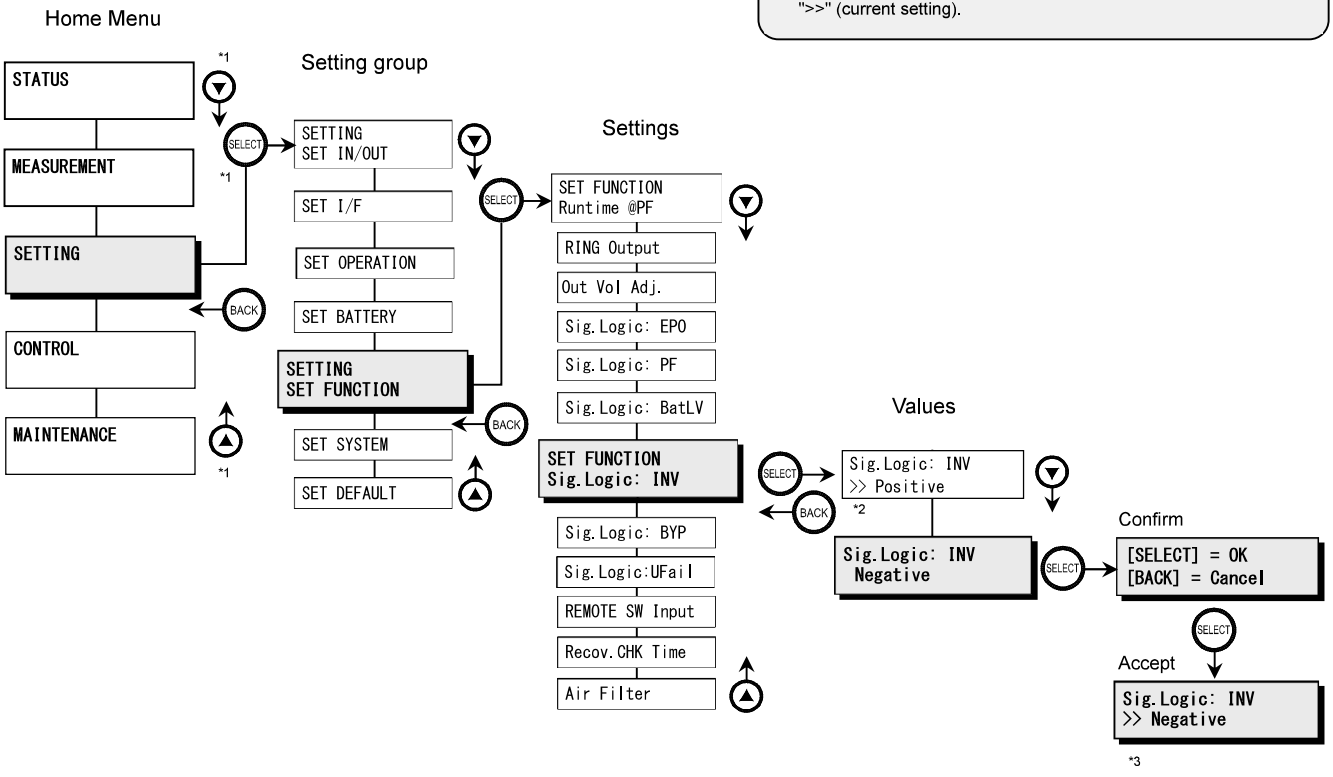
(6) Press BACK to return.



Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

Ex.: Setting the inverter output signal logic to “negative logic”



Details on settings and values

	Values		Description
Default Setting	Positive	Positive logic	This signal is output when inverter output is being supplied.
	Negative	Negative logic	This signal is output when inverter output is not being supplied.

See “5.4 Using UPS External Transmission Signals” in the UPS instruction manual for details.

3.26 Setting the SIGNAL I/F Bypass Output Signal Logic

Set the logic of the bypass output signal output from the “SIGNAL I/F” connector on the back of the UPS.

(1) Press BACK to display the LCD screen.

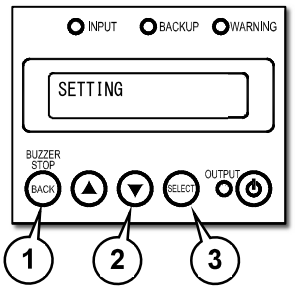
(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

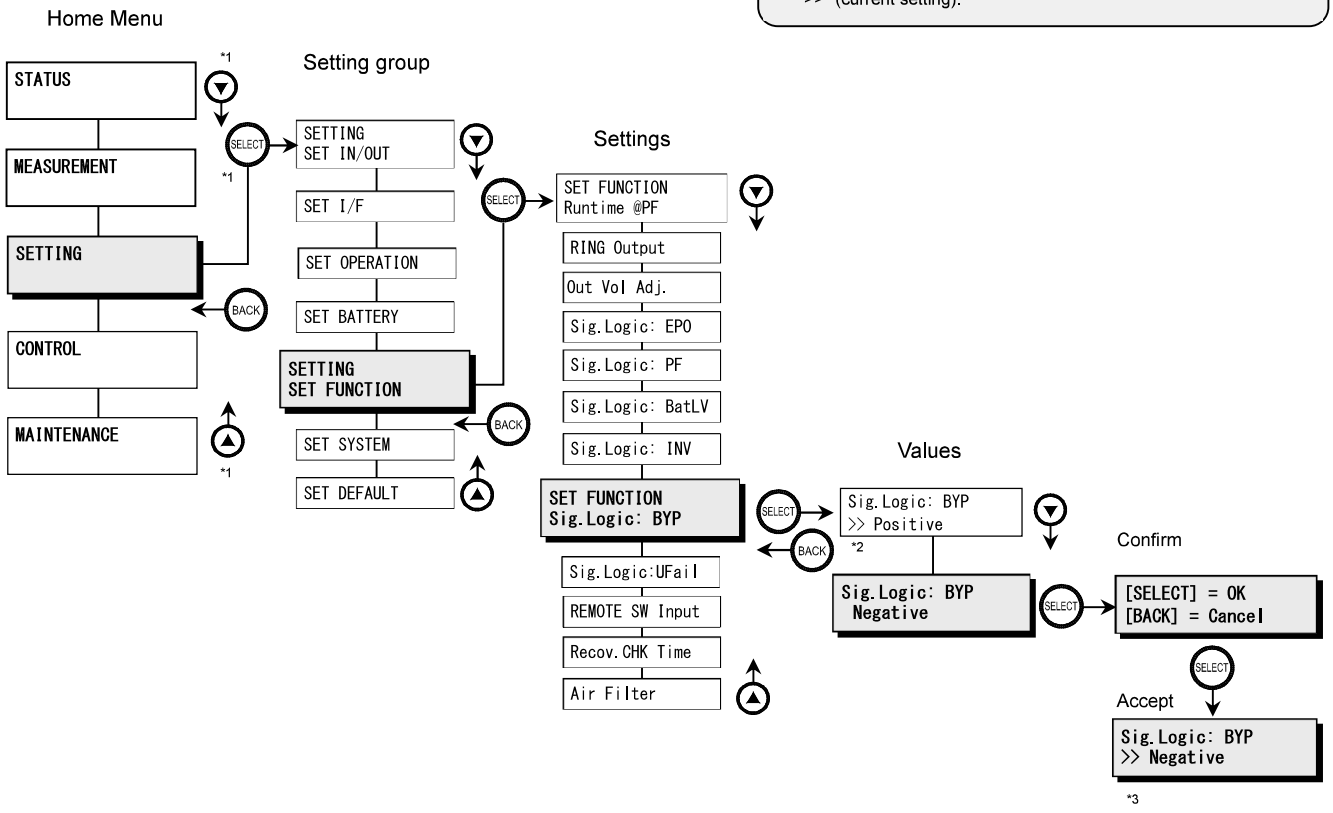
(6) Press BACK to return.



Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

Ex.: Setting the bypass output signal logic to “negative logic”



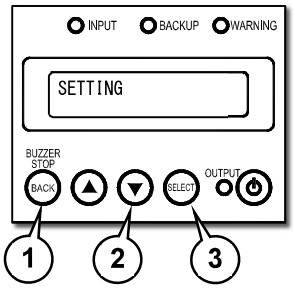
Details on settings and values

	Values		Description
Default Setting	Positive	Positive logic	This signal is output when the utility power supply is being supplied from the bypass circuit.
	Negative	Negative logic	This signal is output when the utility power supply is not being supplied from the bypass circuit.

See “5.4 Using UPS External Transmission Signals” in the UPS instruction manual for details.

3.27 Setting the SIGNAL I/F Device Error Signal Logic

Set the logic of the device error signal output from the “SIGNAL I/F” connector on the back of the UPS.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

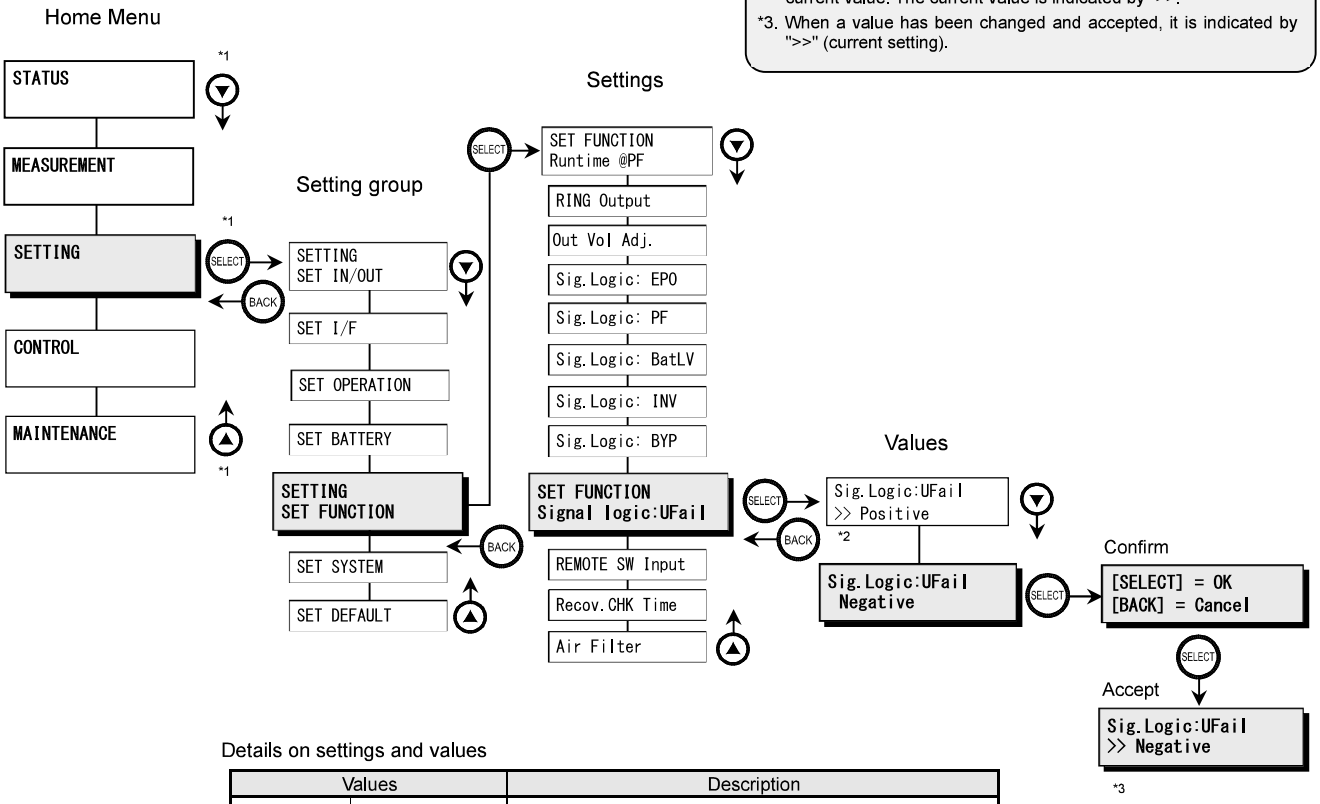
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

Ex.: Setting the device error signal logic to “negative logic”



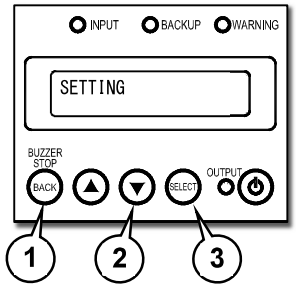
Details on settings and values

	Values		Description
Default Setting	Positive	Positive logic	This signal is output when there is a device error.
	Negative	Negative logic	This signal is output when there is no device error.

See “5.4 Using UPS External Transmission Signals” in the UPS instruction manual for details.

