Supplementary sheet（MODEL 6300 Quick manual）(English)

Supports 256M / 512M / 1G / 2G / 4G / 8GB CF cards.

* with the instrument ver 1.10
(ver 1.08 or earlier supports 128MB or less, 1.09 supports 1GB or less)

● Operation check has completed

Capacity	256MB	512MB	1GB
SanDisk Corp.	SDCFB-256	SDCFB-512	SDCFG-1
Adtec co., Ltd.	AD-CFG256	-----	AD-CFX40T1G
BUFFALO INC.	RCF-X256MY	-----	RCF-X1GY
Capacity	**2GB**	**4GB**	**8GB**
SanDisk Corp.	Ultra II 15MB/s CF 2GB SDCFH-002G	Ultra II 15MB/s CF 4GB SDCFH-004G	Ultra II 15MB/s CF 8GB SDCFH-008G

* This instrument supports FAT16 and cannot save data of 2GB or more if a card of 4GB or more is used.
(Identified as over capacity when the area of usage exceeds 2GB.)

* When a mark of "CARD" displayed for several tens of seconds at powering on the instrument, the CF card inserted may not be appropriate to be used with this instrument. In this case, try to format the card on this instrument. If it is failed, the card cannot be used with this instrument.

● Max possible recoding time

<table>
<tr><th colspan="2">Capacity</th><th>256MB</th><th>512MB</th><th>1GB</th><th>2GB</th><th>4GB</th><th>8GB</th></tr>
<tr><td colspan="2">Instantaneous measurement</td><td>400,000</td><td>800,000</td><td colspan="4">1,000,000 or more</td></tr>
<tr><td rowspan="3">Interval at Integration/ Demand measurement</td><td>1sec</td><td>2 days</td><td>4 days</td><td>9 days</td><td colspan="3">18 days</td></tr>
<tr><td>1min</td><td>144 days</td><td>288 days</td><td colspan="4">over 1 year</td></tr>
<tr><td>30min</td><td colspan="6">over 1 year</td></tr>
<tr><td colspan="2">Max number of files</td><td colspan="6">20</td></tr>
</table>

Quick manual

Read the Manual in the supplied CD-ROM first.

DIGITAL POWER METER

MODEL 6300

KYORITSU ELECTRICAL INSTRUMENTS WORKS, LTD.

● Preface

This Quick manual is a simplified version of the full instruction manual which can be found in the supplied CD-ROM.

This manual is intended only as a handy reference guide and should only be used after having read the full instruction manual which contains full details on each function of this instrument and the items contained in the package.

● Safety Warning!

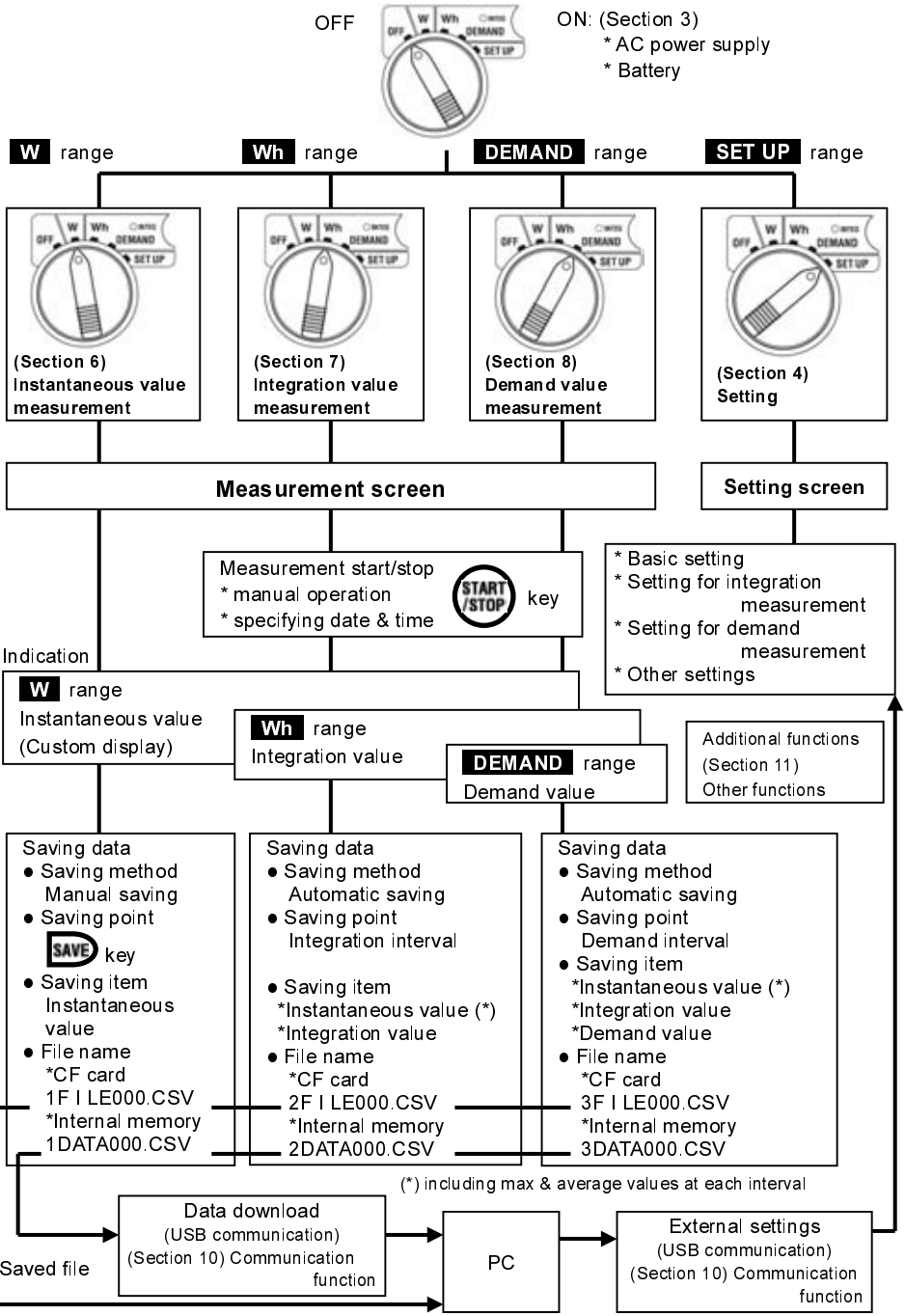
The instruction manual contains warnings and safety procedures which have to be observed to ensure safe operation of the instrument and maintain it in a safe condition. Thus, these operating instructions have to be read prior to using the instrument.

