M0009235E

SANUPS

ON LINE UPS

A11J

LCD Panel

Operating Manual

SANYO DENKI

Introduction

Thank you for choosing the **SANUPS A11J**.

SAVE THESE INSTRUCTIONS

This manual describes the functions and setting operations of the LCD panel menus. To operate correctly, read this manual when setting or changing the LCD panel menus of the UPS. Please be sure to also read the ***A11J Instruction Manual*** for details about UPS installation and operation. Store this manual together with the ***A11J Instruction Manual*** in a safe place for convenient reference.

UPS is an abbreviation for Uninterruptible Power Supply.

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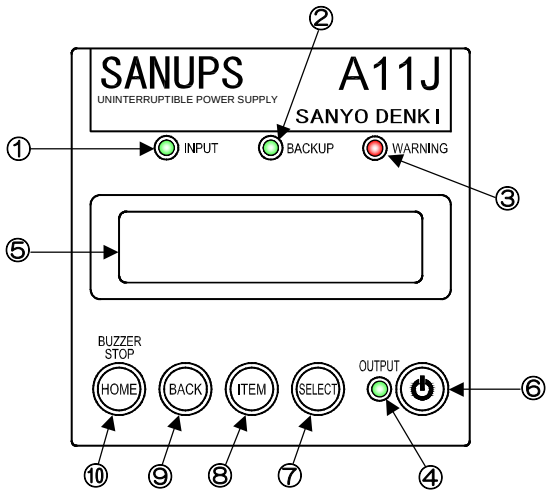
§1. Identifying LCD Panel

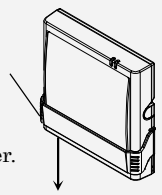
§1.1 Names of LCD Panel Parts



No.	Name	Label	Color	Function	
①	Input LED	INPUT	Green	Lights	When input power is normal
				Blinks	When input power is abnormal
②	Backup LED	BACKUP	Green	Lights	When the battery is operating
③	Warning LED	WARNING	Red	Lights	Caution/warning, malfunction, or end of battery discharge
④	Output LED	OUTPUT	Green	Lights	When supplying power by inverter operation
				Blinks	When supplying power by bypass operation
⑤	LCD screen	—	—	Displays UPS status information, measurement values, maintenance support information, various setting values, operation, etc.	
⑥	ON/OFF button	—	—	Starts and stops inverter operation	
⑦	SELECT key	SELECT	—	Select and accept LCD display item or content	
⑧	ITEM key	ITEM	—	Switches LCD display item or content	
⑨	BACK key	BACK	—	Cancel the selection and returns to previous LCD display (menu) level	
⑩	HOME Key	BUZZER STOP HOME	—	Return the LCD display (menu) level to the home menu When the buzzer is sounding, stops the buzzer	

About LCD panel

- About indication in LED illustration
  LEDs are indicated in the form of "Green INPUT", "Red WARNING", etc.
- About LCD panel cover operation
  When using the ON/OFF button or keys:
  Slide down the cover.
  After the operation, return the cover to its original position.
  This will prevent accidental operation.



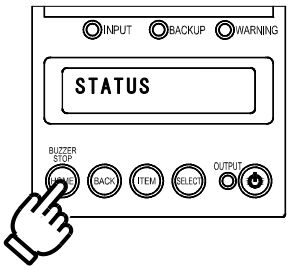
§1.2 Functions of Home Menus

The LCD panel provides five home menus. Each home menu has its own setting groups and settings.
For details on each of the home menus and how to change settings, read the respective pages of the home menus. §6. “Menu List” summaries all menus and settings.

Home menu	Function	Description
STATUS Read page 4.	Status/state display Displays UPS status.	Displayed status items: Operation mode, Input power, output power, battery state, Internal error, load factor etc.
MEASUREMENT Read page 5.	Measurements/measurements display Displays UPS measurements.	Displayed measurement items: Input power (voltage, frequency) Output power (voltage, current, load factor, frequency) Battery (voltage, charging rate, operating duration, battery life, number of outages) Charging power (voltage, current) Temperature (around device, battery temperature)
SETTING Read pages 8 to 29.	Setting/setting Change various UPS settings.	Settings: Input/output: voltage, frequency, display Interface: interface, baud rate Operation: startup condition, buzzer sound, off operation, overload operation, output off operation Battery: low battery voltage warning timing, battery test time, test schedule Function: operating time during outage, ring signal, output voltage adjustment System: time, number of connected units, operation system, input phases
CONTROL Read pages 31 to 36.	Control/operation Operate the UPS.	Operation items: Battery test, test result display Turn on/off UPS Switch to bypass operation
MAINTENANCE Maintenance menu (for service technician)	Maintenance/maintenance Menu for service technician. Display or change maintenance settings. Do not use this home menu if you are not a service technician. For details, refer to the maintenance manual for service technician.	Displayed items: Malfunction history, operation history, battery information, Operating state and measurements of each unit Settings: Battery backup time, battery life

§1.3 How to Operate LCD Panel

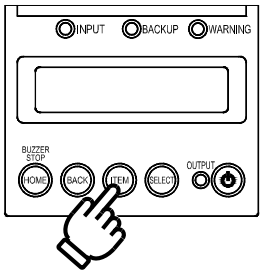
① Slide down the cover, and then press (HOME) to display the LCD screen.



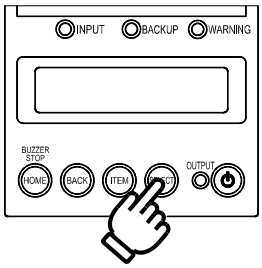
Note

- If you press (HOME) while the UPS's buzzer is beeping, the buzzer stops. If a single press fails to stop the buzzer, keep pressing repeatedly until the buzzer stops. The menu will not appear on the LCD screen if you press (HOME) while the buzzer is beeping.
- If you do not operate the LCD screen for over 10 minutes, the panel light goes off. In about 30 seconds later, the UPS mode and input/output power measurement information appears randomly as screen saver. Pressing any key displays the "STATUS" of home menu.
- The actual text that appears on the LCD screen may be different from the text and position described in the operating manual.

② Press (ITEM) to change screen.



③ Press (SELECT) to accept the selected item.



Repeat steps ② and ③ to display or set an item.

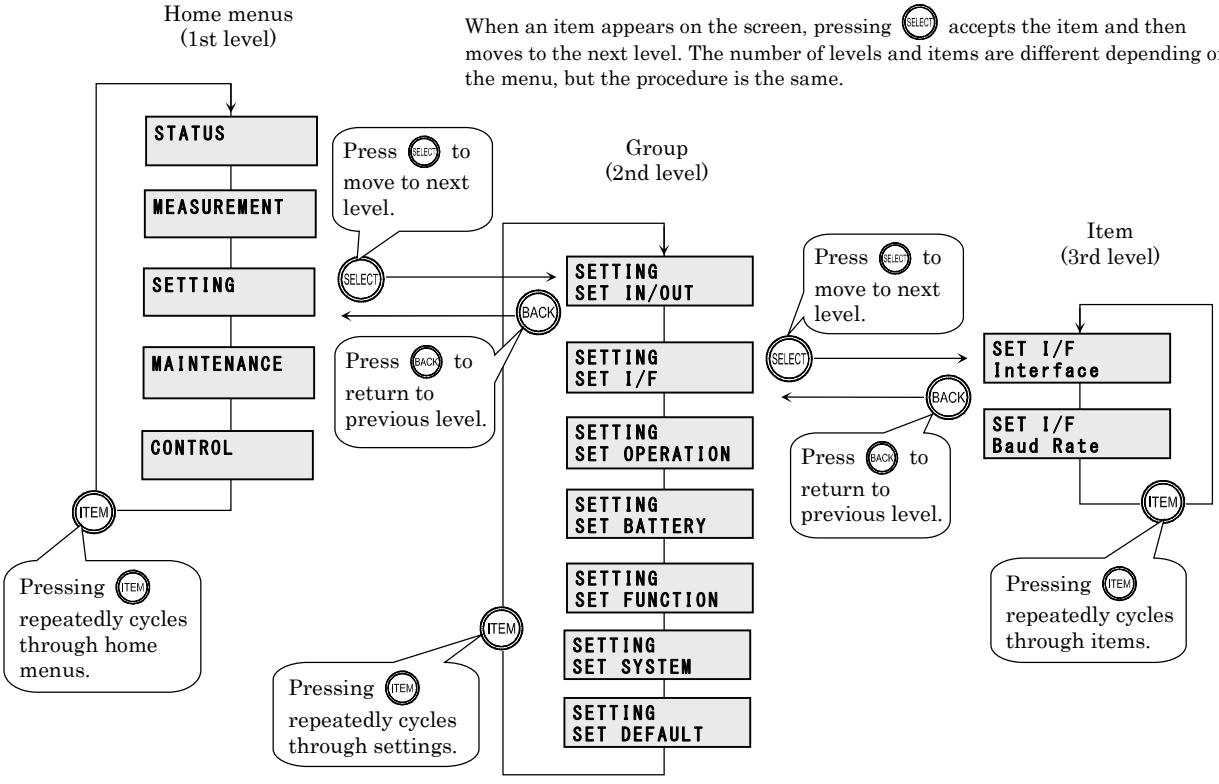
Example: From the "SETTING" screen, press (SELECT). Then, from the "SETTING" menu, select the interface setting.

The menu structure is shown below and contains several levels.

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

Each level has several items. Pressing (ITEM) repeatedly cycles 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.



④ Press (HOME) to return to the home menu, and then return the cover to its original position.

For details on menu contents and screen display, read their respective pages.

§2. Viewing UPS Information

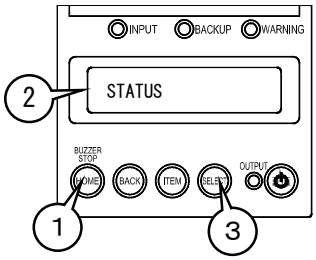
§2.1 Viewing UPS Operation Status

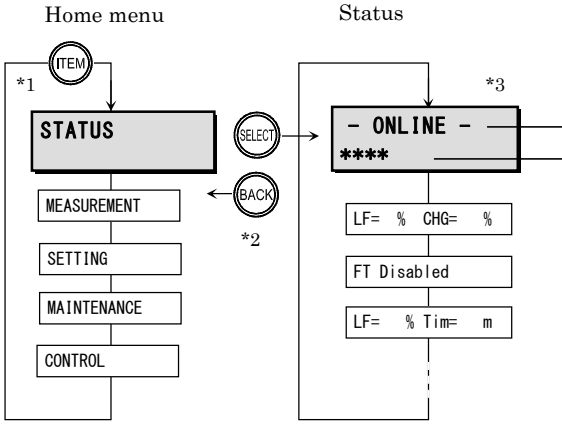
You can view the current operation status of the UPS system.

① Press (HOME) to display the LCD screen.

② Make sure "STATUS" appears on the screen.

③ Press (SELECT) to display the UPS status.





Upper line: UPS mode

Lower line: Status information such as measurements, warning, and malfunction.

If there are multiple statuses, the lower line automatically scrolls to display them.

Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.

*2. To return to the previous level, press (BACK).

*3. For details on the displayed contents, consult your supplier or SANYO DENKI. Also, if device error or malfunction information appears, contact your supplier or SANYO DENKI.

According to the state of the UPS, the LCD screen displays its UPS mode in the upper line and its status in the lower line. For details on the displayed status and how to handle it, see §7. "Status Description".

UPS mode (upper line)		Status (lower line)			
Display	Description	Display	Description	Display	Description
STANDBY	Standby	Output Not Sync	Asynchronous operation	Batt Life End	End of battery life
ONLINE	Online	Input Freq Err	Input frequency error	Batt Life Warn	Battery life end warning
BYPASS	During bypass operation	Input Vol Hi	High input voltage	Batt Vol Error	Battery voltage error
BATTERY	During battery operation.	Input Vol Low	Low input voltage	Batt Vol End	End of battery discharge
BATT TEST	During battery testing	Input Error	Input error	Batt Vol Low	Low battery voltage
SYS FAILURE	During system malfunction	INV Vol Hi	High inverter voltage (serious malfunction)	CHG Error	Charger error (serious malfunction)
		INV Vol Low	Low inverter voltage (serious malfunction)	CONV Error	Converter error (serious malfunction)
		INV Vol Error	Inverter voltage detection circuit error (serious malfunction)	BF Circuit Error	Back feed prevention circuit error (serious malfunction)
		Output Stop (HV)	Bypass output stopped (excessive voltage)	FIN Temp Error	Fin temperature error (serious malfunction)
		Over Load	Overload	DSP Error	Controller error (serious malfunction)
		Vo= V Fo= Hz	Output voltage, output frequency	BUS Error	DC voltage error (serious malfunction)
		Vi= V Fi= Hz	Input voltage, input frequency	AUX2 Error	Auxiliary power error (minor malfunction)
		LF= % CHG= % *	Load factor %, Charging rate %	Total Unit# Err	Total number of units error (serious malfunction)
		LF= % Tim= m *	Load factor %, Charging duration minutes	LCD Error	LCD panel error
		Byp Fuse Error	Bypass fuse error	Minor Error	Minor malfunction
		Bypass SW ON	Bypass switch ON	Fatal Error	Serious malfunction
		Req To Restart	Restart is necessary	FT Disabled	Redundant operation not allowed
		Remote	Battery test by remote operation in progress	Check Unit Error	Device error exists and checking is required
		Remote OFF	Operation stops due to remote OFF	EPO ON	Operation stopping due to EPO

* Refer to §8 "Notes on UPS Measurements Information."

④ Press (HOME) to return to the home menu.

§2.2 Viewing UPS Measurements

You can view various UPS measurements.
The displayed measurements refer to numbers about the UPS system.

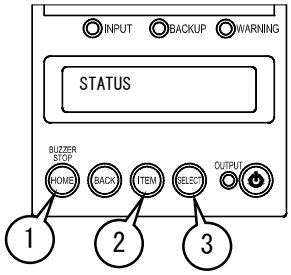
① Press (HOME) to display the LCD screen.

② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Measurement setting" → "Measurements"

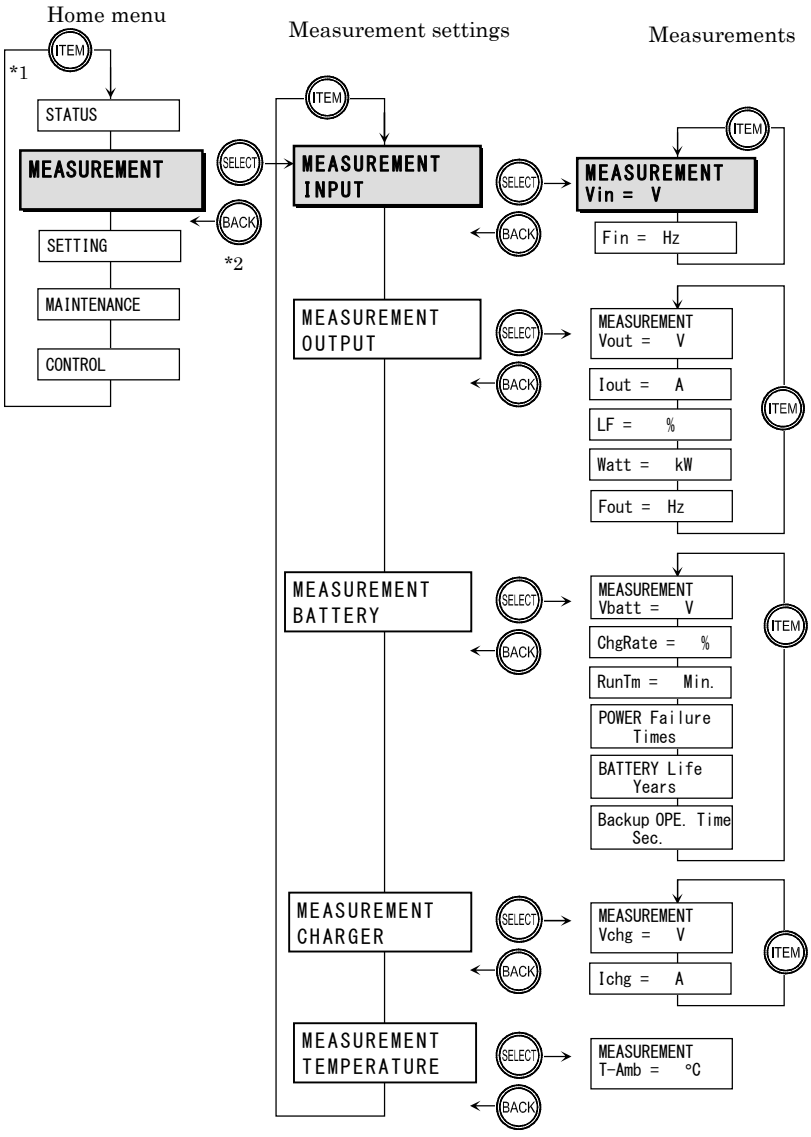
⑤ Press (ITEM) to select a measurement to view.



Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. Therefore, if you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).

Example: Viewing UPS input voltage



Measurement settings	Measurements	
	Measurements displayed	Description
INPUT (input measurements)	Vin = V	Input voltage
	Fin = Hz	Input frequency
OUTPUT (output measurements)	Vout = V	Output voltage
	Iout = A	Output current
	LF = % *	Load factor
	Watt = kW	Output power
	Fout = Hz	Output frequency
BATTERY (battery measurements)	Vbatt = V	Battery voltage
	ChgRate = % *	Battery charging rate
	RunTm = Min. *	Battery retention time
	Power Failure Times	Number of outages
	Battery Life Years	Battery life
	Backup OPE. Time Sec.	Accumulated time on battery operation
CHARGER (charger measurements)	Vchg = V	Charger voltage
	Ichg = A	Charger current
TEMPERATURE (temperature measurements)	T-Amb = °C	Ambient temperature

* Refer to §8 "Notes on UPS Measurements Information."

⑥ Press (HOME) to return to the home menu.

§3. Setting UPS

The SETTING menu contains 7 settings groups. The "＊" in the "Default setting" column indicates factory defaults. Change the settings to suit your operating environment or usage. For details on how to change the settings, read sections §3.1 to §3.22. Once you change the value of a setting, we recommend that you place a check mark in the "Current setting" column.

List of settings

Home menu: SETTING

Settings group	Settings			Values		Default setting	Current setting	Ref item	Ref page
	Display	Description		Display	Description				
SET IN/OUT (Input/Output Setting)	Voltage	Voltage ★	Set UPS voltage. Output voltage and input voltage are the same.	200V	Output voltage 200V	＊		3.1	8
				220V	Output voltage 220V				
				230V	Output voltage 230V				
				240V	Output voltage 240V				
				208V	Output voltage 208V				
	FREQ Range	Synchronous frequency tracking range ★	Set the range (%) at which the output frequency tracks the input frequency.	1%	±1%			3.2	9
				3%	±3%	＊			
				5%	±5%				
	Frequency	Output frequency ★	Set output frequency.	Auto	Automatic selection	＊		3.3	10
				50Hz	Fixed at 50Hz				
				60Hz	Fixed at 60Hz				
	Display	Voltage current display	Set input/output voltage and current for display in measurements display etc.	200V/200V(S) *3	200V/200V(S)	*2		3.4	11
				200V/100V	200V/100V				
				100V/200V	100V/200V				
				100V/100V	100V/100V				
				200V/200V	200V/200V				
SET I/F (Interface Setting)	Interface	Interface	Set interface for using PC interface connector.	Standalone	Standalone			3.5	12
				WS	Workstation	＊			
				Terminal *1	Terminal				
	Baud Rate	Baud rate	Set baud rate for connection with PC, LAN card, or workstation.	9600	9600bps	＊		3.6	13
				4800	4800bps				
				2400	2400bps				
SET OPERATION (Operation Setting)	Start Condition	Specify power recovery operation.	Set UPS operation to perform when utility power recovers, after UPS stops due to end of battery discharge in power outage.	Auto	Auto start	＊		3.7	14
				Any Condition	Always start				
				STOP	Stop				
				BATT>30%	Start when charging rate reaches 30%				
				BATT>50%	Start when charging rate reaches 50%				
				BATT>80%	Start when charging rate reaches 80%				
	BUZZER	Buzzer sound	Set when the buzzer should beep.	ALL	All	＊		3.8	15
				Group #1	Group 1				
				Group #2	Group 2				
				SILENT	Stop				
	OFF Operation	Operation of OFF	Set how to turn off ⏻ on the operation panel of the main unit to stop the UPS.	1 Sec.	Turn off when pressed for 1 second	＊		3.9	16
				3 Sec.	Turn off when pressed for 3 seconds				
				Unique	Turn off by special operation				
	OVERLOAD	Operation for overload	Set what to do after power supply switches to bypass due to overload.	Auto Ret BYP	Automatic recovery from bypass			3.10	17
				Stay on BYP	Bypass power supply during overload	＊			
				Output OFF *1	Stop output				
	Output @OFF	Power supply during OFF ★	Set output's power supply state when UPS stops.	OFF	Stop output	＊		3.11	18
				BYPASS	Bypass power supply				
SET BATTERY (Battery Setting)	BATLV Timing	BATLV timing	Set when to issue low battery voltage warning.	Voltage	When battery voltage threshold detected	＊		3.12	19
				2 Min.	When 2 minutes left in battery capacity				
				3 Min.	When 3 minutes left in battery capacity				
				5 Min.	When 5 minutes left in battery capacity				
				10 Min.	When 10 minutes left in battery capacity				
	BATT TST Length	Battery test time	Set duration to perform battery test.	2 Min	Run for 2 minutes	＊		3.13	20
				5 Min.,	Run for 5 minutes				
				10 Min.	Run for 10 minutes				
				20 Min.	Run for 20 minutes				
	BATT TST Period	Battery test schedule	Set interval (number of days) to run battery test automatically.	180 days	Automatically every 180 days	＊		3.14	21
				90 days	Automatically every 90 days				
				30 days	Automatically every 30 days				
				None	No automatic testing				

