

ELECTRONIC MULTI-MEASURING INSTRUMENT

ME96SS series

Logging specifications

Model ME-0000BU-SS96

SPEC.NO.	LSPM-0092A
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This Specification is as of December, 2019.
Please note that contents of the specification may change without notice.

mitsubishi ELECTRIC CORPORATION

CONTENTS

1.	Features.....	2
2.	Specifications.....	2
3.	Name and function of each part	3
4.	How to insert and eject the SD memory card.....	4
4.1	How to insert the SD memory card	4
4.2	How to eject the SD memory card.....	4
5.	Operations	5
5.1	Logging operation	6
5.2	Logging data output.....	8
5.3	CSV file specifications	10
6.	Pre-Operational Procedures and Setting	15
6.1	Setting of Present time, Logging ID, Logging-item pattern and Detailed data logging cycle	16
6.2	Logging items	16
6.3	Set-up by setting data file	17
6.4	Open the configured data file which I made by Microsoft Excel again	21
6.5	Format the SD memory card	22
6.6	Output logging data and system log data to the SD memory card	23
7.	Appendices.....	24
7.1	List of logging item.....	24
7.2	List of system log codes	38
	TRADEMARKS.....	38

1. Features

Optional plug-in module: ME-0000BU-SS96 can memorize the data of various quantities related to electricity such as voltage, current, power and energy (hereinafter referred to as measurement data) measured by Electronic Multi-measuring Instrument: ME96SS-Ver.A or ME96SS-Ver.B (hereinafter referred to as ME96) for a certain period. Therefore, measurement data can be backup even when the MODBUS RTU communication of ME96 fails.

Memorized measurement data can be output to an SD memory card in CSV format. You can check the data files output to the SD memory card by Microsoft Excel.

2. Specifications

Item		Specifications		
Logging mode		Auto overwriting updating		
Type of logging data (*1)	Detailed data	Memorize measured data in the specified "Detailed data logging cycle (1 minute, 5 minutes, 10 minutes, 15 minutes or 30 minutes). Data is output as detailed data file.		
	One-hour data	Memorize measured data in one-hour cycle. Data is output as One-hour data file and One-day data file		
The number of logging items	Detailed data	Up to 6 items		
	One-hour data	Up to 6 items		
Internal memory logging period	Detailed data	Logging cycle	Logging period	
		1minute	2 days	
		5minute	10 days	
		10minute	20 days	
		15minute	30 days	
		30minute	60 days	
	One-hour data	400 days (About 13 months)		
Logging period with SD memory card (2GB) *2		10 years or longer		
System log data		1200 records		
Output format of logging data and system log data		CSV format (ASCII)		
Compensation for power failure		Lithium battery (Embedded in ME-0000BU-SS96) Total time of compensation is 5 year (average daily temperature is less than +35°C). (Lifetime expectancy of lithium battery is 10 year) (average daily temperature is less than +35°C). It is impossible for customer to exchange the battery. Please consider renewal.		
Setting values (Logging ID, Logging items, Detailed data logging cycle)		Memorized in FRAM (nonvolatile memory) The data is memorized during power failure.		
Logging data, System log data		Memorized in SRAM (volatile memory) Data is erased if power failure occurs under low battery voltage condition (BAT.LED turns on).		
Clock time operation		Clock time operation is stopped if power failure occurs under low battery voltage condition (BAT.LED turns on). After power recovery, timing is started from Jan 1, 2016 00:00:00.		
Clock accuracy		Within ±1 minute per month (at 25°C)		
Memory media for data output *3		SD memory card (SD, SDHC)		
Optional part		SD memory card (EMU4-SD2GB) *3		

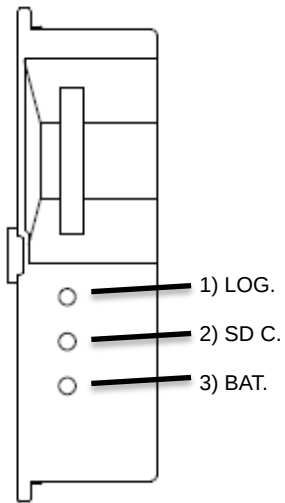
*1. Energy data (Wh,varh,VAh) is measuring data in ME96SS. These are not difference value calculated by logging cycle.

*2. It is the period until capacity of 2GB SD memory card is filled in always-on connection. Data amount depends on the number of characters. It is the logging period when data is output in maximum volume.

*3. Use a SD memory card, EMU4-SD2GB, manufactured by Mitsubishi Electric Corporation. If a SD memory card not manufactured by Mitsubishi Electric Corporation is used, it may cause a problem such as data corruption in the SD card or system stop. Regarding the use of commercially available SD memory cards, access our FA website. Note that the customer is responsible for verifying safe use of those SD memory cards.

3. Name and function of each part

■LEDs of ME-0000BU-SS96

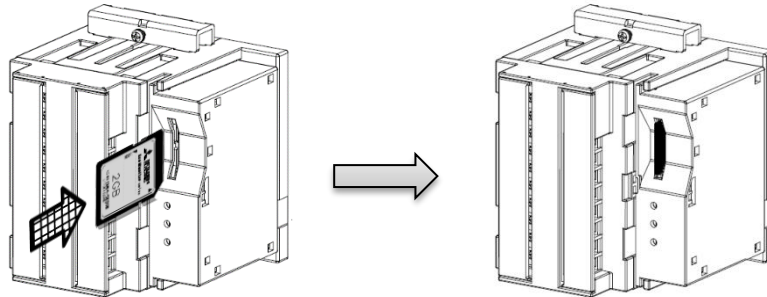


No.	Name	Function
1)	LOG. LED	This indicates a state of logging operation.
	ON	Logging is running.
	OFF	Logging is stopped.
	Blink slowly (0.5s:on/ 0.5s:off)	Change of logging condition settings finished. Blink of LED lasts 5 second.
2)	Blink quickly (0.25s:on/ 0.25s:off)	When Setting of Logging-item pattern is LP00, Setting data file needed to store in SD memory card was incorrect. LED blinks until correct setting is done.
	SD C. LED	This indicates a state of communication with the SD memory card.
	ON	Communicating
	OFF	Stop communicating
3)	Blink quickly (0.25s:on/ 0.25s:off)	SD memory card error. Check whether the SD memory card is write-protect and SD memory card capacity is sufficient or not.
	BAT. LED	This indicates a state of battery voltage.
	OFF	Normal
	ON	The battery is low voltage. (It is impossible for customer to exchange the battery. Please consider renewal.)

4. How to insert and eject the SD memory card

4.1 How to insert the SD memory card

Slide the SD memory card straight into the slot until it clicks into place.

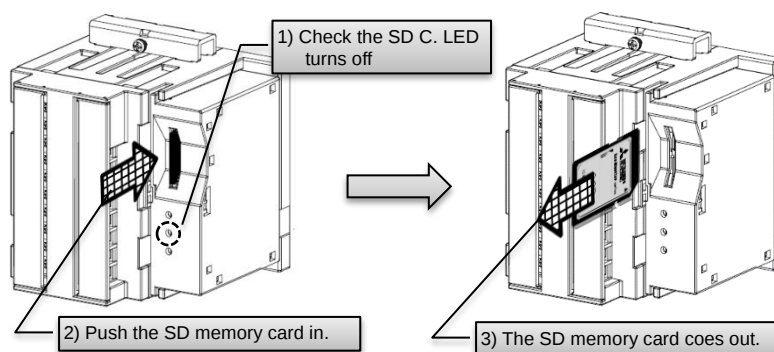


CAUTION

- Do not insert and eject the SD memory card with live wires.
- Use a SD memory card, EMU4-SD2GB, manufactured by Mitsubishi Electric Corporation. If a SD memory card not manufactured by Mitsubishi Electric Corporation is used, it may cause a problem such as data corruption in the SD card or system stop. Regarding the use of commercially available SD memory cards, access our FA website. Note that the customer is responsible for verifying safe use of those SD memory cards.
- Insert the SD memory card with the write protect switch "OFF". If the write protect switch is "ON", the ME-0000BU-SS96 does not communicate with an SD memory card.

4.2 How to eject the SD memory card

- 1) Check the SD C. LED turns off
- 2) Push the SD memory card in until it clicks into place.
- 3) The SD memory card comes out by itself.

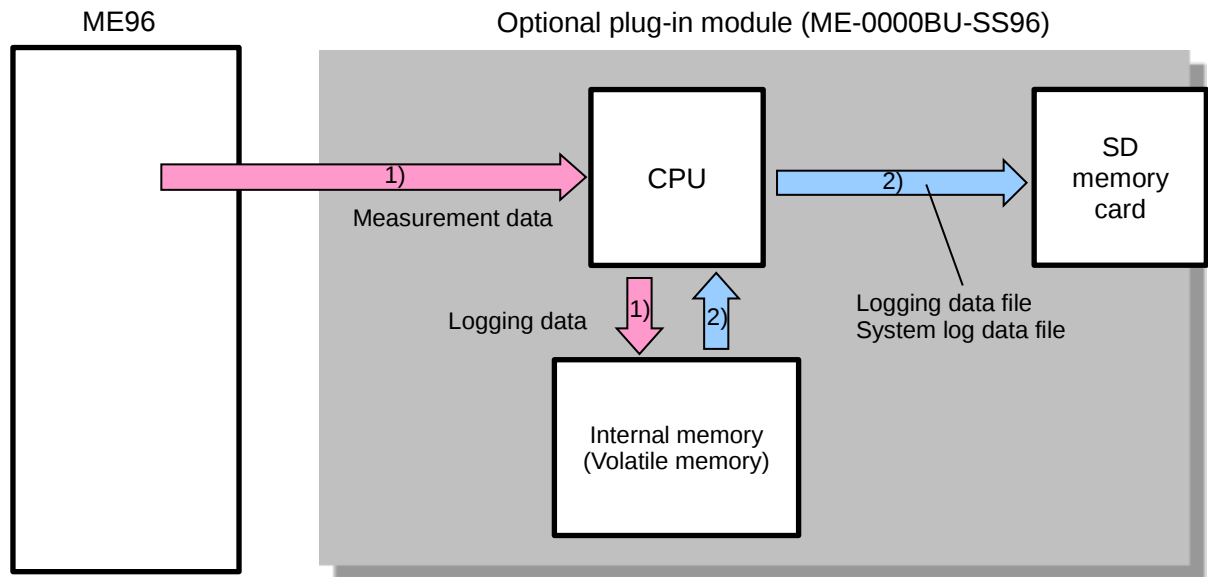


CAUTION

- Do not insert and eject the SD memory card with live wires.
- During communication with the SD memory card, ejection of the memory card may cause data corruption of the memory card or failure of this unit or the memory card. Check that SD C.LED turns off to eject the SD memory card.

5. Operations

The following figure indicates the summary of operation of this unit.



<Summary of operation>

- 1) This optional plug-in module memorizes measurement data acquired from the ME96 as logging data in the internal memory (volatile memory).
For details, refer to “5.1.Logging operation”.
- 2) This optional plug-in module outputs logging data or system log data memorized in the internal memory (volatile memory) of the Logging Unit as logging data file or system log data file to the SD memory card.
For details, refer to “5.2.Logging data output”.

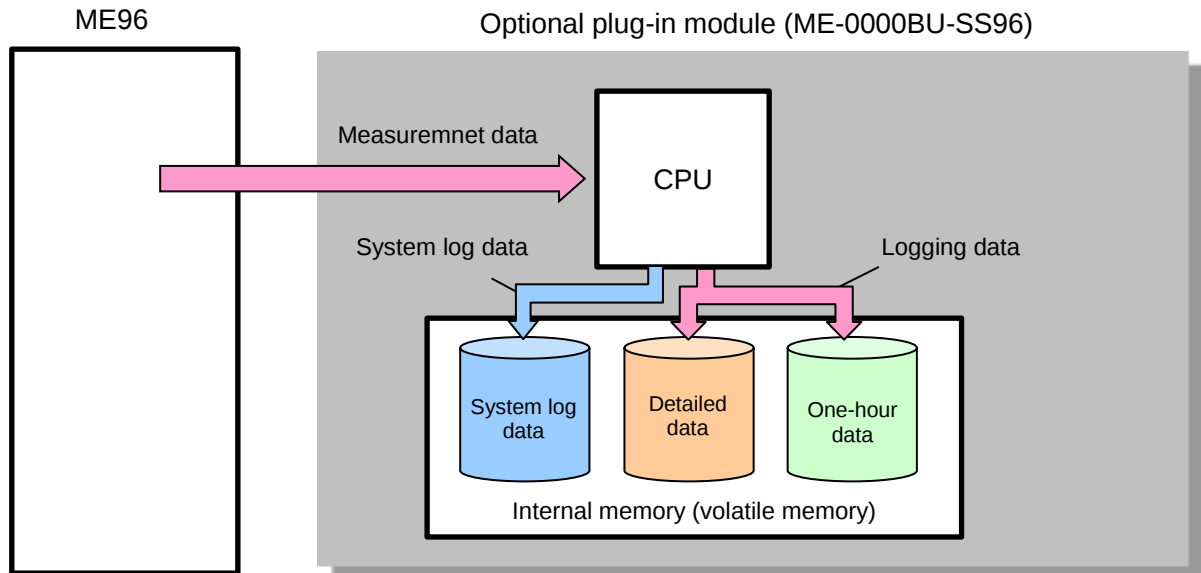
5.1 Logging operation

This optional plug-in module can memorize measurement data acquired from the ME96 as logging data in the internal memory as follows.