Contents

Each section heading in this manual is followed by a cross reference (enclosed in parenthesis) to the Instruction manual. The subheadings are also followed by a similar cross reference which refers to the corresponding clause in the instruction manual.

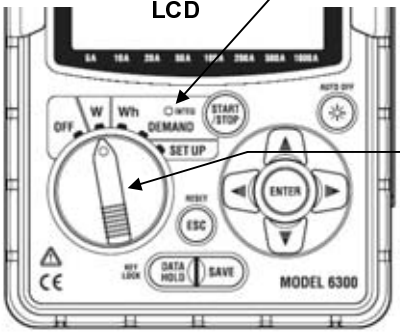
The contents of this Quick manual are subject to change without prior notice.

1. Functional overview (Section 1)



2. Instrument layout (Section 2)

• Display & keys (2-1)

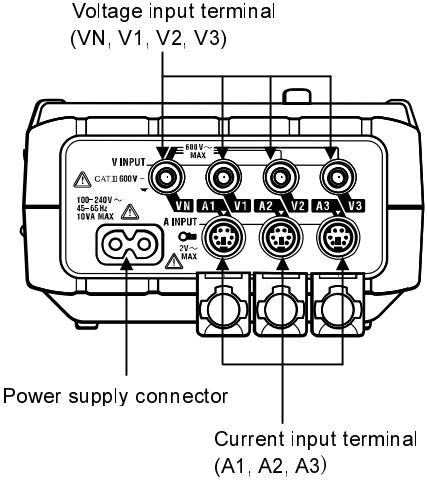


LED status indicator
*Lights up: During integration/ demand measurement
*Flashes : During integration/ demand stand-by mode

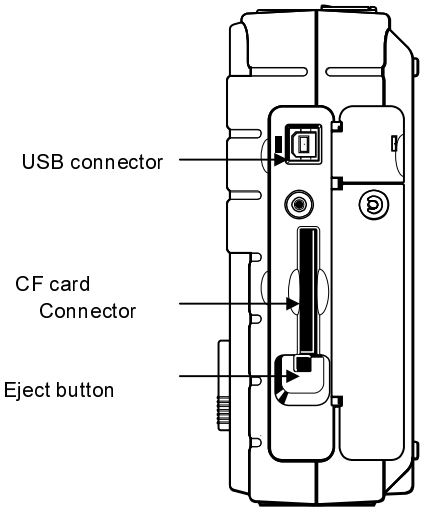
Function switch
* Turns the instrument on when it is in any position other than OFF. (Section 3)
1. AC power supply, or
2. Battery

Keys	Details	Keys	Details
START /STOP	Starts/ Stops integration and demand measurement.	ESC	* Cancels a setting * Clears integration/ demand value
☼	Switches on/off the backlight of the LCD.	DATA HOLD	* Data hold * Key lock Pressing this key for at least 2 sec locks keys. Pressing again this key for at least 2 sec releases key lock.
◀ ▶ ▲ ▼	Measurement screen: Switches the display contents. Setting screen: Changes selection, number, or moves digits.		
ENTER	Confirms entry such as a change to a setting.	SAVE	Saves the instantaneous measurement data.

• Connector (2-2)

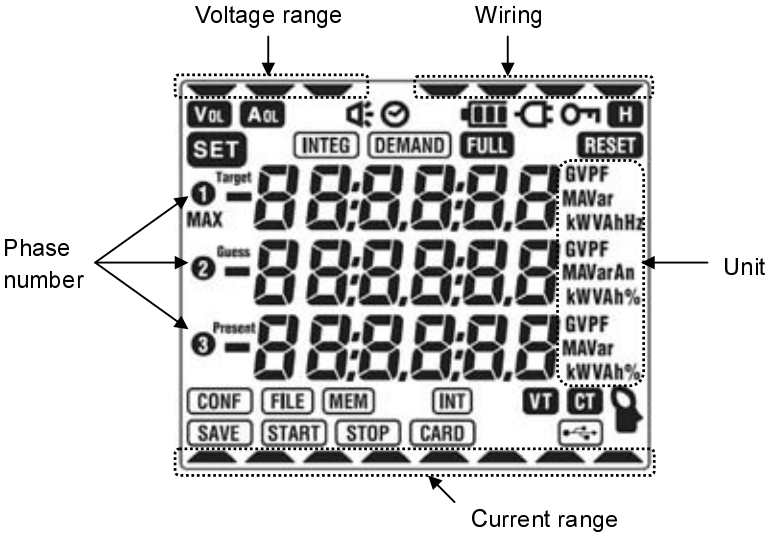


• CF card/ USB part (2-3)



● Marks displayed on the LCD (2-1)

< All marks to be displayed on the LCD>



< Marks indicate the measurement status or functions >

Mark	Measurement status or function
	Displayed when the keys are locked.
VOL	Displayed when voltage exceeds a certain value.
AOL	Displayed when current exceeds a certain value.
	Displayed when instrument is operating with AC power supply.
	Displayed when instrument if operating with batteries.
H	Displayed when data hold function is activated.
INTEG	Displayed during integration, Flashes during stand-by mode.
DEMAND	Displayed during demand, Flashes during stand-by mode.
FULL	Displayed when the capacity of CF card or internal memory is full.
CARD	Displayed while saving data in CF card.
FILE	Displayed when opening/ closing a file at measurement.
SAVE	Displayed when saving data.
MEM	Displayed when a file exists in the internal memory.
VT	Displayed when VT ratio is set to at a value other than 1.
CT	Displayed when CT ratio is set to at a value other than 1.

3. Setting: SET UP range (Section 4)

3.1 List of setting items (4-1)

Each Setting	Item No./ Setting item	Mark	Setting
Basic setting	**01** Wiring	-	1P2W(1ch)/ 1P2W(2ch)/ 1P2W(3ch)/ 1P3W/ 3P3W /3P4W
	02 Voltage range	-	150/ 300/ 600V
	03 Current range	-	Range (**04** Clamp sensor) 5/ 10/ 20/ 50A : (50A) 10/ 20/ 50/ 100A : (100A) 20/ 50/ 100/ 200A : (200A) 50/ 100/ 200/ 500A : (500A) 100/ 200/ 500/ 1000A : (1000A) 1000/ 3000A : (3000A)
	04 Clamp sensor		50/ 100/ 200/ 500/ 1000/ 3000A
	05 VT ratio	VT	1 ~ 10000
	06 CT ratio	CT	1.00 ~ 10000.0
Other settings	**07** Time (*1)		Year : Month : Day, Hour : Minute : Second
	08 Buzzer		on (sound) oFF (not sound)
Settings only for integration measurement	**09** Integration interval	INTEG INT	1/ 2/ 5/ 10/ 15/ 20/ 30 sec. 1/ 2/ 5/ 10/ 15/ 20/ 30 min., 1 hour
	10 Integration start time & date	INTEG START	Year : Month : Day, Hour : Minute : Second
	11 Integration stop time & date	INTEG STOP	Year : Month : Day, Hour : Minute : Second
	12 Reset of integration value	INTEG RESET	on (reset) oFF (not reset)
Settings only for demand measurement	**13** Demand Interval	DEMAND INT	1/ 2/ 5/ 10/ 15/ 20/ 30 sec. 1/ 2/ 5/ 10/ 15/ 20/ 30 min., 1 hour
	14 Demand start time & date	DEMAND START	Year : Month : Day, Hour : Minute : Second
	15 Demand stop time & date	DEMAND STOP	Year : Month : Day, Hour : Minute : Second
	16 Demand target value	DEMAND Target	0.1W ~ 999.9GW
	17 Demand inspection cycle	DEMAND	Can select a time from any three of preceding time as demand interval. <e.g.> Interval =30min. →10/ 15/ 20 min.
	18 Reset of demand value	DEMAND RESET	on (reset) oFF (not reset)