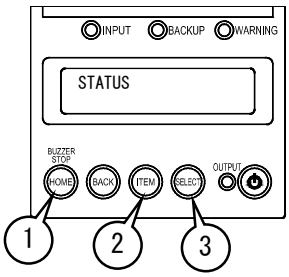
Settings group	Settings			Values		Default setting	Current setting	Ref item	Ref page
	Display	Description		Display	Description				
SET FUNCTION (Function Setting)	RUN TIM @PF	Operating period during outage	Set the time from when UPS starts backup to when it stops output.	BATT END	Until end of battery discharge	*		3.15	22
				10 Sec.	Stop output after 10 seconds				
				30 Sec.	Stop output after 30 seconds				
				1 Min.	Stop output after 1 minute				
				3 Min.	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 to output RING signal during UPS startup.	Output	Output			3.16	23
				None	Do not output	*			
	Out Vol Adj.	Output voltage adjustment	Set value adjustment for rated voltage set in 3.1. Each increment of adjustment is about 1V	-3	Minus 3 increments			3.17	24
				-2	Minus 2 increments				
				-1	Minus 1 increment				
				0	No adjustment	*			
				+1	Plus 1 increment				
				+2	Plus 2 increments				
				+3	Plus 3 increments				
SET SYSTEM (System Setting)	DATE/TIME	Date/Time	Set date and time for UPS.	DATE YY/MM/DD TIME HH:MM:SS	Date YY/MM/DD Time HH/MM/SS			3.18	25
	ChA Total Unit#	Number of units in ChA system parallel connection	Set the number of UPS units connected in the UPS system.	1 *3	1 unit	*2		3.19	26
				2	2 units				
				3	3 units				
				4	4 units				
				5	5 units				
				6	6 units				
				7	7 units				
				8	8 units				
	ChB Total Unit#	Number of units in ChB system parallel connection	Do not change this setting .	1	Do not change this setting.	*		3.19	26
				2					
				3					
				4					
				5					
				6					
				7					
				8					
	Redundancy	UPS operation system	Redundant operation, or single / parallel operation	N+1	Redundant operation			3.20	27
				None	Single / parallel operation	*			
	INPUT Phases	Input phase ★	Set number of input phases of UPS	Single	Single phase, 2 wires	*		3.21	28
				3Ph/4W *1	3 phases, 4 wires				
SET DEFAULT (Initialization)	SET DEFAULT	Reset to factory defaults		—	—	—		3.22	29

Note

- Do not set values marked with "*1".
- The default value of "*2" is different depending on the UPS model. If you reset the value using "SET DEFAULT", the value will not be set to its default but the one indicated by "*3".
- For settings marked with "★", after you change their values, the values will not take effect until you restart the UPS. Therefore, after changing the values, read §3.23 "Restarting UPS" and then start the UPS again. For details on UPS operation, refer to the ***A11J Instruction Manual***. Before stopping the UPS, always be sure to stop the load device first.

§3.1 Setting Voltage

This section describes how to set the UPS voltage.



① Press (HOME) to display the LCD screen.

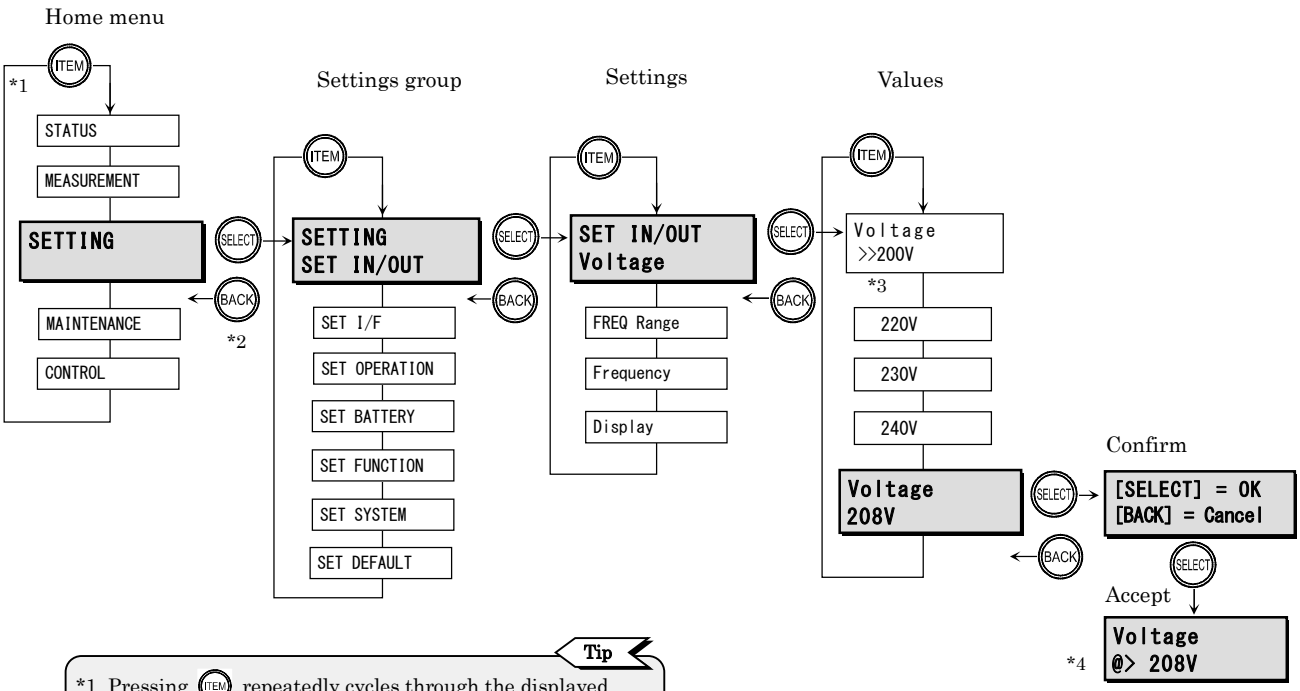
② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group" → "Settings" → "Values"

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

Example: Change output voltage to "208V"



Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by "@>". After you restart the UPS, the indication becomes ">>" (current value).

Details on settings and values

	Values	Description
Default	200V	Specify UPS output voltage. Input voltage and output voltage are the same. Check the input voltage and then 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.

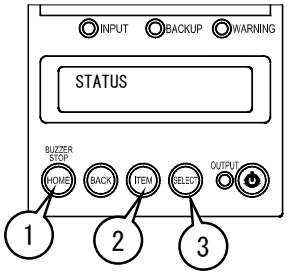
⑥ Press (HOME) to return to the home menu.

Note

- After you change a setting, read §3.23 "Restarting UPS" and then start the UPS again; otherwise, the change will not take effect. To stop the UPS, alawys stop the load device.
- If the UPS status display is "**Req. to restart**":
  Values for settings are changed but you have not restarted the UPS. See §3.23 "Restarting UPS" and then restart the UPS.

§3.2 Setting Synchronous Frequency Tracking Range

This section describes how to specify a tracking range to synchronize the output frequency with the input frequency.



① Press (HOME) to display the LCD screen.

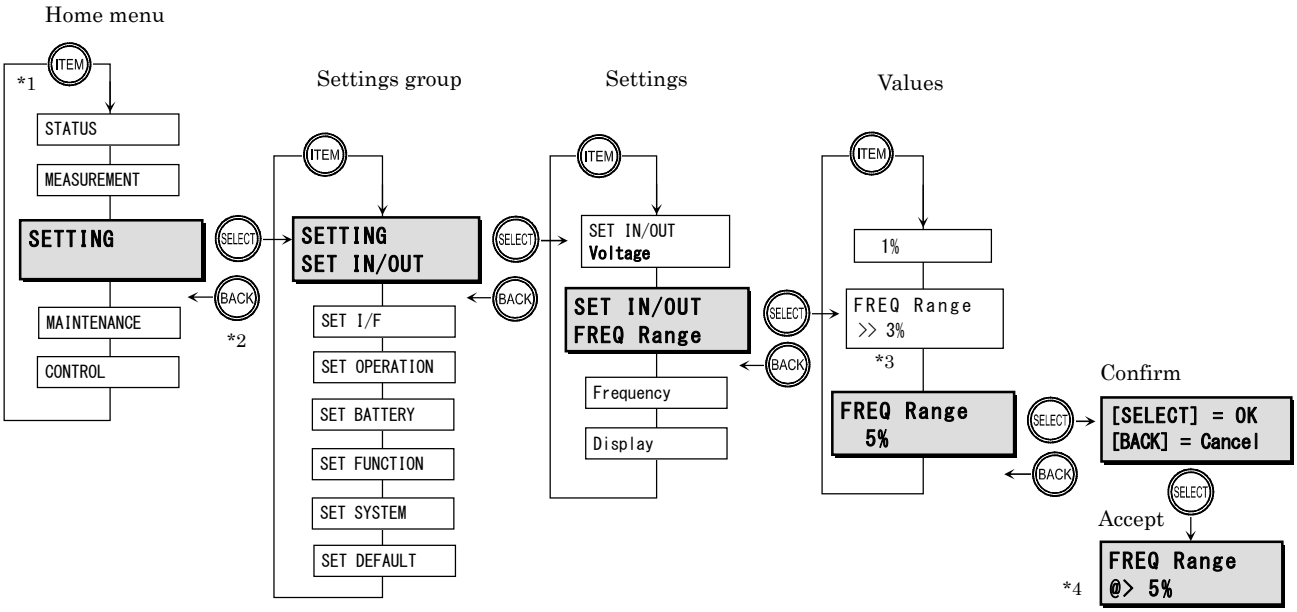
② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group" → "Settings" → "Values"

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

Example: Change the synchronous frequency tracking range to "5%"



Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by "@>". After you restart the UPS, the indication becomes ">>" (current value).

Details on settings and values

Values	Description
1 %	±1% of input frequency
Default 3 %	±3% of input frequency
5 %	±5% of input frequency

- A smaller value provides better precision. However, if the input frequency is unstable, the UPS tends to switch to the asynchronous operation. To connect to output of the engine power generator, select 5%.
  During the asynchronous operation, if the UPS switches to the bypass operation, this will be instant cutoff switching.
- The inverter will not operate unless the input frequency is within the specified tracking range (±1%, ±3%, or ±5%) of the frequency setting in §3.3 ("50Hz", "60Hz", or "Auto").

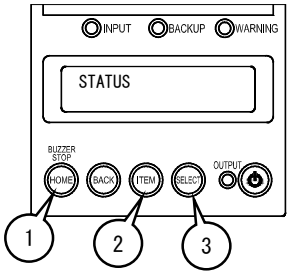
⑥ (HOME) to return to the home menu.

Note

- After you change a setting, read §3.23 "Restarting UPS" and then start the UPS again; otherwise, the change will not take effect. To stop the UPS, alawys stop the load device.
- If the UPS status display is "**Req. to restart**":
  Values for settings are changed but you have not restarted the UPS. See §3.23 "Restarting UPS" and then restart the UPS.

§3.3 Setting Frequency

The frequency has been set to "Auto" when the UPS is shipped from the factory. Do not change the value, except when using UPS in a special power supply environment. If you changed the value accidentally, use the procedure below to change it to "Auto".



① Press (HOME) to display the LCD screen.

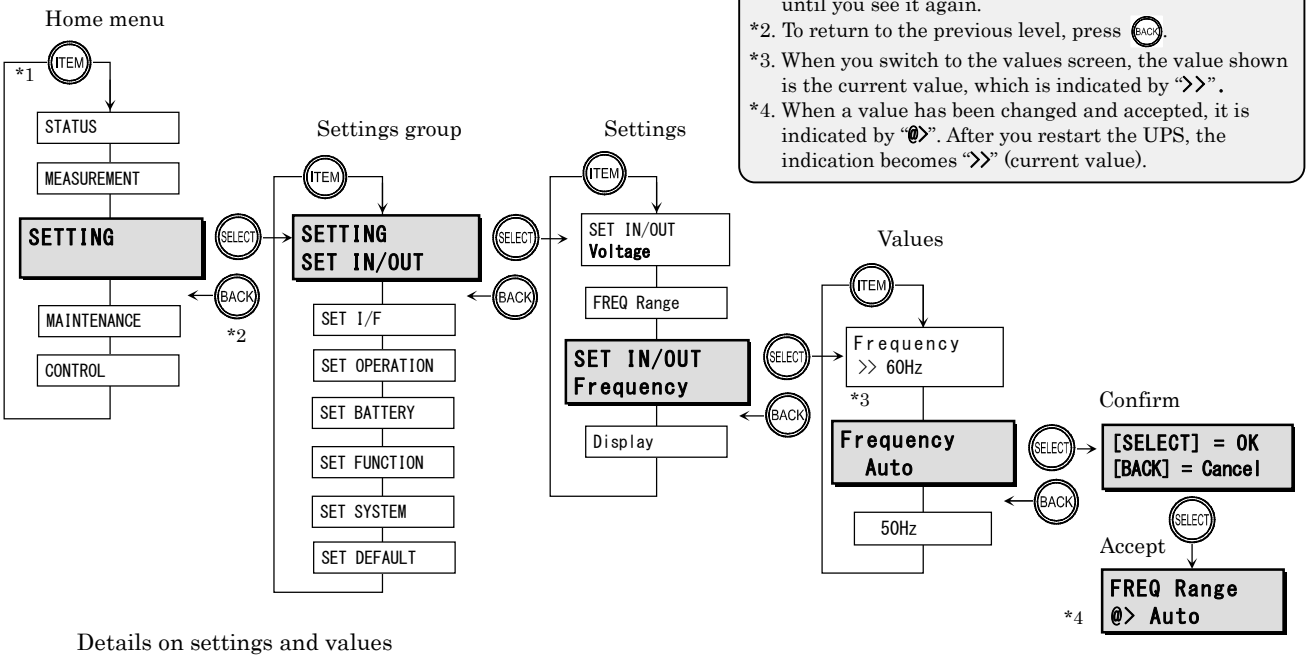
② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group" → "Settings" → "Values"

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

Example: Set frequency to "Auto"



Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by "@>". After you restart the UPS, the indication becomes ">>" (current value).

Details on settings and values

Value	Description		
Default Auto	Set the output frequency to match the input frequency automatically.	If "Auto" is selected, when the frequency exceeds the tracking range set in §3.2 "Setting Synchronous Frequency Tracking Range", the UPS switches to the asynchronous operation. If frequency exceeds ±8% of the specified frequency, the UPS switches to the battery operation.	
50Hz	Set the output frequency to 50Hz.	If "50Hz" or "60Hz" is selected, the output frequency does not synchronize with the input frequency but the specified frequency is output. In this case, the input frequency's acceptable range is 40Hz to 120Hz. If this range is exceeded, the UPS switches to the battery operation. During UPS startup or recovery from battery operation, the operation same as that specified in the "Auto" setting is used.	Contact SANYO DENKI beforehand if you need to change the frequency setting to "50Hz" or "60Hz".
60Hz	Set the output frequency to 60Hz.		

- The synchronous frequency tracking range (±1%, ±3%, or ±5%) is set in §3.2. Regardless of the frequency setting here ("50Hz", "60Hz", or "Auto"), the inverter will not start up unless the input frequency is within the specified tracking range.
- When "50Hz" or "60Hz" is set, the battery test described in §4.1 "Running Battery Test" is not available. Also, even if you set the battery test schedule to perform battery test automatically in §3.14 "Setting Battery Test Schedule", the battery test will not be performed.
- When "50Hz" or "60Hz" is set, if the UPS switches to the bypass operation by manual switching operation or an overload, it will be instant cutoff switching.

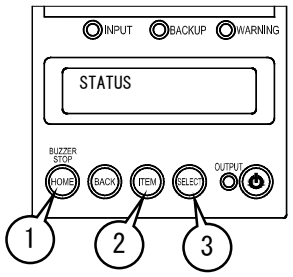
⑥ Press (HOME) to return to the home menu.

Note

- After you change a setting, read §3.23 "Restarting UPS" and then start the UPS again; otherwise, the change will not take effect. To stop the UPS, alawys stop the load device.
- If the UPS status display is "**Req. to restart**":
  Values for settings are changed but you have not restarted the UPS. See §3.23 "Restarting UPS" and then restart the UPS.

§3.4 Setting Voltage for Measurement Display

This section describes how to specify an input/output voltage for measurement display.
If you have connected the UPS to a collector unit, change this setting according to the specifications of the collector unit.



① Press (HOME) to display the LCD screen.

② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

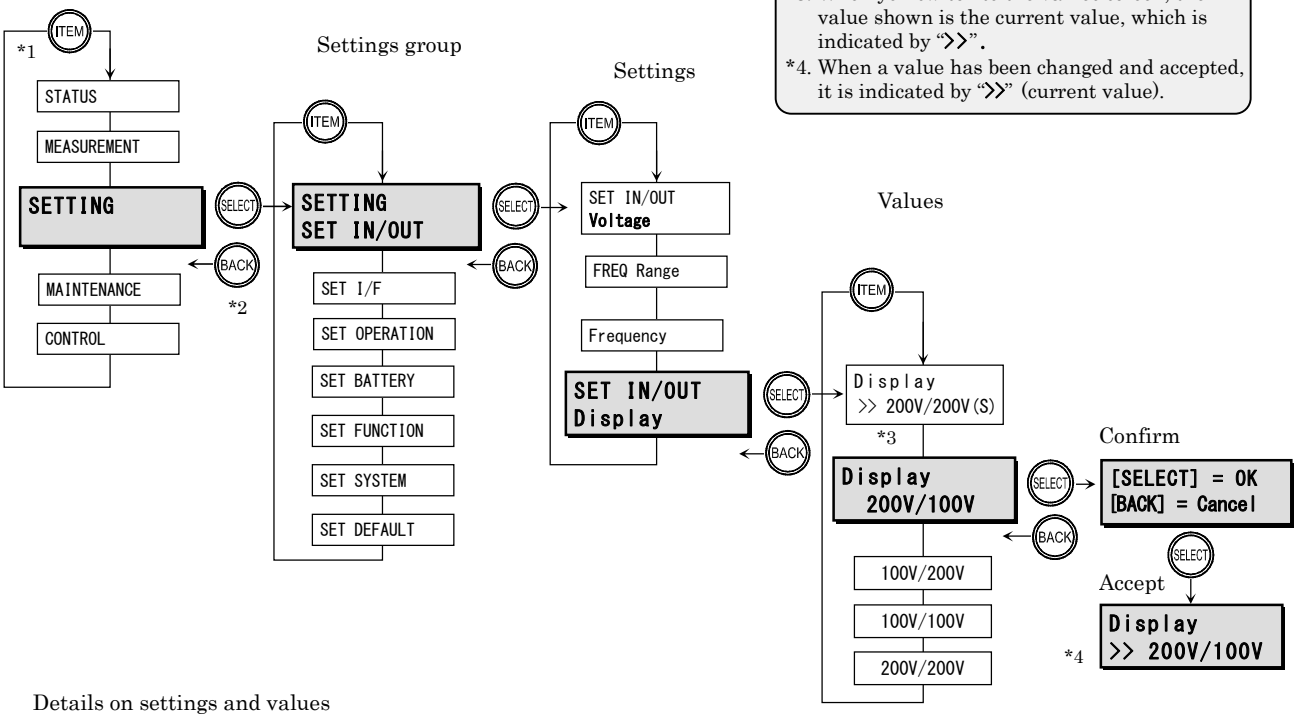
④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group" → "Settings" → "Values"

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

Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by ">>" (current value).

Example: Set display voltage to "200V/100V"



Details on settings and values

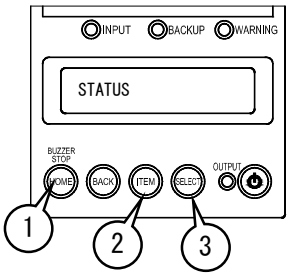
Value	Description	
200V/200V(S)	If rated input voltage and output voltage are both 200V type	This is the default setting for S2 type or single-type. If the voltage is set to 200V, 220V, 230V, 240V, or 208V, this is the value used. If S2 type or single-operation type is used, do not change this setting.
200V/100V	If rated input voltage is 200V and output voltage is 100V	For W1 or W2 type, the default is different depending on the UPS model. If the PDU unit's terminal block is modified, change the value according to the specification. For details on terminal block settings and values, refer to the *A11J Instruction Manual*.
100V/200V	If rated input voltage is 100V and output voltage is 200V	
100V/100V	If rated input voltage and output voltage are both 100V	
200V/200V	If rated input voltage and output voltage are both 200V	

These are the values of voltage and current that appear on the LCD screen when UPS measurements are displayed.
If you change the voltage, the current is also changed.
If the value is different from the UPS rated voltage, the measurements will not be displayed correctly.
If you have performed the operation described in §3.22 "Resetting Values of Settings", the value becomes "200V/200V(S)".

⑥ Press (HOME) to return to the home menu.

§3.5 Setting PC Interface

This section describes how to specify an interface method when a PC interface connector is used. For details on PC interface connector, refer to §5.4 "External Interface" in the ***A11J Instruction Manual***.