(1) Type of logging data

This optional plug-in module can memorize measurement data as both “Detailed data” and “One-hour data” at the same time.

And this can memorize events occurred in the module as system log data.



For the content of detailed data and One-hour data, refer to the following.

Type of logging data	Features												
Detailed data	- Memorize measurement data in the specified “Detailed data logging cycle” (1 minute, 5 minutes, 10 minutes, 15 minutes or 30 minutes). - Memorizing time is as follows:												
	<table><tr><th>Detailed data logging cycle</th><th>Memorizing time</th></tr><tr><td>1 minute</td><td>Every minute</td></tr><tr><td>5 minutes</td><td>Every hour and 5, 10, 15, 20, 25, 30, 35, 40, 45, 50 and 55 minutes past the hour</td></tr><tr><td>10 minutes</td><td>Every hour and 10, 20, 30, 40 and 50 minutes past the hour</td></tr><tr><td>15 minutes</td><td>Every hour and a quarter, a half and three quarters past the hour</td></tr><tr><td>30 minutes</td><td>Every hour and a half past the hour</td></tr></table>	Detailed data logging cycle	Memorizing time	1 minute	Every minute	5 minutes	Every hour and 5, 10, 15, 20, 25, 30, 35, 40, 45, 50 and 55 minutes past the hour	10 minutes	Every hour and 10, 20, 30, 40 and 50 minutes past the hour	15 minutes	Every hour and a quarter, a half and three quarters past the hour	30 minutes	Every hour and a half past the hour
	Detailed data logging cycle	Memorizing time											
	1 minute	Every minute											
	5 minutes	Every hour and 5, 10, 15, 20, 25, 30, 35, 40, 45, 50 and 55 minutes past the hour											
	10 minutes	Every hour and 10, 20, 30, 40 and 50 minutes past the hour											
	15 minutes	Every hour and a quarter, a half and three quarters past the hour											
	30 minutes	Every hour and a half past the hour											
This data is output to the SD memory card as detailed data file.													
One-hour data	- Memorize measurement data in a hour cycle. - Memorizing time is every hour. - This data is output to the SD memory card as One-hour data file and One-day data file.												

(2) The number of logging items

This optional plug-in module can set logging items by logging data type respectively.

Type of logging data	The number of logging items
Detailed data	- Up to 6 items. - Settable logging items depend on the setting. Refer to “6.2.Logging items”, “7.1.List of logging item”.
One-hour data	- Up to 6 items. - Settable logging items depend on the setting. Refer to “List of logging items”, “7.1.List of logging item”.

(3) Maximum logging period

This unit memorizes measured data for the following period.

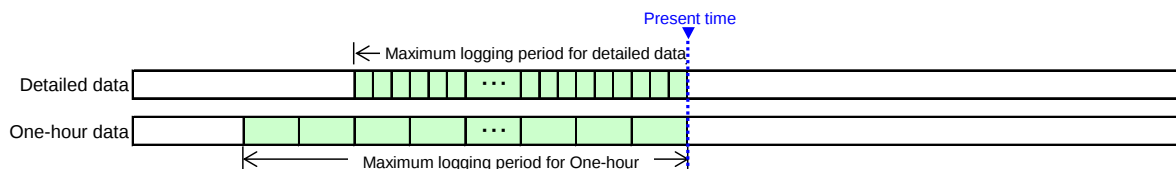
Type of logging data	Maximum logging period	
Detailed data	Depend on the specified "Detailed data logging cycle".	
	Detailed data logging cycle	Maximum logging period
	1 minute	2 days
	5 minutes	10 days
	10 minutes	20 days
	15 minutes	30 days
	30 minutes	60 days
One-hour data	400days (About 13 months)	

(4) Logging modes

The following logging modes are available. You can choose a suitable mode.

Logging mode	Features
Auto updating	- Logging operation starts right after the settings are finished. - After memorable maximum logging period, the oldest data is erased to overwrite new one with the passing of time. - LOG.LED is always on.

◆ Auto updating



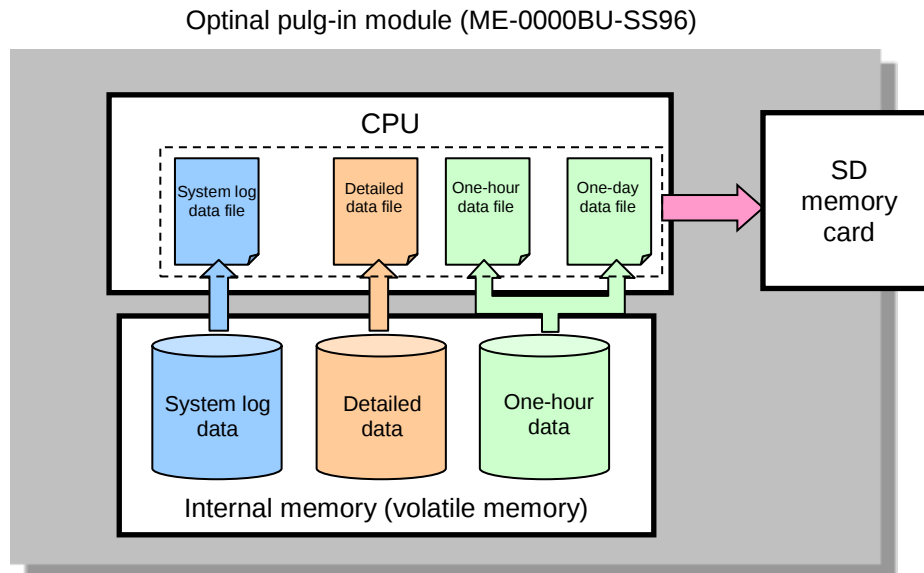
This optional plug-in module stores the data of logging period from current time in the internal memory. Data older than the maximum logging period is erased.

5.2 Logging data output

This optional plug-in module can output logging data and system log data memorized in the internal memory to the SD memory card in CSV format as follows.

(1) Type of output data file

This optional plug-in module can output logging data files and system log data files to the SD memory card. For the detailed specifications of each data file, refer to “5.3.CSV file specifications”.



Type of data file	Contents
Logging data file	—
Detailed data file	- This file is made based on detailed data. - This is as one file for one day. - Measurement data are acquired in specified “Detailed data logging cycle”. Energy data (Wh,varh,VAh) are not difference values calculated by logging time.
One-hour data file	- This file is made based on One-hour data. - This is as one file for one day. - Measurement data are acquired in every hour. Energy data (Wh,varh,VAh) are not difference values calculated by logging time.
One-day data file	- This file is made based on One-hour data. - This is as one file for one month. - Measurement data are acquired in one day cycle (every 12:00 a.m.). Energy data (Wh,varh,VAh) are not difference values calculated by logging time.
System log data file	- Events occurred in this unit are output as system log data file. - The optional plug-in module outputs the events up to past 1200 records.

(2) Data file name and storage location

Logging data file and system log data file are output to the SD memory card with the following filenames.

Type of data file	Storage location			File name ^[Note 2]
	Logging ID folder ^[Note 1]	Type of data file folder	Year and month folder ^[Note 2]	
Logging data file	—	—	—	—
Detailed data file	—	—	—	—
One-minute data	LOG***	---- 1MIN	YYMM	01MDD.CSV
Five-minute data		---- 5MIN	YYMM	05MDD.CSV
10-minute data		---- 10MIN	YYMM	10MDD.CSV
15-minute data		---- 15MIN	YYMM	15MDD.CSV
30-minute data		---- 30MIN	YYMM	30MDD.CSV
One-hour data file		1HOUR		HYMMDD.CSV
One-day data file		1DAY		DYYMM.CSV
System log data file				SYS_LOG.CSV
Setting data file				SET.CSV

[Note 1] For detailed data files, data acquired in specified “Detailed data logging cycle” is only output.

[Note 2] “***” indicates the logging ID (001 to 255) specified in this unit.

“YY” indicates the last two digits of the year CE (00 to 99).

“MM” indicates the month (01 to 12).

“DD” indicates the day (01 to 31).

[Note 3] Setting data file is not a data output from this module. When you set the logging conditions, please save the setting data file in the above-mentioned position of the SD memory card.

(3) Output time of the data file

This unit outputs data files to the SD memory card in the following time.

Output timing	Range of output data	
	Logging data file	System log data file
1) When the SD memory card is inserted during operation	<If there are no logging data files in the SD memory card> • Outputs all logging data in itself.	Outputs all system log data in itself. If there is system log data file in the SD memory card, it is overwritten.
2) When power turns on with the SD memory card inserted	<If there are some logging data files in the SD memory card> • Outputs data after the latest of detailed data file, One-hour data file and One-day data file in the SD memory card. (Data of the latest data file is overwritten.) All logging data is output if this module does not memorize data to write to the latest data file.	
3) Every hour during operation with the SD memory card inserted	•Outputs data from next to previous output data to the present time.	



- For above 1) and 2), if there is the logging data file with the same logging ID in the SD memory card, it is overwritten. Logging ID should be set if you acquire data of multiple modules with one SD memory card.
- Use a SD memory card, EMU4-SD2GB, manufactured by Mitsubishi Electric Corporation. If a SD memory card not manufactured by Mitsubishi Electric Corporation is used, it may cause a problem such as data corruption in the SD card or system stop. Regarding the use of commercially available SD memory cards, access our FA website. Note that the customer is responsible for verifying safe use of those SD memory cards.
- Format an SD memory card in the way specified in this manual. (Refer to “6.5Format the SD memory card”)
- The write-protect switch of the SD memory card should be turned OFF. If the write protect switch is “ON”, this module does not communicate with an SD memory card.

5.3 CSV file specifications

(1) CSV file format

The file format of logging data file and system log data file is as follows:

Item	Code
Delimiter	Comma (,)
Linefeed code	CR+LF (0x0D, 0x0A)
Character code	ASCII

(2) Logging data file specifications

Specifications of logging data file which this unit outputs are as follows:

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	....	Column N		
File imformation row	[LOGGING]	YM_1	2	3	4	CR+LF				
Data tye pe imformation row	DATETIME[YYYY/ MM/DD hh:mm:ss]	INDEX	DOUBLE[DEC.1]	DOUBLE[DEC.1]	DOUBLE[DEC.2]	DOUBLE[DEC.1]	....	DOUBLE[DEC.0]	CR+LF	
Data name row	TIME	INDEX	ch1 A[A]	ch1 V[V]	ch1 W[kW]	ch1 PF[%]	....	ch1 Wh[kWh]	CR+LF	
Data row	(Head)	2016/11/22 00:01:00	1	100.0	220.0	37.53	98.5	....	999999	CR+LF
		2016/11/22 00:02:00	2	100.5	220.0	37.72	98.5	....	999999	CR+LF
		2016/11/22 00:03:00	3	100.2	220.0	37.60	98.5	....	999999	CR+LF
		2016/11/22 00:04:00	4	100.1	220.0	37.57	98.5	....	999999	CR+LF
		2016/11/22 00:05:00	5	100.0	220.1	37.54	98.5	....	999999	CR+LF
		2016/11/22 00:06:00	6	100.0	220.5	37.61	98.5	....	999999	CR+LF
		....	....	....	....	....	....	....	....	CR+LF
		2016/11/22 23:59:00	1439	100.2	220.0	37.60	98.5	....	999999	CR+LF
	(End)	2016/11/23 00:00:00	1440	100.0	220.6	37.63	98.5	....	999999	CR+LF

(a) File information row

No.	Column name	Content of output
Column 1	File type	Output "[LOGGING]".
Column 2	File version	Output "YM_1".
Column 3	Number of "Data type information row"	Output "2". This indicates what row "Data type information row" is.
Column 4	Number of "Data name row"	Output "3". This indicates what row "Data name row" is.
Column 5	Number of "Data start row"	Output "4". This indicates what row "Data start rows" start from.

(b) Data information row

No.	Column name	Content of output
Column 1	Date	Output "DATETIME[YYYY/MM/DD hh:mm:ss]".
Column 2	Index	Output "INDEX".
Column 3	Data	Output "DOUBLE[DEC.digits*]".
...		...
Column N		*: "Digits" indicates the number of decimal places.

(c) Data name row

No.	Column name	Content of output
Column 1	Date	Output "TIME".
Column 2	Index	Output "INDEX".
Column 3 ⋮ Column N	Data	Output "CH1 Item*[Unit*]". *: "Item" and "Unit" depend on the specified "Logging item". Refer to "7.1.List of logging item".