Each Setting	Item No./ Setting item	Mark	Setting
Setting for CF card	**19** Use of CF card (*2)	CARD	on (use) oFF (not use, use internal memory)
	20 Formatting of CF card (*3)		on (formatting) oFF (not formatting)
	21 Deleting the data in CF card		dEL (delete) not.dEL (not delete)
Other settings	**22** Deleting the data in internal memory	MEM	dEL (delete) not.dEL (not delete)
	23 System reset	RESET	on (reset) oFF (not reset)
	24 Loading settings	CONF	Save number 01 ~ 20
	25 Saving settings		Save number 01 ~ 20

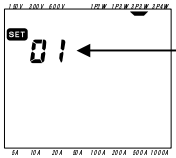
(*1) Time has been adjusted to Japanese local time at the shipment.

(*2) A message “on” is displayed on the LCD when powering on the instrument while the formatted CF card has been inserted.

(*3) Format a CF Card before use.

3-2 Setting procedure (4-3)

STEP 1 Set the Function switch to **SET UP** range. (setting screen)



Item number

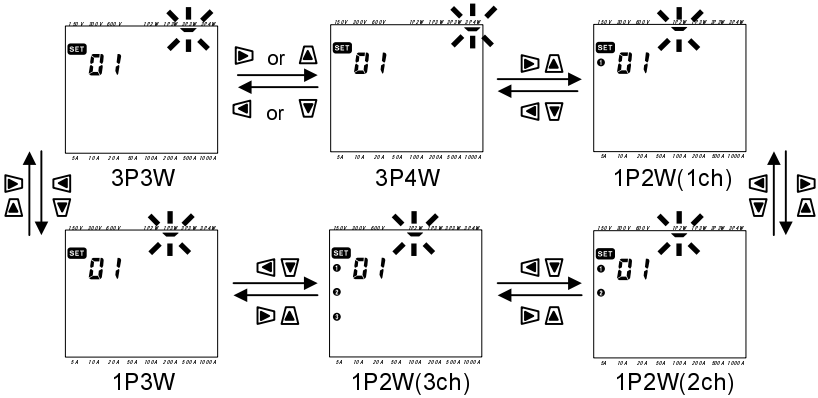
Setting screen

STEP 2 Switch the setting items (Item number 01 ~ 25) with ◀ ▶ ▲ ▼ keys.

STEP 3 Press the ENTER key on the selected item.
(Then settings blink and the instrument gets setting change mode.)

STEP 4 Change the settings with ◀ ▶ ▲ ▼ keys.

< Example>
Item number **[01]**, Setting item **[Wiring]**
Setting **[1P2W(1ch)/ 1P2W(2ch)/ 1P2W(3ch)/ 1P3W/ 3P3W/ 3P4W]**

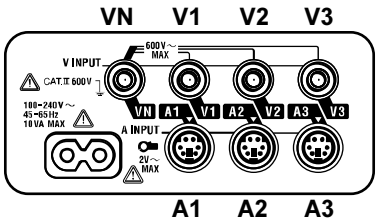


STEP 5 Enter the settings.
(Press the ENTER key.)

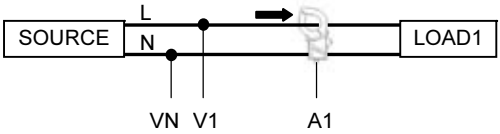
STEP 5 Cancel the settings.
(Press the ESC key.)

Setting ends: Proceed to **STEP2** to do other settings.

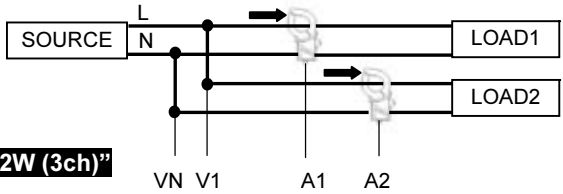
4. Wiring (Section 5)



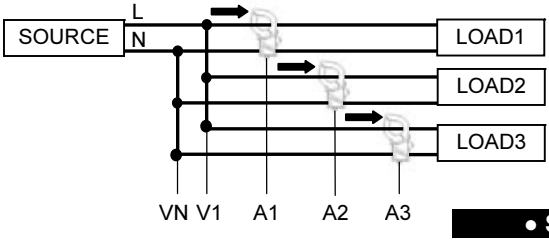
• Single-phase 2-wire (1ch) "1P2W (1ch)"



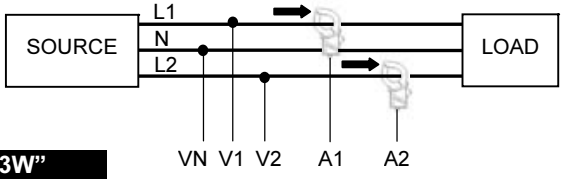
• Single-phase 2-wire (2ch) "1P2W (2ch)"



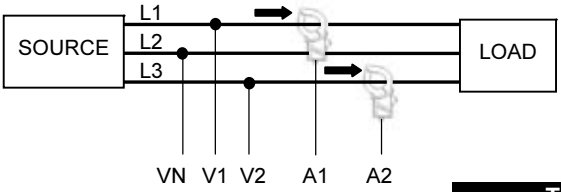
• Single-phase 2-wire (3ch) "1P2W (3ch)"