3.28 Setting the Input Method of the Remote Switch

Set the input method of the remote switch connected to the remote terminal on the UPS.
For details, see “5.5 Turning the UPS ON/OFF with the Remote Switch” in the UPS instruction manual.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

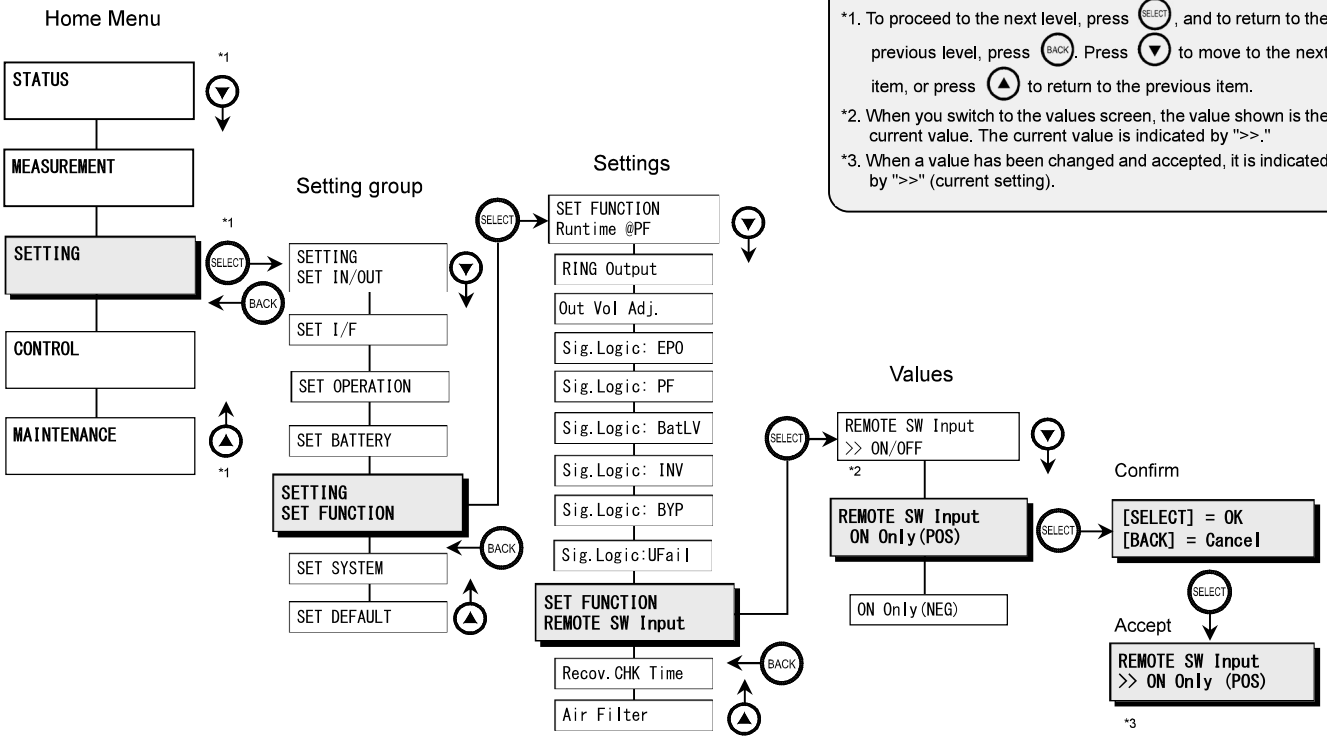
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears,press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Setting the input method of the remote switch to “ON only (positive logic)”

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).



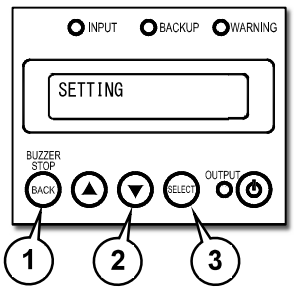
Details on settings and values

	Values		Description
Default Setting	ON/OFF	Use ON/OFF	Turn ON/OFF with a separate switch. OFF is given priority if both are input.
	ON Only (POS)	ON only (Positive logic)	When the ON signal is input to the ON terminal, the UPS starts, and when the OFF signal is input, the UPS shuts down.
	ON Only (NEG)	ON only (Negative logic)	When the OFF signal is input to the ON terminal, the UPS starts, and when the ON signal is input, the UPS shuts down.

For details, see “5.5 Turning the UPS ON/OFF with the Remote Switch” in the UPS instruction manual.

3.29 Setting the Power Recovery Check Time

Set the time until the UPS confirms that the utility power supply has recovered after the UPS stops due to end of battery discharge during a power outage.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to "Setting Group"→ "Setting Item"→ "Setting Value."

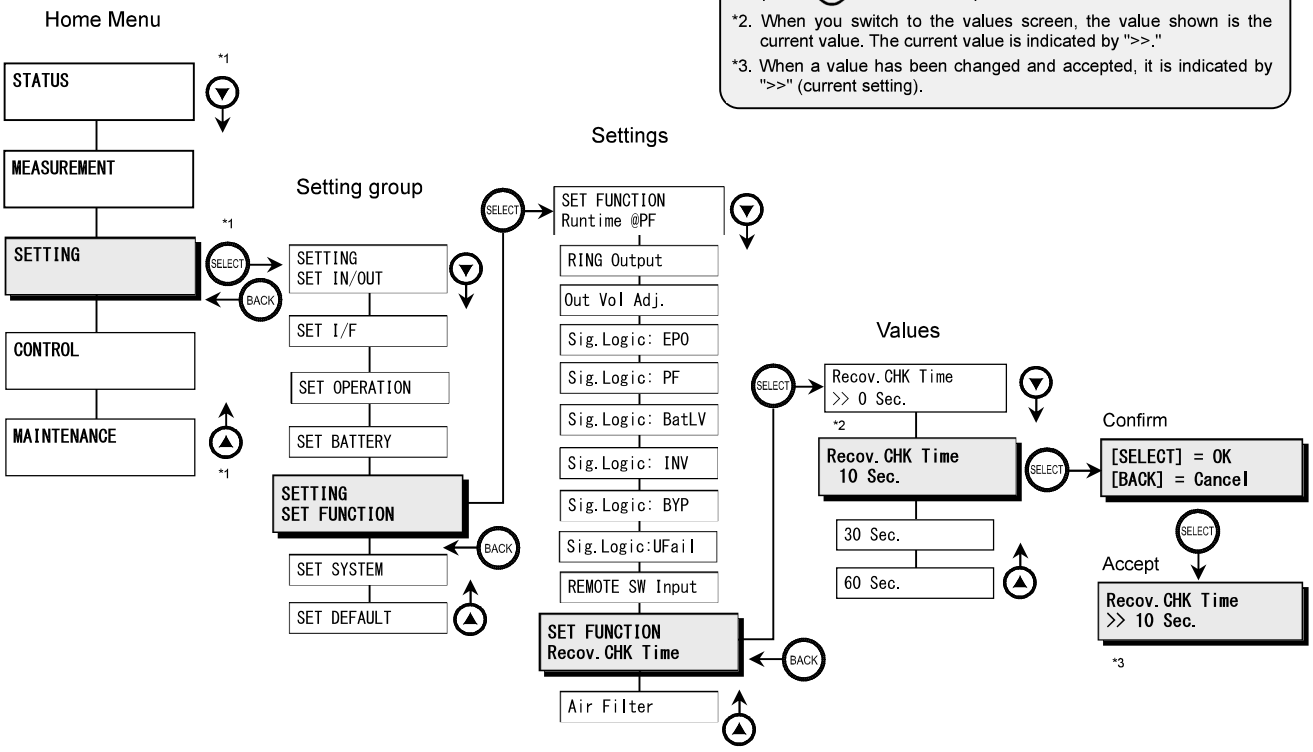
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Setting the power recovery check time to "10 Sec."

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).



Details on settings and values

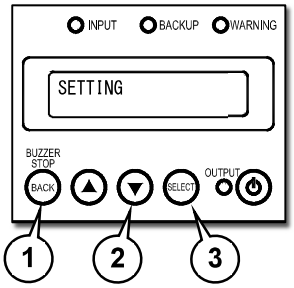
	Values		Description
Default Setting	0 Sec.	Immediate (0 sec)	After the UPS stops due to end of battery discharge during a power outage, the UPS detects that the utility power supply has been recovered after the set time has elapsed.
	10 Sec.	10 seconds	
	30 Sec.	30 seconds	
	60 Sec.	60 seconds	

3.30 Setting Air Filter Usage

Set whether or not an air filter (option) is attached or not attached to the front panel of the UPS.
When an air filter is attached, change the set value.
Note that the air filter is not automatically set even if this set value is changed.
See the air filter instruction manual to attach the air filter.

Note

Use the optional air filter. Do not use any air filter other than those specified.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

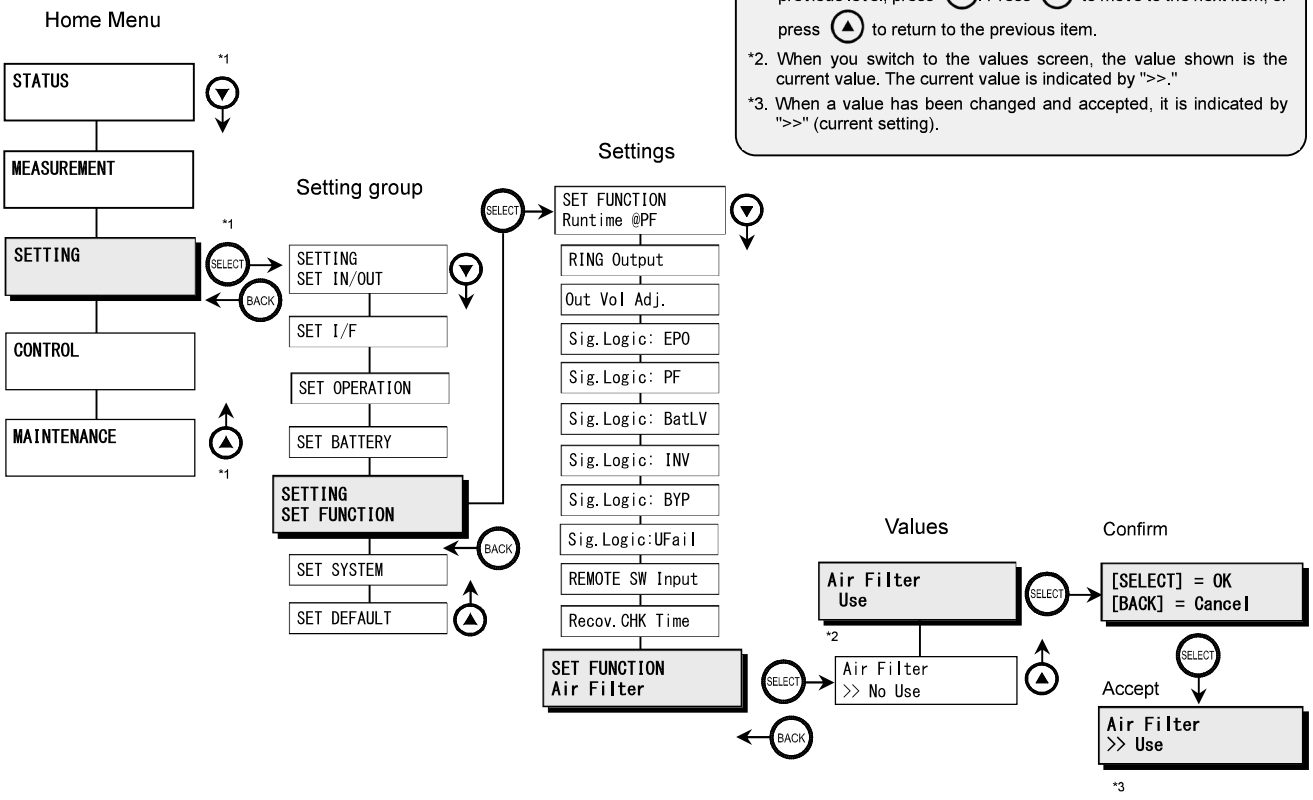
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Setting the air filter to “Use”

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).