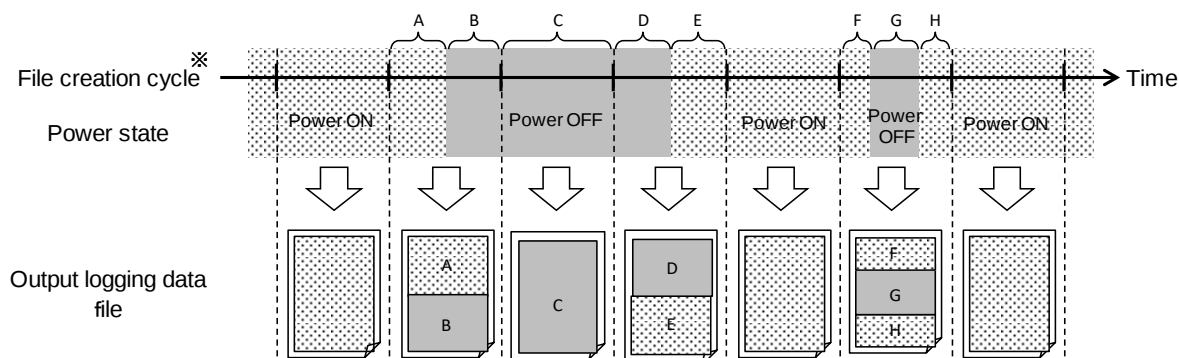
(d) Data row

No.	Column name	Content of output			
Column 1 ⋮ Column N	Date	Output the date. The output format of the date is "YYYY/MM/DD hh:mm:ss". The number of rows is as follows:			
		File type	Logging cycle	Data acquiring period per file	The maximum number of rows
		Detailed data file	1 minute	1 day <Example> For the file of March 4 From Mar 4 00:01:00 to Mar 5 00:00:00	1440 rows
			5 minutes	1 day <Example> For the file of March 4 From Mar 4 00:05:00 to Mar 5 00:00:00	288 rows
			10 minutes	1 day <Example> For the file of March 4 From Mar 4 00:10:00 to Mar 5 00:00:00	144 rows
			15 minutes	1 day <Example> For the file of March 4 From Mar 4 00:15:00 to Mar 5 00:00:00	96 rows
			30 minutes	1 day <Example> For the file of March 4 From Mar 4 00:30:00 to Mar 5 00:00:00	48 rows
		One-hour data file	1 hour	1 day <Example> For the file of March 4 From Mar 4 01:00:00 to Mar 5 00:00:00	24 rows
		One-day data file	1 day	1 month <Example> For the file of December From Dec 1 to Dec 31	Between 28 and 31 rows (Depend on days in a month)
Column 2	Index	Output the numerical value counted up from 1 in every file. Output "1" if there are losses of data, and count up from 1 for the following rows again.			
Column 3 ⋮ Column N	Data	Output of measurement data. (Energy data (Wh,varh,VAh) are not difference values calculated by logging time.) If there are losses of data caused by power OFF etc., columns for the data become belows. •Energy data (Wh,varh,VAh) :Outputs the data before the power OFF. •Other than energy data :Blanks			

<Logging data file output contents at the time of the power OFF>

Show below logging data file (detailed data file /1 hour data file /1 day data file) output contents at the time of the power OFF.

- (i) Logging data file output composition: When an energy data exists in the logging items.



* The data period of one file is shown. A file creation cycle changes with classification of a logging data file. Refer to the "5.2(1) Type of output data file" for a file creation cycle.

The contents of an output of PeriodA ~ H are shown below.

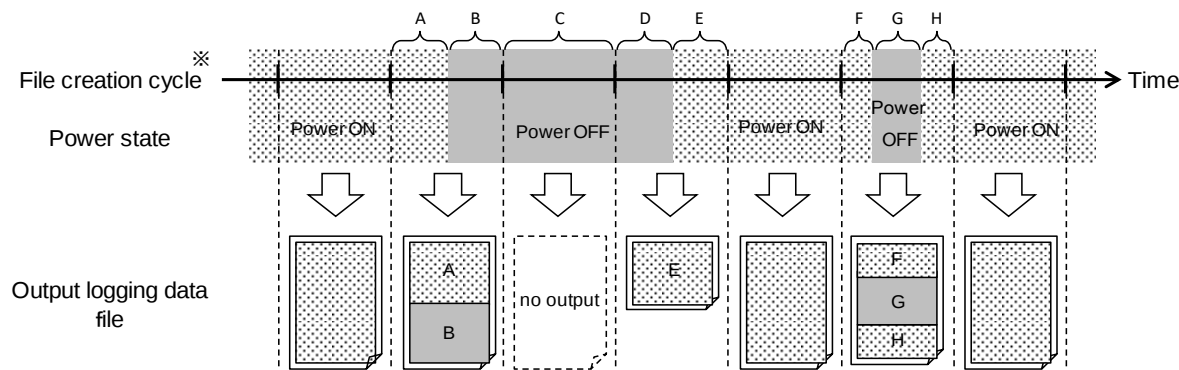
《Output constitution》

Period A, E, F, H..... All the time of a data line, the indexes, and data are outputted.

Period B, C, D, G..... The time of a data line and the indexes are outputted. The data become belows.

- Energy data (Wh,varh,VAh) :Outputs the data before the power OFF.
- Other than energy data :Blanks

- (ii) Logging data file output composition: When no energy data exists in the logging items.



* The data period of one file is shown. A file creation cycle changes with classification of a logging data file. Refer to the "5.2(1) Type of output data file" for a file creation cycle.

The contents of an output of PeriodA ~ H are shown below.

《Output constitution》

Period A, E, F, H..... All the time of a data line, the indexes, and data are outputted.

Period B, G Data becomes blank although the time and the index of a data line are outputted.

Period C A logging data file is not outputted.

Period D All the time of a data line, the indexes, and data are not outputted.

(3) System log data file specifications

Specifications of system log data file which this unit outputs are as follows:

	Column 1	Column 2	
Data row {	2016/06/01 00:00:01	201	CR+LF
	2016/06/01 00:00:01	202	CR+LF
	2016/06/01 00:00:01	305	CR+LF
	2017/07/31 03:59:59	100	CR+LF
	2017/07/31 04:03:09	001	CR+LF
	2017/07/31 04:03:09	305	CR+LF
	2017/07/31 04:04:34	902	CR+LF
	2017/07/31 04:06:33	302	CR+LF
	....	....	CR+LF
	2017/07/31 04:06:56	902	CR+LF

(a) Content of output

No.	Column name	Content of output
Column 1	Date	Output the time of event occurrence. The output format of the date is “YYYY/MM/DD hh:mm:ss”. The number of rows is up to 1200.
Column 2	Data	Output a three-digit system log code. For system log codes, refer to “7.2.List of system log codes”.

(4) Setting data file specifications

If the setting of “Logging pattern” is LP00, it is necessary to set the logging conditions from the SD memory card.

Specifications of setting data file used for setting logging conditions are as follows:

	Column 1	Column 2	....	Column 6	Column 7	Column 8	....	Column 12	
Basic setting row	01	CR+LF							
Logging item row	0701	0501	....	8063	8001	0000	....	0000	CR+LF

(a) Basic setting row (Row 1)

(a) Basic logging row (row 2)

No.	Column name	Content												
Column 1	Detailed data logging cycle	This indicates a detailed data logging cycle. Input value for each detailed data logging cycle is as follows: <table><tr><th>Detailed data logging cycle</th><th>Input value</th></tr><tr><td>1 minute</td><td>01</td></tr><tr><td>5 minutes</td><td>02</td></tr><tr><td>10 minutes</td><td>03</td></tr><tr><td>15 minutes</td><td>04</td></tr><tr><td>30 minutes</td><td>05</td></tr></table>	Detailed data logging cycle	Input value	1 minute	01	5 minutes	02	10 minutes	03	15 minutes	04	30 minutes	05
Detailed data logging cycle	Input value													
1 minute	01													
5 minutes	02													
10 minutes	03													
15 minutes	04													
30 minutes	05													

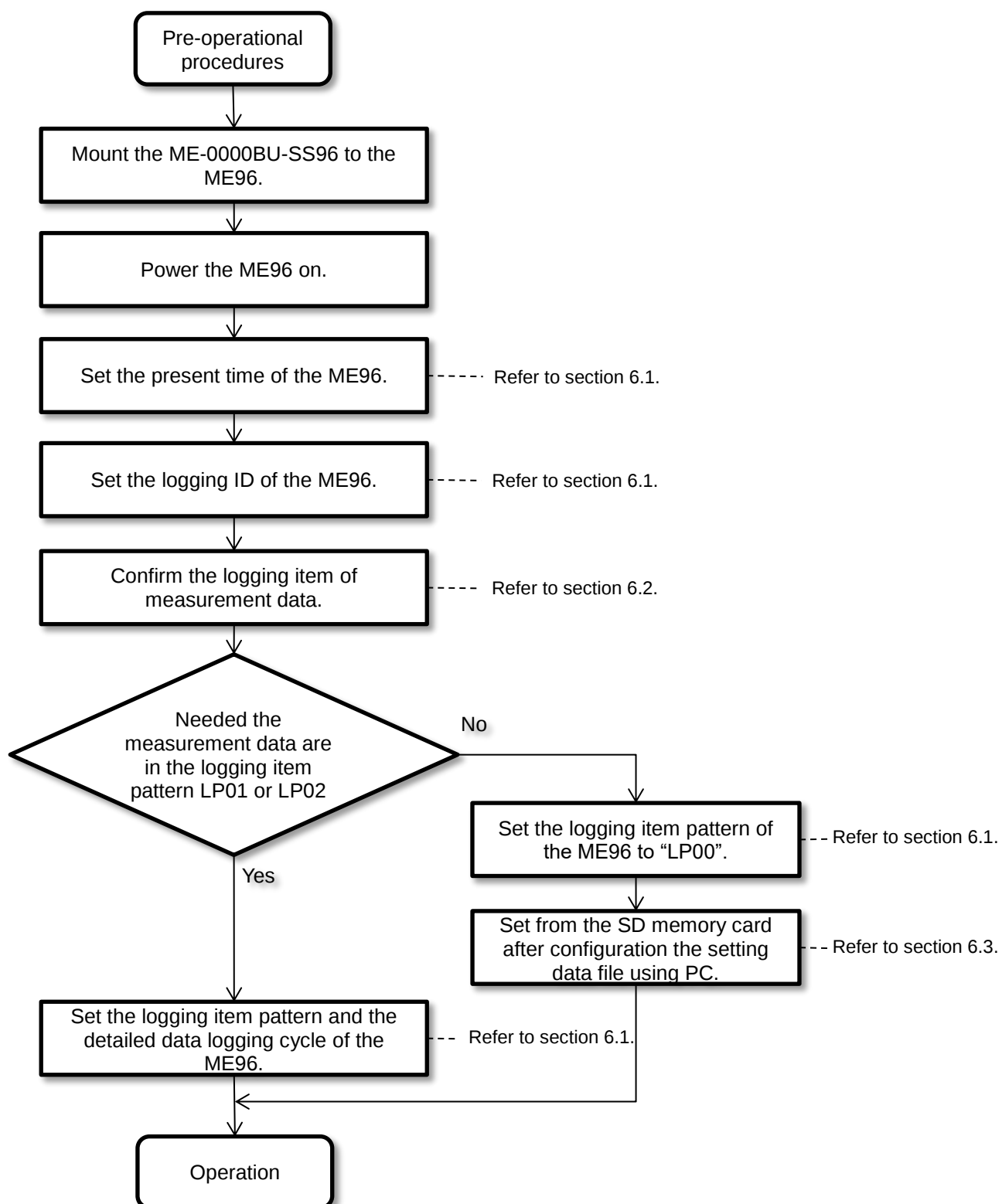
(b) Logging item row (Row 2)

No.	Column name	Content
Column 1 ⋮ Column 6	Detailed data logging items 1 to 6	These indicate group number and channel number of detailed data logging items. Refer to “7.1.List of logging item” for the group channel number of logging items. 《Example》 In the case of the Total active power Group number: 07,channel number:01 → input value:0701 For logging items, refer to “7.1.List of logging item”. If no use, input 0000.
Column 7 ⋮ Column12	One-hour data logging items 1 to 6	These indicate group number and channel number of One-hour data logging items. Refer to “7.1.List of logging item” for the group channel number of a logging items. 《Example》 In the case of Active energy (import) Group number: 80,channel number:01 → input value:8001 For logging items, refer to “7.1.List of logging item”. If no use, input 0000.

6. Pre-Operational Procedures and Setting

This chapter explains the procedures and setting method for operating the ME-0000BU-SS96. (Only concerned with the setting of logging function)

Please read the ME96's user's manual in addition to this document.



6.1 Setting of Present time, Logging ID, Logging-item pattern and Detailed data logging cycle

Setting of present time, logging ID, logging-item pattern and detailed data logging cycle are set at the ME96. Please refer the user's manual of ME96.

	• All logging data of ME-0000BU-SS96 are erased when you change the setting of "Present time" more than 31days from the before time. Before changing the setting of present clock time, output the logging data to the SD memory card and check the output data in the PC whether the logging data are memorized properly. • In case there is the data with the same logging ID in the SD memory card, it may be overwritten. Logging ID should be set if you acquire data of multiple Logging Units with one SD memory card.
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6.2 Logging items

The logging items are grouped as the logging-item pattern (LP01, LP02) at the ME96 in advance. So, it is possible to select the logging item by setting the logging-item pattern. Refer to the below about the logging item.

In addition, if there is no logging pattern that you want, select the LP00 to configure the logging item freely.