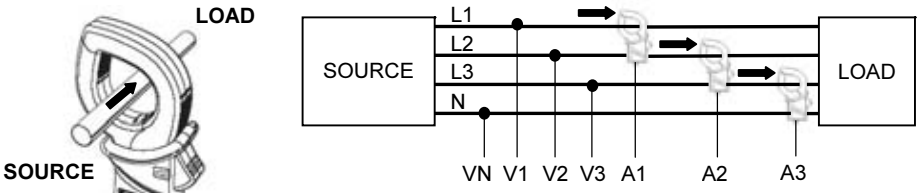
• Single-phase 3-wire "1P3W"



• Three-phase 3-wire "3P3W"

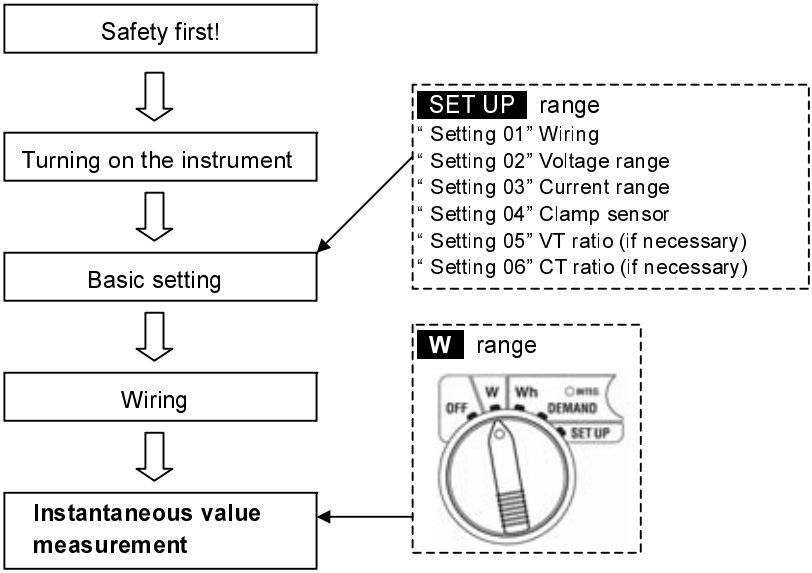


• Three-phase 4-wire "3P4W"



5. Instantaneous value measurement: **W** range (Section 6)

- Measurement flow chart



- Displayed items on **W** range

Displayed parameters				Unit
Voltage (RMS)	V : Average voltage of Vi	Vi	: Voltage per phase	V
Current (RMS)	A : Average current of Vi	Ai	: Current per phase	A
Active power	P : Total active power Polarity: + (no mark) consumption, - (minus) regenerating	Pi	: Active power per phase	W
Reactive power	Q : Total reactive power Polarity: + (no mark) phase lag, - (minus) phase lead	Qi	: Reactive power per phase	Var
Apparent power	S : Total apparent power	Si	: Apparent power per phase	VA
Power factor	PF : Total power factor Polarity: + (no mark) phase lag, - (minus) phase lead	Pfi	: Power factor per phase	PF
Frequency	f : Frequency at V1			Hz
Neutral current	In** : Current on a neutral line (only at three-phase 4-wire)			An

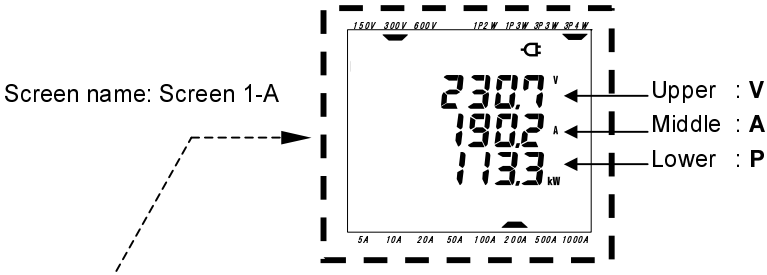
* i = 1, 2, 3

** : The recorded/displayed In(neutral current) value will not be a true value in situations where there is an earth leakage or leakage current flowing through the live conductors of the three phase system that is being monitored using the Power Meter Model 6300.

5.1 Display screen modes(6-1, 6-2)

Three parameters are displayed on one screen as shown below. (On Screen 1-A: V/ A/ P) Display screens vary depending on the wiring configuration.

- In case of a Three-phase 4-wire "3P4W" (15 screens)



X Axis ▶ ◀

Screen name	Y Axis		A	B	C	D	E	F	G
			(1-A)	(1-B)	(1-C)	(1-D)			
Upper	▲ ▼	1	**V**	V1	V2	V3	-	-	-
Middle			**A**	A1	A2	A3			
Lower			**P**	P1	P2	P3			
Screen name			(2-A)	(2-B)	(2-C)	(2-D)			
Upper		2	P	P1	P2	P3	-	-	-
Middle			S	S1	S2	S3			
Lower			PF	PF1	PF2	PF3			
Screen name			(3-A)	(3-B)	(3-C)	(3-D)	(3-E)	(3-F)	(3-G)
Upper		3	V1	A1	P1	PF1	S1	Q1	f
Middle			V2	A2	P2	PF2	S2	Q2	In
Lower			V3	A3	P3	PF3	S3	Q3	-

* Screen 1-A appears on switching on the instrument .
* Pressing ▶ or ◀ key displays the screens along the X axis of the above table. (eg. from Screen 1-A to 1-D, Screen 2-A to 2-D, Screen 3-A to 3-G)
* Pressing ▲ or ▼ key displays the screens along the Y axis of the above table
  Pressing ▲ key whilst on any Screen 1, displays screen 3-A, and 2-A by pressing ▼ key.
  Pressing ▲ key whilst on any screen 2, displays screen 1-A, and 3-A by pressing ▼ key.
  Pressing ▲ key whilst on any screen 3, displays screen 2-A, and 1-A by pressing ▼ key.
* On the display screen, ❶, ❷, ❸ correspond to the respective phase .
  (e.g. On Screen 1-B, ❶ and on Screen 3-A, all ❶ ❷ ❸ are displayed.
  On Screen 1-A, 2-A and 3-G, the numbers will not be displayed.)

●other wiring configuration

Display screen can be switched in the same way to switch “3P4W”.