① Press (HOME) to display the LCD screen.

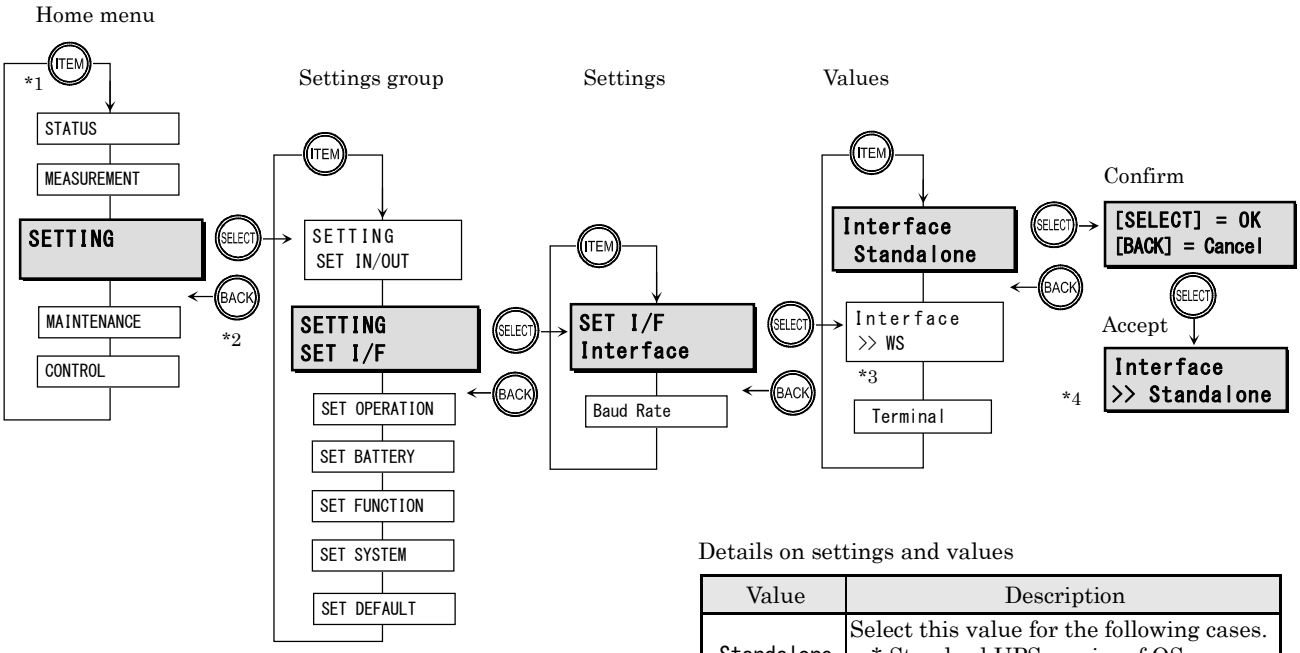
② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group" → "Settings" → "Values"

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

Example: Set interface to "Standalone"



Details on settings and values

Value	Description
Standalone (Standalone)	Select this value for the following cases. * Standard UPS service of OS * UPS remote ON/OFF using remote switch
WS (Workstation)	Select this value for the following cases. * Power management software * LAN interface card * Computer one-touch shutdown using remote switch
Terminal (Terminal)	Do not use this value.

Default

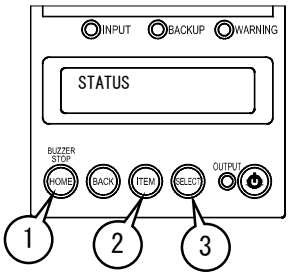
Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by ">>" (current value).

⑥ Press (HOME) to return to the home menu.

§3.6 Setting Baud Rate

This section describes how to specify a baud rate for connection to a workstation, PC, or LAN interface card.



① Press (HOME) to display the LCD screen.

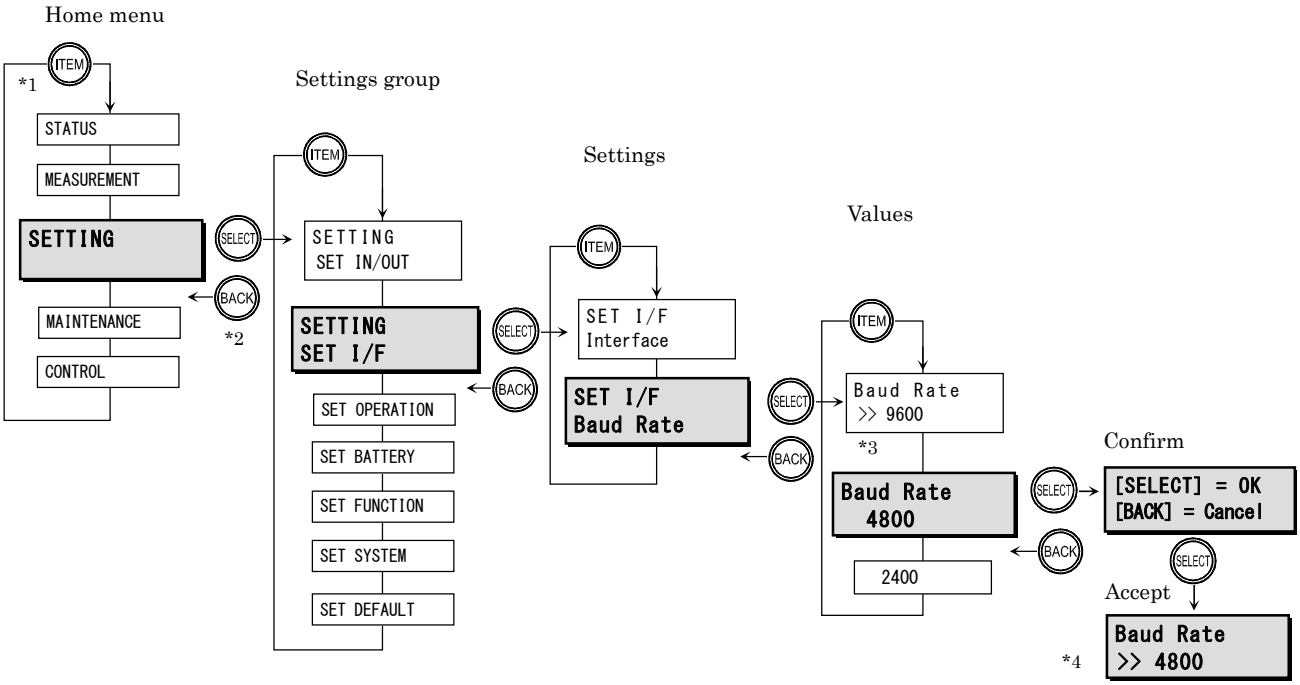
② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group" → "Settings" → "Values"

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

Example: Set baud rate to "4800"



Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by ">>" (current value).

Details on settings and values

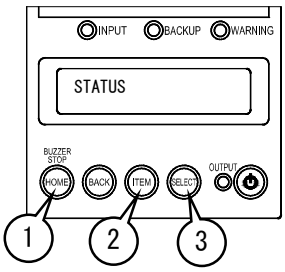
	Value	Description
Default	9600	Baud rate 9600 bps
	4800	Baud rate 4800 bps
	2400	Baud rate 2400 bps

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

⑥ Press (HOME) to return to the home menu.

§3.7 Setting UPS Operation Upon Power Recovery

This section describes how to specify an operation to use in utility power recovery after the UPS is stopped by end of battery discharge during power outage.



① Press HOME to display the LCD screen.

② Press ITEM to change the home menu to the one shown below.

③ Press SELECT to accept it.

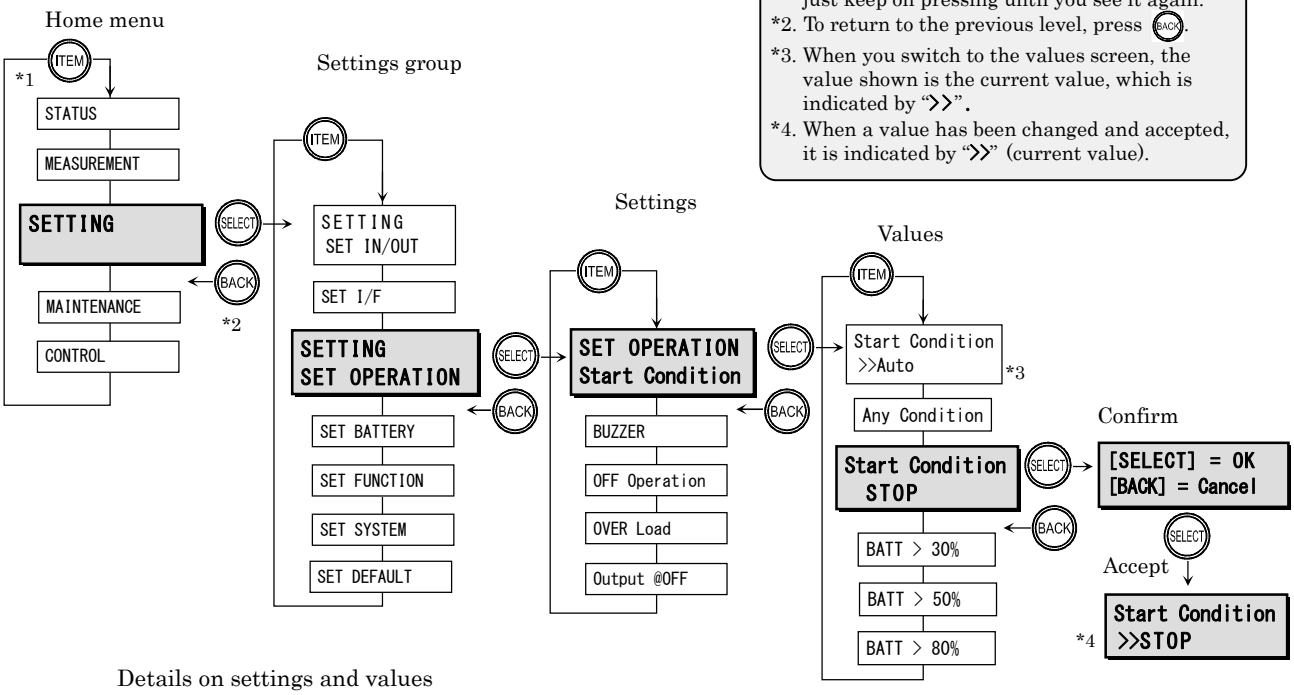
④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group" → "Settings" → "Values"

⑤ Use ITEM to switch values, and then press SELECT to select a desired value. When the confirmation screen appears, press SELECT again to accept the value.

Example: Specify "STOP" as the operation for power recovery.

Tip

*1. Pressing ITEM repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press BACK.
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by ">>" (current value).



Details on settings and values

	Value		Description
Default	Auto	Automatic	The UPS restarts automatically when the utility power recovers.
	Any Condition	Always start	The UPS always starts automatically when input power is received, regardless of whether it is power recovery after outage or input power is received at initial startup.
	STOP	Stop	The UPS stays off even when the utility power recovers. However, if "BYPASS" is selected in §3.11, bypass power is used.
	BATT > 30%	More than 30%	The UPS restarts automatically when battery charge reaches 30% if the utility power recovers.
	BATT > 50%	More than 50%	The UPS restarts automatically when battery charge reaches 50% if the utility power recovers.
	BATT > 80%	More than 80%	The UPS restarts automatically when battery charge reaches 80% if the utility power recovers.

When power management software is used, the UPS starts at the charging rate specified by the power management software. Even if you set this item by the procedures above, the value cannot be enabled. In such a case, when you display the value by the procedures above, the value of power management software appears as follows.

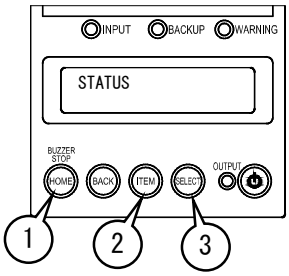
Example: Start Condition / BATT > 5%(Val) "(Val)" at the end of the value indicates the value set by power management software.

When you press ITEM, this value disappears. Press BACK to go back once, and then press SELECT, it is displayed again.

⑥ Press HOME to return to the home menu.

§3.8 Setting Buzzer Condition

This section describes how to specify a condition to sound the buzzer.



① Press (HOME) to display the LCD screen.

② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

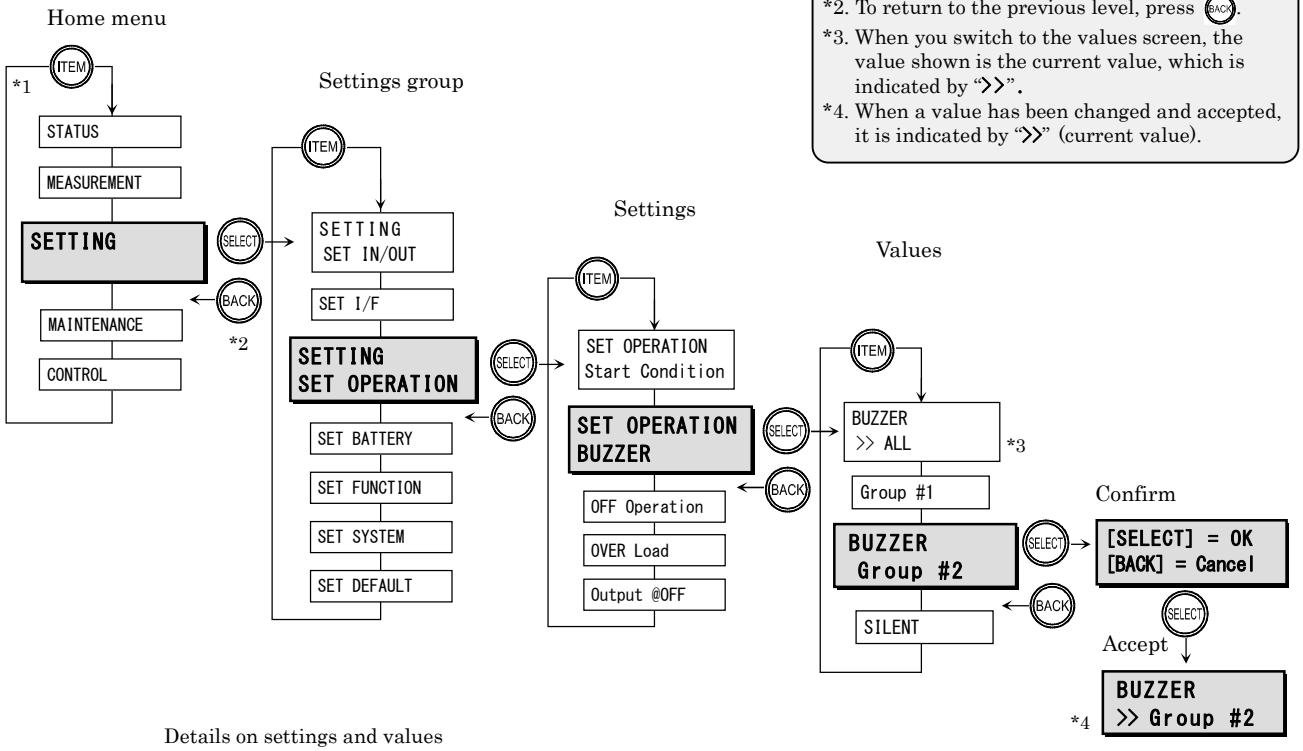
④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group" → "Settings" → "Values"

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

Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by ">>" (current value).

Example: Specify "Group #2" as a condition to sound the buzzer



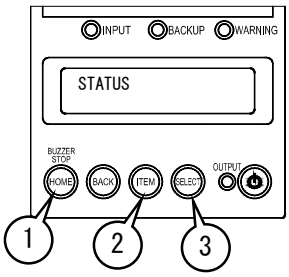
Details on settings and values

	Value		Description
Default	ALL	All states	Buzzer beeps in following cases: Battery operation, battery testing, battery voltage error, low battery voltage, overload (bypass operation), battery life end warning, battery life end, serious malfunction, minor malfunction, end of discharge, request for buzzer from power management software. (Button operation sounds are also enabled.)
	Group #1	Group 1	Buzzer beeps in following cases: Low battery voltage, battery life end warning, battery life end, serious malfunction, minor malfunction, end of discharge, request for buzzer from power management software. (Button operation sounds are also enabled.)
	Group #2	Group 2	Buzzer beeps in following cases: Serious malfunction, request for buzzer from power management software. (Button operation sounds are also enabled.)
	SILENT	Stop	Only the button operation sounds are enabled.

⑥ Press (HOME) to return to the home menu.

§3.9 Setting UPS Shutdown Operation

This section describes how to shut down the UPS using ⏻ on its control panel. This setting prevents unintended contact or accidental operation of the button to cause the UPS to stop.
On the control panel, only the "OFF operation" of ⏻ is enabled, but the "ON operation" cannot be changed.



① Press HOME to display the LCD screen.

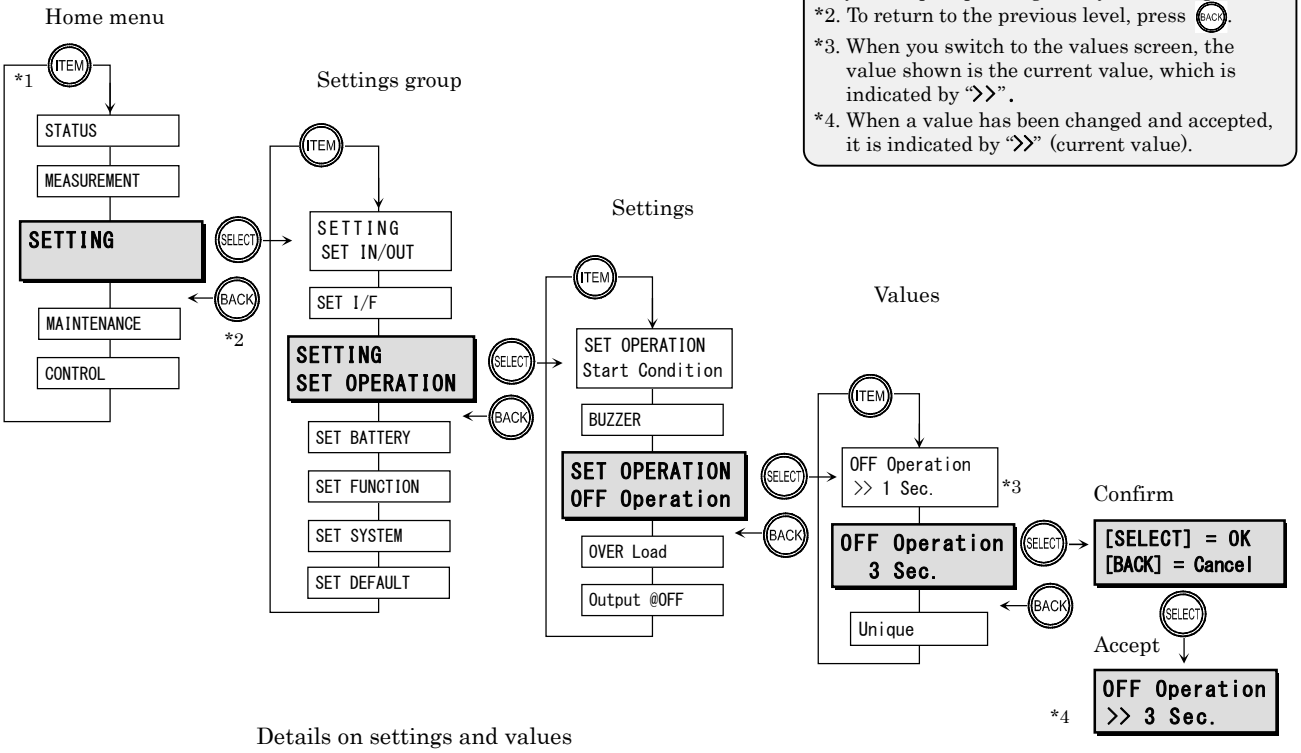
② Press ITEM to change the home menu to the one shown below.

③ Press SELECT to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group" → "Settings" → "Values"

⑤ Use ITEM to switch values, and then press SELECT to select a desired value. When the confirmation screen appears, press SELECT again to accept the value.

Example: Shut down UPS in "3 Sec" (3 seconds)



Tip

*1. Pressing ITEM repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press BACK.
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by ">>" (current value).

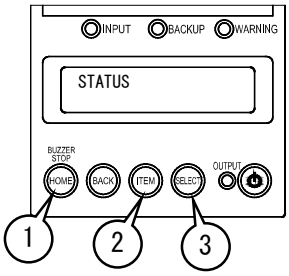
Details on settings and values

	Value		Description
Default	1 Sec.	1 second	Pressing ⏻ for 1 second shuts down the UPS.
	3 Sec.	3 seconds	Pressing ⏻ for 3 seconds shuts down the UPS.
	Unique	Special operation	Press and hold ⏻ for 3 seconds and then release the button when the buzzer starts beeping. While the buzzer is still beeping, press ⏻ for 3 seconds to shut down the UPS.

⑥ Press HOME to return to the home menu.

§3.10 Setting Overload Recovery Operation

This section describes how to specify a condition for returning to UPS power supply after switching to bypass power because of overload.



① Press (HOME) to display the LCD screen.