(1) In case of 3P4W, 3P3W(2CT/3CT), 1P3W(1N2/1N3)

Logging-item pattern	LP01		LP02	
	Detailed data	One-hour data	Detailed data	One-hour data
Data 1	Active energy (import) (Wh)	Active energy (import) (Wh)	Active energy (import) (Wh)	Active energy (import) (Wh)
Data 2	Reactive energy (import LAG) (varh)	Active energy (export) (RWh)	Current (Average) (A)	Active energy (export) (RWh)
Data 3	Apparent energy (VAh)	Reactive energy (import LAG) (varh)	Volgtage (Average(L-L)) (LL_V)	Reactive energy (import LAG) (varh)
Data 4	Total rolling demand active power (Last)	Reactive energy (import LEAD) (L_varh)	Total active power (W)	Reactive energy (import LEAD) (L_varh)
Data 5	Total rolling demand reactive power (Last)	Apparent energy (VAh)	Total power factor (PF)	Apparent energy (VAh)
Data 6	Total rolling demand apparent power (Last)	non	Frequency (Hz)	non

(2) In case of 1P2W

Logging-item pattern	LP01		LP02	
	Detailed data	One-hour data	Detailed data	One-hour data
Data 1	Active energy (import) (Wh)	Active energy (import) (Wh)	Active energy (import) (Wh)	Active energy (import) (Wh)
Data 2	Reactive energy (import LAG) (varh)	Active energy (export) (RWh)	Current (Phase1) (1_A)	Active energy (export) (RWh)
Data 3	Apparent energy (VAh)	Reactive energy (import LAG) (varh)	Volgtage (Phase1-2) (12_V)	Reactive energy (import LAG) (varh)
Data 4	Total rolling demand active power (Last)	Reactive energy (import LEAD) (L_varh)	Total active power (W)	Reactive energy (import LEAD) (L_varh)
Data 5	Total rolling demand reactive power (Last)	Apparent energy (VAh)	Total power factor (PF)	Apparent energy (VAh)
Data 6	Total rolling demand apparent power (Last)	non	Frequency (Hz)	non

Note: "Last" of total rolling demand means the rolling demand value of latest interval time completed.

6.3 Set-up by setting data file

If the logging-item pattern is selected the LP00, it is necessary to specify the logging items and logging cycle as a setting data file. The set-up procedure is as shown below.

<Set-up procedure for logging condition>

Step 1: Make a setting data file in the PC

Step 2: Save the setting data file on SD memory card in the PC

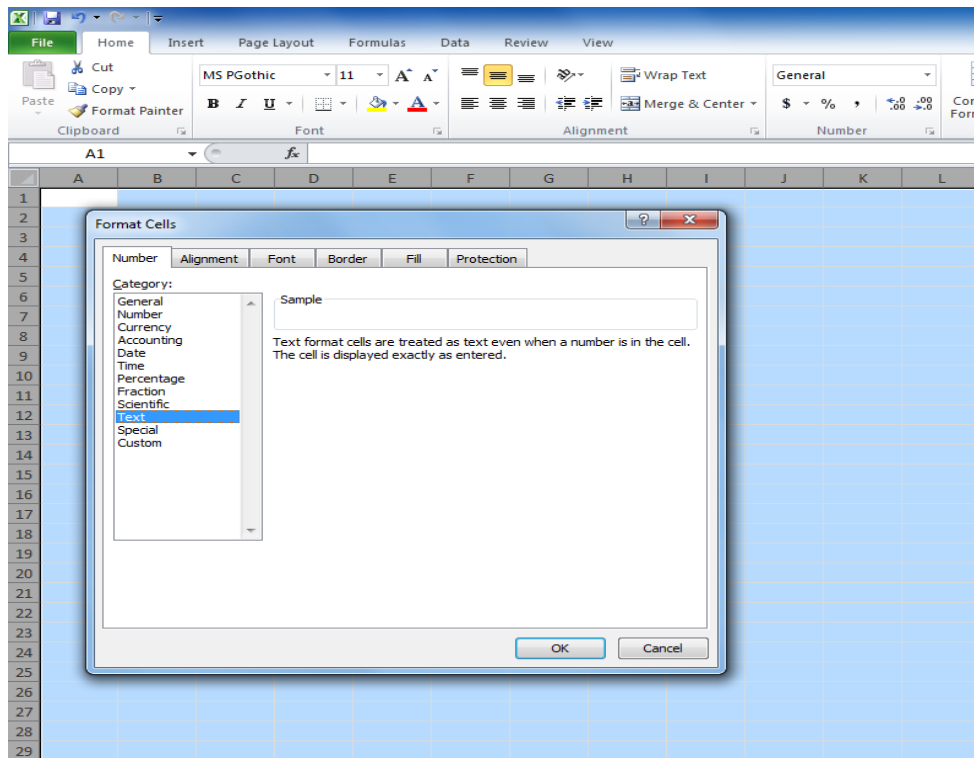
Step 3: Insert the SD memory card in the ME-0000BU-SS96 when ME96's power off. After that, power it on.

(1) Step 1: Make a setting data file in the PC

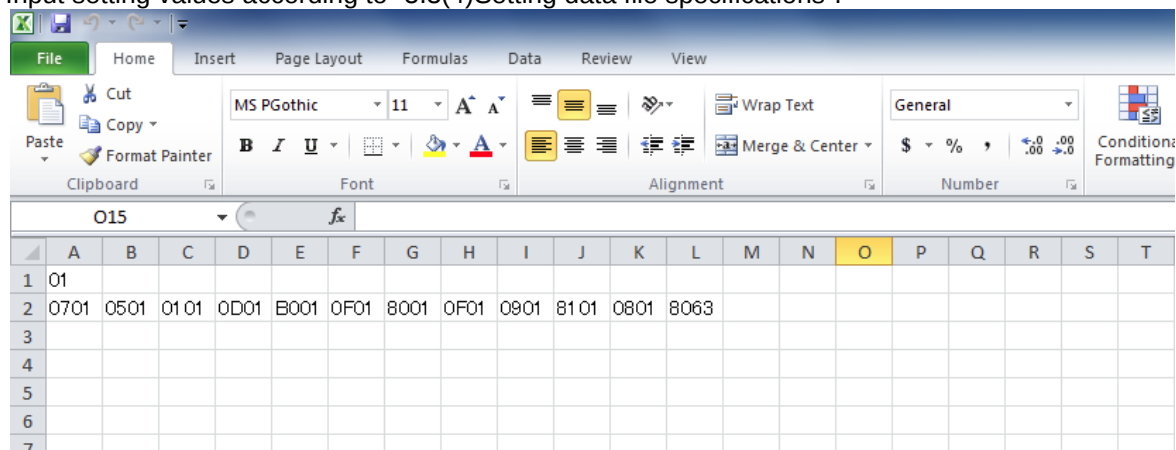
This manual explains how to make a setting data file by Microsoft Excel.

(a) Start up Microsoft Excel.

Select all cells, right-click to select [Format Cells...] or click [Format(O)] on the menu bar to select [Cell(E)]. In pop-up window, click [Number] tab to select "Text".



(b) Input setting values according to “5.3(4)Setting data file specifications”.



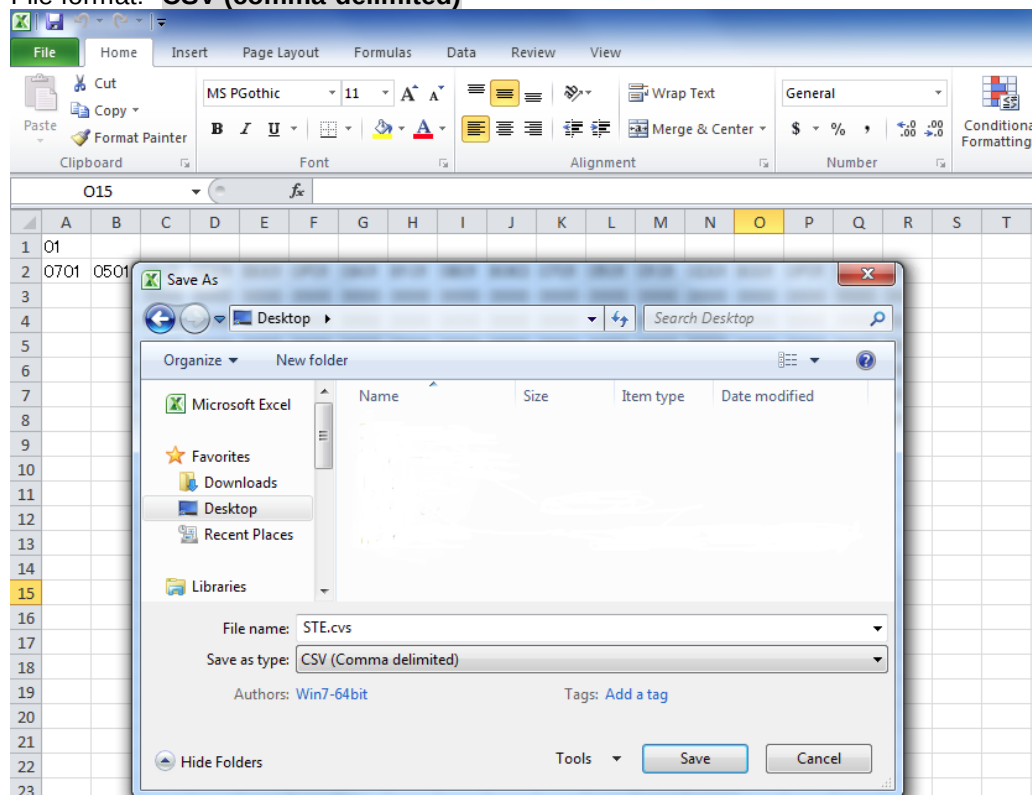
The setting contents shown in the above figure are as follows:

Setting item	Cell position		Setting value	
	Row	Column		
Detailed data logging cycle	Row 1	Column 1	1 minute (01)	
Detailed data logging item 1	Row 2	Column 1	Total active power	W 0701
Detailed data logging item 2		Column 2	Voltage (Average(L-L))	LL_V 0501
Detailed data logging item 3		Column 3	Current (Average)	A 0101
Detailed data logging item 4		Column 4	Total power factor	PF 0D01
Detailed data logging item 5		Column 5	Active energy (import)	Wh 8001
Detailed data logging item 6		Column 6	Frequency	Hz 0F01
One-hour data logging item 1		Column 7	Active energy (import)	Wh 8001
One-hour data logging item 2		Column 8	Frequency	Hz 0F01
One-hour data logging item 3		Column 9	Total reactive power	var 0901
One-hour data logging item 4		Column 10	Reactive energy (import LAG)	varh 8101
One-hour data logging item 5		Column 11	Total rolling demand (kW)	DW 0801
One-hour data logging item 6		Column 12	Active energy (export)	RWh 8063

(c) Save data in the following format

File name: **SET.CSV** (Note) Both capitals and lower-case letters are available for alphabet.

File format: **CSV (comma-delimited)**



(2) Step 2: Save the setting data file on SD memory card in the PC

(a) Make a logging ID folder

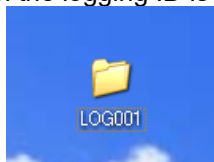
Name of the logging ID folder is as follows:

Folder name: **LOG***** (***: Logging ID set to Logging Unit Range: 001 to 255)

[Note 1] Both capitals and lower-case letters are available for alphabet.

[Note 2] If the folder name is different from the logging ID set to the Logging Unit, the setting values are not read in to the unit.

<Example> When the logging ID is “1”, the folder should be named “LOG001”.



(b) Save the setting data file in logging ID folder.



(c) Save the logging ID folder with setting data file on the SD memory card.

(3) Step 3: Insert the SD memory card in the Logging Unit

Insert the SD memory card described in Step 2 in the ME-0000BU-SS96 when power the ME96 off.
For inserting, refer to “4.How to insert and eject the SD memory card”.

After insert the SD memory card and then power-on, LOG.LED works as follows. When you change settings, make sure to check LOG.LED to confirm whether the settings are changed properly.

<If the settings are changed properly>

LOG.LED blinks slowly for 5 seconds (repetition of 0.5-second on and 0.5-second off).

<If the setting change is failed>

LOG.LED blinks quickly (repetition of 0.25-second on and 0.25-second off).

Review the setting data file in SD memory card.