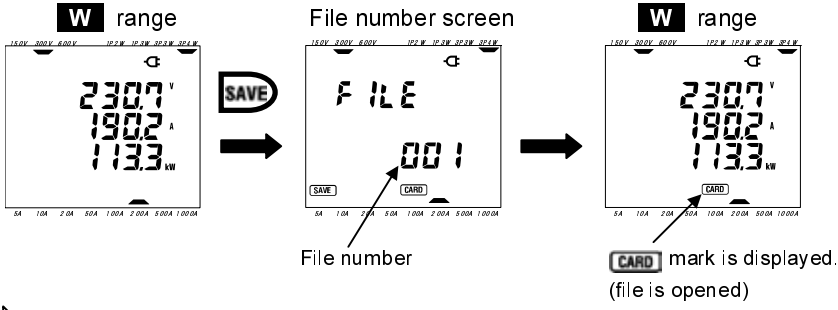
Wiring	A	B	C	D	E	F	G
1P2W (1ch) **9 screens**	V A P	-	-	-	-	-	-
	P S PF	-	-	-	-	-	-
	V - -	A - -	P - -	PF - -	S - -	Q - -	f - -
1P2W (2ch) **13 screens**	V A P	V A1 P1	V A2 P2	-	-	-	-
	P S PF	P1 S1 PF1	P2 S2 PF2	-	-	-	-
	V - -	A1 A2 -	P1 P2 -	PF1 PF2 -	S1 S2 -	Q1 Q2 -	f - -
1P2W (3ch) **15 screens**	V A P	V A1 P1	V A2 P2	V A3 P3	-	-	-
	P S PF	P1 S1 PF1	P2 S2 PF2	P3 S3 PF3	-	-	-
	V - -	A1 A2 A3	P1 P2 P3	PF1 PF2 PF3	S1 S2 S3	Q1 Q2 Q3	f - -
1P3W **13 screens**	V A P	V1 A1 P1	V2 A2 P2	-	-	-	-
	P S PF	P1 S1 PF1	P2 S2 PF2	-	-	-	-
	V1 V2 -	A1 A2 -	P1 P2 -	PF1 PF2 -	S1 S2 -	Q1 Q2 -	f - -
3P3W **13 screens**	V A P	V1 A1 P1	V2 A2 P2	-	-	-	-
	P S PF	P1 S1 PF1	P2 S2 PF2	-	-	-	-
	V1 V2 -	A1 A2 -	P1 P2 -	PF1 PF2 -	S1 S2 -	Q1 Q2 -	f - -

5.2 Data saving procedure (6-4)

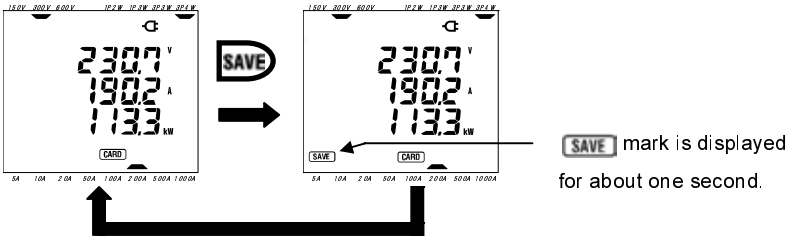
The instantaneous value (on **W** range) can be saved only by a manual operation.

Opening a file

Pressing the SAVE key on **W** range during a measurement displays File number screen and file is opened. (First data is recorded at this stage.)

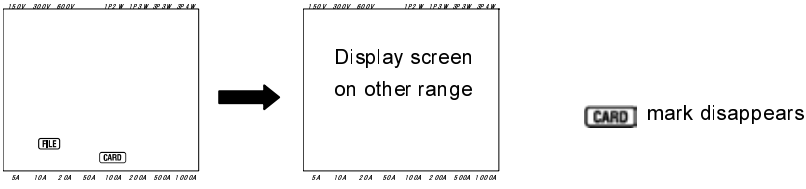


Pressing the SAVE key again records next (second) data stream.



Closing a file

Set the Function switch to any position **other than W and OFF**.



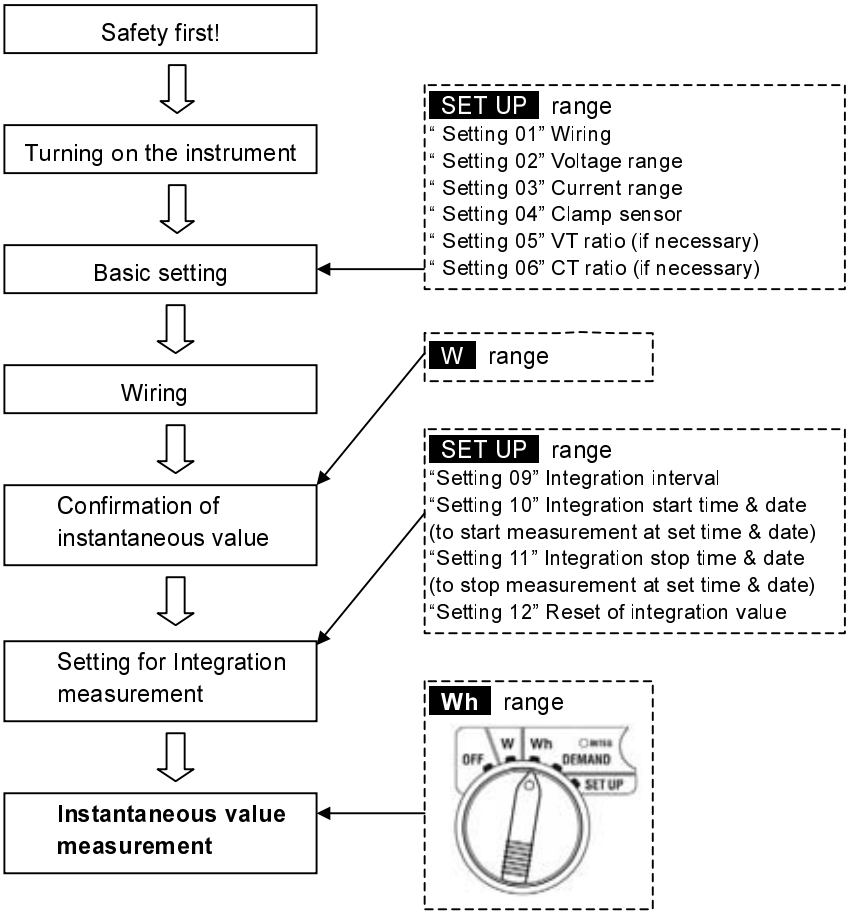
Completing Data saving Procedure

According to above procedure, data can be saved to one file whenever the SAVE key is pressed.

* When data is saved to the internal memory, the MEM mark is displayed instead of the CARD mark.
* File shall be closed first. Data will not be saved when a file is not closed.
* File has to be closed ! Data will not be saved unless a file is closed.