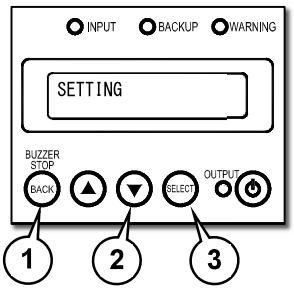
Details on settings and values

	Values		Description	
	Use	Use	When an air filter is used.	If an air filter is used, clean the air filter regularly. See “Air Filter Inspection” in the UPS instruction manual.
Default setting	No Use	Do not use	When an air filter is not used	

Control of the UPS internal cooling fan motor differs according to the set value.
When a value that differs from actual air filter usage conditions is set, the UPS may not function properly.
When you set the setting value to "Use" , "Warning for the air filter inspection period" will be displayed approximately once every 2.5 months. Clean the air filter, and perform the operation described in “5.3 Completing Air Filter Cleaning.”
When the warning for air filter inspection period is displayed, if the setting value of “3.13 Setting Whether or Not to Output Transmission Signals During a Minor Malfunction” is set to “Output", the “Device error” signal is output.

3.31 Setting the Date/Time

Set the UPS date and time. The clock is set at the time of shipment. Normally, do not change it.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to "Setting Group"→ "Setting Item"→ "Setting Value."

(5) Press SELECT while DATE **/**/** TIME **:** :** is displayed, then set the desired value using ▼ or ▲ in the "Year" field, and press SELECT.
Similarly, set the month, day, hour, and minutes in that order.

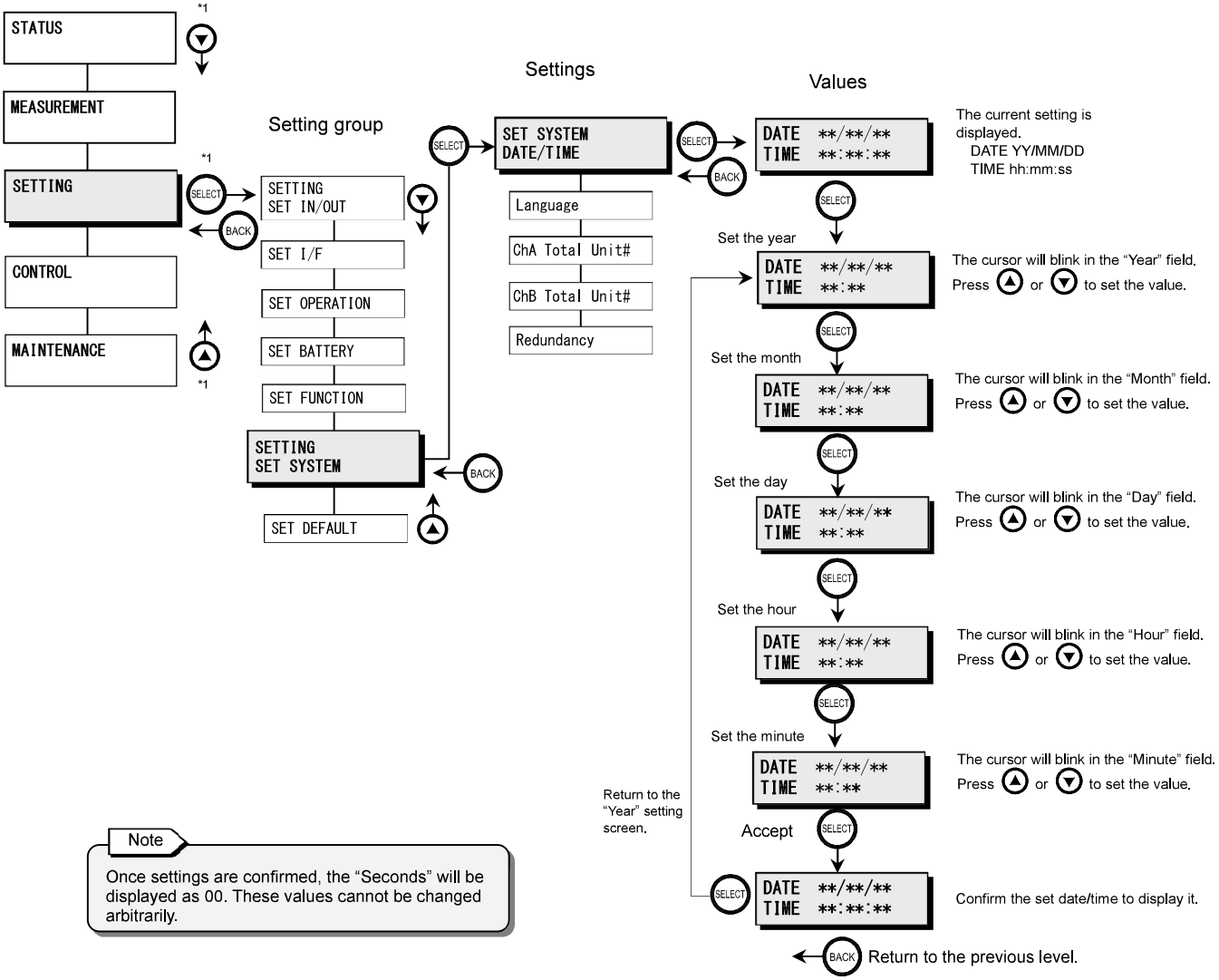
(6) Press BACK to return.

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.

Setting the Date/Time

Home Menu

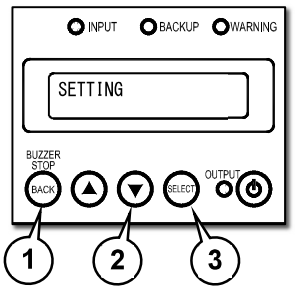


Note

Once settings are confirmed, the "Seconds" will be displayed as 00. These values cannot be changed arbitrarily.

3.32 Setting the Display Language

Set the language displayed on the LCD screen.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to “Setting Group”→ “Setting Item”→ “Setting Value.”

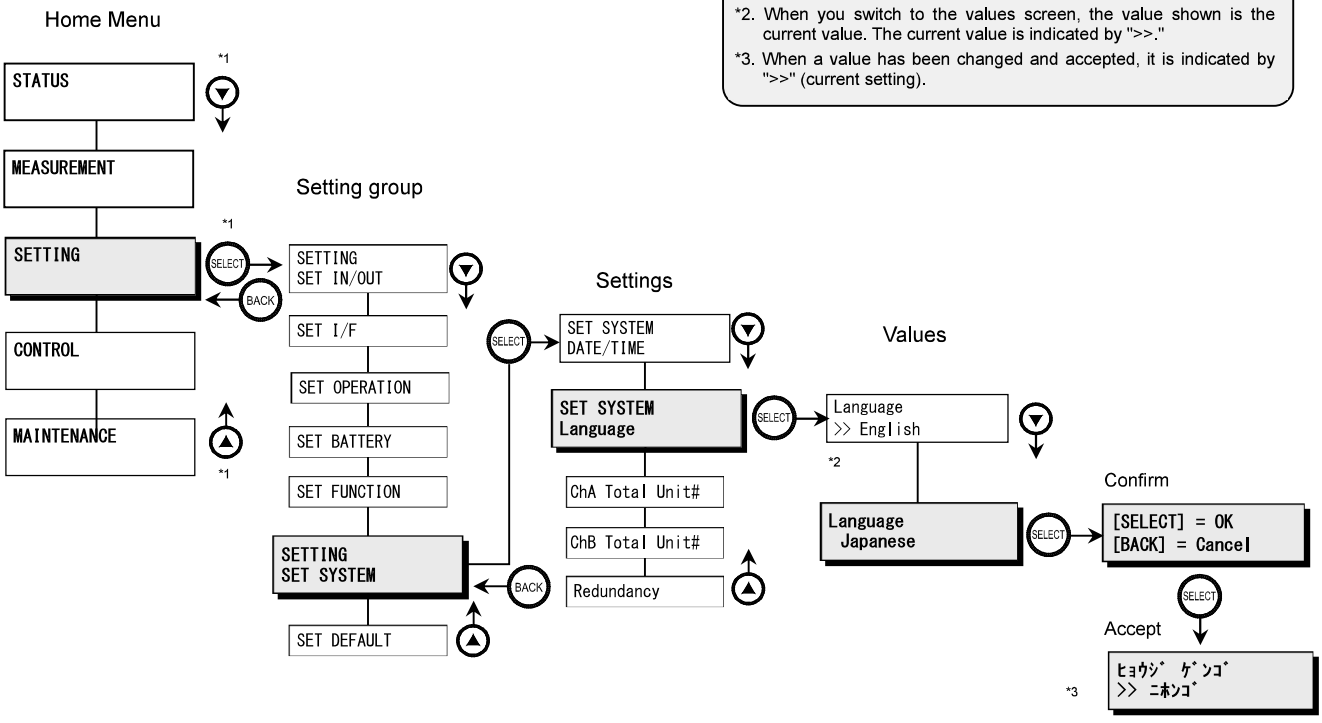
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Setting the display language to “Japanese”

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

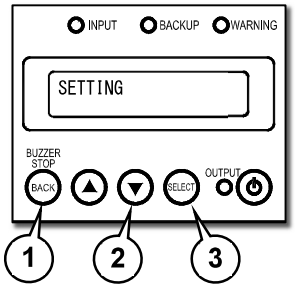


Details on settings and values

	Values		Description
Default Setting	English	English	The language displayed on the LCD panel will be English.
	Japanese	Japanese (Katakana)	The language displayed on the LCD panel will be Japanese (Katakana).

3.33 Setting the Number of UPS Units to be Connected in Parallel

Set the number of UPS units to be connected in parallel to create the UPS system.
This is normally set at the time of shipment, do not change it.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to "Setting Group"→ "Setting Item"→ "Setting Value."

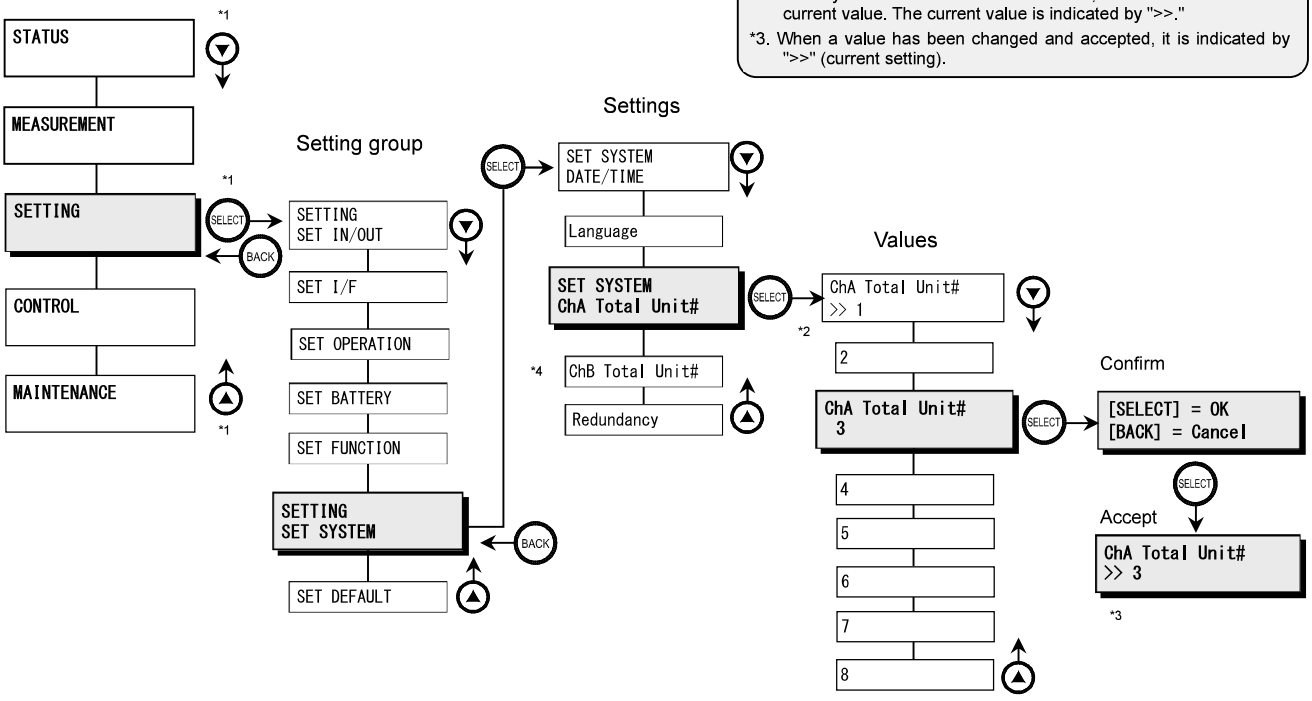
(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

Ex.: Setting the number of UPS units to "3"



*4 Note

Set the ChB Total Unit# as1.
Do not change this. If you accidentally change this, select ChB Total Unit# in the setting items and follow the same procedure to change the setting.