<If LOG.LED does not blink>

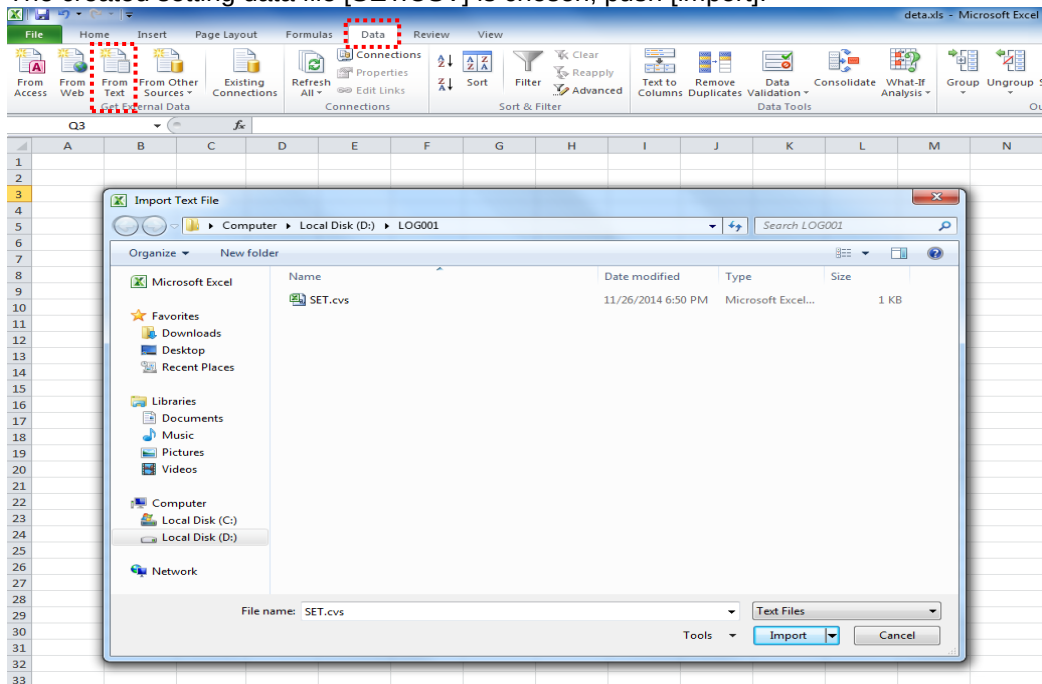
The same as the settings of the current situation, or the filename (SET), the file format (CSV) or storage location of the setting data file on the SD memory card may be wrong. Set again according to “Step 1: Make a setting data file in the PC”.

	• Format an SD memory card in the way specified in this manual. (Refer to “6.5.Format the SD memory card”.) • After logging condition is changed, logging data is initialized. Before changing settings, output logging data to the SD memory card and check the output data in the PC whether the data is memorized properly. • After settings for the ME96 are changed, logging data is initialized. Before changing settings, output logging data to the SD memory card and check the output data in the PC whether the data is memorized properly.
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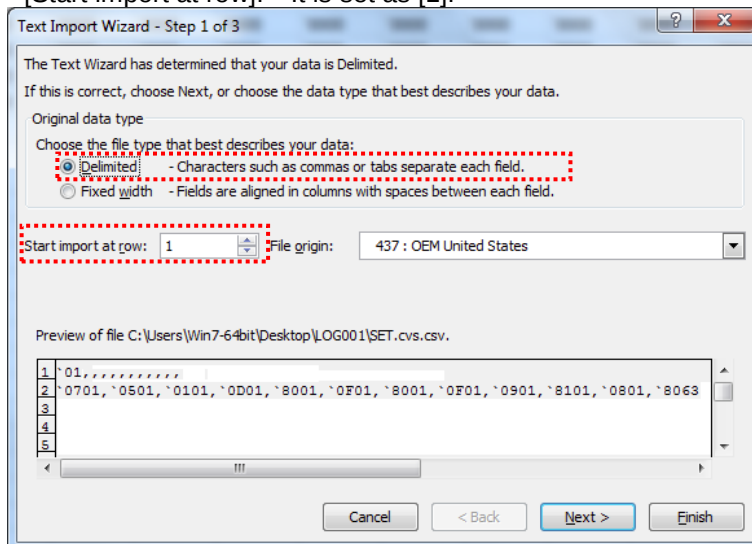
6.4 Open the configured data file which I made by Microsoft Excel again

Again, when opening the setting data file created once by Microsoft Excel, the following procedures perform it.

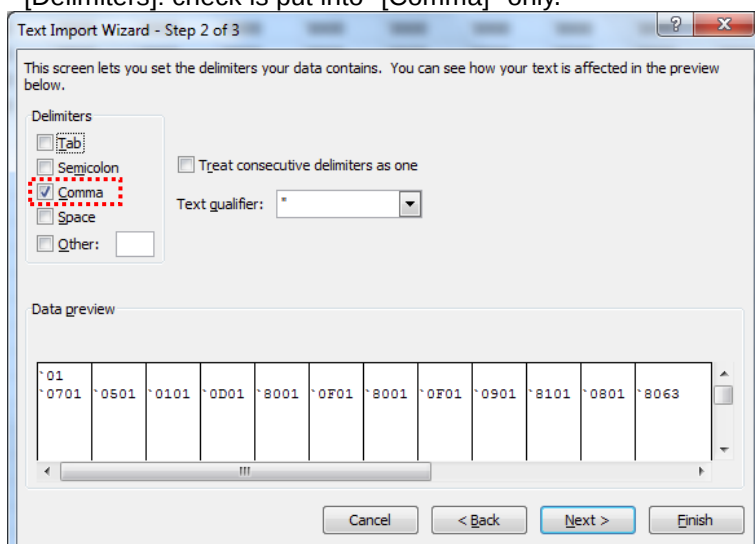
- 1) Start up Microsoft Excel.
- 2) Choose [Text Files] among a [Data] tab.
- 3) The created setting data file [SET.CSV] is chosen, push [import].



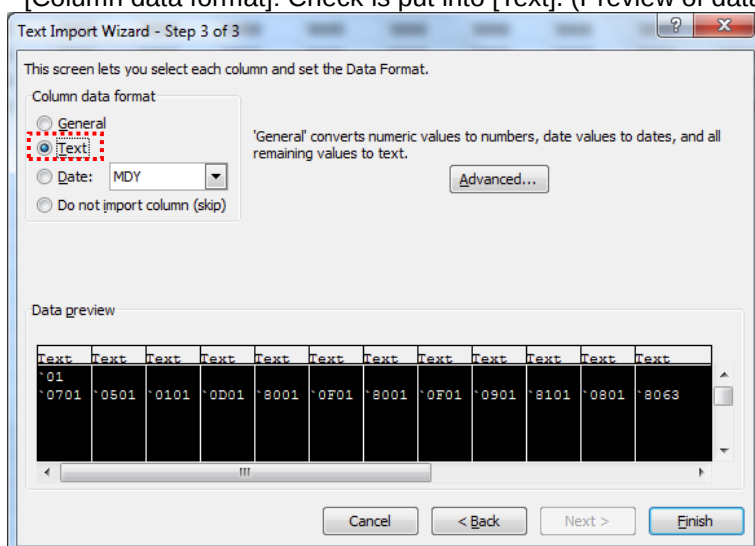
- 4) Perform the following setting [Text Input Wizard - Step1 of 3]. Push [Next].
 - [Original data type]: [Delimited] chooses.
 - [Start import at row]: It is set as [1].



- 5) Perform the following setting [Text Input Wizard - Step2 of 3]. Push [Next].
 - [Delimiters]: check is put into [Comma] only.



- 6) Perform the following setting [Text Input Wizard - Step3 of 3]. Push [Finish].
 - [Data preview]: Choose all the columns (shift+ column is chosen).
 - [Column data format]: Check is put into [Text]. (Preview of data changes to [Text].)



6.5 Format the SD memory card

You should use the formatter designated by SD Association to format the SD memory card for this optional plug-in module.

Download the SD formatter from the website of SD Association to format the SD memory card.

■ SD Association website

<https://www.sdcard.org/downloads/>

	• Use a SD memory card, EMU4-SD2GB, manufactured by Mitsubishi Electric Corporation. If a SD memory card not manufactured by Mitsubishi Electric Corporation is used, it may cause a problem such as data corruption in the SD card or system stop. Regarding the use of commercially available SD memory cards, access our FA website. Note that the customer is responsible for verifying safe use of those SD memory cards. • Format is done already as of the purchase, so a SD memory card made by Mitsubishi Electric Corporation (Model EMU4-SD2GB) has use just as it is, and is no problem.
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6.6 Output logging data and system log data to the SD memory card

After inserting the SD memory card in this optional plug-in module, the module outputs logging data and system log data to the memory card automatically.

For inserting the SD memory card, refer to “4.How to insert and eject the SD memory card”.
For details of output operation, refer to “5.2(3)Output time of the data file”.

(1) When inserting the SD memory card

Data after the latest file in SD memory card is output.

If there is no data in the SD memory card, all logging data in the optional plug-in module is output.

[Note 1] It takes about one hour to output data if the storage area of the optional plug-in module is full of logging data. Outputting logging data on a regular basis is recommended.

[Note 2] Output data size is up to 10MB if the storage area of the optional plug-in module is full of logging data.

(2) If the SD memory card is always inserted

Logging data is output every hour.

[Note 1] If output data exceeds maximum capacity of the SD memory card, output operation is stopped automatically. When output operation is stopped, SD C.LED blinks quickly (repetition of 0.25-second on and 0.25-second off).

Before the SD memory card is out of space, back up data in the memory card and format it.

	• Use a SD memory card, EMU4-SD2GB, manufactured by Mitsubishi Electric Corporation. If a SD memory card not manufactured by Mitsubishi Electric Corporation is used, it may cause a problem such as data corruption in the SD card or system stop. Regarding the use of commercially available SD memory cards, access our FA website. Note that the customer is responsible for verifying safe use of those SD memory cards. • Format an SD memory card in the way specified in this manual. • The write-protect switch of the SD memory card should be turned OFF to connect to the unit. If the write protect switch is “ON”, the logging unit does not communicate with an SD memory card. • During communication with the SD memory card, the operations such as power-off, reset and ejection of the memory card may cause data corruption of the memory card or failure of this module or the memory card. Power off or reset the module, or eject the SD memory card after checking that SD C.LED turns off.
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(1) ME96SS-Ver.A

Refer the below table

[Note] For the total power, refer to the user's manual of ME96.

Logging Item		Group Number	Channel Number	Data Name	Unit	ME96SSHA-MB			ME96SSRA-MB		
						3P4W	3P3W 1P3W	1P2W	3P4W	3P3W 1P3W	1P2W
Current	Average	01	01	A	[A]	○	○	-	○	○	-
	Phase 1	01	21	1_A	[A]	○	○	○	○	○	○
	Phase 2	01	41	2_A	[A]	○	○	-	○	○	-
	Phase 3	01	61	3_A	[A]	○	○	-	○	○	-
	Phase N	01	81	N_A	[A]	○	-	-	○	-	-
Current demand	Average	02	01	DA	[A]	○	○	-	○	○	-
	Phase 1	02	21	1_DA	[A]	○	○	○	○	○	○
	Phase 2	02	41	2_DA	[A]	○	○	-	○	○	-
	Phase 3	02	61	3_DA	[A]	○	○	-	○	○	-
	Phase N	02	81	N_DA	[A]	○	-	-	○	-	-
Voltage	Average(L-N)	03	01	LN_V	[V]	○	-	-	○	-	-
	Phase 1-N	03	21	1N_V	[V]	○	-	-	○	-	-
	Phase 2-N	03	41	2N_V	[V]	○	-	-	○	-	-
	Phase 3-N	03	61	3N_V	[V]	○	-	-	○	-	-
	Average(L-L)	05	01	LL_V	[V]	○	○	-	○	○	-
	Phase 1-2	05	21	12_V	[V]	○	○	○	○	○	○
	Phase 2-3	05	41	23_V	[V]	○	○	-	○	○	-
	Phase 3-1	05	61	31_V	[V]	○	○	-	○	○	-
Total active power		07	01	W	[kW]	○	○	○	○	○	○
Total rolling demand active power (Last)		08	01	DW	[kW]	○	○	○	○	○	○
Total reactive power		09	01	VAR	[kvar]	○	○	○	○	○	○
Total rolling demand reactive power (Last)		0A	01	DVAR	[kvar]	○	○	○	○	○	○
Total apparent power		0B	01	VA	[kVA]	○	○	○	○	○	○
Total rolling demand apparent power (Last)		0C	01	DVA	[kVA]	○	○	○	○	○	○
Total power factor		0D	01	PF	[%]	○	○	○	○	○	○
Frequency		0F	01	Hz	[Hz]	○	○	○	○	○	○

Note: Logging data are corresponded as follows according to setting of phase wiring of ME96. (Harmonic data listed next page and after are same)

Logging Item	Phase wiring			
	3P3W	1P3W(1N3)	1P3W(1N2)	1P2W
Voltage Phase 1-2	Voltage Phase 1-2	Voltage Phase 1-N	Voltage Phase 1-N	Voltage
Voltage Phase 2-3	Voltage Phase 2-3	Voltage Phase 3-N	Voltage Phase 2-N	-
Voltage Phase 3-1	Voltage Phase 3-1	Voltage Phase 1-3	Voltage Phase 1-2	-
Current Phase 1	Current Phase 1	Current Phase 1	Current Phase 1	Current
Current Phase 2	Current Phase 2	Current Phase N	Current Phase N	-
Current Phase 3	Current Phase 3	Current Phase 3	Current Phase 2	-