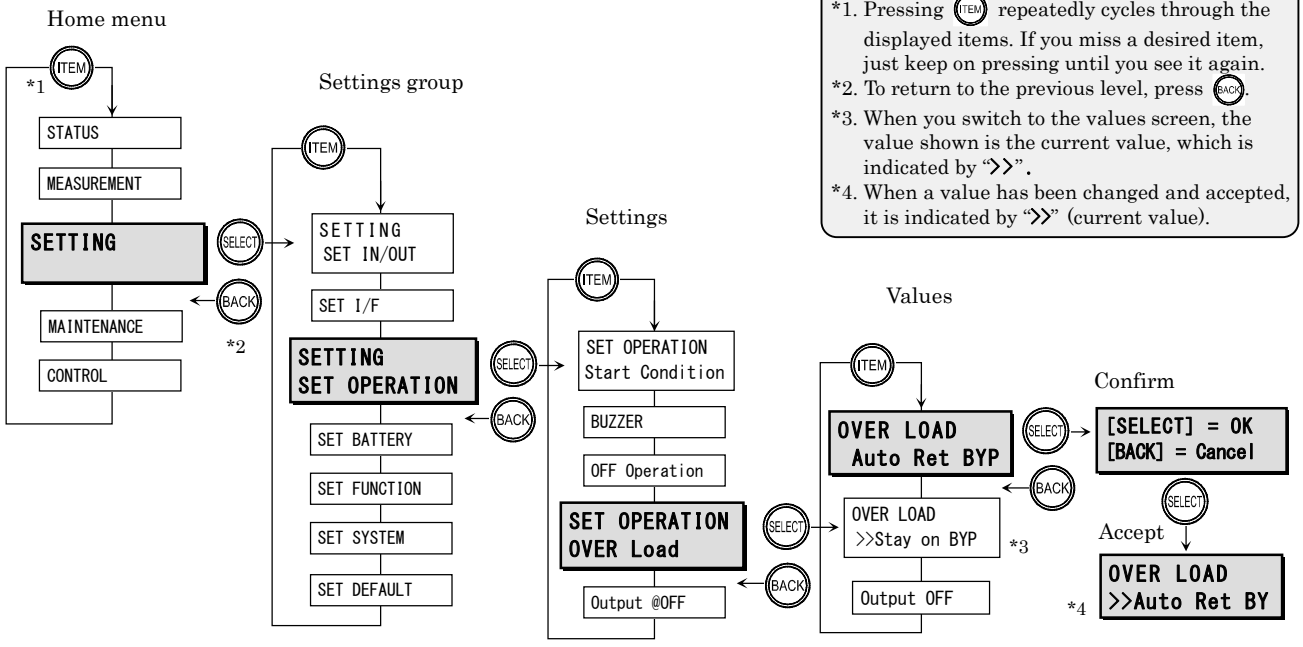
② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group" → "Settings" → "Values"

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

Example: Set overload operation to "Auto Ret BYP" (Automatic return)



Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by ">>" (current value).

Details on settings and values

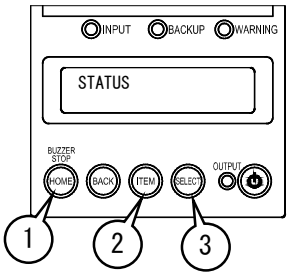
Value		Description
Auto Ret BYP	Automatic return	After overload causes power to switch to bypass power supply, power switches back to UPS power supply automatically after a certain period of time. If overload continues, power switches to bypass power supply again, and this operation repeats.
Default Stay on BYP	Bypass power supply	If overload continues, bypass power supply continues. If overload goes away, power switches back to UPS power supply. When power switches to bypass power supply, the power continues to switch between UPS power supply and bypass power supply depending on the utility power voltage value.
Output OFF	Stop output	Do not use this value.

- Regardless of the setting above ("Auto Ret BYP" or "Stay on BYP"), the UPS cannot switch to UPS power supply from bypass power supply during asynchronous operation (when the input frequency is not within the specified tracking range (±1%, ±3%, or ±5%) set in §3.2).
- Under the condition below, the UPS switches to the bypass operation with instant interruption.
  - When "50Hz" or "60Hz" is set in §3.3 "Setting frequency."
  - When "Auto" is set in §3.3 "Setting frequency" and during asynchronous operation.

⑥ Press (HOME) to return to the home menu.

§3.11 Setting UPS Operation at ⏻ OFF

This section describes how to specify UPS power supply when the ⏻ button's OFF operation performed in "UPS Shutdown" of the ***A11J Instruction Manual*** causes the UPS to stop (MAIN MCCB is ON).



① Press HOME to display the LCD screen.

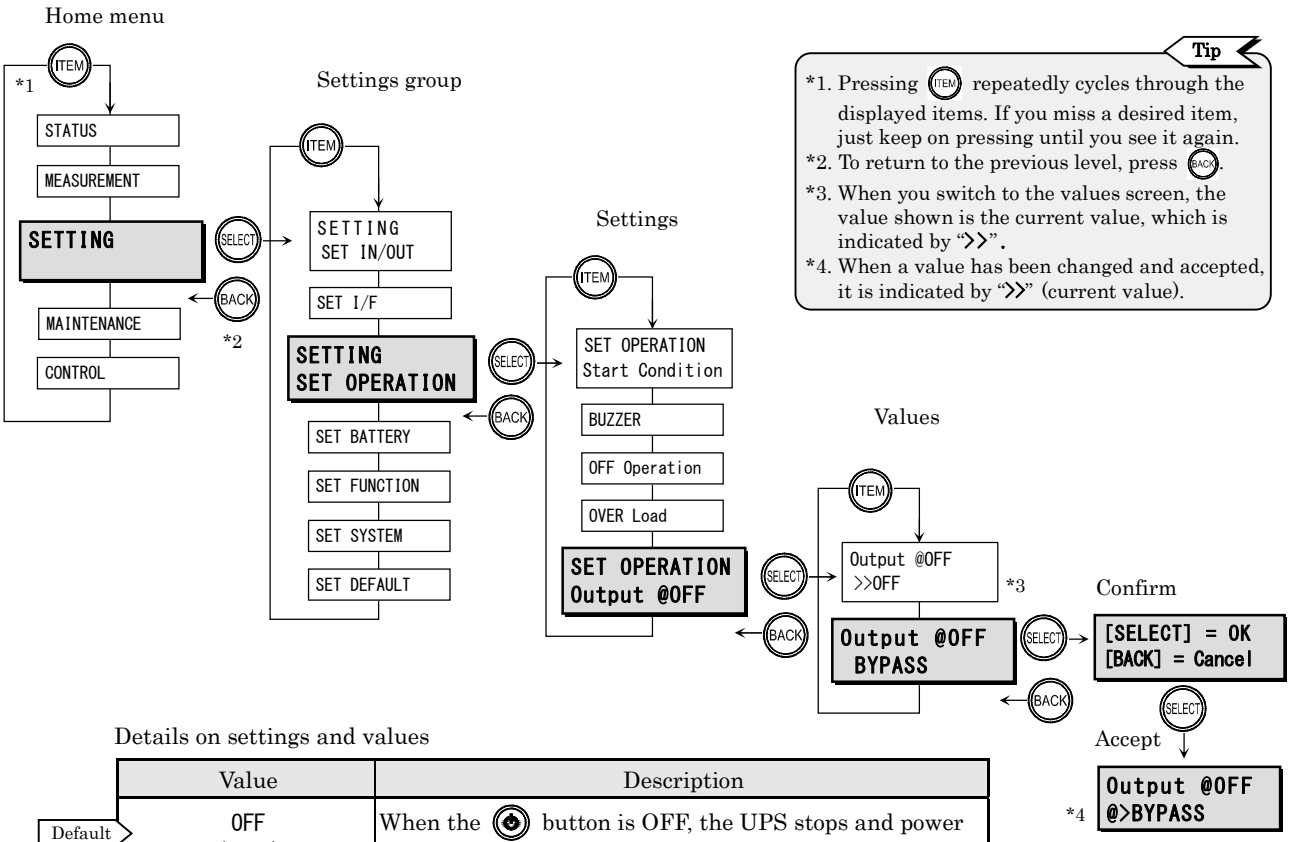
② Press ITEM to change the home menu to the one shown below.

③ Press SELECT to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group" → "Settings" → "Values"

⑤ Use ITEM to switch values, and then press SELECT to select a desired value. When the confirmation screen appears, press SELECT again to accept the value.

Example: Set power supply when button is OFF to "BYPASS" (bypass power supply)



Tip

*1. Pressing ITEM repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press BACK.
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by ">>" (current value).

Details on settings and values

	Value	Description
Default	OFF (Stop)	When the ⏻ button is OFF, the UPS stops and power is not supplied.
	BYPASS (Bypass power supply)	When the ⏻ button is OFF, power switches to bypass power supply continues.

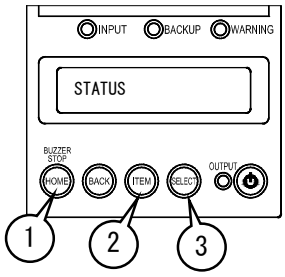
⑥ Press HOME to return to the home menu.

Note

- After you change a setting, read §3.23 "Restarting UPS" and then start the UPS again; otherwise, the change will not take effect.
  However, if the current setting is "BYPASS", setting the UPS's MAIN MCCB to OFF does not stop the UPS. Therefore, cut off the breaker distribution board on the input side of the UPS, stop the UPS, and then start it again.
  To stop the UPS, alawys stop the load devices first.
- If the UPS status display is "Req. to restart":
  Values for settings are changed but they require restart of the UPS before their changes take effect. Therefore, see §3.23 "Restarting UPS" and then restart the UPS.

§3.12 Setting Low Battery Voltage Warning Timing

This section describes how to set the time to issue low battery voltage warning.



① Press (HOME) to display the LCD screen.

② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

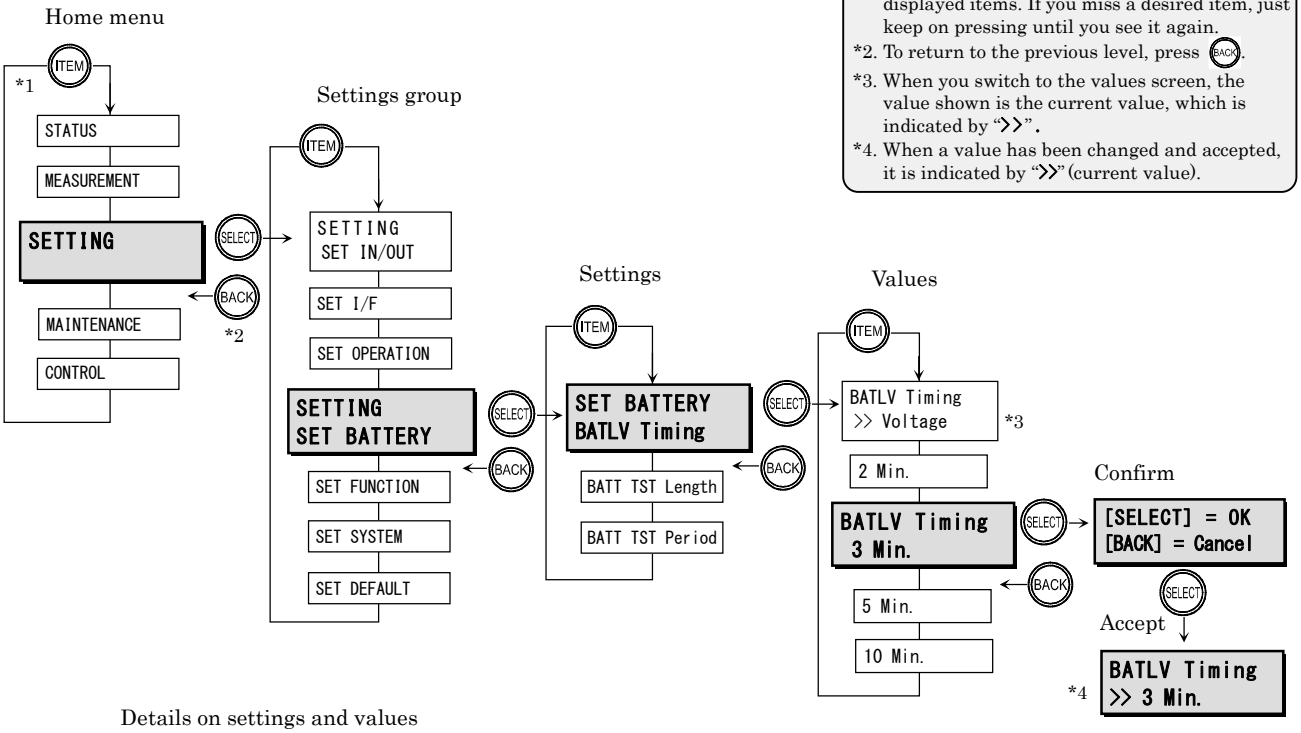
④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group" → "Settings" → "Values"

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

Example: Set time to issue warning to "3 Min." (3 minutes)

Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by ">>" (current value).



Details on settings and values

	Value		Description	
Default	Voltage	Voltage	When low battery voltage is detected, issue warning. "Batt Vol low" appears on the LCD screen and the buzzer beeps.	
	2 Min.	2 minutes	When the battery's remaining capacity is less than 2 minutes*, issue warning.	When using 5 min. or 10 min. backup type UPS, or when the load factor is 30% or less, do not use these values.
	3 Min.	3 minutes	When the battery's remaining capacity is less than 3 minutes*, issue warning.	
	5 Min.	5 minutes	When the battery's remaining capacity is less than 5 minutes*, issue warning.	
	10 Min.	10 minutes	When the battery's remaining capacity is less than 10 minutes*, issue warning.	

* The time (minutes) is only an approximation. Refer to §8 "Notes on UPS Measurements Information."

- If the setting in §3.8 "Setting Buzzer Condition" is "SILENT" or "Group #2", the buzzer does not beep.
- When power management software is used, warning is issued at the time set by the power management software to shut down the UPS. Even if you set this item by the procedures above, the value cannot be enabled. In such a case, when you display the value by the procedures above, the value of power management software appears as follows.

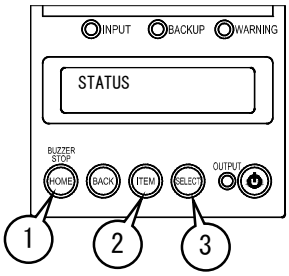
Example: BATLV Timing 4 Min. (Val) "(Val)" at the end of the value indicates the value set by power management software.

When you press (ITEM), this value disappears. Press (BACK) to go back once, and then press (SELECT), it is displayed again.

⑥ Press (HOME) to return to the home menu.

§3.13 Setting Battery Test Time

This section describes how to set a duration to run a battery test either regularly or manually.



① Press (HOME) to display the LCD screen.

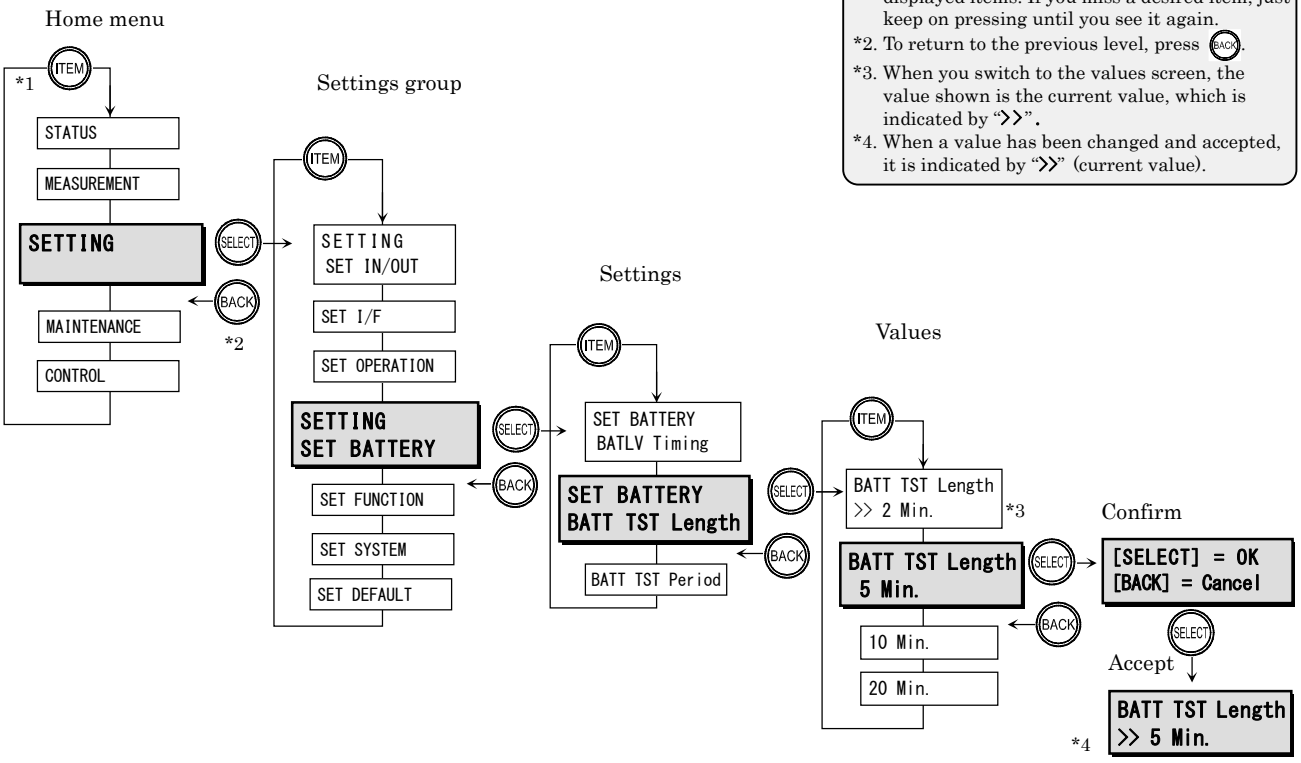
② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group" → "Settings" → "Values"

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

Example: Set battery test time to "5 Min." (5 minutes)



Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by ">>" (current value).

Details on settings and values

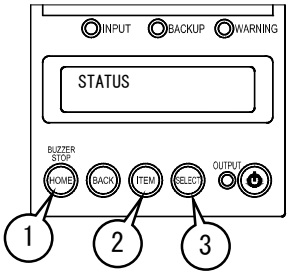
	Value		Description
Default	2 Min.	2 minutes	Run battery test for 2 minutes.
	5 Min.	5 minutes	Run battery test for 5 minutes.
	10 Min.	10 minutes	Run battery test for 10 minutes.
	20 Min.	20 minutes	Run battery test for 20 minutes.

Set battery test time according to the battery capacity and load capacity connected to the UPS.

⑥ Press (HOME) to return to the home menu.

§3.14 Setting Battery Test Schedule

This section describes how to set a schedule (number of days) to run an automatic battery test. The test is carried out automatically when the specified number of days has elapsed.



① Press (HOME) to display the LCD screen.

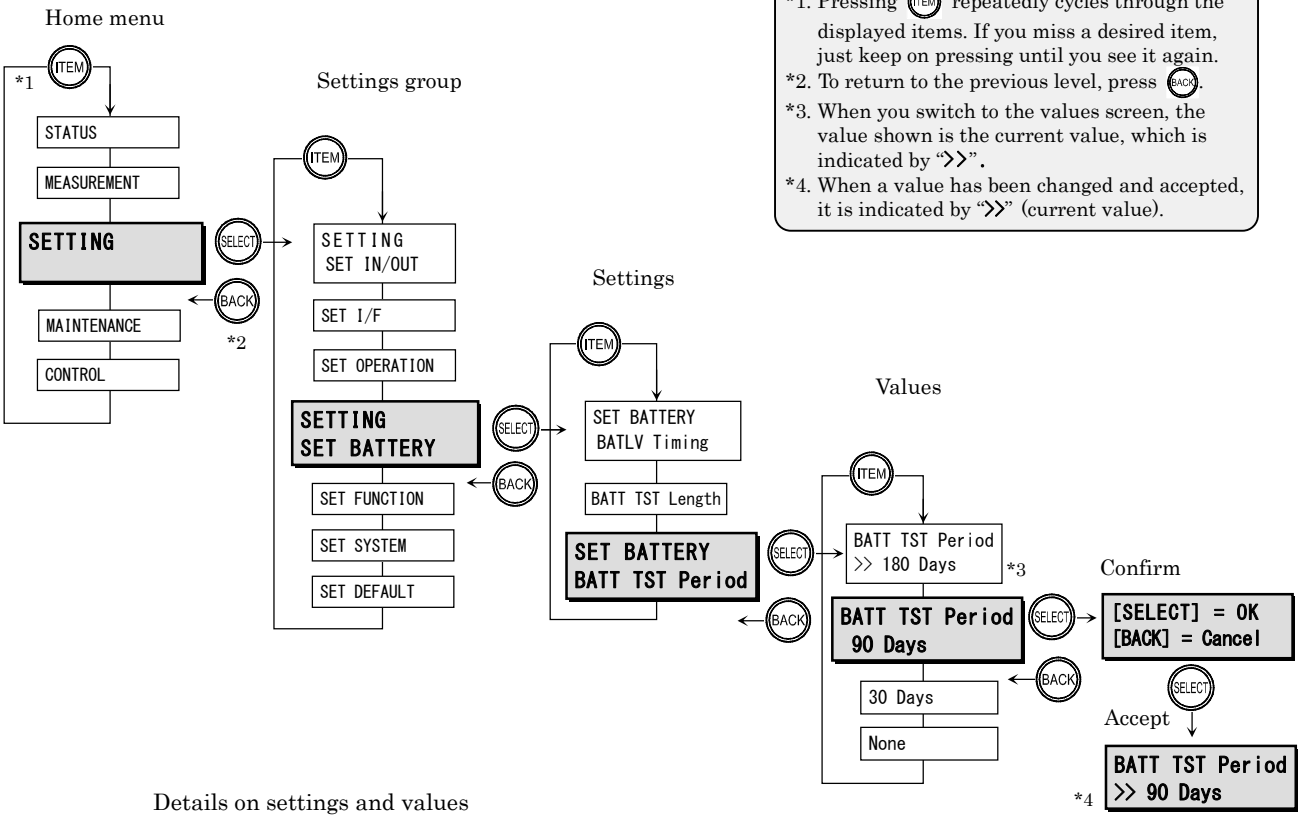
② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group" → "Settings" → "Values"

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

Example: Set battery test interval to "90 Days"



Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by ">>" (current value).