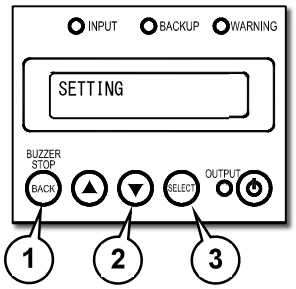
Details on settings and values

Values	Description	
1	When using one UPS unit	Default setting differs according to UPS model number. The value is set at the time of shipment.
2	When connecting two UPS units	
3	When connecting three UPS units	
4	When connecting four UPS units	
5	When connecting five UPS units	
6	When connecting six UPS units	
7	When connecting seven UPS units	
8	When connecting eight UPS units	

Change this setting when adding UPS units or changing the number of connected units.
Set the number of UPS units to be actually connected.
The UPS status display on the LCD panel shows "Total Unit# Err" if there is a discrepancy between the total number of operating UPS units and the set number of units if UPS units stop operating for any reason.
The set value becomes 1 when the operation described in "3.35 Resetting the Set Values" is performed. Reset the values according to UPS system.

3.34 Setting the Operation System

Set the UPS operation system. Select from parallel redundant operation and single/parallel operation.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

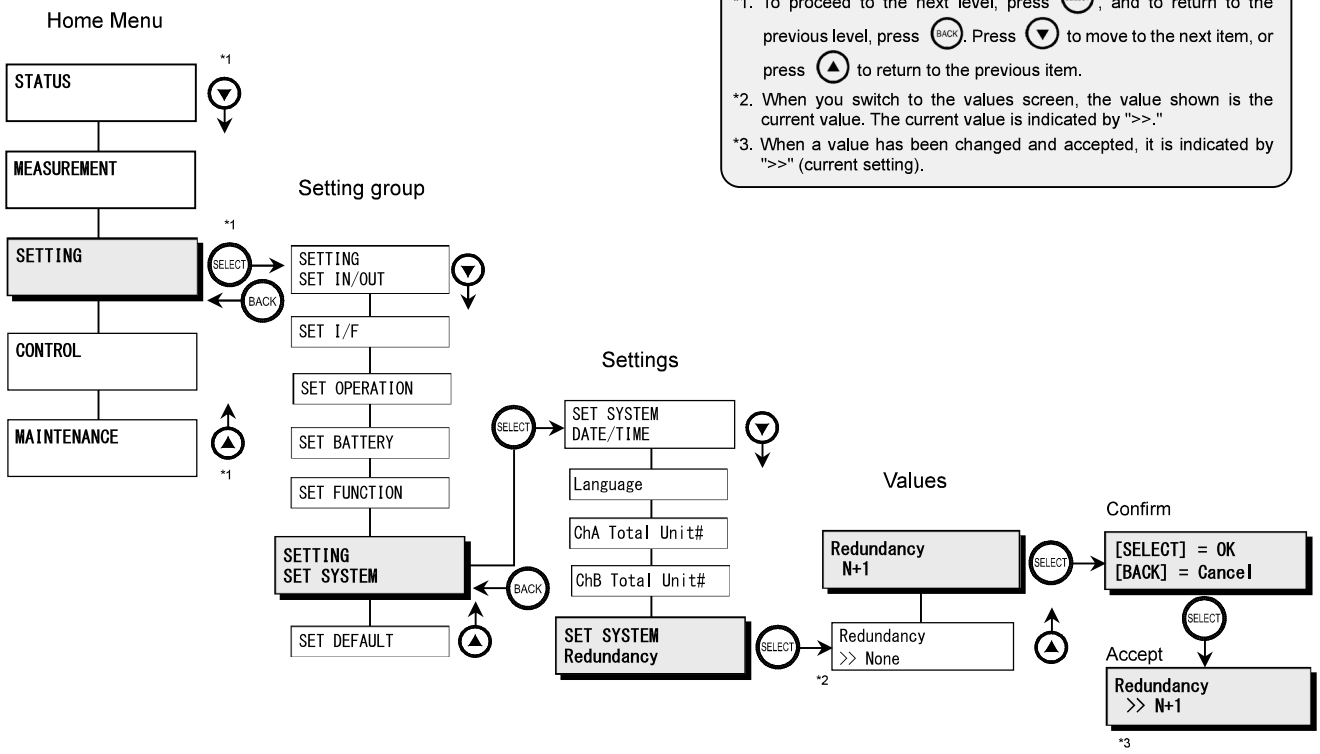
(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Follow the same steps for each level, and proceed to "Setting Group"→ "Setting Item"→ "Setting Value."

(5) Use ▼ or ▲ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Ex.: Setting the operation system to "N+1 redundancy"



Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.

*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."

*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

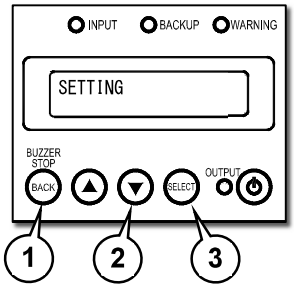
Details on settings and values

Values		Description	
N+1	N+1 redundancy	Set to parallel redundant operation system.	・Parallel redundant operation system: When operating with extra capacity equivalent to one UPS unit connected in parallel to the load capacity.
Default Setting None	Single/Parallel operation	Set to single operation and parallel operation system.	・Single operation system : When using 1 UPS unit. ・Parallel operation system: When operating with the total capacity of the number of UPS units connected in parallel as the connectible load capacity.

When set to "N+1," the LCD screen displays "FT Disabled" when the UPS capacity no longer has room for one UPS unit relative to the load capacity connected to the UPS. Reduce the amount of load connected to the UPS.

3.35 Resetting Set Values

Reset the settings described in Sections 3.1 to 3.34 back to default values as described below.
Use the setting list in “3. SETTING UP THE UPS” to check the default values.
Performing this operation resets the values of all settings. You cannot reset values on a per setting basis.
Once you have reset the settings, you cannot undo the operation.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display SETTING .

(3) Press SELECT to confirm.

(4) In the same way, select the screens shown in the figure below at each level, and progress from “Home Menu”→ “Setting Group.”

(5) Press SELECT to display the selection confirmation screen, and the press SELECT again to reset the value.

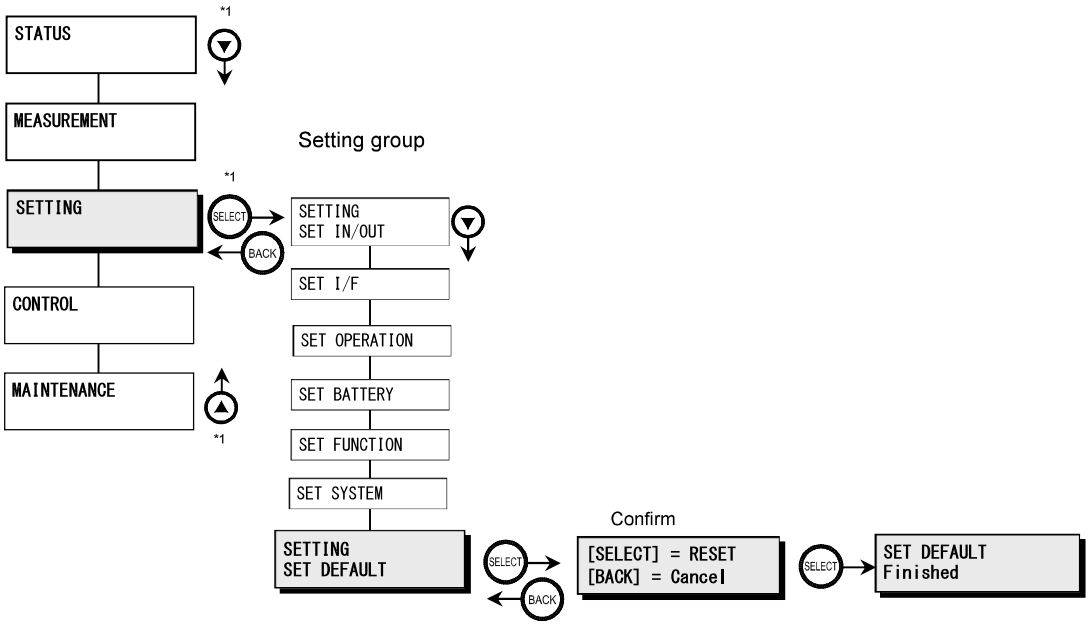
(6) Press BACK to return.

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.

Resetting the settings

Home Menu



Note

When this reset operation has changed a setting item that requires UPS restart for the change to be applied, the UPS needs to be restarted. In this case, “Req To Restart” appears in the UPS status display. See “3.36 Restarting the UPS” to restart the UPS. Before shutting down the UPS, be sure to shut down the load equipment.

3.36 Restarting the UPS*

*What is restarting?

Restarting refers to stopping the UPS when it is running, and then starting it again.
If "restart the UPS" is mentioned in the LCD Panel Operating Manual (this manual) or the UPS instruction manual with reference to making setting changes in the setting menu take effect, stop the operating UPS, wait for the specified time to elapse, and then restart the UPS.

For settings marked with "★" in the setting list on pages 11 and 12, after you change the value, the value will not take effect until after you restart the UPS. Therefore, after you change a setting in a menu marked with "★," use the following procedure to restart the UPS.
The procedure for stopping and restarting the UPS differs depending on the UPS model. See "4.2 Operation Procedures" in the UPS instruction manual for details. Before shutting down the UPS, be sure to shut down the load equipment.

Shut down the load equipment

↓

Shut down the UPS

Tip
See "Shutting Down the UPS" in the UPS instruction manual to shut down the UPS.

↓

Check that the LED and LCD indicators on the UPS LCD panel, and LEDs on the UPS unit control panel are all off

↓

Wait for one minute

Note
After shutting down the UPS, wait at least one minute and then restart it. Even when the UPS shutdown operation is performed, the internal circuit continues to operate immediately after shutdown and the UPS does not completely shut down until a set period of time has elapsed.

↓

Start the UPS

Tip
See "Starting the UPS" in the UPS instruction manual to start the UPS.

↓

Check that the UPS has started normally

↓

Start the load equipment

Blank page

4. OPERATING THE UPS

The UPS allows you to perform 4 operations from the CONTROL menu: battery test, starting and shutting down the UPS, bypass switching, and EPO latch state release. For details on the operations, see the respective items in 4.1 to 4.5.

List of operations

Home menu: UPS operation

Operation		Displayed item		Displayed content				Reference Item	Reference Page
Display	Details	Display	Details	Display	Details	Display	Details		
BATTERY TEST	Run battery test	Start	Start test	[SELECT] = Start	Execute	Control NG	Operation canceled	4.1	51
				[BACK] = Cancel	Cancel	Control OK	Normal termination		
		Stop (During battery testing)	Test cancellation	[SELECT] = Stop	Cancel	Control NG	Operation canceled		
				[BACK] = Cancel	Test continuation	Control OK	Normal termination		
		Status	Test status	BATTST Status	Test status	Possible	Test can start	4.2	53
						Impossible	Test cannot start		
						Testing m s	Test in progress MM/SS		
				Last Test Time	Date of last test	YY/MM/DD HH:MM	YY/MM/DD HH min		
				Last Result	Result of last test	BATTST: OK	Normal		
						BATTST: NG	Error		
						BATTST: No Result	No previous result		
						BATTST: Stopped	Canceled		
INV ON	Start UPS	[SELECT] = INV ON	Start	Control NG	Operation canceled	Control OK	Normal termination	4.3	54
		[BACK] = Cancel	Cancel						
INV OFF	Shut down UPS	[SELECT] = INV OFF	Shutdown	Control NG	Operation canceled	Control OK	Normal termination		
		[BACK] = Cancel	Cancel						
BYPASS	Switch to bypass operation	[SELECT] = BYPASS	Switch	Control NG	Operation canceled	Control OK	Normal termination	4.4	55
		[BACK] = Cancel	Cancel						
EPO Reset	EPO latch release	[SELECT] = Reset	Release	Control NG	Operation canceled	Control OK	Normal termination	4.5	56
		[BACK] = Cancel	Cancel						

4.1 Running the Battery Test

This section describes how to run a battery test. Prior to shipment, the UPS system is configured so that the battery test run is implemented automatically every 180 days.
If you want to run a battery test manually, use the following procedure.
You can run the battery test without stopping the load devices. If the UPS has performed a backup operation prior to the battery test, the result may show an error. Conduct the test when the UPS has not performed a backup operation prior to the battery test.

Tip

- You can change the period of time the battery test is conducted. See "3.17 Setting the Battery Test Duration".
- You can change the schedule (interval) by which the battery test is automatically run. See "3.18 Setting the Battery Test Schedule".

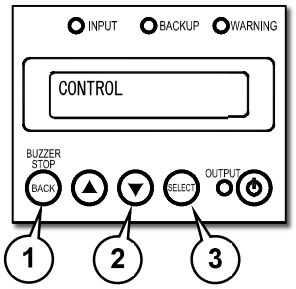
(1) Press BACK to display the LCD screen.