6. Integration value measurement: **Wh** range (Section 7)

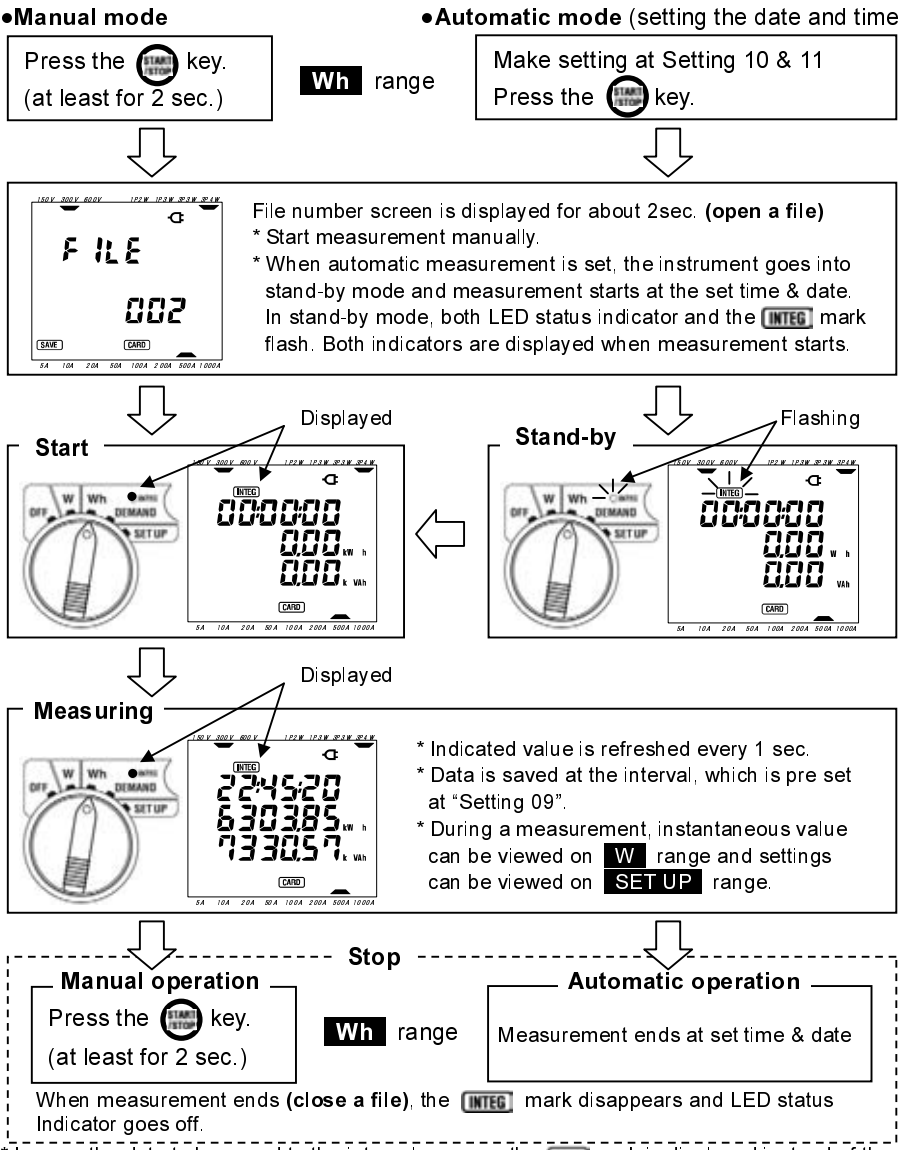
- Measurement flow chart



- Items displayed on **Wh** range

Displayed parameters			Unit
Active electrical energy (consumption)	WP WP1/WP2/WP3	: Total active electrical energy : Active electrical energy per phase	Wh
Apparent electrical energy (consumption)	WS WS1/WS2/WS3	: Total apparent electrical energy : Apparent electrical energy per phase	VAh
Elapsed time of integration	TIME	: Hour; Min.; Sec. Hour; Min. Hour	-

6.1 Measurement execution (7-1, 7-2)



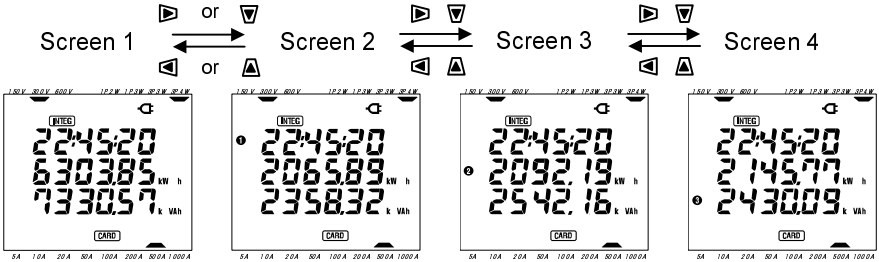
* In case the data to be saved to the internal memory, the MEM mark is displayed instead of the CARD mark.
* Ensure that the file is closed. Data will not be saved unless a file is closed.

Following a measurement, integration value is still shown on the display screen. When the value is not requires for the subsequent measurement, reset (7-3) the integration value by pressing the ESC key for at least 2 sec. and select "dEL", or at "Setting 12".

6.2 Display screen / Data capturing (7-4, 7-5)

● Display screen modes

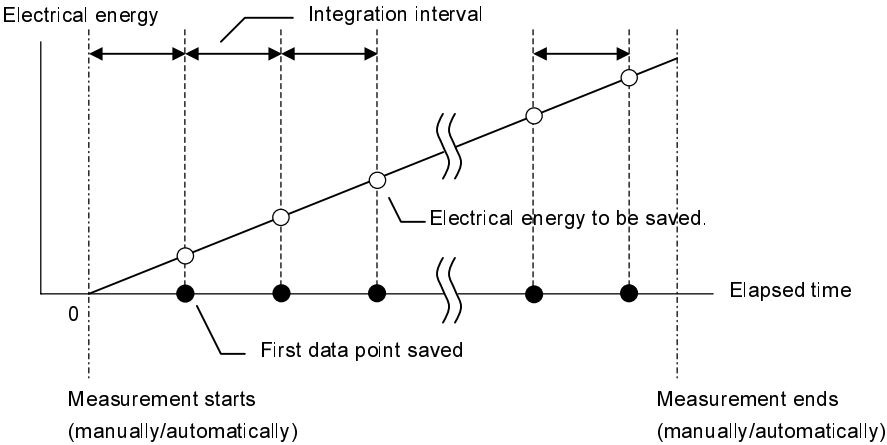
< For Three-phase 4-wire “3P4W” configuration >