Logging Item			Group Number	Channel Number	Data Name	Unit	ME96SSHA-MB			ME96SSRA-MB		
							3P4W	3P3W 1P3W	1P2W	3P4W	3P3W 1P3W	1P2W
Current harmonics value	Total	Phase 1	3F	21	1 HA	[A]	○	○	○	○	○	○
		Phase 2	3F	41	2 HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	3F	61	3 HA	[A]	○	○	-	○	○	-
		Phase N	3F	81	N HA	[A]	○	-	-	○	-	-
	1st	Phase 1	29	21	1 1HA	[A]	○	○	○	○	○	○
		Phase 2	29	41	2 1HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	29	61	3 1HA	[A]	○	○	-	○	○	-
		Phase N	29	81	N 1HA	[A]	○	-	-	○	-	-
	3rd	Phase 1	2B	21	1 3HA	[A]	○	○	○	○	○	○
		Phase 2	2B	41	2 3HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	2B	61	3 3HA	[A]	○	○	-	○	○	-
		Phase N	2B	81	N 3HA	[A]	○	-	-	○	-	-
	5th	Phase 1	2D	21	1 5HA	[A]	○	○	○	○	○	○
		Phase 2	2D	41	2 5HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	2D	61	3 5HA	[A]	○	○	-	○	○	-
		Phase N	2D	81	N 5HA	[A]	○	-	-	○	-	-
	7th	Phase 1	2F	21	1 7HA	[A]	○	○	○	○	○	○
		Phase 2	2F	41	2 7HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	2F	61	3 7HA	[A]	○	○	-	○	○	-
		Phase N	2F	81	N 7HA	[A]	○	-	-	○	-	-
	9th	Phase 1	31	21	1 9HA	[A]	○	○	○	○	○	○
		Phase 2	31	41	2 9HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	31	61	3 9HA	[A]	○	○	-	○	○	-
		Phase N	31	81	N 9HA	[A]	○	-	-	○	-	-
	11th	Phase 1	33	21	1 11HA	[A]	○	○	○	○	○	○
		Phase 2	33	41	2 11HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	33	61	3 11HA	[A]	○	○	-	○	○	-
		Phase N	33	81	N 11HA	[A]	○	-	-	○	-	-
	13th	Phase 1	35	21	1 13HA	[A]	○	○	○	○	○	○
		Phase 2	35	41	2 13HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	35	61	3 13HA	[A]	○	○	-	○	○	-
		Phase N	35	81	N 13HA	[A]	○	-	-	○	-	-
	15th	Phase 1	37	21	1 15HA	[A]	○	○	○	○	○	○
		Phase 2	37	41	2 15HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	37	61	3 15HA	[A]	○	○	-	○	○	-
		Phase N	37	81	N 15HA	[A]	○	-	-	○	-	-
	17th	Phase 1	39	21	1 17HA	[A]	○	○	○	○	○	○
		Phase 2	39	41	2 17HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	39	61	3 17HA	[A]	○	○	-	○	○	-
		Phase N	39	81	N 17HA	[A]	○	-	-	○	-	-
	19th	Phase 1	3B	21	1 19HA	[A]	○	○	○	○	○	○
		Phase 2	3B	41	2 19HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	3B	61	3 19HA	[A]	○	○	-	○	○	-
		Phase N	3B	81	N 19HA	[A]	○	-	-	○	-	-
	21st	Phase 1	3D	21	1 21HA	[A]	○	○	○	-	-	-
		Phase 2	3D	41	2 21HA	[A]	○	○(*3)	-	-	-	-
		Phase 3	3D	61	3 21HA	[A]	○	○	-	-	-	-
		Phase N	3D	81	N 21HA	[A]	○	-	-	-	-	-
	23rd	Phase 1	74	02	1 23HA	[A]	○	○	○	-	-	-
		Phase 2	74	18	2 23HA	[A]	○	○(*3)	-	-	-	-
		Phase 3	74	2E	3 23HA	[A]	○	○	-	-	-	-
		Phase N	74	44	N 23HA	[A]	○	-	-	-	-	-
	25th	Phase 1	74	04	1 25HA	[A]	○	○	○	-	-	-
		Phase 2	74	1A	2 25HA	[A]	○	○(*3)	-	-	-	-
		Phase 3	74	30	3 25HA	[A]	○	○	-	-	-	-
		Phase N	74	46	N 25HA	[A]	○	-	-	-	-	-
	27th	Phase 1	74	06	1 27HA	[A]	○	○	○	-	-	-
		Phase 2	74	1C	2 27HA	[A]	○	○(*3)	-	-	-	-
		Phase 3	74	32	3 27HA	[A]	○	○	-	-	-	-
		Phase N	74	48	N 27HA	[A]	○	-	-	-	-	-
	29th	Phase 1	74	08	1 29HA	[A]	○	○	○	-	-	-
		Phase 2	74	1E	2 29HA	[A]	○	○(*3)	-	-	-	-
		Phase 3	74	34	3 29HA	[A]	○	○	-	-	-	-
		Phase N	74	4A	N 29HA	[A]	○	-	-	-	-	-
	31st	Phase 1	74	0A	1 31HA	[A]	○	○	○	-	-	-
		Phase 2	74	20	2 31HA	[A]	○	○(*3)	-	-	-	-
		Phase 3	74	36	3 31HA	[A]	○	○	-	-	-	-
		Phase N	74	4C	N 31HA	[A]	○	-	-	-	-	-

*3: Applicable only when 3P3W_3CT.

Logging Item			Group Number	Channel Number	Data Name	Unit	ME96SSHA-MB			ME96SSRA-MB		
							3P4W	3P3W 1P3W	1P2W	3P4W	3P3W 1P3W	1P2W
Current harmonics distortion	Total	Phase 1	71	86	1 HA	[%]	○	○	○	○	○	○
		Phase 2	71	9C	2 HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	B2	3 HA	[%]	○	○	-	○	○	-
		Phase N	71	C8	N HA	[%]	○	-	-	○	-	-
	3rd	Phase 1	71	73	1 3HA	[%]	○	○	○	○	○	○
		Phase 2	71	89	2 3HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	9F	3 3HA	[%]	○	○	-	○	○	-
		Phase N	71	B5	N 3HA	[%]	○	-	-	○	-	-
	5th	Phase 1	71	75	1 5HA	[%]	○	○	○	○	○	○
		Phase 2	71	8B	2 5HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	A1	3 5HA	[%]	○	○	-	○	○	-
		Phase N	71	B7	N 5HA	[%]	○	-	-	○	-	-
	7th	Phase 1	71	77	1 7HA	[%]	○	○	○	○	○	○
		Phase 2	71	8D	2 7HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	A3	3 7HA	[%]	○	○	-	○	○	-
		Phase N	71	B9	N 7HA	[%]	○	-	-	○	-	-
	9th	Phase 1	71	79	1 9HA	[%]	○	○	○	○	○	○
		Phase 2	71	8F	2 9HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	A5	3 9HA	[%]	○	○	-	○	○	-
		Phase N	71	BB	N 9HA	[%]	○	-	-	○	-	-
	11th	Phase 1	71	7B	1 11HA	[%]	○	○	○	○	○	○
		Phase 2	71	91	2 11HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	A7	3 11HA	[%]	○	○	-	○	○	-
		Phase N	71	BD	N 11HA	[%]	○	-	-	○	-	-
	13th	Phase 1	71	7D	1 13HA	[%]	○	○	○	○	○	○
		Phase 2	71	93	2 13HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	A9	3 13HA	[%]	○	○	-	○	○	-
		Phase N	71	BF	N 13HA	[%]	○	-	-	○	-	-
	15th	Phase 1	71	7F	1 15HA	[%]	○	○	○	○	○	○
		Phase 2	71	95	2 15HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	AB	3 15HA	[%]	○	○	-	○	○	-
		Phase N	71	C1	N 15HA	[%]	○	-	-	○	-	-
	17th	Phase 1	71	81	1 17HA	[%]	○	○	○	○	○	○
		Phase 2	71	97	2 17HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	AD	3 17HA	[%]	○	○	-	○	○	-
		Phase N	71	C3	N 17HA	[%]	○	-	-	○	-	-
	19th	Phase 1	71	83	1 19HA	[%]	○	○	○	○	○	○
		Phase 2	71	99	2 19HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	AF	3 19HA	[%]	○	○	-	○	○	-
		Phase N	71	C5	N 19HA	[%]	○	-	-	○	-	-
	21st	Phase 1	71	85	1 21HA	[%]	○	○	○	-	-	-
		Phase 2	71	9B	2 21HA	[%]	○	○(*3)	-	-	-	-
		Phase 3	71	B1	3 21HA	[%]	○	○	-	-	-	-
		Phase N	71	C7	N 21HA	[%]	○	-	-	-	-	-
	23rd	Phase 1	74	72	1 23HA	[%]	○	○	○	-	-	-
		Phase 2	74	88	2 23HA	[%]	○	○(*3)	-	-	-	-
		Phase 3	74	9E	3 23HA	[%]	○	○	-	-	-	-
		Phase N	74	B4	N 23HA	[%]	○	-	-	-	-	-
	25th	Phase 1	74	74	1 25HA	[%]	○	○	○	-	-	-
		Phase 2	74	8A	2 25HA	[%]	○	○(*3)	-	-	-	-
		Phase 3	74	A0	3 25HA	[%]	○	○	-	-	-	-
		Phase N	74	B6	N 25HA	[%]	○	-	-	-	-	-
	27th	Phase 1	74	76	1 27HA	[%]	○	○	○	-	-	-
		Phase 2	74	8C	2 27HA	[%]	○	○(*3)	-	-	-	-
		Phase 3	74	A2	3 27HA	[%]	○	○	-	-	-	-
		Phase N	74	B8	N 27HA	[%]	○	-	-	-	-	-
	29th	Phase 1	74	78	1 29HA	[%]	○	○	○	-	-	-
		Phase 2	74	8E	2 29HA	[%]	○	○(*3)	-	-	-	-
		Phase 3	74	A4	3 29HA	[%]	○	○	-	-	-	-
		Phase N	74	BA	N 29HA	[%]	○	-	-	-	-	-
	31st	Phase 1	74	7A	1 31HA	[%]	○	○	○	-	-	-
		Phase 2	74	90	2 31HA	[%]	○	○(*3)	-	-	-	-
		Phase 3	74	A6	3 31HA	[%]	○	○	-	-	-	-
		Phase N	74	BC	N 31HA	[%]	○	-	-	-	-	-

*3: Applicable only when 3P3W_3CT.

Logging Item			Group Number	Channel Number	Data Name	Unit	ME96SSHA-MB			ME96SSRA-MB		
							3P4W	3P3W 1P3W	1P2W	3P4W	3P3W 1P3W	1P2W
Voltage (L-N) harmonics value	Total	Phase 1-N	57	21	1N_HV	[V]	○	-	-	○	-	-
		Phase 2-N	57	41	2N_HV	[V]	○	-	-	○	-	-
		Phase 3-N	57	61	3N_HV	[V]	○	-	-	○	-	-
	1st	Phase 1-N	41	21	1N_1HV	[V]	○	-	-	○	-	-
		Phase 2-N	41	41	2N_1HV	[V]	○	-	-	○	-	-
		Phase 3-N	41	61	3N_1HV	[V]	○	-	-	○	-	-
	3rd	Phase 1-N	43	21	1N_3HV	[V]	○	-	-	○	-	-
		Phase 2-N	43	41	2N_3HV	[V]	○	-	-	○	-	-
		Phase 3-N	43	61	3N_3HV	[V]	○	-	-	○	-	-
	5th	Phase 1-N	45	21	1N_5HV	[V]	○	-	-	○	-	-
		Phase 2-N	45	41	2N_5HV	[V]	○	-	-	○	-	-
		Phase 3-N	45	61	3N_5HV	[V]	○	-	-	○	-	-
	7th	Phase 1-N	47	21	1N_7HV	[V]	○	-	-	○	-	-
		Phase 2-N	47	41	2N_7HV	[V]	○	-	-	○	-	-
		Phase 3-N	47	61	3N_7HV	[V]	○	-	-	○	-	-
	9th	Phase 1-N	49	21	1N_9HV	[V]	○	-	-	○	-	-
		Phase 2-N	49	41	2N_9HV	[V]	○	-	-	○	-	-
		Phase 3-N	49	61	3N_9HV	[V]	○	-	-	○	-	-
	11th	Phase 1-N	4B	21	1N_11HV	[V]	○	-	-	○	-	-
		Phase 2-N	4B	41	2N_11HV	[V]	○	-	-	○	-	-
		Phase 3-N	4B	61	3N_11HV	[V]	○	-	-	○	-	-
	13th	Phase 1-N	4D	21	1N_13HV	[V]	○	-	-	○	-	-
		Phase 2-N	4D	41	2N_13HV	[V]	○	-	-	○	-	-
		Phase 3-N	4D	61	3N_13HV	[V]	○	-	-	○	-	-
	15th	Phase 1-N	4F	21	1N_15HV	[V]	○	-	-	○	-	-
		Phase 2-N	4F	41	2N_15HV	[V]	○	-	-	○	-	-
		Phase 3-N	4F	61	3N_15HV	[V]	○	-	-	○	-	-
	17th	Phase 1-N	51	21	1N_17HV	[V]	○	-	-	○	-	-
		Phase 2-N	51	41	2N_17HV	[V]	○	-	-	○	-	-
		Phase 3-N	51	61	3N_17HV	[V]	○	-	-	○	-	-
	19th	Phase 1-N	53	21	1N_19HV	[V]	○	-	-	○	-	-
		Phase 2-N	53	41	2N_19HV	[V]	○	-	-	○	-	-
		Phase 3-N	53	61	3N_19HV	[V]	○	-	-	○	-	-
	21st	Phase 1-N	55	21	1N_21HV	[V]	○	-	-	-	-	-
		Phase 2-N	55	41	2N_21HV	[V]	○	-	-	-	-	-
		Phase 3-N	55	61	3N_21HV	[V]	○	-	-	-	-	-
	23rd	Phase 1-N	7A	02	1N_23HV	[V]	○	-	-	-	-	-
		Phase 2-N	7A	18	2N_23HV	[V]	○	-	-	-	-	-
		Phase 3-N	7A	2E	3N_23HV	[V]	○	-	-	-	-	-
	25th	Phase 1-N	7A	04	1N_25HV	[V]	○	-	-	-	-	-
		Phase 2-N	7A	1A	2N_25HV	[V]	○	-	-	-	-	-
		Phase 3-N	7A	30	3N_25HV	[V]	○	-	-	-	-	-
	27th	Phase 1-N	7A	06	1N_27HV	[V]	○	-	-	-	-	-
		Phase 2-N	7A	1C	2N_27HV	[V]	○	-	-	-	-	-
		Phase 3-N	7A	32	3N_27HV	[V]	○	-	-	-	-	-
	29th	Phase 1-N	7A	08	1N_29HV	[V]	○	-	-	-	-	-
		Phase 2-N	7A	1E	2N_29HV	[V]	○	-	-	-	-	-
		Phase 3-N	7A	34	3N_29HV	[V]	○	-	-	-	-	-
	31st	Phase 1-N	7A	0A	1N_31HV	[V]	○	-	-	-	-	-
		Phase 2-N	7A	20	2N_31HV	[V]	○	-	-	-	-	-
		Phase 3-N	7A	36	3N_31HV	[V]	○	-	-	-	-	-