Details on settings and values

	Value		Description
Default	180 Days	180 days	Run battery test automatically every 180 days.
	90 Days	90 days	Run battery test automatically every 90 days.
	30 Days	30 days	Run battery test automatically every 30 days.
	None	No	Do not run battery test automatically.

- This function is available only when "Auto" is set in §3.3 "Setting Frequency". If "50Hz" or "60Hz" is set, the battery test will not be performed.
- When power management software is used, battery test is performed according to the schedule set by the power management software.
  If you set to the different value from power management software by the procedures above, the value is once changed. However, when you display the value again, the value set by the power management software is displayed.

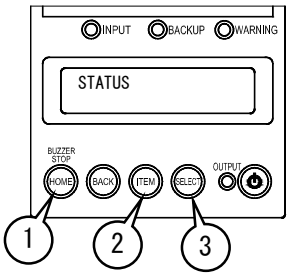
⑥ Press (HOME) to return to the home menu.

§3.15 Setting Backup Time During Power Outage

This section describes how to specify the time from when the UPS starts backup to when output supply stops.

Note

This function is enabled only when "Standalone" is set in §3.5 "Setting PC Interface". See page 12 to check the interface setting. When "WS" is set, change the setting to "Standalone". The default setting is "WS" (workstation).



① Press (HOME) to display the LCD screen.

② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

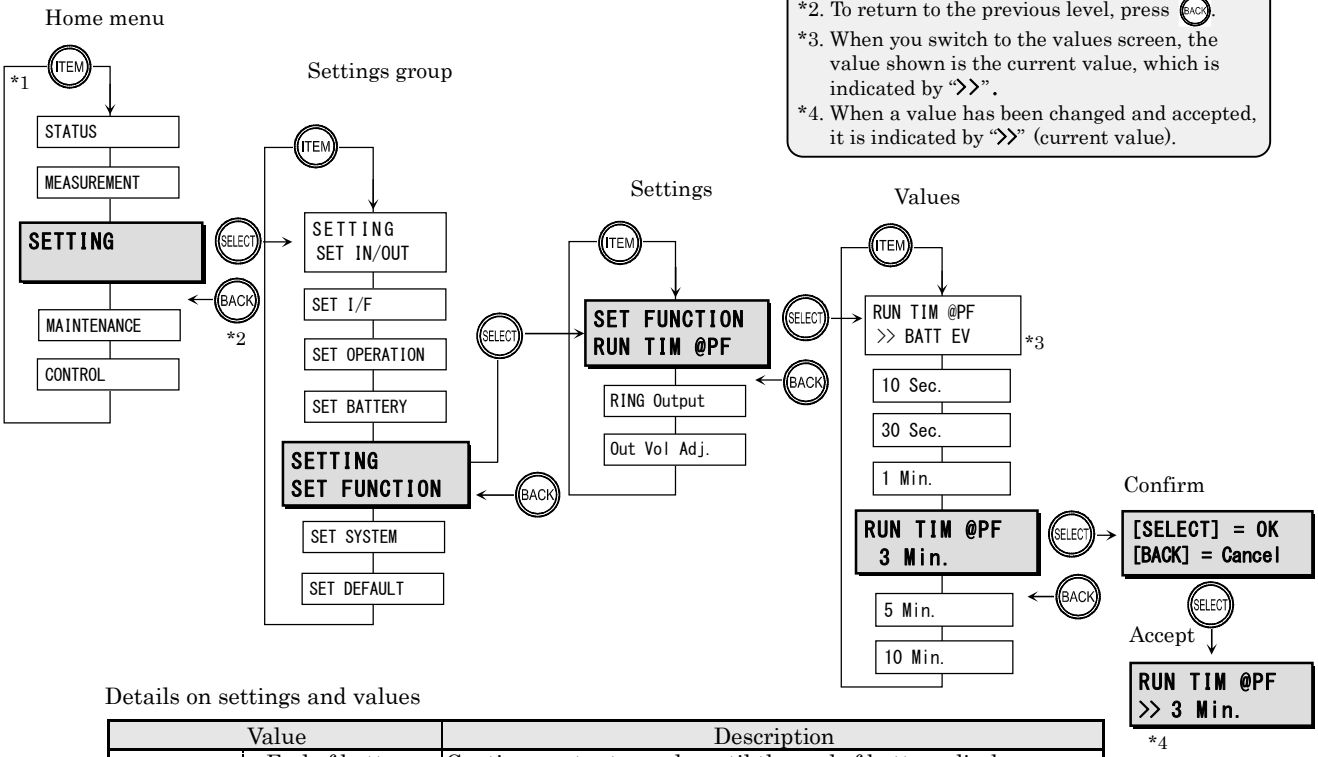
④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group" → "Settings" → "Values"

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

Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by ">>" (current value).

Example: Set backup time at power outage to "3 Min." (3 minutes)



Details on settings and values

	Value		Description
Default	BATT EV	End of battery discharge	Continue output supply until the end of battery discharge. Select this one to maximize use of the battery capacity.
	10 Sec.	10 seconds	Provide backup for 10 seconds, and then stop output supply.
	30 Sec.	30 seconds	Provide backup for 30 seconds, and then stop output supply.
	1 Min.	1 minute	Provide backup for 1 minute, and then stop output supply.
	3 Min.	3 minutes	Provide backup for 3 minutes, and then stop output supply.
	5 Min.	5 minutes	Provide backup for 5 minutes, and then stop output supply.
	10 Min.	10 minutes	Provide backup for 10 minutes, and then stop output supply.

- When the specified time has elapsed, the output supply stops. If utility power supply recovers within the specified time, the UPS returns to normal operation. When using this function, set the interface setting to "Standalone" in §3.5 "Setting PC Interface. If "WS" is set, this function is not enabled. The default setting is "WS" (workstation).
- However, even if you select "** Sec." or "** Min.", the specified time may not be provided depending on the conditions such as the battery configuration, the load factor, the insufficient battery charging, the remaining battery service life, or an ambient temperature.

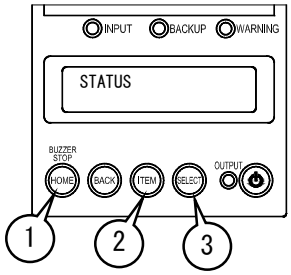
⑥ Press (HOME) to return to the home menu.

§3.16 Setting RING Signal *

This section describes specifying whether to output the RING signal when the UPS starts.

*** What is a RING signal?**

This is a signal which starts a connected computer automatically when the UPS starts. This function is enabled if a computer supporting the "Wake Up on Ring" function is connected to the UPS with the communication cable (optional).



① Press (HOME) to display the LCD screen.

② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

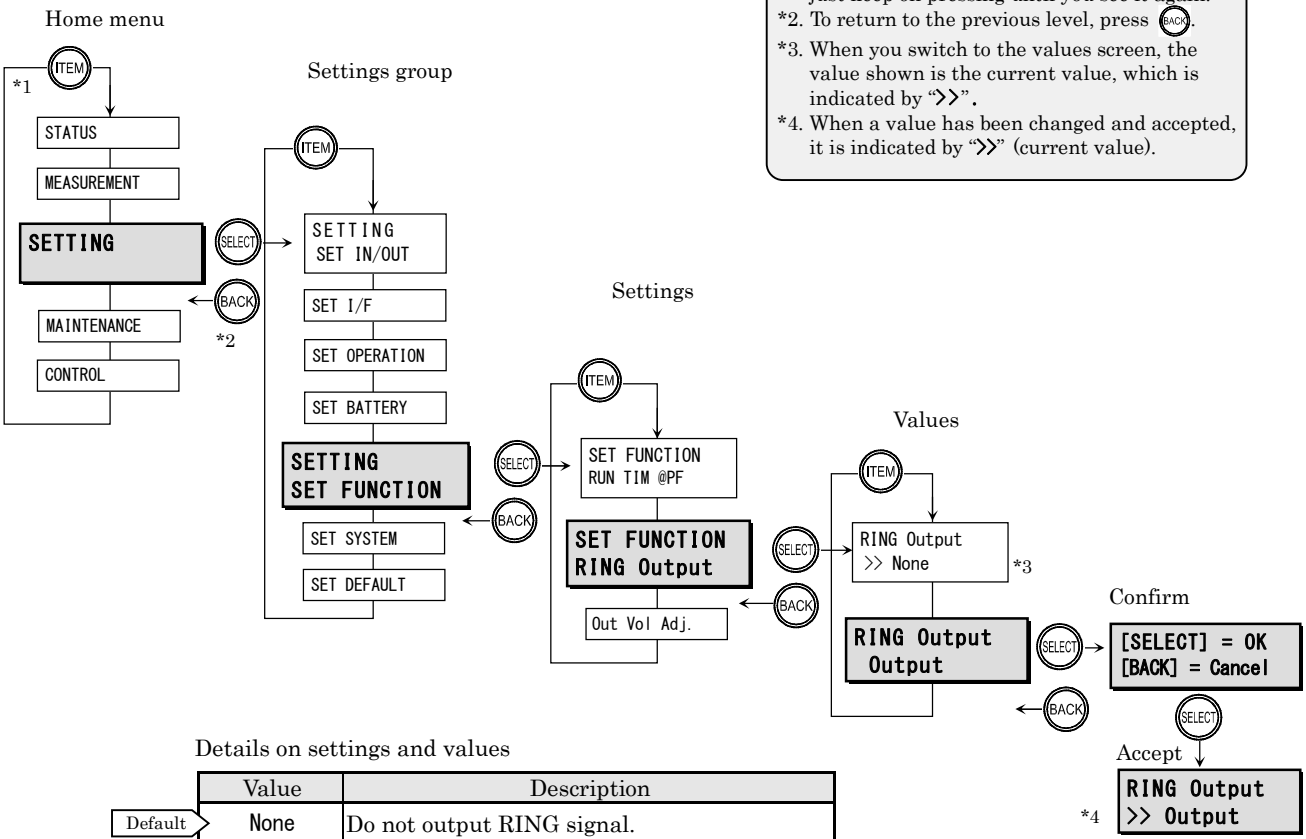
④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group" → "Settings" → "Values"

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

Example: Set Ring signal to "Output" (Output)

Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by "**>>**".
*4. When a value has been changed and accepted, it is indicated by "**>>**" (current value).



Details on settings and values

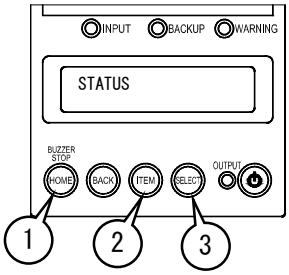
	Value	Description
Default	None	Do not output RING signal.
	Output	Output RING signal when the UPS starts.

If "Output" is selected, it is possible to start a computer (which normally does not start when only power is supplied) automatically when the UPS starts. This setting is enabled only for computers supporting the "Wake Up on Ring" function.

⑥ Press (HOME) to return to the home menu.

§3.17 Setting Adjustment for Output Voltage

This section describes how to set adjustment for the output voltage set up in §3.1 “Setting Voltage”.
Three levels on the plus side and three levels on the minus side (about -3V to +3V) can be selected.



① Press (HOME) to display the LCD screen.

② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

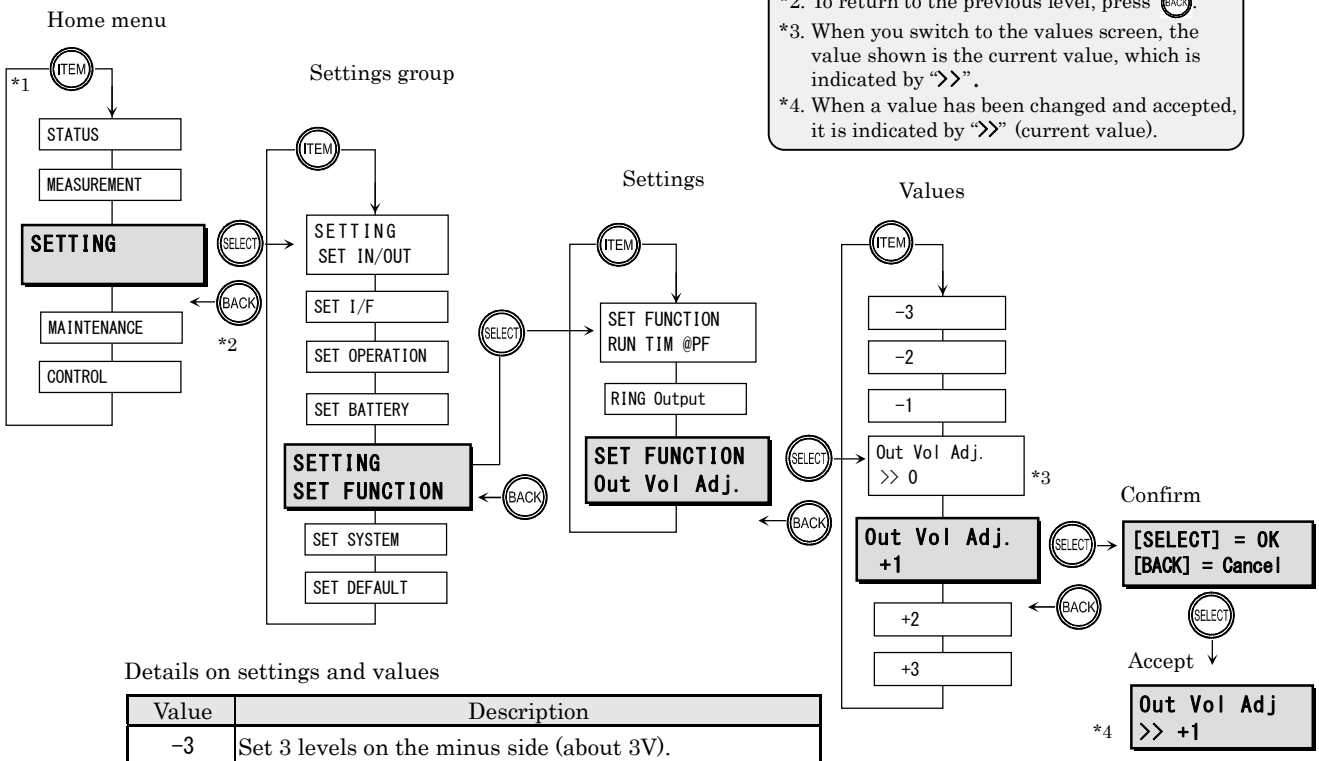
④ In the same way, follow the figure below to make selection at each level, as follows:
“Home menu” → “Settings group” → “Settings” → “Values”

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

Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by “>>”.
*4. When a value has been changed and accepted, it is indicated by “>>” (current value).

Example: Set adjustment to “+1”



Details on settings and values

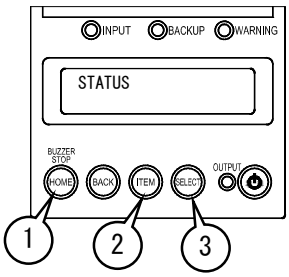
Value	Description
−3	Set 3 levels on the minus side (about 3V).
−2	Set 2 levels on the minus side (about 2V).
−1	Set 1 level lower on the minus side (about 1V).
Default 0	Output specified voltage as it is.
+1	Set 1 level on the plus side (about 1V).
+2	Set 2 levels on the plus side (about 2V).
+3	Set 3 levels on the plus side (about 3V).

Adjustment can be made by specifying the number of levels, with each level being about 1V.
The adjustment values indicated above are those when the setting in §3.4 “Setting Voltage for Measurement Display” is “200V/200V” or “100V/200V” (output voltage 200V type).
If the setting is “200V/100V” or “100V/100V” (output voltage 100V type), the value becomes half.
The selected value is used for adjustment of the output voltage set in §3.1 “Setting Voltage”.
According to the state of the connected load devices and installation environment, set up the adjustment.

⑥ Press (HOME) to return to the home menu.

§3.18 Setting Clock

This section describes how to set the UPS clock. Because the clock has been set when the UPS is shipped from the factory, normally do not change the clock.



① Press (HOME) to display the LCD screen.

② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

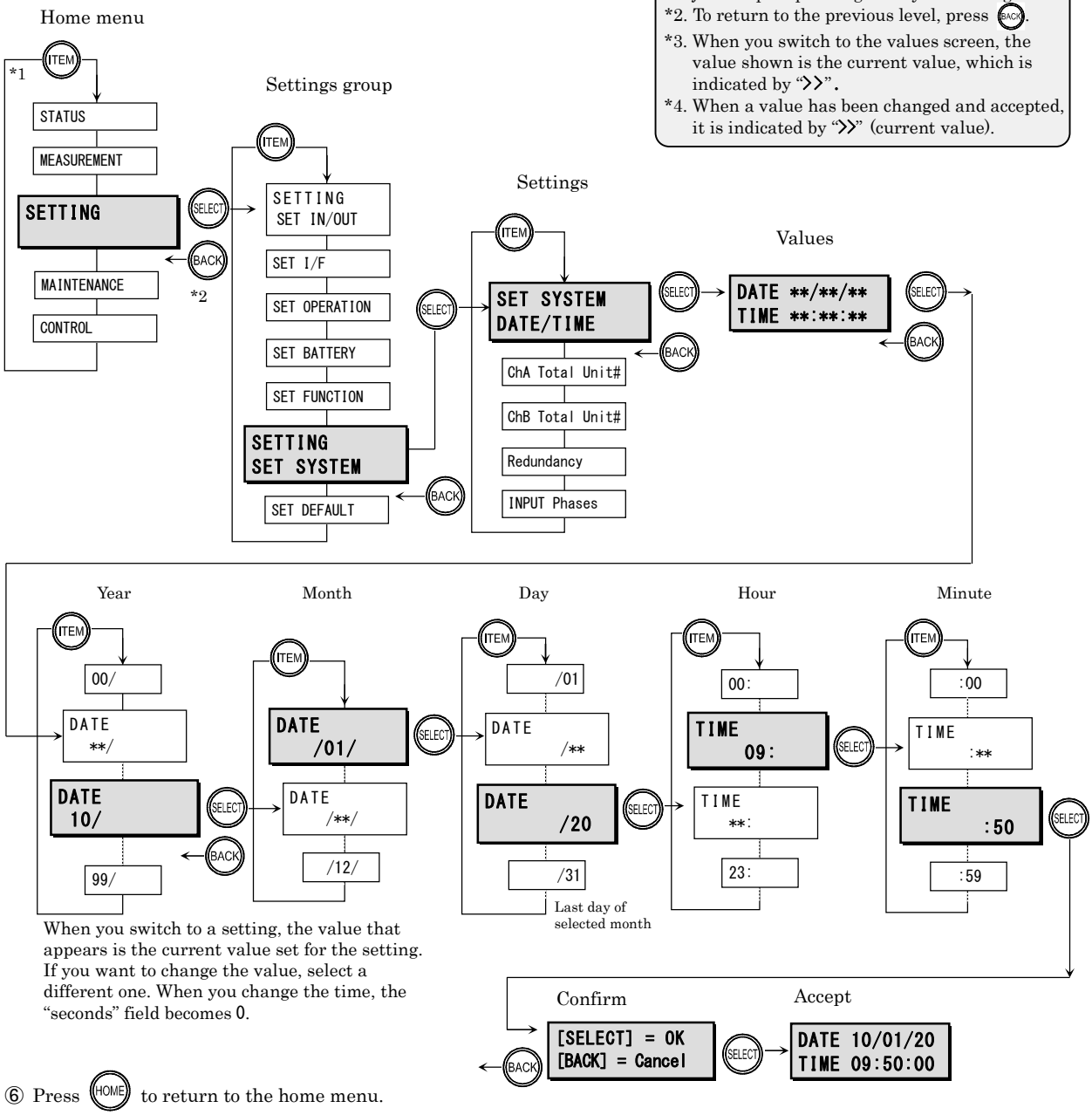
④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Setting group" → "Setting" → "Value"

⑤ Use (ITEM) to switch values, and then press (SELECT) to select a desired value. Repeat this operation. When the confirmation screen appears, press (SELECT) again to accept the value.

Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by "**>>**".
*4. When a value has been changed and accepted, it is indicated by "**>>**" (current value).

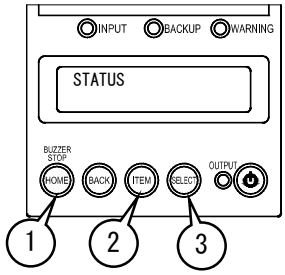
Example: Set the clock to "9:50 AM, January 20, 2010"



⑥ Press (HOME) to return to the home menu.

§3.19 Setting Number of UPS Units in Parallel Connection

This section describes how to specify the number of UPS units in parallel connection to form a UPS system. Because this value has been set at the factory, normally do not change it.