<Other wiring configurations>

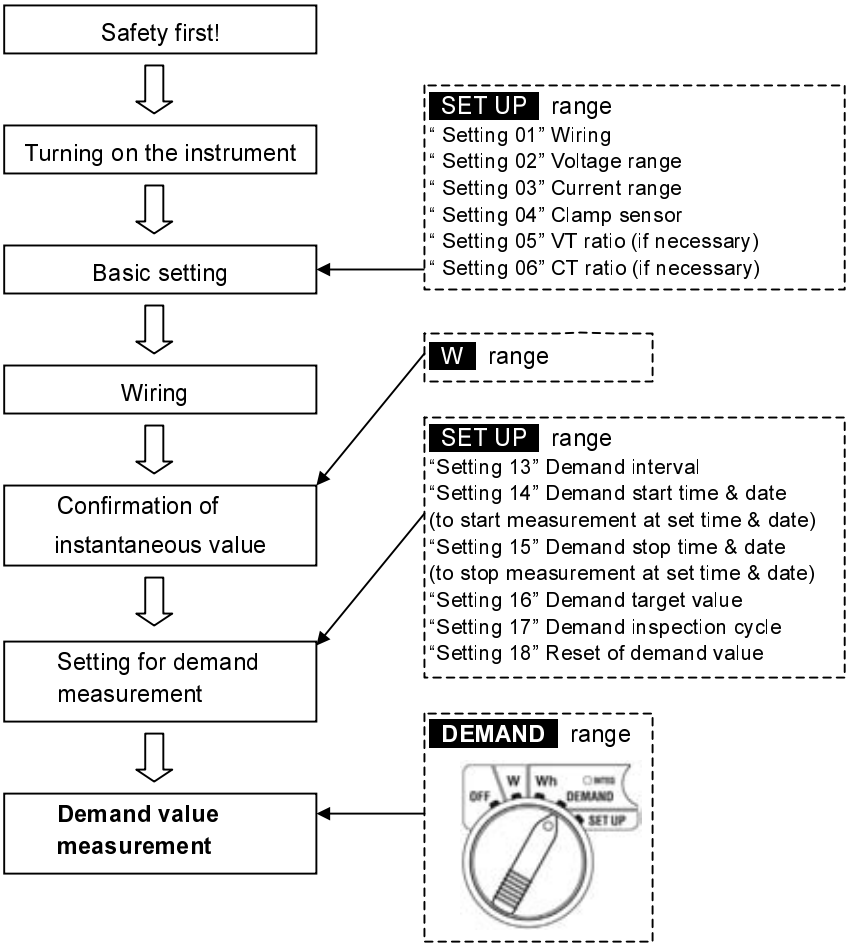
Wiring(“Setting 01”)	Displayed at	Displayed contents			
		Screen1	Screen2	Screen3	Screen4
1P2W (1ch)	Upper Middle Lower	TIME WP WS	-	-	-
1P2W (2ch) 1P3W 3P3W	Upper Middle Lower	TIME WP WS	TIME WP1 WS1	TIME WP2 WS2	-
1P2W (3ch) 3P4W	Upper Middle Lower	TIME WP WS	TIME WP1 WS1	TIME WP2 WS2	TIME WP3 WS3

● Saving capturing (Data is saved automatically without user intervention.)



7. Demand value measurement: DEMAND range (Section 8)

● Measurement flow chart



● Displayed items on **DEMAND** range

Displayed parameters	Unit
Target value	W
Predicted value	W
Present value	W
Load factor	%
Remaining time	-
Max. demand value	W
Date and time when max. demand value measured	-

7.1 Measurement execution (8-3, 8-4)

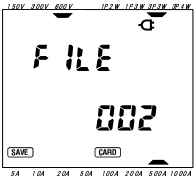
•Manual mode

Press the START/STOP key.
(at least for 2 sec.)

DEMAND range

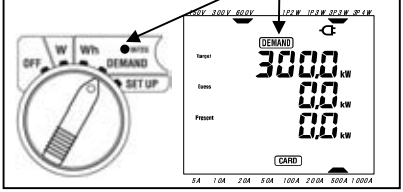
•Automatic mode (setting the date and time)

Make setting at Setting 14 & 15
Press the START/STOP key.

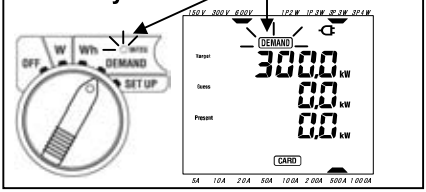


File number screen is displayed for about 2sec. **(open a file)**
* Start measurement manually.
* When automatic measurement is set, the instrument goes into stand-by mode and measurement starts at the set time & date. In stand-by mode, LED status indicator and the DEMAND mark flash. Both are displayed when measurement starts.

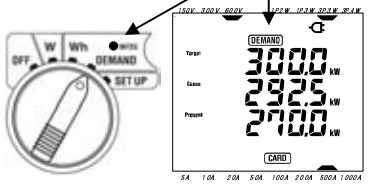
Start — Displayed



Stand-by — Flashing



Measuring — Displayed



* Indicated value is refreshed every 1 sec.
* Data is saved at the interval, which is pre set at “Setting 13”.
* During a measurement, instantaneous value can be viewed on W range, integration value on Wh range and settings can be viewed on SET UP range.

Stop

Manual operation

Press the START/STOP key.
(at least for 2 sec.)

DEMAND range

Automatic operation

Measurement ends at set time & date

When measurement ends **(close a file)**, the DEMAND mark disappear and LED status Indicator goes off.

* In case the data to be saved to the internal memory, the MEM mark is displayed instead of the CARD mark.
* Ensure that the file is closed. Data will not be saved unless a file is closed.

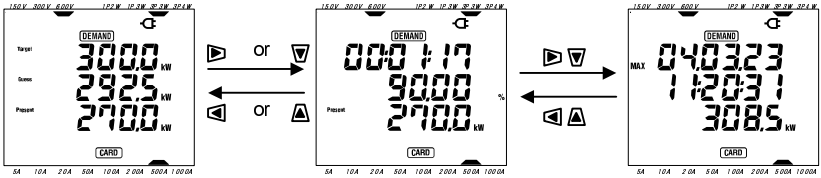
After a measurement, demand value is kept indicated on the display screen. Demand value is reset (8-5) by pressing the ESC key for at least 2 sec. and select “dEL”, or at “Setting 18”.

7.2 Display screen / Data capturing

● Display screen modes

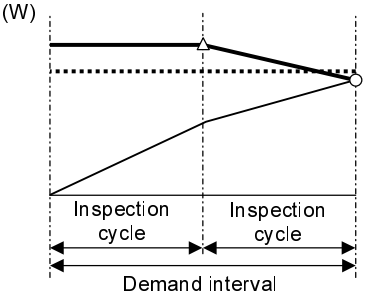
Three display screens are common to each wiring configuration, and can be activated as follows.

Screen 1	Screen 2	Screen 3
Upper : Target value	Upper : Remaining time	Upper : Date max. demand measured
Middle : Predicted value	Middle : Load factor	Middle : Time max. demand measured
Lower : Present value	Lower : Present value	Lower : Max. demand value



● Data capturing (Data is saved automatically without user intervention.)