Logging Item			Group Number	Channel Number	Data Name	Unit	ME96SSHA-MB			ME96SSRA-MB		
							3P4W	3P3W 1P3W	1P2W	3P4W	3P3W 1P3W	1P2W
Voltage (L-N) harmonics distortion	Total	Phase 1-N	73	86	1N_HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	9C	2N_HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	B2	3N_HV	[%]	○	-	-	○	-	-
	3rd	Phase 1-N	73	73	1N_3HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	89	2N_3HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	9F	3N_3HV	[%]	○	-	-	○	-	-
	5th	Phase 1-N	73	75	1N_5HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	8B	2N_5HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	A1	3N_5HV	[%]	○	-	-	○	-	-
	7th	Phase 1-N	73	77	1N_7HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	8D	2N_7HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	A3	3N_7HV	[%]	○	-	-	○	-	-
	9th	Phase 1-N	73	79	1N_9HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	8F	2N_9HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	A5	3N_9HV	[%]	○	-	-	○	-	-
	11th	Phase 1-N	73	7B	1N_11HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	91	2N_11HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	A7	3N_11HV	[%]	○	-	-	○	-	-
	13th	Phase 1-N	73	7D	1N_13HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	93	2N_13HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	A9	3N_13HV	[%]	○	-	-	○	-	-
	15th	Phase 1-N	73	7F	1N_15HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	95	2N_15HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	AB	3N_15HV	[%]	○	-	-	○	-	-
	17th	Phase 1-N	73	81	1N_17HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	97	2N_17HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	AD	3N_17HV	[%]	○	-	-	○	-	-
	19th	Phase 1-N	73	83	1N_19HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	99	2N_19HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	AF	3N_19HV	[%]	○	-	-	○	-	-
	21st	Phase 1-N	73	85	1N_21HV	[%]	○	-	-	-	-	-
		Phase 2-N	73	9B	2N_21HV	[%]	○	-	-	-	-	-
		Phase 3-N	73	B1	3N_21HV	[%]	○	-	-	-	-	-
	23rd	Phase 1-N	7A	72	1N_23HV	[%]	○	-	-	-	-	-
		Phase 2-N	7A	88	2N_23HV	[%]	○	-	-	-	-	-
		Phase 3-N	7A	9E	3N_23HV	[%]	○	-	-	-	-	-
	25th	Phase 1-N	7A	74	1N_25HV	[%]	○	-	-	-	-	-
		Phase 2-N	7A	8A	2N_25HV	[%]	○	-	-	-	-	-
		Phase 3-N	7A	A0	3N_25HV	[%]	○	-	-	-	-	-
	27th	Phase 1-N	7A	76	1N_27HV	[%]	○	-	-	-	-	-
		Phase 2-N	7A	8C	2N_27HV	[%]	○	-	-	-	-	-
		Phase 3-N	7A	A2	3N_27HV	[%]	○	-	-	-	-	-
	29th	Phase 1-N	7A	78	1N_29HV	[%]	○	-	-	-	-	-
		Phase 2-N	7A	8E	2N_29HV	[%]	○	-	-	-	-	-
		Phase 3-N	7A	A4	3N_29HV	[%]	○	-	-	-	-	-
	31st	Phase 1-N	7A	7A	1N_31HV	[%]	○	-	-	-	-	-
		Phase 2-N	7A	90	2N_31HV	[%]	○	-	-	-	-	-
		Phase 3-N	7A	A6	3N_31HV	[%]	○	-	-	-	-	-

Logging Item			Group Number	Channel Number	Data Name	Unit	ME96SSHA-MB			ME96SSRA-MB		
							3P4W	3P3W 1P3W	1P2W	3P4W	3P3W 1P3W	1P2W
Voltage (L-L) harmonics value	Total	Phase 1-2	6F	21	12 HV	[V]	-	○	○	-	○	○
		Phase 2-3	6F	41	23 HV	[V]	-	○	-	-	○	-
	1st	Phase 1-2	59	21	12 1HV	[V]	-	○	○	-	○	○
		Phase 2-3	59	41	23 1HV	[V]	-	○	-	-	○	-
	3rd	Phase 1-2	5B	21	12 3HV	[V]	-	○	○	-	○	○
		Phase 2-3	5B	41	23 3HV	[V]	-	○	-	-	○	-
	5th	Phase 1-2	5D	21	12 5HV	[V]	-	○	○	-	○	○
		Phase 2-3	5D	41	23 5HV	[V]	-	○	-	-	○	-
	7th	Phase 1-2	5F	21	12 7HV	[V]	-	○	○	-	○	○
		Phase 2-3	5F	41	23 7HV	[V]	-	○	-	-	○	-
	9th	Phase 1-2	61	21	12 9HV	[V]	-	○	○	-	○	○
		Phase 2-3	61	41	23 9HV	[V]	-	○	-	-	○	-
	11th	Phase 1-2	63	21	12 11HV	[V]	-	○	○	-	○	○
		Phase 2-3	63	41	23 11HV	[V]	-	○	-	-	○	-
	13th	Phase 1-2	65	21	12 13HV	[V]	-	○	○	-	○	○
		Phase 2-3	65	41	23 13HV	[V]	-	○	-	-	○	-
	15th	Phase 1-2	67	21	12 15HV	[V]	-	○	○	-	○	○
		Phase 2-3	67	41	23 15HV	[V]	-	○	-	-	○	-
	17th	Phase 1-2	69	21	12 17HV	[V]	-	○	○	-	○	○
		Phase 2-3	69	41	23 17HV	[V]	-	○	-	-	○	-
	19th	Phase 1-2	6B	21	12 19HV	[V]	-	○	○	-	○	○
		Phase 2-3	6B	41	23 19HV	[V]	-	○	-	-	○	-
	21st	Phase 1-2	6D	21	12 21HV	[V]	-	○	○	-	-	-
		Phase 2-3	6D	41	23 21HV	[V]	-	○	-	-	-	-
	23rd	Phase 1-2	79	02	12 23HV	[V]	-	○	○	-	-	-
		Phase 2-3	79	18	23 23HV	[V]	-	○	-	-	-	-
	25th	Phase 1-2	79	04	12 25HV	[V]	-	○	○	-	-	-
		Phase 2-3	79	1A	23 25HV	[V]	-	○	-	-	-	-
	27th	Phase 1-2	79	06	12 27HV	[V]	-	○	○	-	-	-
		Phase 2-3	79	1C	23 27HV	[V]	-	○	-	-	-	-
	29th	Phase 1-2	79	08	12 29HV	[V]	-	○	○	-	-	-
		Phase 2-3	79	1E	23 29HV	[V]	-	○	-	-	-	-
	31st	Phase 1-2	79	0A	12 31HV	[V]	-	○	○	-	-	-
		Phase 2-3	79	20	23 31HV	[V]	-	○	-	-	-	-
Voltage (L-L) harmonics distortion	Total	Phase 1-2	72	86	12 HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	9C	23 HV	[%]	-	○	-	-	○	-
	3rd	Phase 1-2	72	73	12 3HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	89	23 3HV	[%]	-	○	-	-	○	-
	5th	Phase 1-2	72	75	12 5HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	8B	23 5HV	[%]	-	○	-	-	○	-
	7th	Phase 1-2	72	77	12 7HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	8D	23 7HV	[%]	-	○	-	-	○	-
	9th	Phase 1-2	72	79	12 9HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	8F	23 9HV	[%]	-	○	-	-	○	-
	11th	Phase 1-2	72	7B	12 11HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	91	23 11HV	[%]	-	○	-	-	○	-
	13th	Phase 1-2	72	7D	12 13HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	93	23 13HV	[%]	-	○	-	-	○	-
	15th	Phase 1-2	72	7F	12 15HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	95	23 15HV	[%]	-	○	-	-	○	-
	17th	Phase 1-2	72	81	12 17HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	97	23 17HV	[%]	-	○	-	-	○	-
	19th	Phase 1-2	72	83	12 19HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	99	23 19HV	[%]	-	○	-	-	○	-
	21st	Phase 1-2	72	85	12 21HV	[%]	-	○	○	-	-	-
		Phase 2-3	72	9B	23 21HV	[%]	-	○	-	-	-	-
	23rd	Phase 1-2	79	72	12 23HV	[%]	-	○	○	-	-	-
		Phase 2-3	79	88	23 23HV	[%]	-	○	-	-	-	-
	25th	Phase 1-2	79	74	12 25HV	[%]	-	○	○	-	-	-
		Phase 2-3	79	8A	23 25HV	[%]	-	○	-	-	-	-
	27th	Phase 1-2	79	76	12 27HV	[%]	-	○	○	-	-	-
		Phase 2-3	79	8C	23 27HV	[%]	-	○	-	-	-	-
	29th	Phase 1-2	79	78	12 29HV	[%]	-	○	○	-	-	-
		Phase 2-3	79	8E	23 29HV	[%]	-	○	-	-	-	-
	31st	Phase 1-2	79	7A	12 31HV	[%]	-	○	○	-	-	-
		Phase 2-3	79	90	23 31HV	[%]	-	○	-	-	-	-