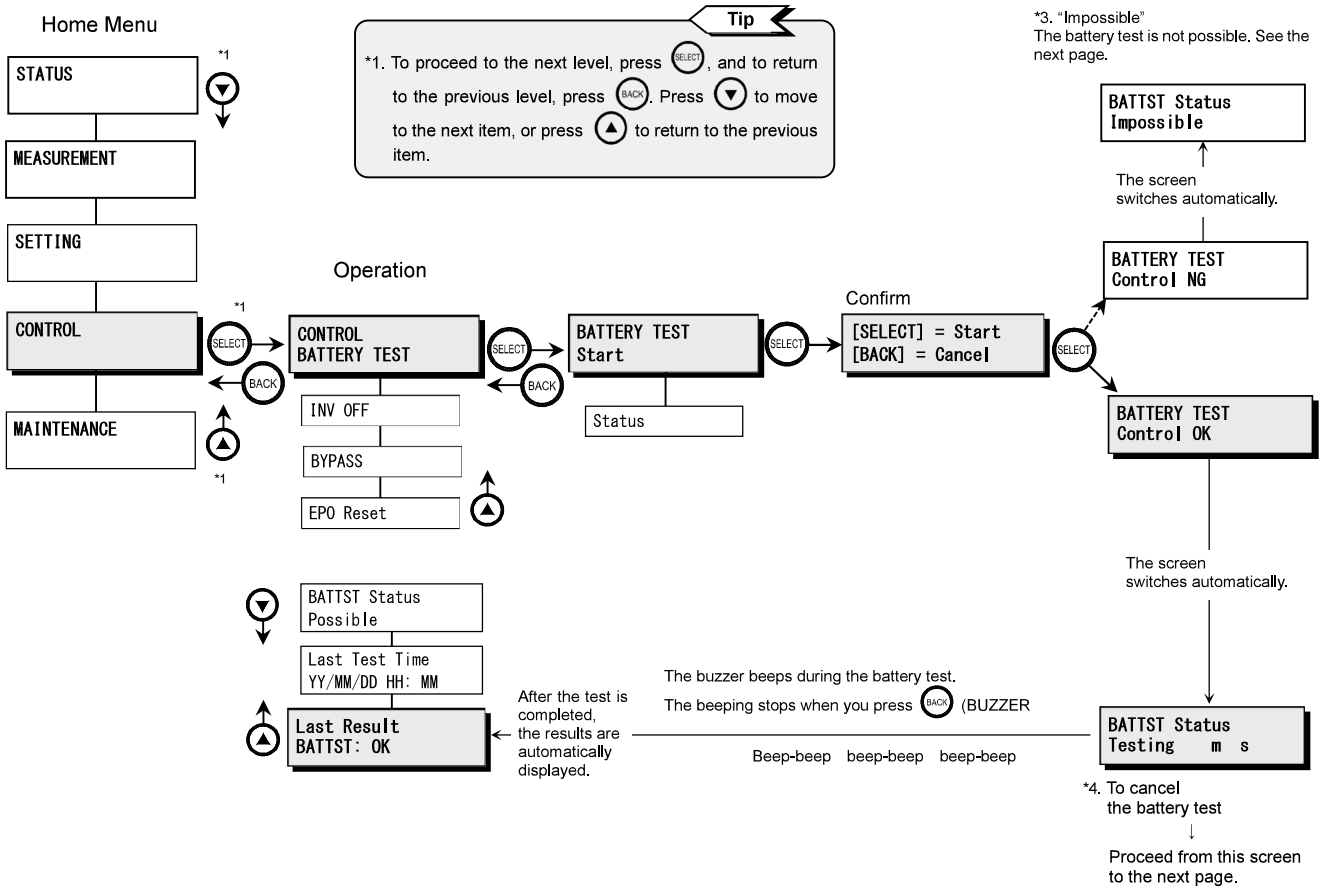
(2) Press ▼ to change the Home Menu, and display CONTROL .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch the display values, select the item to be operated with SELECT, and press SELECT again on the confirmation screen to execute.

(5) Press BACK to return.





Battery test display items

Item		Details	
Display	Details	Display	Details
BATTST Status	Test status	Possible	Test can start
		Impossible	Test cannot start
		Testing	Test in progress
Last Test Time	Date of last battery test	YY/MM/DD HH:MM	YY/MM/DD HH min If "**/**/** **:**" is displayed, then the previous battery test result is missing.
Last Result	Result of the battery test	BATTST: OK	The battery is normal.
		BATTST: NG	A battery error may have occurred.
		BATTST: No Result	There is no previous battery test history.
		BATTST: Stopped	The test was canceled.

Note on the battery test

The battery test result serves as a general guide only. Even if the result is normal, see “6.2 Inspecting the Batteries” in the UPS instruction manual and, if the batteries are deteriorated, contact your sales representative or SANYO DENKI.

States in which the battery test is not possible

- A battery test cannot be performed in the following states (1) to (9). See “8. TROUBLESHOOTING” in the UPS instruction manual and perform the countermeasure.

(1) The inverter is stopped
(2) The bypass power supply is active
(3) Battery operation is in progress
(4) A battery test is running (The battery test cannot be performed when the battery test is running automatically, manually, or by UPS management software.)
(5) UPS malfunction
(6) Battery temperature error
(7) If the battery retention time is less than the value set in “3.16 Setting the Timing for Low Battery Voltage Warnings”
(8) When the value is set to “50 Hz” or “60Hz” in “3.3 Setting Output Frequency”
(9) During asynchronous operation

Canceling the battery testing

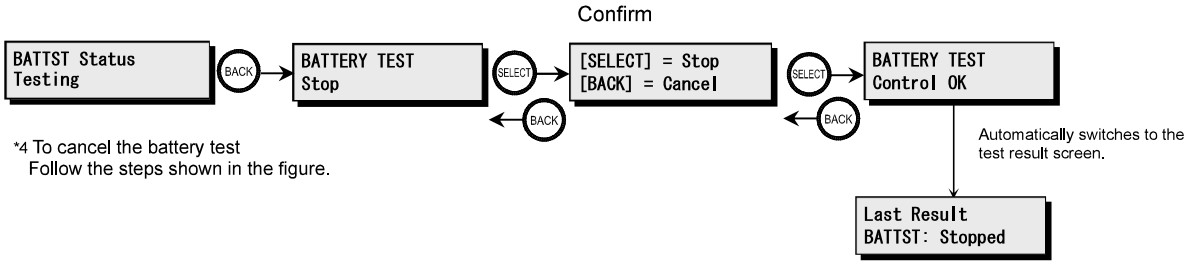
- To cancel a battery test in progress . . .

When “Stop” appears on the LCD screen, press SELECT. ⇒ The UPS returns to normal operation.

- During the battery test, if any of (1) to (5) occurs or if any of (6) to (9) is performed, the battery test is canceled.

(1) Input (voltage, frequency) error
(2) UPS malfunction
(3) Output overcurrent
(4) Battery temperature error
(5) Low battery voltage
(6) Forced bypass switch is operated.
(7) MAIN MCCB is set to “OFF.”
(8) UPS OFF operation was performed
(9) Battery test was canceled by UPS management software.

*3. If “Control NG” appears and the battery test could not be performed, the UPS may be in a state in which the above battery test is not possible. BACK to go back, check the UPS state, and then perform the operation again.



*4 To cancel the battery test
Follow the steps shown in the figure.

4.2 Reading the Battery Test Result

This section describes how to read the result of a battery test implemented automatically or manually.

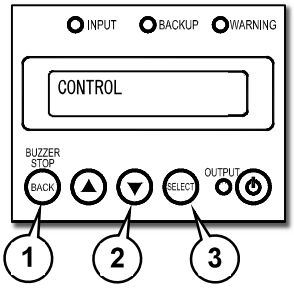
(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display CONTROL.

(3) Press SELECT to confirm.

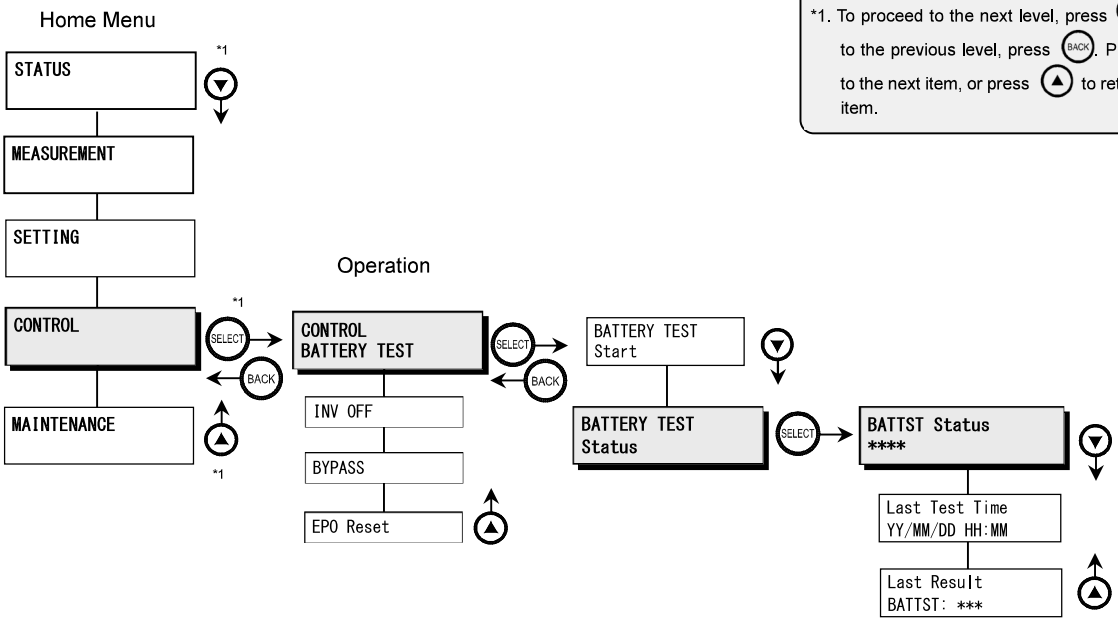
(4) Use ▼ or ▲ to switch the display values, select the item to be operated with SELECT, and press SELECT again on the confirmation screen to execute.

(5) Press BACK to return.



Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.



Battery test display items

Item		Details	
Display	Details	Display	Details
BATTST Status	Test status	Possible	Test can start
		Impossible	Test cannot start
		Testing	Test in progress
Last Test Time	Date of last battery test	YY/MM/DD HH:MM	YY/MM/DD HH:min If "**/**/** **:**" appears, the last battery test result does not exist.
Last Result	Result of the battery test	BATTST: OK	The battery is normal.
		BATTST: NG	A battery error may have occurred.
		BATTST: No Result	There is no previous battery test history.
		BATTST: Stopped	The test was canceled.

4.3 Starting or Shutting Down the UPS

From the LCD panel, you can use the CONTROL menu to start or shut down the UPS.
Before shutting down the UPS, be sure to shut down the load equipment.

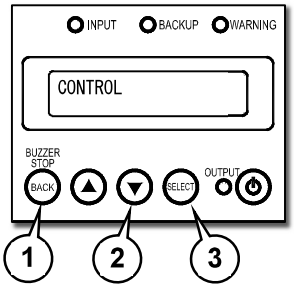
(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display CONTROL .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch the display values, select the item to be operated with SELECT, and press SELECT again on the confirmation screen to execute.

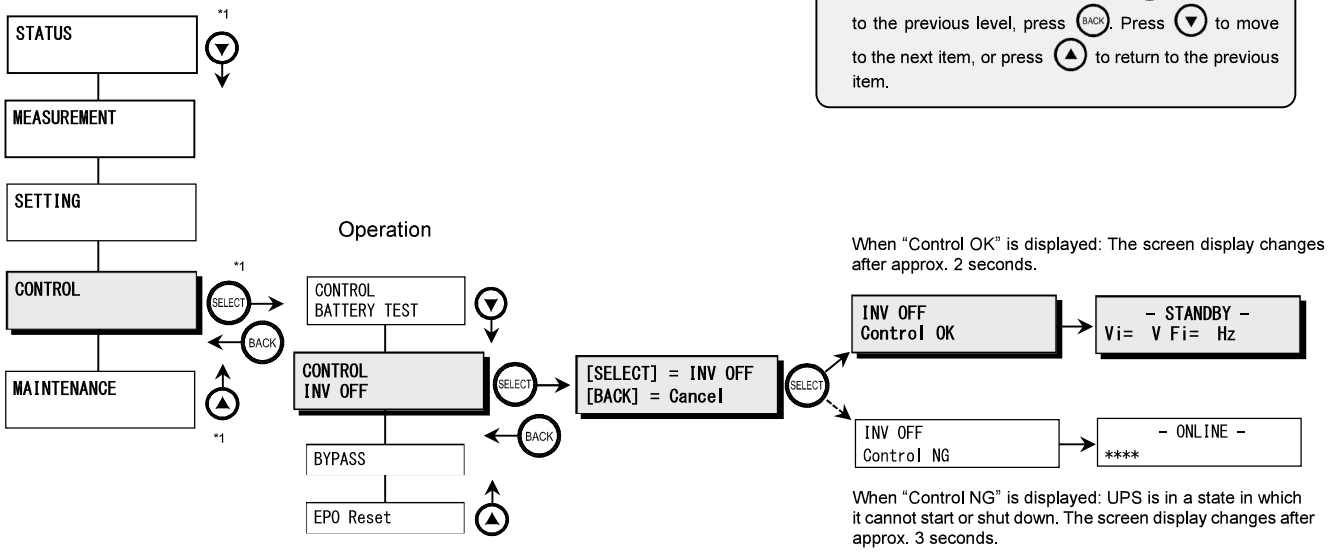
(5) Press BACK to return.



Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.

Home Menu



If the UPS is running, INV OFF appears.
If the UPS is shutdown, INV ON appears.

Notes on starting and shutting down the UPS

The UPS cannot be started or shut down in the following states:

- The UPS cannot be started:

(1) During inverter startup
(2) When the input voltage and input frequency are outside the rated range
(3) When the UPS is malfunctioning
(4) During continuous input of the Remote OFF signal
(5) When the inverter/bypass switch is set to "BYP. "
(6) During normal operation

- The UPS cannot be shut down:

(1) During bypass operation
(2) When the inverter is stopped

Starting or shutting down the UPS with the ON/OFF button

You can also use the ⏻ button on the LCD panel to start or shut down the UPS.
For details, see "4.2 UPS Operation Procedures" in the UPS instruction manual.

4.4 Switching to Bypass Operation

You can switch the UPS to bypass operation using the following procedure when performing maintenance on the UPS or if a UPS malfunction occurs.

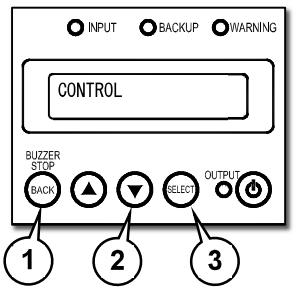
(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display CONTROL .

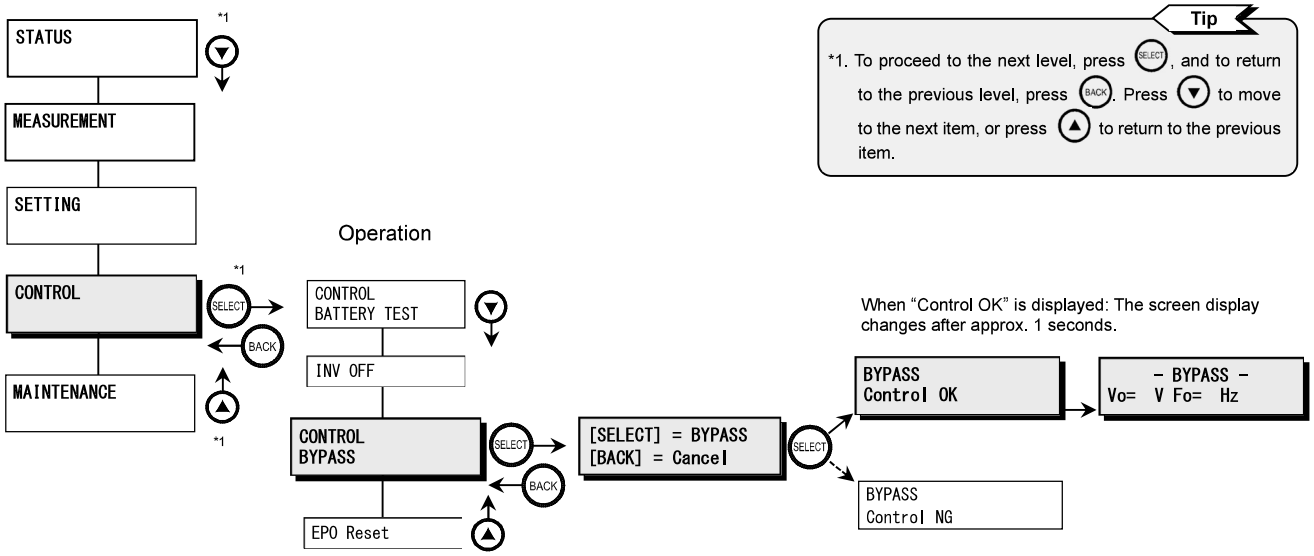
(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch the display values, select the item to be operated with SELECT, and press SELECT again on the confirmation screen to execute.

(5) Press BACK to return.



Home Menu



Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.

Notes on switching to bypass operation

- When the UPS malfunctioned and the output power supply stopped, you cannot switch to bypass operation by the procedure above.
- When the value is set to "Auto2" in "3.3 Setting Output Frequency, " the UPS will switch to bypass operation without interruption during synchronous operation. During asynchronous operation, the UPS switches with interruption.
- When the value is set to "50 Hz" or "60Hz" in "3.3 Setting Output Frequency, " the UPS does not switch to bypass operation.
- The UPS can also be switched to bypass operation by operating the Forced Bypass inside the front panel of the UPS.
- Note that when MAIN MCCB is turned "OFF" during bypass operation, "Main MCCB OFF" is displayed on the LCD screen, [WARNING] (red) is lit, and output supply is stopped.

How to switch from bypass to inverter operation

Switch to inverter operation by performing the below operation A or B:

A. Press ⏻ button on the LCD panel or ⏻ on the UPS unit control panel for ON operation.

B. Select "CONTROL INV ON" in operation item "4.3 Starting or Shutting Down the UPS."
For the operation procedure, see "4.3 Starting or Shutting Down the UPS".

When the value is set to "Auto2" in "3.3 Setting Output Frequency, " the UPS will not switch to inverter operation unless the UPS is operating synchronously.

4.5 Releasing the EPO Latch * State

When `****` `EPO Latch` is displayed on the LCD screen and the UPS is stopped, release it with the following operation.

What is EPO latch state?

The state in which the UPS continues to be stopped after an emergency stop of the UPS using the UPS emergency stop switch connected to the EPO (Emergency Power Off) terminal of the UPS. For details see, "5.6 Connecting the UPS Emergency Stop Switch" from the instruction manual.

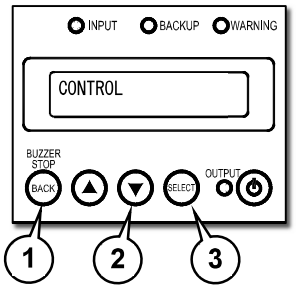
(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display `CONTROL` .

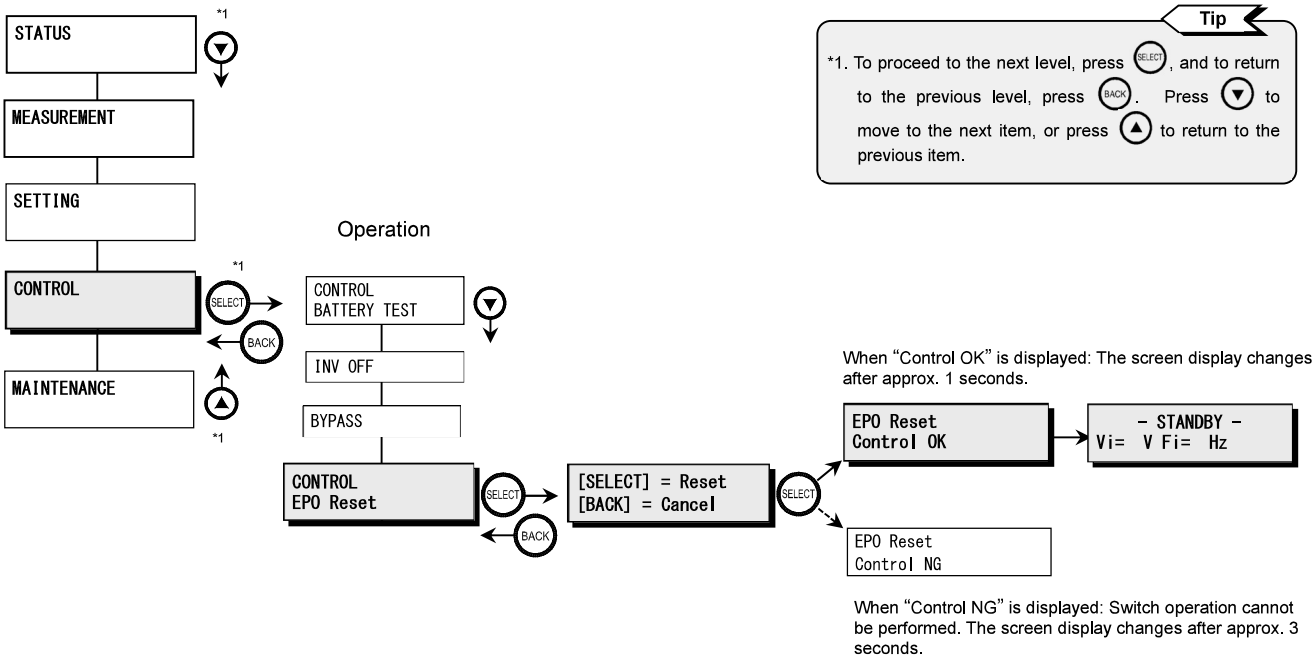
(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch the display values, select the item to be operated with SELECT, and press SELECT again on the confirmation screen to execute.

(5) Press BACK to return.



Home Menu



When "Control OK" is displayed: The screen display changes after approx. 1 seconds.

When "Control NG" is displayed: Switch operation cannot be performed. The screen display changes after approx. 3 seconds.

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.

Note

- During an emergency stop of the UPS, the UPS remains in the emergency stop state even if the EPO switch is released. Release the emergency stop status of the UPS with the above operation.
- The UPS cannot be started while receiving EPO signals.

5. MAINTENANCE MENU（FOR SERVICE TECHNICIANS * ）

The maintenance menu is intended for use by service technicians when performing maintenance on the UPS.
Do not perform any operations other than those described in “5.3 Completing Air Filter.”

*Service technicians

This term is used to indicate service technicians with technical expertise related to electrical equipment construction, or service technicians with knowledge of this UPS from SANYO DENKI or entrusted by SANYO DENKI. Construction and maintenance work must not be performed by any person other than a qualified service technician.

Home Menu: MAINTENANCE (only for service technicians)

Operation group	Displayed item		Item				
	Display	Details	Display	Details	Display	Details	
SYSTEM	Cleaned Filter*2	Air Filter Cleaning Complete	Control OK	Input the air filter cleaning complete, and clear air filter inspection time warning.			
	INTERNAL INFO.	Internal information	BATTERY INFO.	Battery information	INV OPE. Time hour	Accumulated time of UPS operation	
					Battery Life year(s)	Battery life	
					Power Failure time(s)	Number of power outages	
					Backup OPE.Tim Sec.	Accumulated time of battery operation	
					Last Test Time YY/MM/DD HH: MM	Date of last test	
					Last result*1 ***	Result of last test	
			RESET BAT INFO.	Reset battery information			
			BATT Capacity	Set the backup time	Setting Value	5 Min.	5 minutes	User settings
						10 Min.	10 minutes	
						15 Min.	15 minutes	
						25 Min.	25 minutes	
						30 Min.	30 minutes	
						35 Min.	35 minutes	
						45 Min.	45 minutes	
						60 Min.	60 minutes	
						120 Min.	120 minutes	
						180 Min.	180 minutes	
						360 Min.	360 minutes	
			Battery Type	Battery type	Setting Value	5Years(Lead)	5 years (lead battery)	User settings
						10Years(Lead)	10 Years (Lead battery)	
						13Years(Lead)	13 Years (Lead battery)	
						Lithium-ion	Lithium-Ion Battery	
	Unit INFO.	Device information	UPS Model	UPS model name			
			Rated Runtime	Rated backup time			
			Output Capacity	Rated capacity			
			Serial ID	Serial number			
			LCD Program	LCD program version			
			EXIF Program	EXIF program version			
UNIT1 ¦ UNIT8	FAIL HIST	Malfunction history	HIST (1 to 30)	Malfunction history display: up to 30 can be saved			
	OPE. HIST	Operation history	HIST (1 to 60)	Operation history display: up to 60 can be saved			
	INTERNAL INFO.	Internal Information	BATTERY INFO.	Battery information	INV OPE. Time hour	Accumulated time of UPS operation	
					Battery Life year(s)	Battery life	
					Power Failure time(s)	Number of power outages	
					Backup OPE.Tim Sec.	Accumulated time of battery operation	
					Last Test Time YY/MM/DD HH: MM	Date of last test	
					Last Result*1 ***	Result of last test	
			RESET BAT INFO.	Reset battery information			
	Unit INFO.	System information	ROM Ver.	Program version			
			Serial ID	Serial number			
			Main Program	P1 main CPU program version			
			Sub Program	P1 sub CPU program version			
	STATUS	Unit status display	Same as “1. Status display”				
	MEASUREMENT	Unit measurement display	Vbatt = V	Battery voltage	Vinv = V	Inverter voltage	
			Vchg = V	Charger voltage	Iinv = A	Inverter current	
			Ichg = A	Charger current	Vbus = V	BUS voltage	
			Tamb = °C	Ambient temperature			

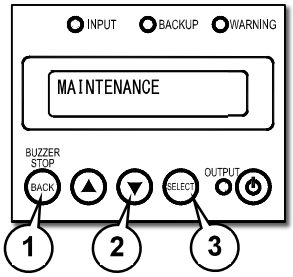
*1. The “Last Result” item in the “MAINTENANCE” menu is the same as the “Last Result” item in the “CONTROL” menu.