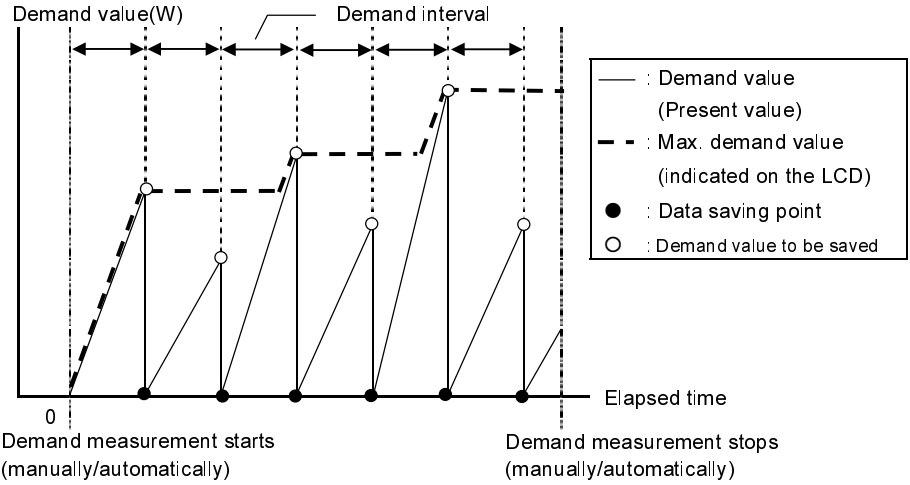
< Operation in the demand interval of this instrument >



: Target value “Setting 13”
: Predicted value
: Present value
△ : Visible and audible warning
○ : Demand value(Present value)

* Load factor (%) = Present value/ Target value x 100

< Max. demand value and data saving point >



8. **CF card** (Section 9)/ **Data saving** (6-4, 7-5, 8-6)

● CF card
* Available capacity
128MB/256MB/512MB/1GB
(CF card with above stated capacity can be used.)
* CF card
(Proper operation of following CF cards has been verified on this instrument.)

Supplier	Model	Capacity
SanDisk Corporation	SDCFB-128	128MB
	SDCFB-256	256MB
	SDCFB-512	512MB
	SDCFG-1	1GB
Adtec co., Ltd.	AD-CFG128	128MB
	AD-CFG256	256MB
	AD-CFX40T1G	1GB
BUFFALO Inc.	RCF-X128MY	128MB
	RCF-X256MY	256MB
	RCF-X1GY	1GB

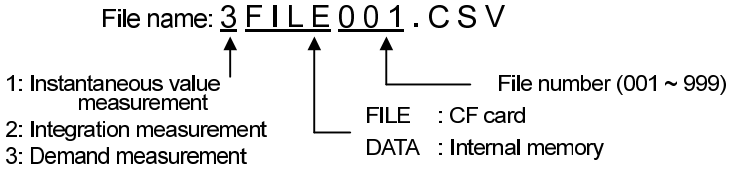
* Company name and model name are the trademark or the registered trademark.
* A CF Card may not operate properly even if any of the following cards are used due to manufacture's specification change, etc.
Please be aware above issue when purchasing commercially available CF Cards.
We can offer following CF Cards (proper operation has been verified) as optional parts. Please feel free to inquire.

● Max recordable number of data points (specification)

Data saved in:		CF card				Internal Memory
Capacity		128MB	256MB	512MB	1GB	128kB**
Instantaneous measurement		400,000 points	800,000 points	1,600,000 points	3,200,000 points	1,000 points
Integration/demand interval	1sec	28 hours	56 hours	112 hours	224 hours	4 minutes
	1min	72 days	144 days	288 days	1 year or more	4 hours
	30min	1 year or more				5 days
File can be saved up to:		20 files				1 file

* In case that no file exists in the CF card.
** Downloading from internal memory takes about 3 min (max capacity: 128kB)
A continuous measurement with alkaline batteries is limited to 7 hours. Use of an ac power supply is required for a continuous measurement more than 7 hours.

● File format and name
Measured data is saved in CSV format, and the file name is allocated automatically.



● Selection of parameters for recording

According to each measurement range, the following parameters are selected depending on each wiring configuration.

Manual saving on W range : Only the parameters listed in 1 (except for each max/ avg)

Automatic saving on Wh range : parameters listed in 1 and 2

Automatic saving on DEMAND range : parameters listed in 1, 2 and 3

	Parameters recorded					
1	Voltage (RMS)	Vi : Voltage per phase Vi max : Each max. value of Vi Vi avg : Each average value of Vi				
	Current (RMS)	Ai : Current per phase Ai max : Each max. value of Ai Ai avg : Each average value of Ai				
	Active power	P : Total active power P max : Max. value of P P avg : Average value of P		Pi : Active power per phase Pi max : Each max. value of Pi Pi avg : Each average value of Pi		
	Reactive power	Q : Total reactive power Q max : Max. value of Q Q avg : Average value of Q		Qi : Reactive power per phase Qi max : Each max. value of Qi Qi avg : Each average value of Qi		
	Apparent power	S : Total apparent power S max : Max. value of S S avg : Average value of S		Si : Apparent power per phase Si max : Each max. value of Si Si avg : Each average value of Si		
	Power factor	PF : Total power factor PF max : Max. value of PF PF avg : Average value of PF		PFi : Power factor per phase PFi max : Each max. value of PFi PFi avg : Each average value of PFi		
	Frequency	f : Frequency of V1 f max : Max. value of f f avg : Average value of f	Neutral current	In : Neutral current In max : Max. value of In In avg : Average value of In		
2	Active electrical energy (consumption) (regenerating) (overall)	+WP : Total active electrical energy(consumption) +WPi : Active electrical energy per phase (consumption) -WP : Total active electrical energy (regenerating) -WPi : Active electrical energy per phase (regenerating) #WP : Total active electrical energy(overall) #WPi : Active electrical energy per phase (overall)				
	Apparent electrical energy (consumption) (regenerating) (overall)	+WS : Total apparent electrical energy (consumption) +WSi : Apparent electrical energy per phase (consumption) -WS : Total apparent electrical energy (regenerating) -WSi : Apparent electrical energy per phase (regenerating) #WS : Total apparent electrical energy(overall) #WSi : Apparent electrical energy per phase (overall)				
	Reactive electrical energy (consumption)	+WQ : Total reactive electrical energy (consumption)				
3	Demand value	#DEM : Total demand value TARGET : Target value		#DEMi : Demand value per phase		

* i = 1, 2, 3

"max" and "avg" mean maximum value and average value during an interval.

MEMO

MEMO

DISTRIBUTOR

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