① Press (HOME) to display the LCD screen.

② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

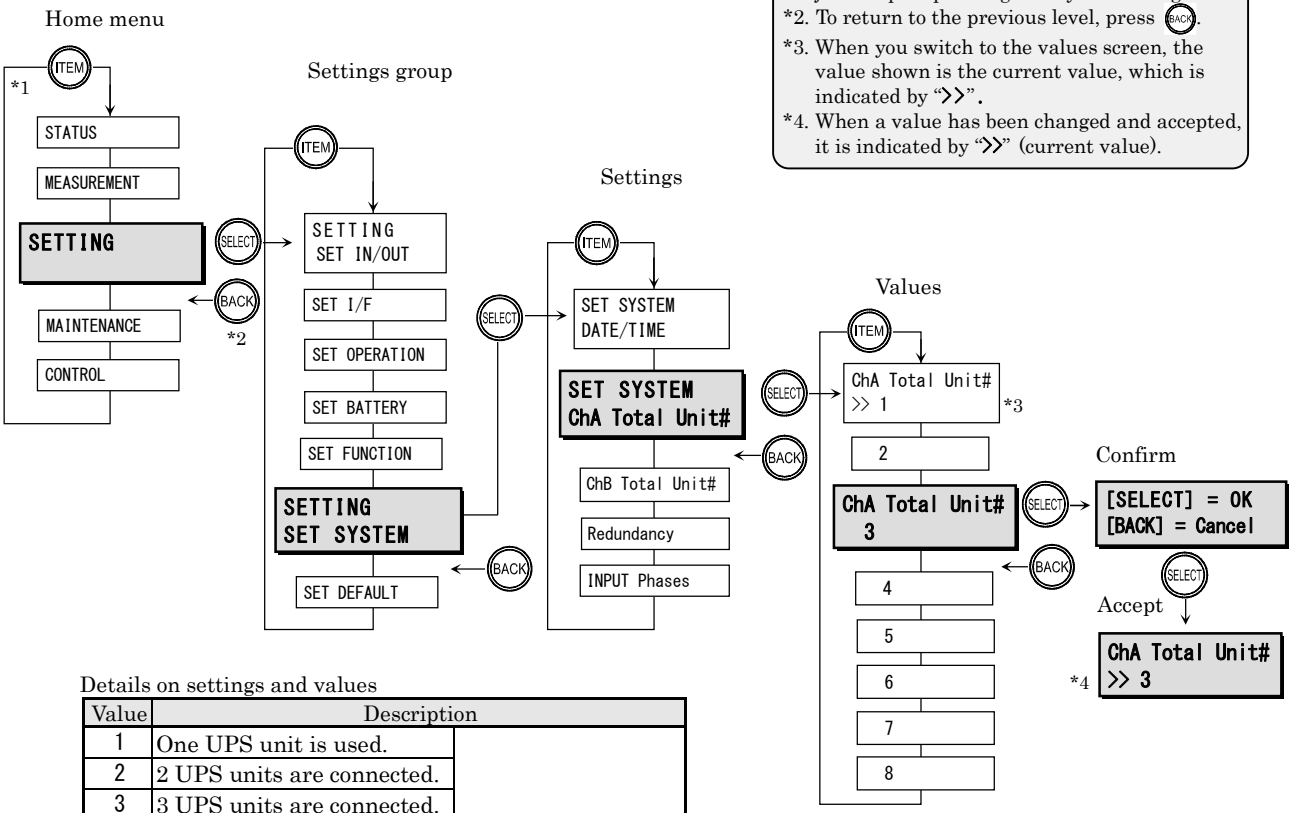
④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Setting group" → "Setting" → "Value"

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

Example: Set the number of UPS units to "3"

Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by ">>" (current value).



Details on settings and values

Value	Description	
1	One UPS unit is used.	The default is different depending on the UPS model.
2	2 UPS units are connected.	
3	3 UPS units are connected.	
4	4 UPS units are connected.	
5	5 UPS units are connected.	
6	6 UPS units are connected.	
7	7 UPS units are connected.	
8	8 UPS units are connected.	

Note

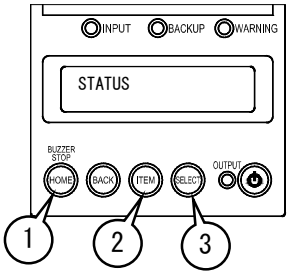
ChB Total Unit# has a value of 1. Do not change it. If you have changed the value by mistake, select ChB Total Unit# and then use the same procedure to change its value.

If you have added a UPS unit or changed the number of UPS units connected, change this setting to match the number of UPS units actually connected. If a UPS unit stops during operation for some reason so that the number of operating UPS units does not match the setting, the message "Total Unit# Err" appears in the UPS status display on the LCD panel.
After you perform the operation in §3.22 "Resetting Values of Settings", this setting returns to 1. In this case, check the number of UPS units in the system and then change the setting again.

⑥ Press (HOME) to return to the home menu.

§3.20 Setting Operation System

This section describes how to specify the UPS operation system. You can choose between parallel redundant operation or single machine/parallel operation.



① Press (HOME) to display the LCD screen.

② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

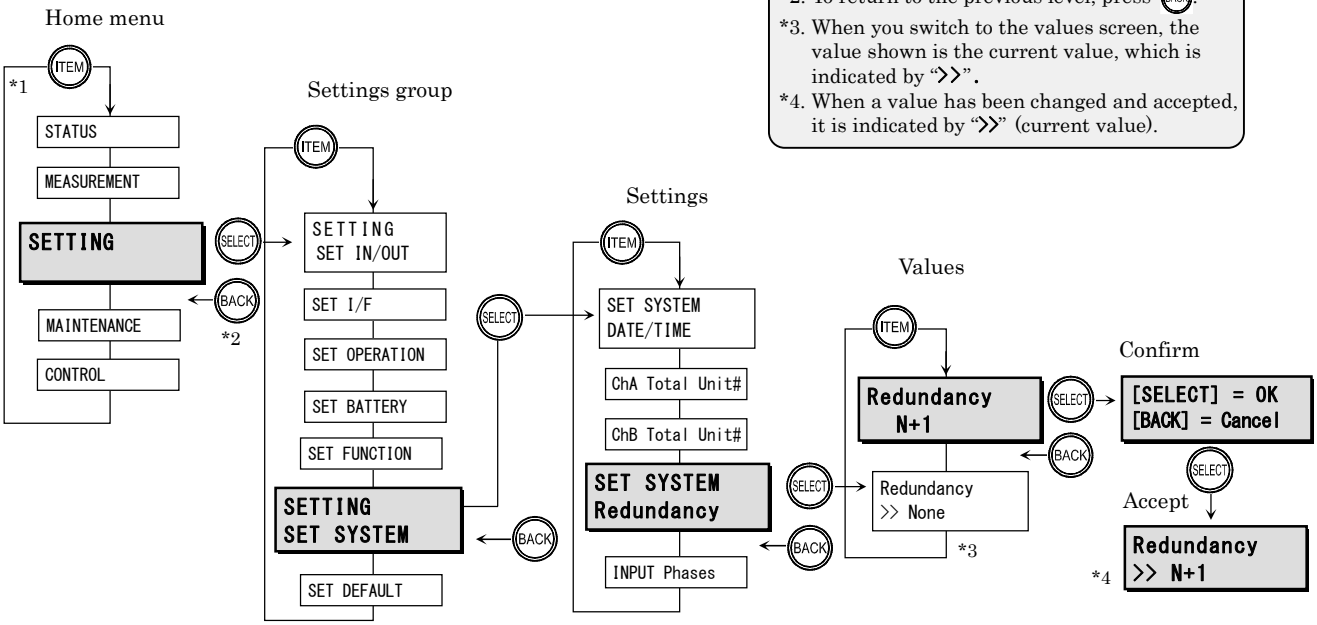
④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Setting group" → "Setting" → "Value"

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

Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by ">>" (current value).

Example: Set operation system to "N+1"



Details on settings and values

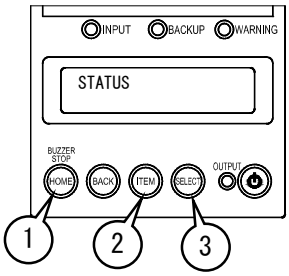
Value	Description	
N+1	Parallel redundant operation	* Parallel redundant operation system: where there is surplus of one unit from UPS units in parallel connection to handle load capacity
Default None	Single / parallel operation	* Single operation system: where there is one UPS unit * Parallel operation system: where total capacity of UPS units in parallel connection is used as connectable load capacity in operation

If "N+1" is selected, when there is no surplus of one UPS unit for load capacity connected to UPS, the LCD screen displays "FT Disabled". In this case, reduce the load connected to UPS.
However, the load factor value "LF = %" displayed by viewing UPS measurements is same even when either setting value ("N+1" or "None") is set. See §8 "Notes on UPS Measurements Information" for details.

⑥ Press (HOME) to return to the home menu.

§3.21 Setting Input Phase

This section describes how to specify the UPS input phase.



① Press (HOME) to display the LCD screen.

② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Setting group" → "Setting" → "Value"

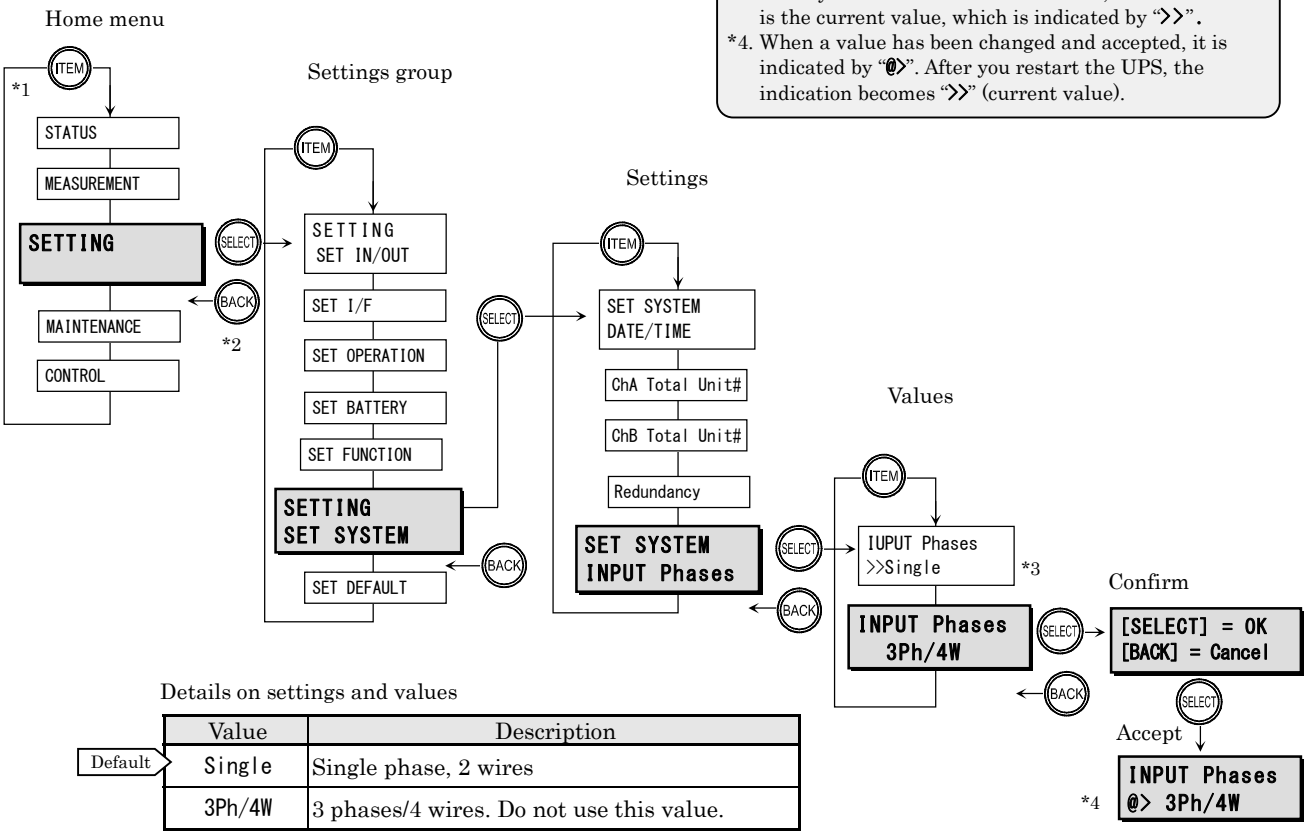
⑤ Use (ITEM) to switch values, and then press (SELECT) to select a desired value. When the confirmation screen appears, press (SELECT) again to accept the value.

Example: Set input phase to "3Ph/4W" (3 phases, 4 wires)

While this example uses "3Ph/4W" in explaining the procedure, keep the setting at "Single" in this UPS system and do not change it.

Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. When you switch to the values screen, the value shown is the current value, which is indicated by ">>".
*4. When a value has been changed and accepted, it is indicated by "@>". After you restart the UPS, the indication becomes ">>" (current value).



Details on settings and values

	Value	Description
Default	Single	Single phase, 2 wires
	3Ph/4W	3 phases/4 wires. Do not use this value.

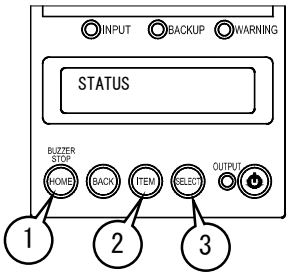
⑥ Press (HOME) to return to the home menu.

Note

- After you change a setting, read §3.23 "Restarting UPS" and then start the UPS again; otherwise, the change will not take effect. To stop the UPS, alawys stop the load device.
- If the UPS status display is "**Req. to restart**":
  Values for settings are changed but you have not restarted the UPS. See §3.23 "Restarting UPS" and then restart the UPS.

§3.22 Resetting Values of Settings

This section describes how to restore settings mentioned in sections §3.1 to §3.21 back to their factory defaults. Use the list in §3. "Setting UPS" to check the factory defaults. Once you restore the settings back to their factory defaults, you cannot return to their previous values.



① Press (HOME) to display the LCD screen.

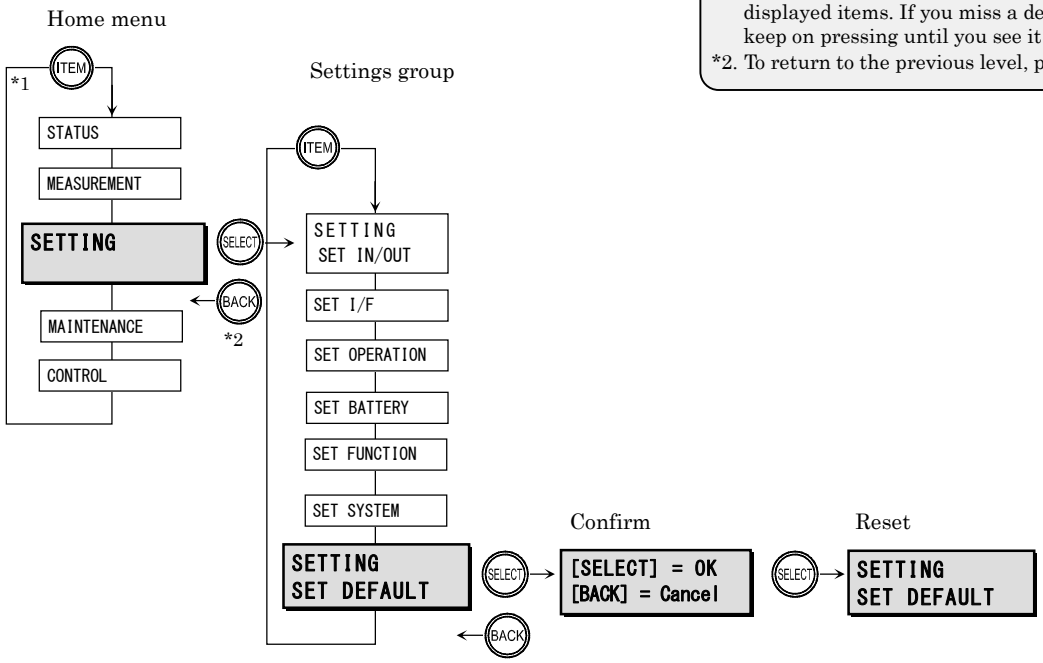
② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Settings group"

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

Example: Resetting the settings



Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).

⑥ Press (HOME) to return to the home menu.

Note

- For the following settings, resetting them does not restore their values to the factory defaults but the values listed below. Therefore, Make the necessary changes according to the UPS system specifications.

Section	Setting (section title)	Value after reset
§3.4	Setting Voltage for Measurement Display	200V/200V(S)
§3.19	Setting Number of UPS Units in Parallel Connection	1

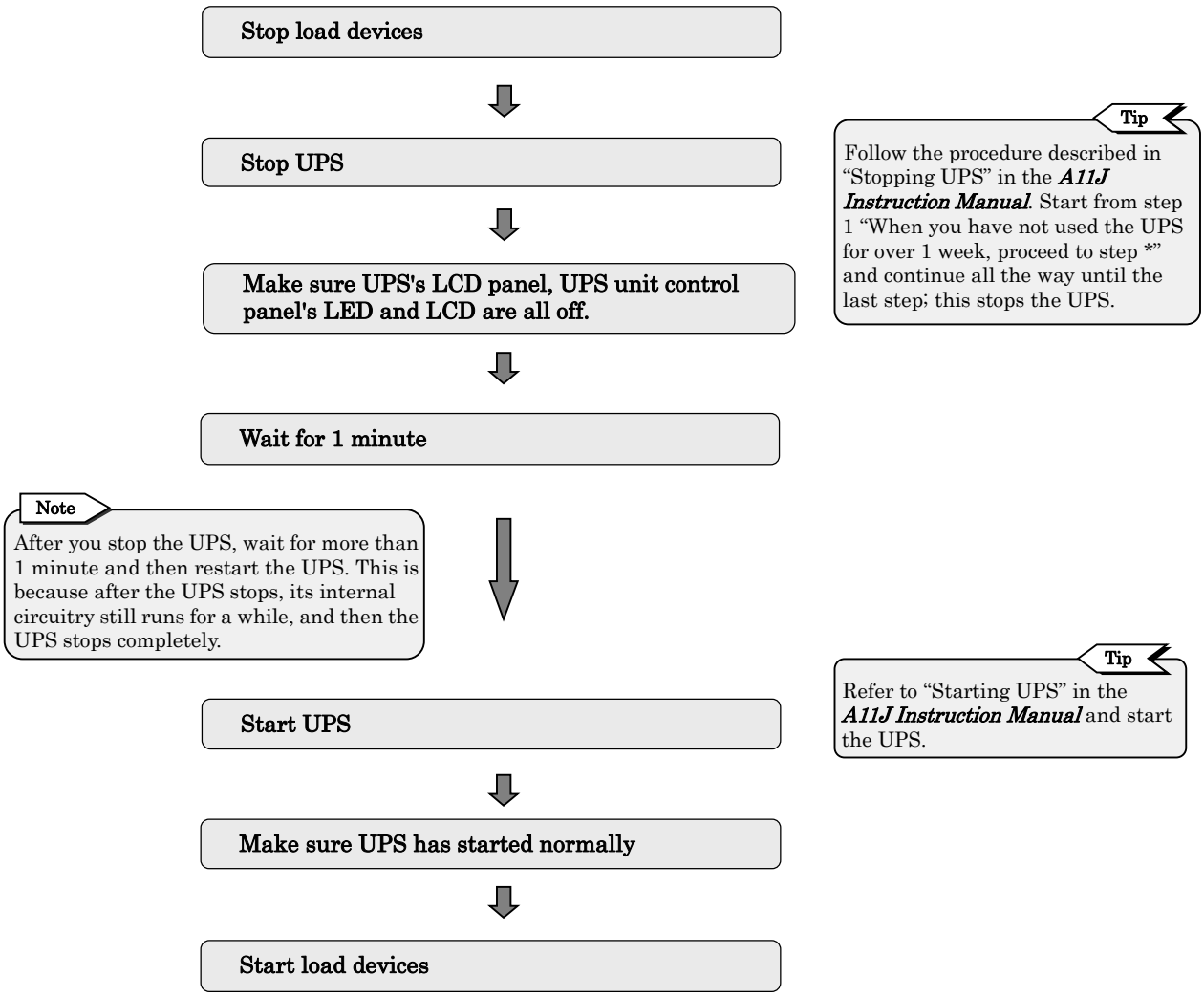
- For settings that require restarting the UPS to make the changes effective, you must restart the UPS after resetting the settings. In this case, "Req. to restart" appears in the UPS status display. See 3.23 "Restarrting UPS" and then restart the UPS. When you stop the UPS, always stop the load devices first.

§3.23 Restarting* UPS

*** What is restarting?**

It means stopping the operating UPS and then starting it again.
If "Please restart the UPS" is mentioned in the LCD Panel Operating Manual (this manual) or A11J Instruction Manual with reference to enabling changes in settings to take effect, stop the operating UPS, wait for the specified time to elapse, and then restart the UPS.

For settings listed on page 6 with the "★" mark, after you change the settings, the changes do not take effect until you restart the UPS. Therefore, after you change settings with the "★" mark, use the following procedure to restart the UPS.
Depending on the UPS model, the procedure to stop and then start it is different. For details, refer to "UPS Operation" in the ***A11J Instruction Manual***. Before you stop the UPS, be sure to stop the load devices first.