*2. This item is displayed when the setting value is set to “Use” in “3.30 Setting Air Filter Usage.”

5.1 Setting the Backup Time (for Service Technicians)

Note
This operation should be performed only by service technicians.

Specify the backup time of the UPS.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display MAINTENANCE .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Operate in the same way at every level, and then go to "Operation group"→ "Operation"→ "Setting Value."

(5) Use ▲ or ▼ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

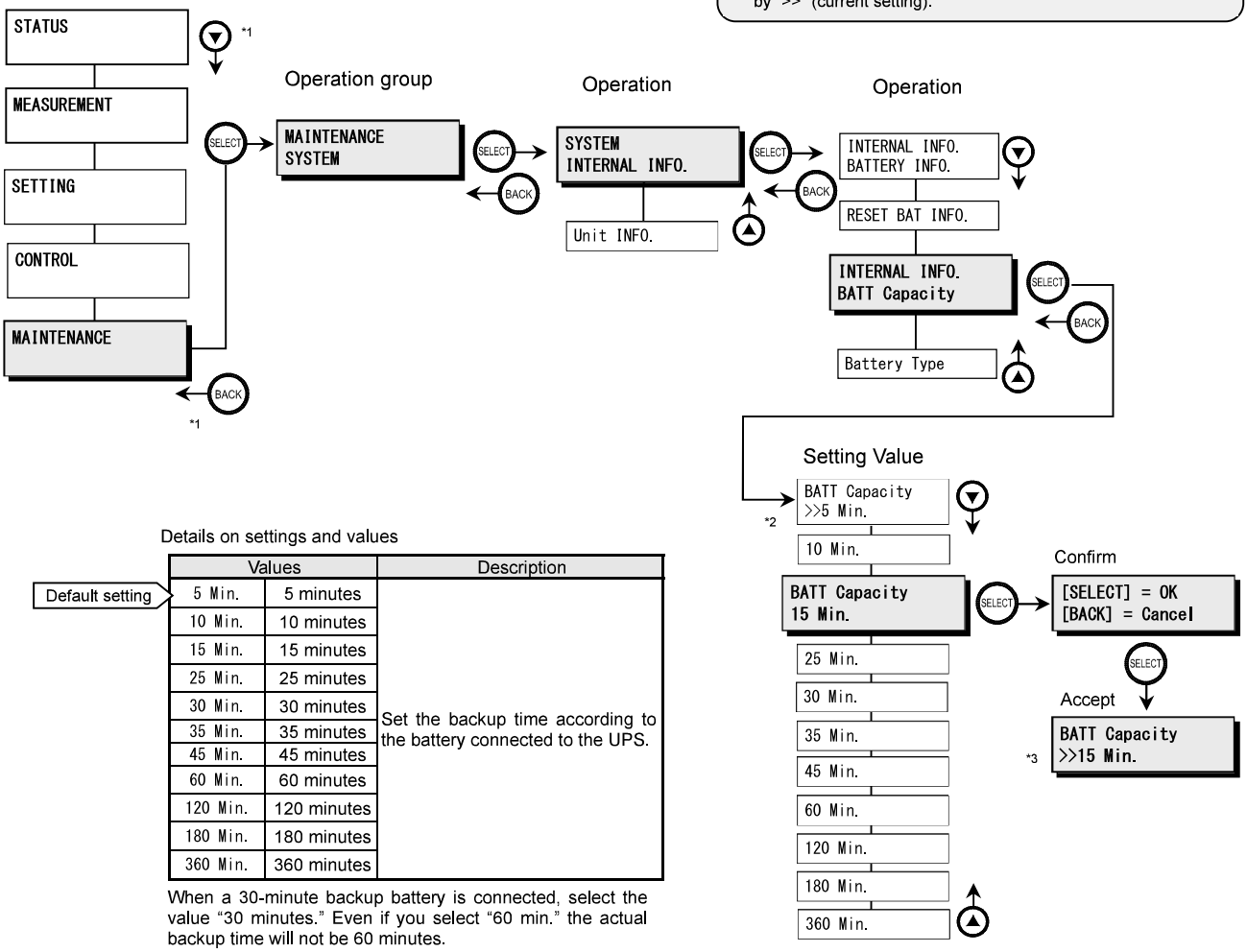
(6) Press BACK to return.

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

Ex.: Setting the backup time to "15 min."

Home Menu



Details on settings and values

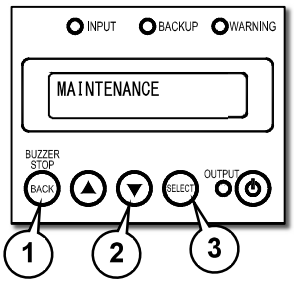
	Values		Description
Default setting	5 Min.	5 minutes	Set the backup time according to the battery connected to the UPS.
	10 Min.	10 minutes	
	15 Min.	15 minutes	
	25 Min.	25 minutes	
	30 Min.	30 minutes	
	35 Min.	35 minutes	
	45 Min.	45 minutes	
	60 Min.	60 minutes	
	120 Min.	120 minutes	
	180 Min.	180 minutes	
	360 Min.	360 minutes	

When a 30-minute backup battery is connected, select the value "30 minutes." Even if you select "60 min." the actual backup time will not be 60 minutes.

5.2 Setting the Battery Type (for Service Technicians)

Note
This operation should be performed only by service technicians.

Set the battery type.



(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display MAINTENANCE .

(3) Press SELECT to confirm.

(4) Use ▼ or ▲ to switch display values, and then press SELECT to select the desired value.
Operate in the same way at every level, and then go to “Operation group”→ “Operation”→ “Setting Value.”

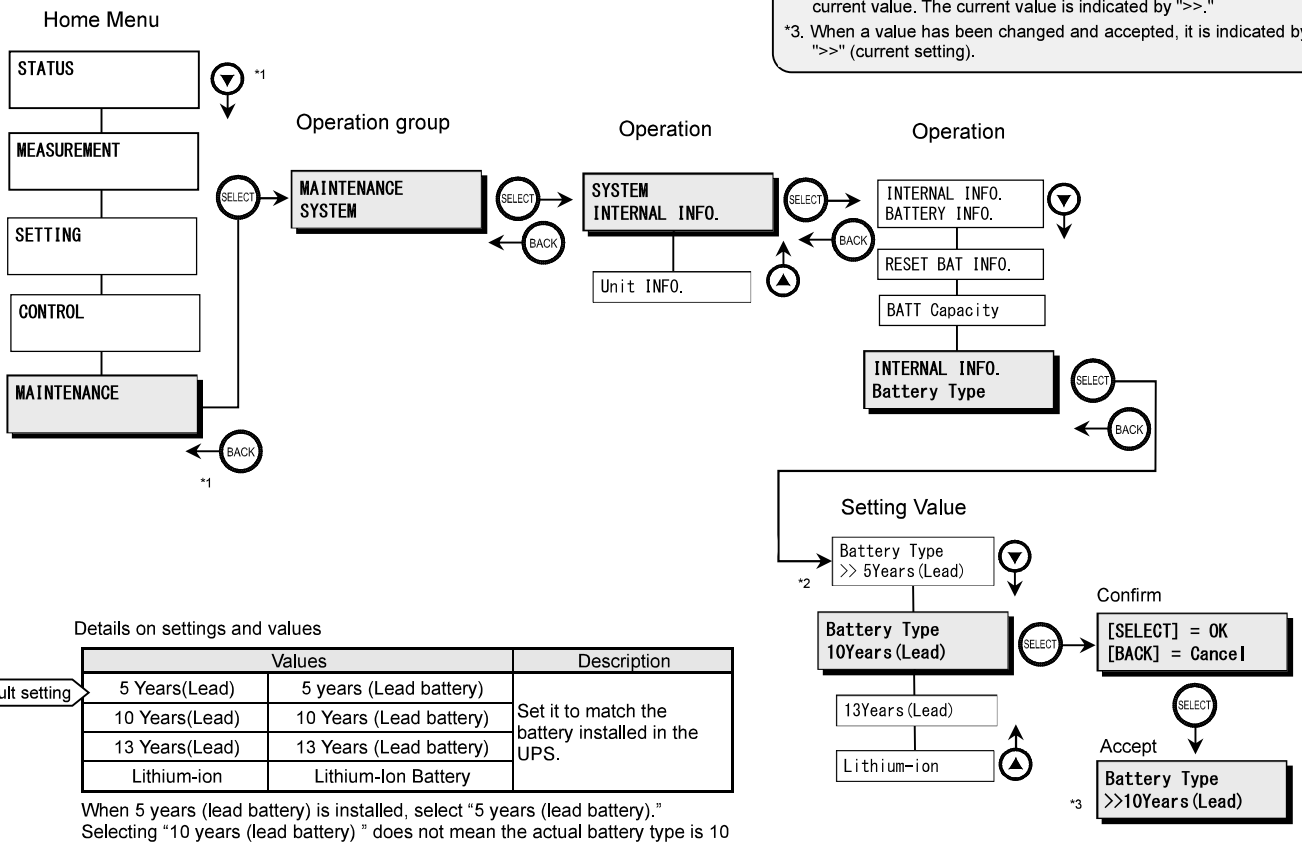
(5) Use ▲ or ▼ to switch values, and then press SELECT to select a desired value.
When the confirmation screen appears, press SELECT again to accept the value.

(6) Press BACK to return.

Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.
*2. When you switch to the values screen, the value shown is the current value. The current value is indicated by ">>."
*3. When a value has been changed and accepted, it is indicated by ">>" (current setting).

Ex.: When setting the battery type to “10 years (lead).”



Details on settings and values

	Values		Description
Default setting	5 Years(Lead)	5 years (Lead battery)	Set it to match the battery installed in the UPS.
	10 Years(Lead)	10 Years (Lead battery)	
	13 Years(Lead)	13 Years (Lead battery)	
	Lithium-ion	Lithium-Ion Battery	

When 5 years (lead battery) is installed, select “5 years (lead battery).”
Selecting “10 years (lead battery) ” does not mean the actual battery type is 10 years.

5.3 Completing Air Filter Cleaning (Only When Air Filter is Used)

If an air filter is used, clean the air filter once every two months, and then perform the Air Filter Cleaning Complete.

If this operation has not been performed for a certain period of time, the following air filter inspection time warning* will be displayed. The warning display is cleared once the cleaning is completed. Be sure to clean the air filter before implementing.

*What is the air filter inspection time warning?

The UPS will enter the following state, indicating that it is time to inspect the air filter.

- Buzzer sound: Beep Beep Beep Beep… (continues)
- LED: [WARNING (Red)]: Lit, [ALARM(Red)] blinks
- LCD screen:

```
- **** -
Check Air Filter
```

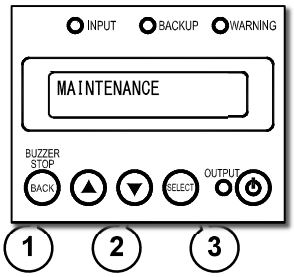
(1) Press BACK to display the LCD screen.

(2) Press ▼ to change the Home Menu, and display `MAINTENANCE` .

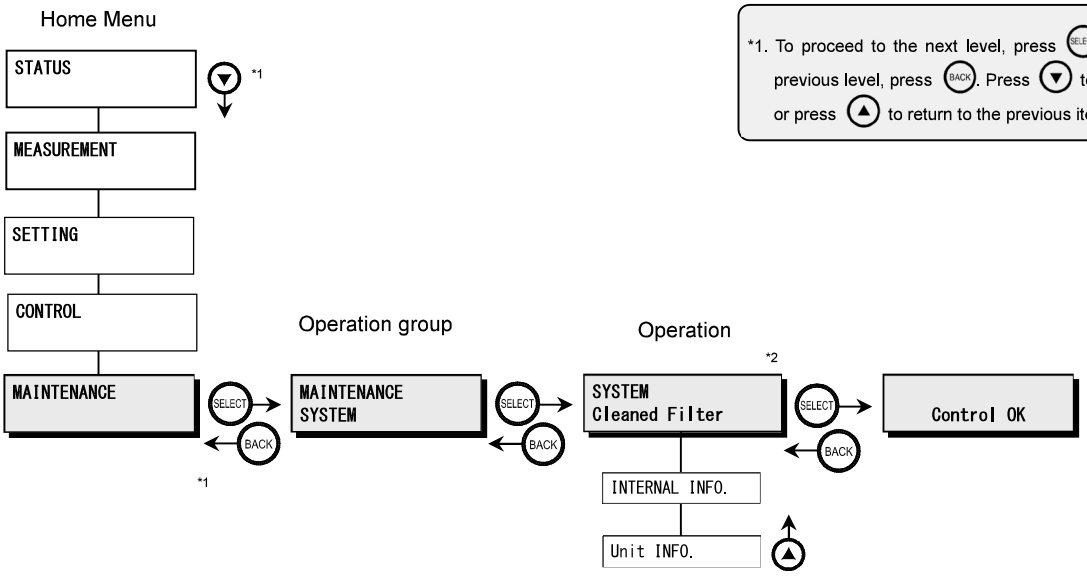
(3) Press SELECT to confirm.

(4) Press SELECT on the displayed screen to confirm the “Operation.”

(5) Press SELECT on the displayed screen.



Ex.: Perform the Air Filter Cleaning Complete.



Tip

*1. To proceed to the next level, press SELECT, and to return to the previous level, press BACK. Press ▼ to move to the next item, or press ▲ to return to the previous item.

*2. The screen

```
SYSTEM
Cleaned Filter
```

will not appear unless the value is set to “Use” in “3.30 Setting Air Filter Usage. ”

6. STATUS DISPLAY EXPLANATION

The details of the UPS status displayed on the LCD screen in the “STATUS” home menu are as described in the table below.
If you cannot resolve a UPS malfunction, contact your sales representative or SANYO DENKI.

UPS operation mode		Status display		
Display	Details	Display	Details	Details and response
STANDBY	Standby	AUX2 Error	Auxiliary power error (minor malfunction)	The UPS has malfunctioned. Contact your sales representative or SANYO DENKI.
ONLINE	During online operation	BUS Error	Converter DC voltage error (serious malfunction)	The UPS has malfunctioned. Contact your sales representative or SANYO DENKI.
BYPASS	During bypass operation	Batt Life Warn	Battery life warning	The remaining battery service life is six months. Make preparations for battery replacement.
BATTERY	During battery operation	Batt Vol End	End of battery discharge	Battery discharge has ended.
BATT TEST	During battery testing	Batt Vol Error	Battery voltage error	The battery packs are not connected. Be sure to fully install the battery packs. If there is no connection error, the batteries have deteriorated. Contact your sales representative or SANYO DENKI.
SYS FAILURE	During system malfunction	Batt Vol Low	Low battery voltage	The battery voltage is low.
		Batt. Error	Battery circuit error (serious malfunction)	The battery circuit has malfunctioned, the UPS output stops. Contact your sales representative or SANYO DENKI.
		Battery Life	Battery life	The battery service life has ended. Replace the batteries.
		Check Air Filter	Air filter inspection period*3	Clean the air filter, and perform the operation described in “5.3 Completing Air Filter Cleaning.”
		CHG Error	Charger error (serious malfunction)	The UPS has malfunctioned. Contact your sales representative or SANYO DENKI.
		CHG Stop (Temp)	Charger shutdown due to the temperature exceeding the operating temperature range (minor malfunction)	The ambient temperature of the UPS exceeds the operating range of the charger. Set the ambient temperature to a suitable temperature.
		CHG Stop (Change)	Charger shutdown due to change in battery type	The charger has been shut down due to a change in battery type. Restart the UPS while referring to “3.36.”
		COM Error	UPS internal communication error. (minor malfunction)	The UPS internal communication error has occurred. Contact your sales representative or SANYO DENKI.
		CONV Error	Converter error (serious malfunction)	The UPS has malfunctioned. Contact your sales representative or SANYO DENKI.
		CPS Error	Control power (12V) error (serious malfunction)	The UPS has malfunctioned. Contact your sales representative or SANYO DENKI.
		CS Circuit Err	Shorted battery activation switch Breakdown (minor malfunction) *2	If the battery activation switch is held down, release it. The UPS has malfunctioned. Contact your sales representative or SANYO DENKI.
		ChgRate Wait	Waiting for battery charging rate startup	The UPS is charging with the UPS startup upon outage recovery set to a battery charging rate. When the set percentage is reached, the UPS will start.
		DSP Error	Controller error (serious malfunction)	The UPS has malfunctioned. Contact your sales representative or SANYO DENKI.
		EPO Latch	Operation stopping due to EPO latch	EPO signal input has been latched, causing the output to be suspended. See “4.5” to release the latch.
		EPO ON	Operation stopping due to EPO	An EPO signal has been input, causing the output to be suspended.
		FIN Temp Error	Fin temperature error (serious malfunction)	The UPS has malfunctioned. Contact your sales representative or SANYO DENKI.
		FT Disabled	Redundant operation not allowed (minor malfunction)	If the operation system is set to “N+1” in “3.34.” The load capacity connected to the UPS is high, causing parallel redundant operation failure. Reduce the number of connected load devices.
		Forced BYP ON	Bypass switch ON	The Forced bypass switch Forced Bypass is set to “Bypass.”
		INV Vol Error	Inverter voltage detection circuit error (serious malfunction)	The UPS has malfunctioned. Contact your sales representative or SANYO DENKI.
		INV Vol Hi	High inverter voltage (serious malfunction)	An error in the inverter output voltage was detected. The UPS has malfunctioned. Contact your sales representative or SANYO DENKI.
		INV Vol Low	Low inverter voltage (serious malfunction)	An error in the inverter output voltage was detected. The UPS has malfunctioned. Contact your sales representative or SANYO DENKI.
		Input Error	Input error	An interruption in the input power supply was detected. If this occurs during normal operation, the power supply is automatically switched to the batteries. If this occurs frequently, check the input power source state and the UPS frequency setting.
		Input Freq Err	Input frequency error	The input power source exceeds the allowable frequency range. If this occurs during normal operation, the power supply is automatically switched to the batteries. If this occurs frequently, check the input power source state and the UPS frequency setting.
		Input Vol Hi	Input over-voltage	The input power source exceeds the allowable voltage range. If this occurs during normal operation, the power supply is automatically switched to the batteries. If this occurs frequently, check the input power source state and the UPS frequency setting.
		Input Vol Low	Low input voltage	

UPS operation mode		Status display		
Display	Details	Display	Details	Details and response
STANDBY	Standby	LF= % CHG= %	Load factor %, charging rate % (Online display)	Load factor %, charging rate %
ONLINE	During online operation	LF= % Tm= m	Load factor %, estimated minutes of discharge time (battery operation display)	Load factor %, Charging duration minutes
BYPASS	During bypass operation	Main MCCB OFF	Main breaker OFF or tripped	If [MAIN MCCB] was manually turned "OFF", turn it "ON".
BATTERY	During battery operation			Many load devices are connected to the UPS, causing the rated UPS capacity to be significantly exceeded, tripping [MAIN MCCB]. Reduce the number of connected load devices.
BATT TEST	During battery testing	Output Not Sync	Asynchronous operation	Power is supplied asynchronously with the input power source. Switching to bypass operation is performed with interruption.
SYS FAILURE	During system malfunction	Output Stop	Bypass output OFF (input voltage error)	Input voltage error was detected during bypass operation, causing the power supply to stop.
		Overload	Overload	Many load devices are connected to the UPS, causing the rated UPS capacity to be exceeded. Reduce the number of connected load devices.
		Overload(Temp)	Overload due to temperature conditions (minor malfunction)	The load limit is exceeded at the ambient temperature where the UPS is used. Decrease the ambient temperature. Or reduce the number of connected load devices.
		PDU Fan Error	PDU fan error (serious malfunction)	An error has occurred in the PDU fan motor. Contact your sales representative or SANYO DENKI.
		PDU MCCB Off	PDU output breaker off (serious malfunction)	If the PDU [OUTPUT MCCB] was manually turned "OFF," turn it "ON".
				Many load devices are connected to the UPS, causing the rated UPS capacity to be significantly exceeded, tripping power distribution unit with [OUTPUT MCCB]. Reduce the number of connected load devices.
				The fan motor inside the PDU has failed resulting in abnormal temperatures inside the PDU. Contact your sales representative or SANYO DENKI.
		Remote	Remote controlled battery Test in progress	A battery test by remote operation from the UPS management software is in progress.
		Remote OFF	Operation stopped due to Remote OFF	A remote OFF signal has been input, causing the inverter startup operation to be suspended.
		Req To Restart	Restart is necessary	The system has not been restarted after a change was made to a setting item that requires UPS restart for the change to be applied. Restart the UPS while referring to "3.36. "
		Setting Error	Setting error	The UPS unit has different settings if multiple UPS units are connected. Match the settings.
		Shutdown= h m	Scheduled stop is delayed*1	OFF delay time is running according to the setting of scheduled operation in the UPS management software. The UPS will stop after the set time elapses.
		Test BatLV Sig.	Simulated transmission signal output for battery LV in progress	A "low battery voltage" transfer signal is sent out for testing. See "3.15."
		Test Err Sig.	Simulated transmission signal output for device error in progress	An "equipment error" transfer signal for testing is transmitted. See "3.14."
		Testing m s	Remaining battery test time*1	The remaining time of the battery test is displayed.
		Total Unit# Err	Total number of units error (serious malfunction)	The number of UPS units set in "3.33" and the number of UPS units actually in operation are different. Check the status of the UPS unit.
		Unit Comm Error	Communication error between units	A communication error between units may have occurred. Check the cable connecting the units.
		Vi= V Fi= Hz	Input voltage, input frequency (Standby display)	Input voltage, input frequency
		Vo= V Fo= Hz	Output voltage, output frequency (Bypass operation display)	Output voltage, output frequency
		Wakeup Wait	Check time during power recovery is currently limited	The UPS is waiting for the check time for checking that the UPS has recovered during power recovery.
		Wakeup= h m	Scheduled startup is delayed*1	ON delay time is running according to the setting of scheduled operation in the UPS management software. The UPS will start after the set time elapses.

*1. The display differs according to time.
*2. Depending on the UPS model number, some models may not have the functions to display these malfunctions.
*3. When the value in "3.30 Setting Air Filter Usage" is set to "Use," "Check Air Filter" will be displayed. Also, the air filter inspection period warning is displayed, if the value set in "313 Setting Whether or Not to Output Transmission Signals During a Minor Malfunction" is "Output," the "Device error" signal is output.

7. NOTES ON MEASUREMENT INFORMATION DISPLAYS

About the Battery Charging rate Indication

(1) Since the battery charging rate will increase according to the operating time of the UPS, see the section “Preparation” in the UPS instruction manual to operate the UPS. The operating time until the battery charging rate becomes 100% differs depending on the configuration of the connected battery.

(2) If the UPS is operated when the batteries are not connected properly, the battery charging rate “ChgRate = %” may not appear correctly.

About the Remaining Battery Backup Time

(1) The value indicated by this remaining battery backup time “RunTm = h m” is only an approximation. It may differ from the actual backup time.

(2) Carry out a battery test at least 20 hours before the preset time and make sure the battery is capable of supplying the backup power in advance if a power cut is planned. See “4.1 Running the Battery Test” for information on the battery test.

About battery charging

(1) For UPS equipped with lithium-ion battery, battery charging stops when the battery charge rate reaches 100%. At this time, the charge voltage is displayed as “Vchg = 0 V”. If the battery charging rate decreases, the charging of the battery resumes.

About the Load Factor Indication

(1) When the load level is less than 5%, the load factor, output current, and output voltage will be displayed as “0.”
When using the UPS management software (SANUPS SOFTWARE) or LAN interface card, the values displayed on the UPS management software (SANUPS SOFTWARE) or LAN interface card are also “0” for load factor, output current, and output power.

●Contact List

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