§4. Operating UPS

You can perform three operations from the CONTROL menu: running battery test, starting/stopping UPS, and switching to bypass operation. For details on the operations, see the sections from §4.1 to §4.4.

List of operations

Home menu: CONTROL

Operation		Displayed item		Displayed content				Ref item	Ref page
Display	Description	Display	Description	Display	Description	Result	Description		
BATTERY TEST	Run battery test	Start	Start	[SELECT] = OK	OK to start	Control NG	Operation canceled	4.1	32
				[BACK] = Cancel	Cancel	Control OK	Normal termination		
		STATUS	Test status	Test Condition	Test result	Possible	Test can start	4.2	34
						Impossible	Test cannot start		
						Testing	Test in progress		
				Last Test Time	Date of last test	YY/MM/DD HH:MM	YY/MM/DD HH:MM		
				Last Result	Result of last test	BATTST:OK	Normal		
						BATTST:NG	Error		
						BATTST:No Result	No previous result		
						BATTST:Error	Error		
						BATTST:Suspended	Aborted		
INV ON	Start UPS	[SELECT] = OK	ON	Control NG	Operation canceled	Control OK	Normal termination	4.3	35
		[BACK] = Cancel	Cancel						
INV OFF	Stop UPS	[SELECT] = OK	OFF	Control NG	Operation canceled	Control OK	Normal termination		
		[BACK] = Cancel	Cancel						
BYPASS	Change bypass operation	[SELECT] = OK	Switch	Control NG	Operation canceled	Control OK	Normal termination	4.4	36
		[BACK] = Cancel	Cancel						

§4.1 Running Battery Test

This section describes how to run a battery test. By default, a battery test is carried out automatically once every 180 days. If you want to run a battery test manually, use the following procedure. You can do this without stopping the load devices connected to the UPS. However, if the UPS has performed a backup operation within 12 hours prior to the test, the result may show an error. Perform the battery test when the UPS has not performed a backup operation within the last 12 hours.

Tip

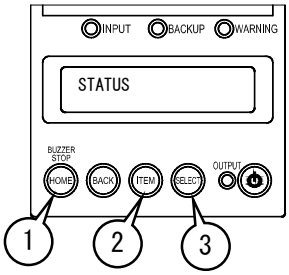
- You can change the battery test time (min.). See §3.13 "Setting Battery Test Time".
- You can change the battery test schedule (interval) of automatic battery test. See §3.14 "Setting Battery Test Schedule".

① Press (HOME) to display the LCD screen.

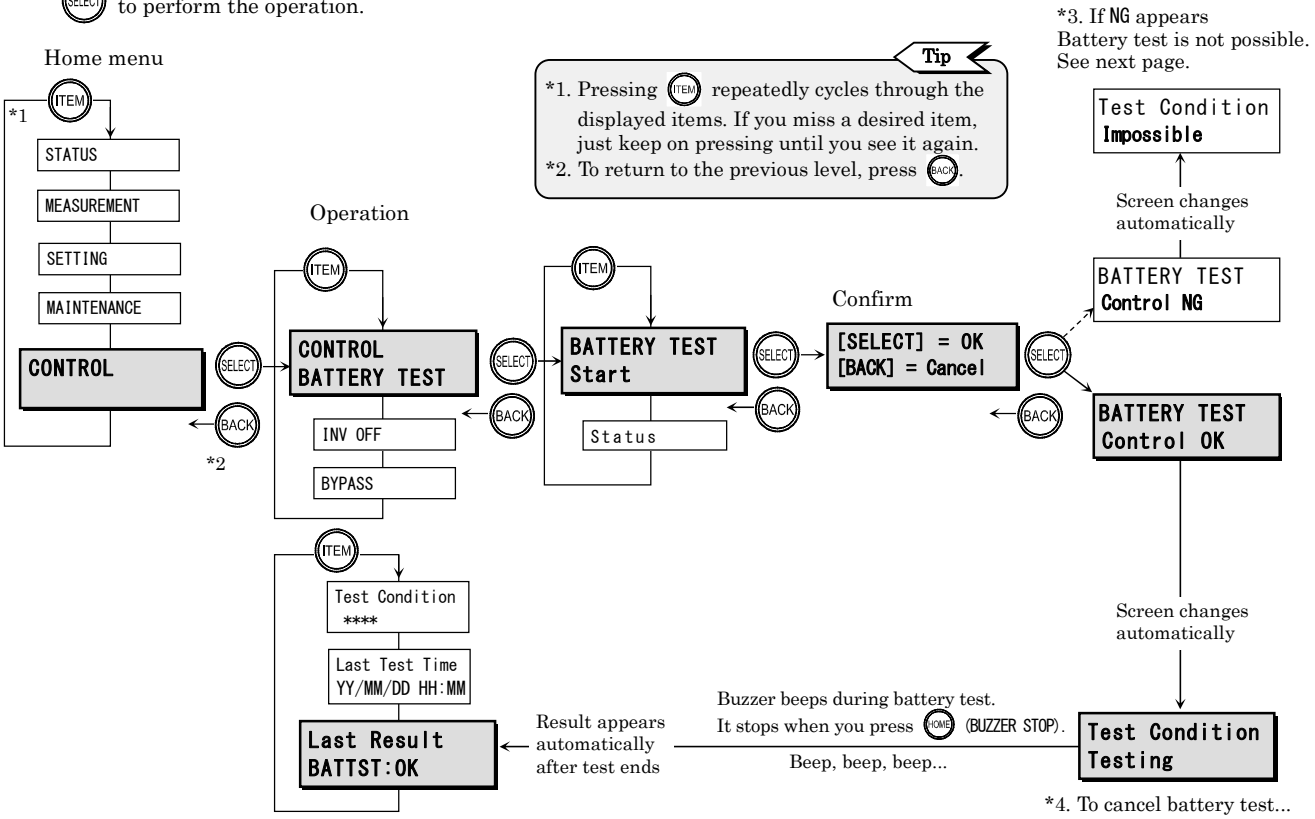
② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Operation" and continue



⑤ Use (ITEM) to switch items, and then press (SELECT) to select a desired item. When the confirmation screen appears, press (SELECT) to perform the operation.



Battery test's displayed content

Item		Content	
Display	Description	Display	Description
Test Condition	Test condition	Possible	Test can start
		Impossible	Test cannot start
		Testing	Test in progress
Last Test Time	Date and time of last battery test	YY/MM/DD HH:MM	YY/MM/DD HH:MM If "**/**/** **:**" appears, this indicates the last test result does not exist.
Last Result	Last battery test result	BATTST:OK	Battery is normal.
		BATTST:NG	Battery malfunction may exist.
		BATTST:No Result	Last battery test result does not exist.
		BATTST:Error	Error occurs. Battery test fails due to some kind of error.
		BATTST:Suspended	Test is canceled.

⑥ Press (HOME) to return to the home menu.

*3. If "Control NG" appears and the battery test could not be performed, the UPS may be in a state which renders battery test not possible. In this case, use (BACK) to go back, check the UPS state, and then try again.

Note on battery test

The result serves as a general guide only. Even if the result is normal, refer to "General Guide on Battery Replacement" in ***the A11J Instruction Manual*** and, if the replacement time has come, contact your supplier or SANYO DENKI as soon as possible.

Cases where battery test is not possible

- In cases ① to ⑦, battery test is not possible.

① While inverter stops
② During bypass power supply
③ During battery operation
④ During shutdown by remote operation, etc.
⑤ UPS malfunction
⑥ During asynchronous operation
⑦ When "50Hz" or "60Hz" is set in §3.3 "Setting Frequency"

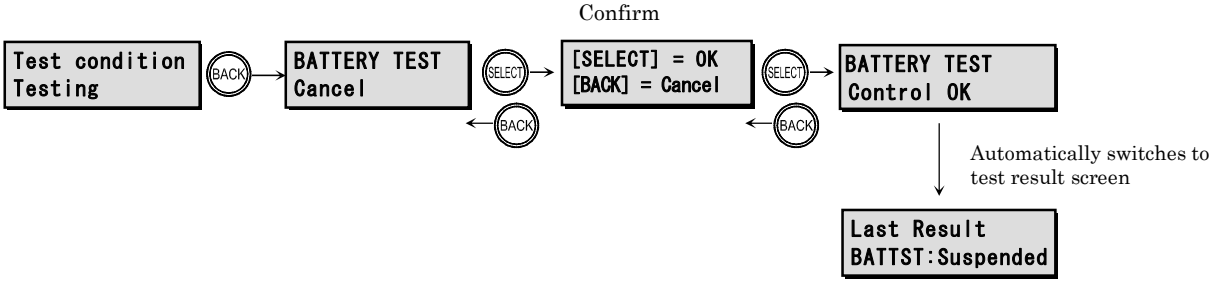
Canceling battery test

- To cancel during battery test...
  When "Cancel" appears on the LCD screen, press (SELECT). ⇒ UPS returns to normal operation.

- During battery test, if any of ① to ③ occurs, or if any of ④ to ⑦ is performed, the battery test is canceled.

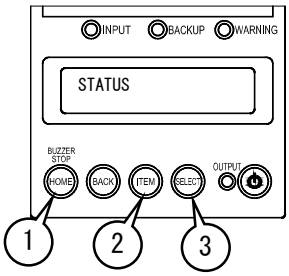
① Input error (voltage, frequency)
② UPS malfunction
③ Output overcurrent
④ Forced to bypass switch
⑤ MAIN MCCB is set to "OFF"
⑥ UPS's OFF operation is performed
⑦ Battery test is canceled by power management software

*4. To cancel battery test...
Follow the steps below.



§4.2 Reading Battery Test Result

This section describes how to read the battery test result generated during a battery test performed either automatically or manually.



① Press (HOME) to display the LCD screen.

② Press (ITEM) to change the home menu to the one shown below.

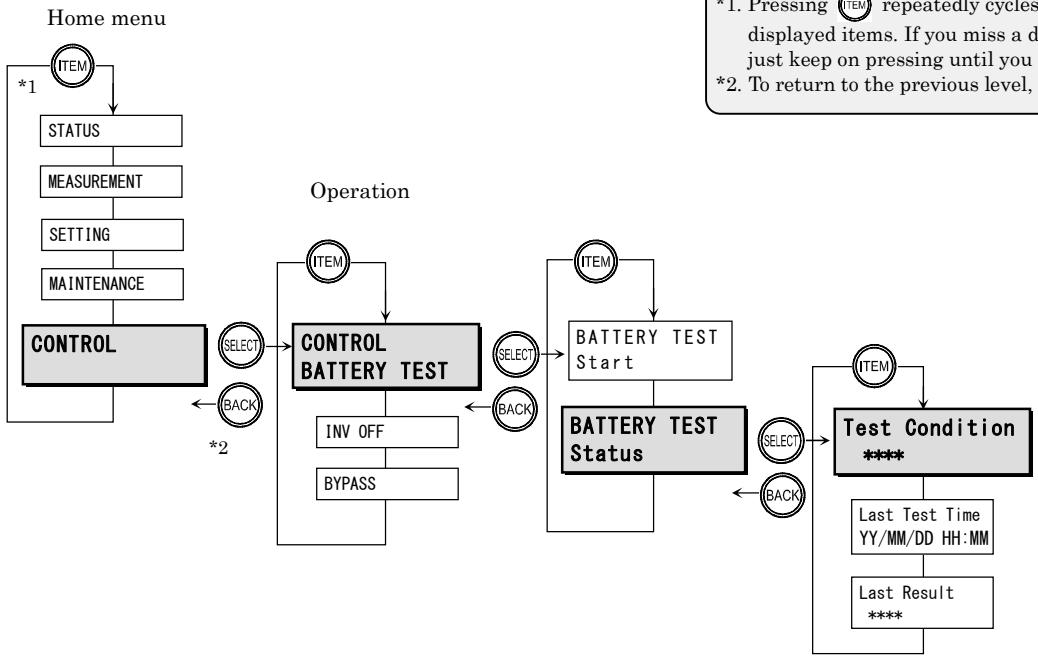
③ Press (SELECT) to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Operation" and continue

⑤ Use (ITEM) to switch items, and then press (SELECT) to select and display it.

Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).



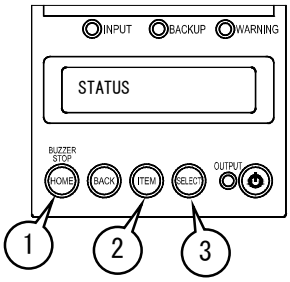
Battery test's displayed content

Item		Content	
Display	Description	Display	Description
Test Condition	Test condition	Possible	Test can start
		Impossible	Test cannot start
		Testing	Test in progress
Last Test Time	Date and time of last battery test	YY/MM/DD HH:MM	YY/MM/DD HH:MM If "**/**/** **:**" appears, this indicates the last test result does not exist.
Last Result	Last battery test result	BATTST:OK	Battery is normal.
		BATTST:NG	Battery malfunction may exist.
		BATTST:No Result	Last battery test result does not exist.
		BATTST:Error	Error occurs. Battery test fails due to some kind of error.
		BATTST:Suspended	Test is canceled.

⑥ Press (HOME) to return to the home menu.

§4.3 Starting or Stopping UPS

From the LCD panel, you can use the CONTROL menu to start or stop the UPS system. When you perform this operation, the entire UPS system starts or stops. It is not possible to use this operation to start or stop individual UPS units. Before stopping the UPS system, be sure to stop the load devices first.



① Press (HOME) to display the LCD screen.

② Press (ITEM) to change the home menu to the one shown below.

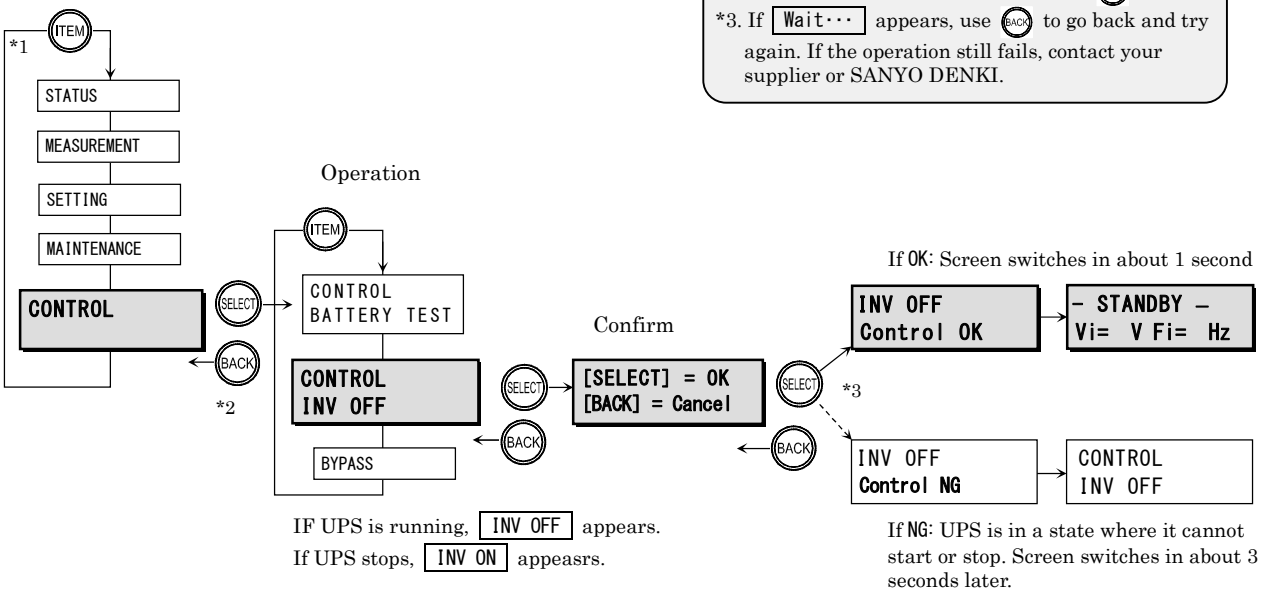
③ Press (SELECT) to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Operation" and continue

⑤ Use (ITEM) to switch items, and then press (SELECT) to select a desired item. When the confirmation screen appears, press (SELECT) to perform the operation.

Example: Stopping UPS

Home menu



Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. If Wait··· appears, use (BACK) to go back and try again. If the operation still fails, contact your supplier or SANYO DENKI.

Note on starting or stopping UPS

The operations are not possible in the following cases.

- UPS cannot start when:
  ① Inverter is starting up.
  ② Input voltage and input frequency exceed rated range
  ③ UPS is malfunctioning
  ④ During continuous input of Remote OFF signal
  ⑤ During EPO signal input
  ⑥ Forced bypass switch Forced Bypass is on "Bypass" side.
- UPS cannot stop when:
  ① During bypass operation
  ② Inverter stops

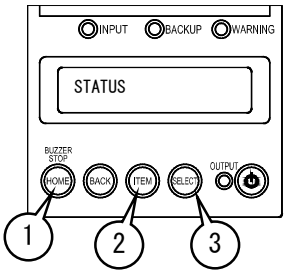
Starting or stopping UPS with ON/OFF button

You can also use the ⏻ button on the LCD panel or the ⏻ button on the main unit's control panel to start or stop the UPS. For details, refer to "Performing Operation" in the ***A11J Instruction Manual***.

⑥ Press (HOME) to return to the home menu.

§4.4 Switching to Bypass Operation

You can switch the UPS operation to the bypass operation using following procedures if a UPS malfunction occurs or when maintaining the UPS.



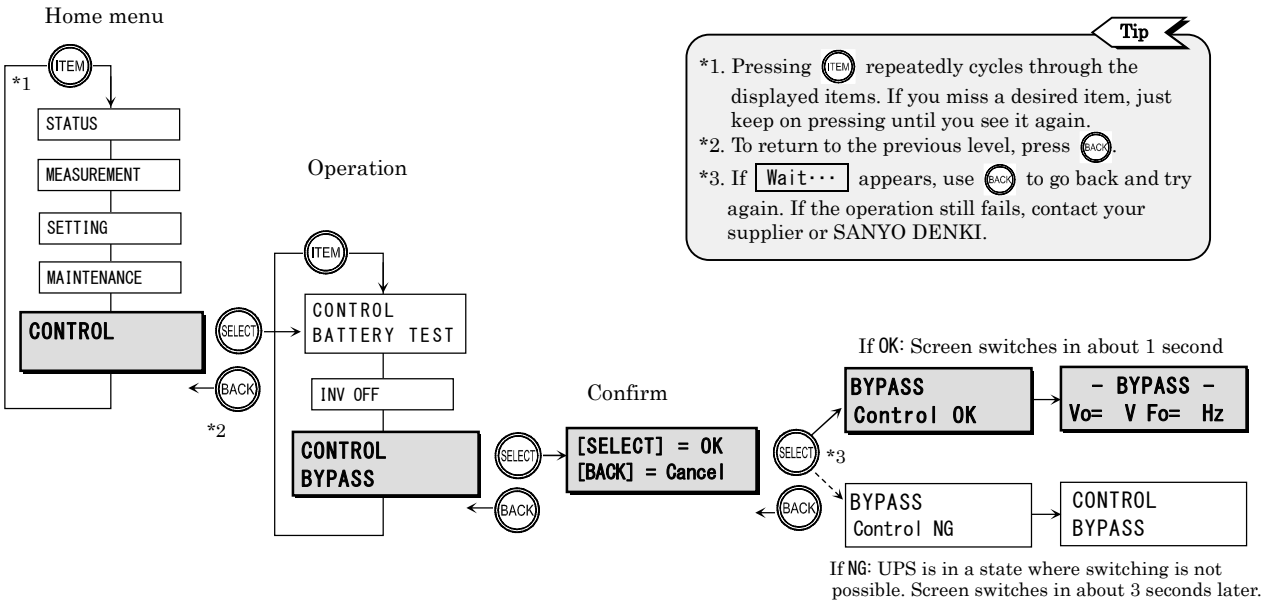
① Press (HOME) to display the LCD screen.

② Press (ITEM) to change the home menu to the one shown below.

③ Press (SELECT) to accept it.

④ In the same way, follow the figure below to make selection at each level, as follows:
"Home menu" → "Operation" and continue

⑤ Use (ITEM) to switch items, and then press (SELECT) to select a desired item. When the confirmation screen appears, press (SELECT) to perform the operation.



Tip

*1. Pressing (ITEM) repeatedly cycles through the displayed items. If you miss a desired item, just keep on pressing until you see it again.
*2. To return to the previous level, press (BACK).
*3. If Wait··· appears, use (BACK) to go back and try again. If the operation still fails, contact your supplier or SANYO DENKI.

Note on switching to bypass operation

- When the UPS is malfunctioning and the output power supply stopped, you cannot switch to the bypass operation by the procedure above.
- When "Auto" is set in §3.3 "Setting frequency", the UPS switches to bypass operation without interruption during synchronous operation. During asynchronous operation, the UPS switches with instant interruption.
  When "50Hz" or "60Hz", the UPS switches to bypass operation with instant interruption.
- You can also switch the UPS operation to the bypass operation using Forced Bypass inside the front panel of the UPS.
- Note that during the bypass operation, if you set MAIN MCCB to "OFF", "Byp Fuse Error" appears on the LCD screen, "Red WARNING" and "Red ALARM" light, and output supply stops. Setting MAIN MCCB to "ON" returns to bypass operation.

How to switch from bypass operation to inverter operation

Use either method A or B below to switch to the inverter operation.

A. Use the ⏻ button on the LCD panel or the ⏻ button on the main unit's control panel to perform the ON operation.
B. In the operation step of §4.3 "Starting or Stopping UPS", select "CONTROL INV ON".
See §4.3 "Starting or Stopping UPS" for details on the procedure.

When "Auto" is set in §3.3 "Setting frequency", even if you perform A or B procedure above, the UPS can not switch to inverter operation during asynchronous operation. When "50Hz" or "60Hz" is set, the UPS can not switch to inverter operation unless the input frequency is within the specified tracking range (±1%, ±3%, or ±5%) set in §3.2 "Setting Synchronous Frequency Tracking Range."

⑥ Press (HOME) to return to the home menu.

§5. Maintenance Menu (For Service Technician*)

The maintenance menu is intended for use by a service technician to perform maintenance of the UPS.
Even though details are described in §6. “Menu List”, do not use the menu to perform any operation.

The operation is described in the maintenance manual for service technician.

* Service technician

This term is used to indicate service technicians from SANYO DENKI or entrusted by SANYO DENKI with knowledge of this UPS.
Maintenance work must not be performed by other than a qualified service technician.

§6. Menu List

1. STATUS

Home menu	UPS mode		Status display			
	Display	Description	Display	Description	Display	Description
STATUS (UPS status display)	STANDBY	Standby	Output Not Sync	Asynchronous operation	Batt Life End	End of battery life
	ONLINE	Online	Input Freq Err	Input frequency error	Batt Life Warn	Battery life end warning
	BYPASS	During bypass operation	Input Vol Hi	High input voltage	Batt Vol Error	Battery voltage error
			Input Vol Low	Low input voltage	Batt Vol End	End of battery discharge
	BATTERY	During battery operation	Input Error	Input error	Batt Vol Low	Low battery voltage
	BATT TEST	During battery testing	INV Vol Hi	High inverter voltage (serious malfunction)	CHG Error	Charger error (serious malfunction)
			INV Vol Low	Low inverter voltage (serious malfunction)	CONV Error	Converter error (serious malfunction)
	SYS FAILURE	During system malfunction	INV Vol Error	Inverter voltage detection circuit error (serious malfunction)	BF Circuit Error	Back feed prevention circuit error (serious malfunction)
			Output Stop (HV)	Bypass output stopped (excessive voltage)	FIN Temp Error	Fin temperature error (serious malfunction)
			Over Load	Overload	DSP Error	Controller error (serious malfunction)
			Vo= V Fo= Hz	Output voltage, output frequency	BUS Error	DC voltage error (serious malfunction)
			Vi= V Fi= Hz	Input voltage, input frequency	AUX2 Error	Auxiliary power error (minor malfunction)
			LF= % CHG= % *	Load factor %, Charging rate %	Total Unit# Err	Total number of units error (serious malfunction)
			LF= % Tim= m *	Load factor %, Charging duration minutes	LCD Error	LCD panel error
			Byp Fuse Error	Bypass fuse error	Minor Error	Minor malfunction
			Bypass SW ON	Bypass switch ON	Fatal Error	Serious malfunction
			Req To Restart	Restart is necessary.	FT Disabled	Redundant operation not allowed
			Remote	Battery test by remote operation in progress	Check Unit Error	Device error exists and checking is required.
			Remote OFF	Operation stops due to remote OFF.	EPO ON	Operation stopping due to EPO
			Output Not Sync	Asynchronous operation	Batt Life End	End of battery life
			Input Freq Err	Input frequency error	Batt Life Warn	Battery life end warning

* Refer to §8 “Notes on UPS Measurements Information.”

2. MEASUREMENT

Home menu	Measurement setting		Measurements displayed	
	Display	Description	Display	Description
MEASUREMENT (measurements displayed)	INPUT	Input measurements	Vin = V	Input voltage
			Fin = Hz	Input frequency
	OUTPUT	Output measurements	Vout = V	Output voltage
			Iout = A	Output current
			LF = % *	Load factor
			Watt = kW	Output power
			Fout = Hz	Output frequency
	BATTERY	Battery measurements	Vbatt = V	Battery voltage
			ChgRate = % *	Battery charging rate
			RunTm = Min. *	Battery retention time
			Power Failure Times	Number of outages
			Battery Life Years	Battery life
			Backup OPE. Time Sec.	Accumulated time on battery operation
	CHARGER	Charger measurements	Vchg = V	Charger voltage
			Ichg = A	Charger current
	TEMPERATURE	Temperature measurements	T-Amb = ° C	Ambient temperature

* Refer to §8 “Notes on UPS Measurements Information.”

Home menu	Settings group	Settings			Values		Default setting
		Display	Content	Description	Display	Description	
SETTING (various settings)	SET IN/OUT (input/output setting)	Voltage	Output voltage ★	Set UPS output voltage. Same as input voltage	200V	Output voltage 200V	*
					220V	Output voltage 220V	
					230V	Output voltage 230V	
					240V	Output voltage 240V	
					208V	Output voltage 208V	
		FREQ Range	Synchronous frequency tracking range★	Set range (%) at which the output frequency tracks input frequency	1%	±1%	
					3%	±3%	*
					5%	±5%	
		Frequency	Output frequency ★	Set output frequency.	Auto	Automatic selection	*
					50Hz	Fixed at 50Hz	
					60Hz	Fixed at 60Hz	
		Display	Voltage current display	Set input/output voltage and current for measurements display etc.	200V/200V(S)	200V/200V(S)	Differs depending on UPS model
					200V/100V	200V/100V	
					100V/200V	100V/200V	
					100V/100V	100V/100V	
					200V/200V	200V/200V	
	SET I/F (interface setting)	Interface	Interface	Set interface for using PC interface connector.	Standalone	Standalone	
					WS	Workstation	*
					Terminal *1	Terminal	
		Baud Rate	Baud rate	Set baud rate for connection with PC, LAN card, or Workstation.	9600	9600bps	*
					4800	4800bps	
					2400	2400bps	
	SET OPERATION (operation setting)	Start Condition	Specify operation during power recovery.	Set UPS operation to perform when utility power recovers, after UPS stops due to end of battery discharge in power outage.	Auto	Automatic	*
					Any Condition	Always start	
					STOP	Stop	
					BATT>30%	Start when charging rate reaches 30%.	
					BATT>50%	Start when charging rate reaches 50%.	
					BATT>80%	Start when charging rate reaches 80%.	
		BUZZER	Buzzer sound	Set when the buzzer should beep.	ALL	All	*
					Group #1	Group 1	
					Group #2	Group 2	
					SILENT	Stop	
		OFF Operation	Operation of OFF	Set how to turn off ⦿ on the operation panel of the main unit to stop the UPS.	1 Sec.	Turn off when pressed for 1 second.	*
					3 Sec.	Turn off when pressed for 3 seconds.	
					Unique	Turn off by special operation.	
		OVER Load	Overload operation	Set what to do after power supply switches to bypass due to overload.	Auto Ret BYP	Automatic recovery from bypass	
					Stay on BYP	Bypass power supply during overload	*
					Output OFF *1	Stop output	
		Output @OFF	Power supply during OFF ★	Set output's power supply state when UPS stops.	OFF	Stop output	*
					BYPASS	Bypass power supply	
	SET BATTERY (battery setting)	BATLV Timing	BATLV timing	Set when to issue battery voltage low warning.	Voltage	When battery voltage threshold is detected	*
					2 Min.	When 2 minutes left in battery capacity	
					3 Min.	When 3 minutes left in battery capacity	
					5 Min.	When 5 minutes left in battery capacity	
					10 Min.	When 10 minutes left in battery capacity	
		BATT TST Length	Battery test time	Set duration to perform battery test.	2 Min	Run for 2 minutes	*
					5 Min.	Run for 5 minutes	
					10 Min.	Run for 10 minutes	
					20 Min.	Run for 20 minutes	
		BATT TST Period	Battery test schedule	Set when (number of days) to run battery test automatically.	180 days	Automatically every 180 days	*
					90 days	Automatically every 90 days	
					30 days	Automatically every 30 days	
					None	No automatic testing	
	SET FUNCTION (function setting)	RUN TIM @PF	Operating period during outage	Set the time from when UPS starts backup to when it stops output.	BATT END	Until end of battery discharge	*
					10 Sec.	Stop output after 10 seconds	
					30 Sec.	Stop output after 30 seconds	
					1 Min.	Stop output after 1 minute	
					3 Min.	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 to output RING signal during UPS startup.	Output	Output	
					None	Do not output	*
		Out Vol Adj.	Output voltage adjustment	Set adjustment for rated voltage set in 3.1. Each increment of adjustment is about 1V	-3	Minus 3 increments	
					-2	Minus 2 increments	
					-1	Minus 1 increment	
					0	No adjustment	*
					+1	Plus 1 increment	
					+2	Plus 2 increments	
					+3	Plus 3 increments	
	SET SYSTEM (system setting)	DATE/TIME	Date/Time	Set date and time for UPS.	DATE YY/MM/DD TIME HH:MM:SS	Date YY/MM/DD Time HH/MM/SS	
		ChA Total Unit#	Number of units in ChA system parallel connection	Set the number of UPS units connected in the UPS system.	1	1 unit	Differs depending on UPS model
					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 in ChB system parallel connection	Do not change anything here.	1	Do not change anything here.	*
					2		
					3		
					4		
					5		
					6		
					7		
					8		
		Redundancy	UPS operation system	Redundant operation, or single machine/parallel operation	N+1	Redundant operation	
					None	Single machine/parallel operation	*
		INPUT Phases	Input phase ★	Specify input phase of UPS	Single	Single phase, 2 wires	*
					3Ph/4W *1	3 phases, 4 wires	
	SET DEFAULT (initialization)	SET DEFAULT	Reset to factory default setting		—	—	—

★: Settings that require restarting UPS *1: Do not set values to these settings.

4. CONTROL

Home menu	Operation		Displayed item		Displayed content			
	Display	Description	Display	Description	Display	Description	Result	Description
CONTROL (UPS operation)	BATTERY TEST	Run battery test	Start	Start	[SELECT] = OK	OK to start	Control NG	Operation canceled
					[BACK] = Cancel	Cancel	Control OK	Normal termination
			STATUS	Test status	Test Condition	Test status	Possible	Test can start
							Impossible	Test cannot start
							Testing	Test in progress
					Last Test Time	Date of last test	YY/MM/DD 00:00	YY/MM/DD HH:MM
					Last Result *1	Result of last test	BATTST:OK	Normal
							BATTST:NG	Error
							BATTST: No Result	No previous result
							BATTST:Error	Error
							BATTST:Suspended	Aborted
	INV ON	Start UPS	[SELECT] = OK	ON	Control NG	Operation canceled	Control OK	Normal termination
			[BACK] = Cancel	Cancel				
	INV OFF	Stop UPS	[SELECT] = OK	OFF	Control NG	Operation canceled	Control OK	Normal termination
			[BACK] = Cancel	Cancel				
	BYPASS	Switch to bypass operation	[SELECT] = OK	Switch	Control NG	Operation canceled	Control OK	Normal termination
			[BACK] = Cancel	Cancel				

5. MAINTENANCE (for service technician)

Home menu	Operations group	Displayed item		Item				
		Display	Description					
MAINTENANCE (maintenance)	MAINTENANCE SYSTEM (maintenance of UPS system)	FAIL HIST	Malfunction history	HIST #(1～4)	Malfunction history display: up to 4 can be saved.			
		OPE. HIST	Operation history	HIST #(1～8)	Operation history display: up to 8 can be saved.			
		INTERNAL INFO.	Battery information	BATTERY INFO.	Battery information	Power Failure Times	Number of outages	
						Battery Life Years	Battery life	
						INV OPE. Time Hours	Accumulated time on UPS operation	
						Backup OPE. Time Sec.	Accumulated time on battery operation	
						Last Test Time YY/MM/DD HH:MM	Date of last test	
						Last Result *1	Result of last test	
				RESET BATT INFO.	Reset battery information			
				BATT. CAPA	Set backup time	Values	5Min.	5 minutes (Default setting is different depending on UPS model)
							10Min	10 minutes
							15Min.	15 minutes
							25Min.	25 minutes
							30Min.	30 minutes
							35Min.	35 minutes
							45Min.	45 minutes
							60Min.	60 minutes
							120Min.	120 minutes
							180Min.	180 minutes
							360Min.	360 minutes
				BATT. Life	Set battery life	Values	5Years	5 years (default)
							10Years	10 years
							13Years	13 years
		Unit INFO.	System information	UPS Model	UPS model name	Rated voltage	Rated input voltage	
				ROM Ver.	Program version	Pow DistNum	Number of output systems	
				Run Time	Rated backup time	Always Out	Whether to have constant output	
				Out Capa	Rated capacity	Serial ID	Serial number	
				Input Phases	Number of input phases	P3-LCD Ver.	LCD program version	
				Output Phases	Number of output phases			
	MAINTENANCE UNIT1 ¦ UNIT8 (maintenance UPS unit 1 ¦ UPS unit 8)	FAIL HIST	Malfunction history	HIST #(1～4)	Malfunction history display: up to 4 can be saved.			
		OPE. HIST	Operation history	HIST #(1～8)	Operation history display: up to 8 can be saved.			
		INTERNAL INFO.	Battery information	BATTERY INFO.	Battery information	Power Failure Times	Number of outages	
						Battery Life Years	Battery life	
						INV OPE. Time Hours	Accumulated time on UPS operation	
						Backup OPE. Time Sec.	Accumulated time on battery operation	
						Last Test Time YY/MM/DD HH:MM	Date of last test	
						Last Result *1	Result of last test	
				RESET BATT INFO.	Reset battery information			
		Unit INFO.	System information	UPS Model	UPS model name	Rated Voltage	Rated Input Voltage	
				ROM Ver.	Program version	Pow Dist Num	Number of output systems	
				Run Time	Rated backup time	Always Out	Whether to have constant output	
				Out Capa	Rated capacity	Serial ID	Serial number	
				Input Phases	Number of input phases	P3-LCD Ver.	LCD program version	
				Output Phases	Number of output phases			
		STATUS	Unit state display	Same as "1.STATUS"				
		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 (BUS) voltage	
				Tamb = ° C	Ambient temperature			

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

§7. Status Description

The following table lists details about UPS states that appear on the LCD screen in the "STATUS" home menu. If you cannot resolve the problem when the UPS malfunctions, contact your supplier or SANYO DENKI.

UPS mode		State display		
Display	Description	Display	Description	Details and solution
STANDBY	Standby	Output Not Sync	Asynchronous operation	Power supply is asynchronous with input power source. Switching to bypass operation is instant cutoff switching.
ONLINE	Online	Input Freq Err	Input frequency error	The input power source exceeds the acceptable frequency range. If it occurs during normal operation, power supply automatically switches to battery. If this problem occurs frequently, check the input power source and the UPS frequency setting.
BYPASS	During bypass operation	Input Vol Hi	High input voltage	The input power source exceeds the acceptable voltage range. If it occurs during normal operation, power supply automatically switches to battery. If this problem occurs frequently, check the input power source and the UPS frequency setting.
BATTERY	During battery operation	Input Vol Low	Low input voltage	
BATT TEST	During battery testing	Input Error	Input error	Instant disconnection of input power source is detected. If it occurs during normal operation, power supply automatically switches to battery. If this problem occurs frequently, check the input power source and the UPS frequency setting.
SYS FAILURE	During system malfunction	INV Vol Hi	High inverter voltage (serious malfunction)	Inverter output voltage error is detected. UPS is malfunctioning. Contact your supplier or SANYO DENKI.
		INV Vol Low	Low inverter voltage (serious malfunction)	
		INV Vol Error	Inverter voltage detection circuit error (serious malfunction)	UPS is malfunctioning. Contact your supplier or SANYO DENKI.
		Output Stop (HV)	Bypass output stopped (excessive voltage)	Power supply stops because input over voltage is detected during bypass operation.
		OverLoad	Overload	There are a lot of load devices connected to the UPS to exceed the UPS rated capacity. Reduce the number of load devices.
		Vo= V Fo= Hz	Output voltage, output frequency	Output voltage, output frequency
		Vi= V Fi= Hz	Input voltage, input frequency	Input voltage, input frequency
		LF= % CHG= % *	Load factor %, Charging rate %	Load factor %, Charging rate %
		LF= % Tim= m *	Load factor %, Charging duration minutes	Load factor %, Charging duration minutes
		Byp Fuse Error	Bypass fuse error	There are a lot of load devices connected to the UPS to exceed the UPS rated capacity. As a result, the MAIN MCCB trips. Reduce the number of load devices.
		Bypass SW ON	Bypass switch ON	The forced bypass switch Forced Bypass is set to "Bypass".
		Req To Restart	Restart is necessary.	Values for settings are changed but they require restart of the UPS before their changes take effect. Therefore, see §3.23 "Restarting UPS" and then restart the UPS.
		Remote	Battery test by remote operation in progress	Battery test is in progress by remote operation of power management software.
		Remote OFF	Operation stops due to remote OFF.	Inverter startup operation is canceled because remote OFF signal is input.
		EPO ON	Operation stopping due to EPO.	Inverter startup operation is canceled because EPO signal is input.
		Batt Life End	End of battery life	The battery life has come to an end. Replace the battery.
		Batt Life Warn	Battery life end warning	The battery will last for 6 more months. Prepare to replace the battery.
		Batt Vol Error	Battery voltage error	No battery pack is connected. Make sure a battery pack is installed.
		Batt Vol End	End of battery discharge	Battery discharge has ended.
		Batt Vol Low	Low battery voltage	Battery voltage is low.
		CHG Error	Charger error (serious malfunction)	UPS is malfunctioning. Contact your supplier or SANYO DENKI.
		CONV Error	Converter error (serious malfunction)	UPS is malfunctioning. Contact your supplier or SANYO DENKI.
		FIN Temp Error	Fin temperature error (serious malfunction)	UPS is malfunctioning. Contact your supplier or SANYO DENKI.
		DSP Error	Controller error (serious malfunction)	UPS is malfunctioning. Contact your supplier or SANYO DENKI.
		BUS Error	DC voltage error (serious malfunction)	UPS is malfunctioning. Contact your supplier or SANYO DENKI.
		AUX2 Error	Auxiliary power error (minor malfunction)	UPS is malfunctioning. Contact your supplier or SANYO DENKI.
		BF Circuit Error	Back feed prevention circuit error (serious malfunction)	UPS is malfunctioning. Contact your supplier or SANYO DENKI.
		Total Unit# Err	Total number of units error (serious malfunction)	The number of UPS units set in §3.19 is different from the actual number of UPS units operating. Check the setting and the actual number of UPS units.
		LCD Error	LCD panel error	The LCD panel is malfunctioning. Contact your supplier or SANYO DENKI.
		Minor Error	Minor malfunction	Contact your supplier or SANYO DENKI.
		Fatal Error	Serious malfunction	UPS is malfunctioning. Contact your supplier or SANYO DENKI.
		FT Disabled	Redundant operation not allowed	In §3.20, if the operation system is set to "N+1": there is a lot of load capacity connected to the UPS so that parallel redundant operation is not possible. Reduce the number of connected load devices.
		Check Unit Error	Device error exists and checking is required.	There may be communication error between units. Check the cable connecting the units.

* Refer to §8 "Notes on UPS Measurements Information."

§8. Notes on UPS Measurements Information

About the Battery Charge Rate Indication

(1) Although the batteries in the UPS have been charged when shipping the UPS from factory, the battery charging rate "ChgRate = %" is indicated as "0%" if you operate the LCD panel to display it at initial startup of the UPS. Since the battery charging rate will increase according to operating time of the UPS, see the item "Charging UPS" in the *A11J Instruction Manual* to operate the UPS.
The operating time of which the battery charging rate becomes 100% differs depending on the configuration of the connected battery.

(2) If the UPS is stopped and then restarted, even when the UPS is sufficiently charged, the battery charging rate may be indicated as "80%" or "90%." This occurs due to the influence of operating conditions such as ambient temperature, and the battery charging rate will be indicated correctly if the UPS is operated for about 1 to 2 hours.

(3) If the UPS is operated when the batteries are not connected properly, the battery charging rate "ChgRate = %" may not be indicated correctly. In such a state, even if the batteries are reconnected and the UPS is operated again, the correct value will not be displayed immediately. If this happens, the correct value will be indicated if the UPS is operated normally for at least 12 hours. However, the operating time of which the battery charging rate will be correctly indicated differs depending on the specifications of the UPS (configuration of the battery).

(4) The value indicated by "ChgRate = %" is only an approximation. It may differ from the actual charge rate.

About the Battery Retention Time Indication

(1) The battery retention time "RunTm = Min." may not be displayed accurately if the load factor is 30% or less.

(2) This battery retention time "RunTm = Min." is only an approximation. It may differ from the actual backup time.

About the Load Factor Indication

(1) The load factor value "LF = %" displayed by viewing UPS measurements is same even when either setting value ("N+1" or "None") is set in§3.20 "Setting Operation System."
Do not use the load devices in excess of the maximum load factor shown in the table below.
When setting to "N+1", if you use the load devices in excess of the maximum load factor, the UPS can not perform the parallel redundant operation. Moreover the output power supply of some UPS model may stop. If the setting is "N+1", and the load devices in excess of the maximum load factor, "FT Disabled" message is shown on the LCD screen. In this case, reduce the load devices connected to the UPS.

Maximum Load Factor by the setting value of Operation System

UPS	Operation System setting	Maximum Load Factor
A11J103	None	100 %
	N+1	50 %
A11J153	None	100 %
	N+1	65 %
A11J203	None	100 %
	N+1	75 %
A11J103N	None	(Do not set values to these settings.)
	N+1	65 %