(2) ME96SS-Ver.B

Logging Item		Group Number	Channel Number	Data Name	Unit	ME96SSHB-MB			ME96SSRB-MB			
						3P4W	3P3W 1P3W	1P2W	3P4W	3P3W 1P3W	1P2W	
Active energy (import)		*1	80	01	Wh	[kWh]	○	○	○	○	○	○
Active energy (export)		*1	80	63	RWh	[kWh]	○	○	○	○	○	○
CO2 Equivalent		*1	80	6A	806A (*3)	[kg]	○	○	○	○	○	○
Reactive energy (import LAG)		*1	81	01	varh	[kvarh]	○	○	○	○	○	○
Reactive energy (export LAG)		*1	81	63	Rvarh	[kvarh]	○	○	○	○	○	○
Reactive energy (import LEAD)		*1	81	64	L_varh	[kvarh]	○	○	○	○	○	○
Reactive energy (export LEAD)		*1	81	65	L_Rvarh	[kvarh]	○	○	○	○	○	○
Apparent energy		*1	82	01	VAh	[kVAh]	○	○	○	○	○	○
Periodic active energy (Period1)		*1	8B	01	P1_Wh	[kWh]	○	○	○	○	○	○
Periodic active energy (Period2)		*1	8C	01	P2_Wh	[kWh]	○	○	○	○	○	○
Periodic active energy (Period3)		*1	92	01	9201 (*3)	[kWh]	○	○	○	○	○	○
Active energy (import)	(fixed:Wh)	*2	B0	01	Wh_n	[kWh]	○	○	○	○	○	○
Active energy (export)	(fixed:Wh)	*2	B0	04	RWh_n	[kWh]	○	○	○	○	○	○
Reactive energy (import LAG)	(fixed:varh)	*2	B0	07	varh_n	[kvarh]	○	○	○	○	○	○
Reactive energy (export LAG)	(fixed:varh)	*2	B0	0A	Rvarh_n	[kvarh]	○	○	○	○	○	○
Reactive energy (import LEAD)	(fixed:varh)	*2	B0	0D	L_varh_n	[kvarh]	○	○	○	○	○	○
Reactive energy (export LEAD)	(fixed:varh)	*2	B0	10	L_Rvarh_n	[kvarh]	○	○	○	○	○	○
Apparent energy	(fixed:VAh)	*2	B0	13	VAh_n	[kVAh]	○	○	○	○	○	○
Periodic active energy (Period1)	(fixed:Wh)	*2	B0	16	P1_Wh_n	[kWh]	○	○	○	○	○	○
Periodic active energy (Period2)	(fixed:Wh)	*2	B0	19	P2_Wh_n	[kWh]	○	○	○	○	○	○
Periodic active energy (Period3)	(fixed:Wh)	*2	B0	1C	B01C (*3)	[kWh]	○	○	○	○	○	○
Active energy (import)	(fixed:kWh)	*2	B0	02	Wh_k	[kWh]	○	○	○	○	○	○
Active energy (export)	(fixed:kWh)	*2	B0	05	RWh_k	[kWh]	○	○	○	○	○	○
Reactive energy (import LAG)	(fixed:kvarh)	*2	B0	08	varh_k	[kvarh]	○	○	○	○	○	○
Reactive energy (export LAG)	(fixed:kvarh)	*2	B0	0B	Rvarh_k	[kvarh]	○	○	○	○	○	○
Reactive energy (import LEAD)	(fixed:kvarh)	*2	B0	0E	L_varh_k	[kvarh]	○	○	○	○	○	○
Reactive energy (export LEAD)	(fixed:kvarh)	*2	B0	11	L_Rvarh_k	[kvarh]	○	○	○	○	○	○
Apparent energy	(fixed:kVAh)	*2	B0	14	VAh_k	[kVAh]	○	○	○	○	○	○
Periodic active energy (Period1)	(fixed:kWh)	*2	B0	17	P1_Wh_k	[kWh]	○	○	○	○	○	○
Periodic active energy (Period2)	(fixed:kWh)	*2	B0	1A	P2_Wh_k	[kWh]	○	○	○	○	○	○
Periodic active energy (Period3)	(fixed:kWh)	*2	B0	1D	B01D (*3)	[kWh]	○	○	○	○	○	○
Active energy (import)	(fixed:MWh)	*2	B0	03	Wh_M	[kWh]	○	○	○	○	○	○
Active energy (export)	(fixed:MWh)	*2	B0	06	RWh_M	[kWh]	○	○	○	○	○	○
Reactive energy (import LAG)	(fixed:Mvarh)	*2	B0	09	varh_M	[kvarh]	○	○	○	○	○	○
Reactive energy (export LAG)	(fixed:Mvarh)	*2	B0	0C	Rvarh_M	[kvarh]	○	○	○	○	○	○
Reactive energy (import LEAD)	(fixed:Mvarh)	*2	B0	0F	L_varh_M	[kvarh]	○	○	○	○	○	○
Reactive energy (export LEAD)	(fixed:Mvarh)	*2	B0	12	L_Rvarh_M	[kvarh]	○	○	○	○	○	○
Apparent energy	(fixed:MVAh)	*2	B0	15	VAh_M	[kVAh]	○	○	○	○	○	○
Periodic active energy (Period1)	(fixed:MWh)	*2	B0	18	P1_Wh_M	[kWh]	○	○	○	○	○	○
Periodic active energy (Period2)	(fixed:MWh)	*2	B0	1B	P2_Wh_M	[kWh]	○	○	○	○	○	○
Periodic active energy (Period3)	(fixed:MWh)	*2	B0	1E	B01E (*3)	[kWh]	○	○	○	○	○	○
Operating time1			87	01	1 h	[h]	○	○	○	○	○	○
Operating time2			88	01	2 h	[h]	○	○	○	○	○	○

*1. The logging data of the energy data will be changed according to the total load setting of ME96. The number of significant figures is 6.

*2. Regardless to the total load setting of ME96, the logging data of the energy data will be stored after transrated to unit "k".
Refer the below table.

(Example) In case of Active energy (import) data of ME96 is 876,543,210,987,654,321mWh, each logging data are following.

						GWh				MWh				kWh				Wh				mWh	
Data =		8	7	6	5	4	3	2	1	0	9	8	7	6	5	4	3	2	1				
Logging Item	Total power[kW]																						
Active energy (import)	less than 10									0	9	8	7.	6	5								
	10 or more and less than100								1	0	9	8	7.	6									
	100 or more and less than1000							2	1	0	9	8	7										
	1000 or more and less than10000						3	2	1	0	9	8	0										
	10000 or more and less than100000					4	3	2	1	0	9	0	0										
	100000 or more				5	4	3	2	1	0	0	0	0										
Active energy (import) (fixed:Wh)	-							2	1	0	9	8	7.	6	5	4							
Active energy (import) (fixed:kWh)	-				5	4	3	2	1	0	9	8	7										
Active energy (import) (fixed:MWh)	-	8	7	6	5	4	3	2	1	0	0	0	0										

[Note] For the total power, refer to the user's manual of ME96.

* 3. The Data Name is [Group Number and Channel Number].

Logging Item		Group Number	Channel Number	Data Name	Unit	ME96SSHB-MB			ME96SSRB-MB		
						3P4W	3P3W 1P3W	1P2W	3P4W	3P3W 1P3W	1P2W
Current	Average	01	01	A	[A]	○	○	-	○	○	-
	Phase 1	01	21	1_A	[A]	○	○	○	○	○	○
	Phase 2	01	41	2_A	[A]	○	○	-	○	○	-
	Phase 3	01	61	3_A	[A]	○	○	-	○	○	-
	Phase N	01	81	N_A	[A]	○	-	-	○	-	-
Current demand	Average	02	01	DA	[A]	○	○	-	○	○	-
	Phase 1	02	21	1_DA	[A]	○	○	○	○	○	○
	Phase 2	02	41	2_DA	[A]	○	○	-	○	○	-
	Phase 3	02	61	3_DA	[A]	○	○	-	○	○	-
	Phase N	02	81	N_DA	[A]	○	-	-	○	-	-
Voltage	Average(L-N)	03	01	LN_V	[V]	○	-	-	○	-	-
	Phase 1-N	03	21	1N_V	[V]	○	-	-	○	-	-
	Phase 2-N	03	41	2N_V	[V]	○	-	-	○	-	-
	Phase 3-N	03	61	3N_V	[V]	○	-	-	○	-	-
	Average(L-L)	05	01	LL_V	[V]	○	○	-	○	○	-
	Phase 1-2	05	21	12_V	[V]	○	○	○	○	○	○
	Phase 2-3	05	41	23_V	[V]	○	○	-	○	○	-
	Phase 3-1	05	61	31_V	[V]	○	○	-	○	○	-
Total active power		07	01	W	[kW]	○	○	○	○	○	○
Total rolling demand active power (Last)		08	01	DW	[kW]	○	○	○	○	○	○
Total rolling demand active power (peak)		08	02	0802 (*3)	[kW]	○	○	○	○	○	○
Total reactive power		09	01	VAR	[kvar]	○	○	○	○	○	○
Total rolling demand reactive power (Last)		0A	01	DVAR	[kvar]	○	○	○	○	○	○
Total rolling demand reactive power (peak)		0A	02	0A02 (*3)	[kvar]	○	○	○	○	○	○
Total apparent power		0B	01	VA	[kVA]	○	○	○	○	○	○
Total rolling demand apparent power (Last)		0C	01	DVA	[kVA]	○	○	○	○	○	○
Total rolling demand apparent power (peak)		0C	02	0C02 (*3)	[kVA]	○	○	○	○	○	○
Total power factor		0D	01	PF	[%]	○	○	○	○	○	○
Frequency		0F	01	Hz	[Hz]	○	○	○	○	○	○
Current unbalance Ratio		01	1E	011E (*3)	[%]	○	○	-	○	○	-
Voltage unbalance Ratio		03	1E	031E (*3)	[%]	○	○	-	○	○	-

Note: Logging data are corresponded as follows according to setting of phase wiring of ME96. (Harmonic data listed next page and after are same)

Logging Item	Phase wiring			
	3P3W	1P3W(1N3)	1P3W(1N2)	1P2W
Voltage Phase 1-2	Voltage Phase 1-2	Voltage Phase 1-N	Voltage Phase 1-N	Voltage
Voltage Phase 2-3	Voltage Phase 2-3	Voltage Phase 3-N	Voltage Phase 2-N	-
Voltage Phase 3-1	Voltage Phase 3-1	Voltage Phase 1-3	Voltage Phase 1-2	-
Current Phase 1	Current Phase 1	Current Phase 1	Current Phase 1	Current
Current Phase 2	Current Phase 2	Current Phase N	Current Phase N	-
Current Phase 3	Current Phase 3	Current Phase 3	Current Phase 2	-

Logging Item			Group Number	Channel Number	Data Name	Unit	ME96SSHB-MB			ME96SSRB-MB		
							3P4W	3P3W 1P3W	1P2W	3P4W	3P3W 1P3W	1P2W
Current harmonics value	Total	Phase 1	3F	21	1 HA	[A]	○	○	○	○	○	○
		Phase 2	3F	41	2 HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	3F	61	3 HA	[A]	○	○	-	○	○	-
		Phase N	3F	81	N HA	[A]	○	-	-	○	-	-
	1st	Phase 1	29	21	1 1HA	[A]	○	○	○	○	○	○
		Phase 2	29	41	2 1HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	29	61	3 1HA	[A]	○	○	-	○	○	-
		Phase N	29	81	N 1HA	[A]	○	-	-	○	-	-
	3rd	Phase 1	2B	21	1 3HA	[A]	○	○	○	○	○	○
		Phase 2	2B	41	2 3HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	2B	61	3 3HA	[A]	○	○	-	○	○	-
		Phase N	2B	81	N 3HA	[A]	○	-	-	○	-	-
	5th	Phase 1	2D	21	1 5HA	[A]	○	○	○	○	○	○
		Phase 2	2D	41	2 5HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	2D	61	3 5HA	[A]	○	○	-	○	○	-
		Phase N	2D	81	N 5HA	[A]	○	-	-	○	-	-
	7th	Phase 1	2F	21	1 7HA	[A]	○	○	○	○	○	○
		Phase 2	2F	41	2 7HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	2F	61	3 7HA	[A]	○	○	-	○	○	-
		Phase N	2F	81	N 7HA	[A]	○	-	-	○	-	-
	9th	Phase 1	31	21	1 9HA	[A]	○	○	○	○	○	○
		Phase 2	31	41	2 9HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	31	61	3 9HA	[A]	○	○	-	○	○	-
		Phase N	31	81	N 9HA	[A]	○	-	-	○	-	-
	11th	Phase 1	33	21	1 11HA	[A]	○	○	○	○	○	○
		Phase 2	33	41	2 11HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	33	61	3 11HA	[A]	○	○	-	○	○	-
		Phase N	33	81	N 11HA	[A]	○	-	-	○	-	-
	13th	Phase 1	35	21	1 13HA	[A]	○	○	○	○	○	○
		Phase 2	35	41	2 13HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	35	61	3 13HA	[A]	○	○	-	○	○	-
		Phase N	35	81	N 13HA	[A]	○	-	-	○	-	-
	15th	Phase 1	37	21	1 15HA	[A]	○	○	○	○	○	○
		Phase 2	37	41	2 15HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	37	61	3 15HA	[A]	○	○	-	○	○	-
		Phase N	37	81	N 15HA	[A]	○	-	-	○	-	-
	17th	Phase 1	39	21	1 17HA	[A]	○	○	○	○	○	○
		Phase 2	39	41	2 17HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	39	61	3 17HA	[A]	○	○	-	○	○	-
		Phase N	39	81	N 17HA	[A]	○	-	-	○	-	-
	19th	Phase 1	3B	21	1 19HA	[A]	○	○	○	○	○	○
		Phase 2	3B	41	2 19HA	[A]	○	○(*3)	-	○	○(*3)	-
		Phase 3	3B	61	3 19HA	[A]	○	○	-	○	○	-
		Phase N	3B	81	N 19HA	[A]	○	-	-	○	-	-
	21st	Phase 1	3D	21	1 21HA	[A]	○	○	○	-	-	-
		Phase 2	3D	41	2 21HA	[A]	○	○(*3)	-	-	-	-
		Phase 3	3D	61	3 21HA	[A]	○	○	-	-	-	-
		Phase N	3D	81	N 21HA	[A]	○	-	-	-	-	-
	23rd	Phase 1	74	02	1 23HA	[A]	○	○	○	-	-	-
		Phase 2	74	18	2 23HA	[A]	○	○(*3)	-	-	-	-
		Phase 3	74	2E	3 23HA	[A]	○	○	-	-	-	-
		Phase N	74	44	N 23HA	[A]	○	-	-	-	-	-
	25th	Phase 1	74	04	1 25HA	[A]	○	○	○	-	-	-
		Phase 2	74	1A	2 25HA	[A]	○	○(*3)	-	-	-	-
		Phase 3	74	30	3 25HA	[A]	○	○	-	-	-	-
		Phase N	74	46	N 25HA	[A]	○	-	-	-	-	-
	27th	Phase 1	74	06	1 27HA	[A]	○	○	○	-	-	-
		Phase 2	74	1C	2 27HA	[A]	○	○(*3)	-	-	-	-
		Phase 3	74	32	3 27HA	[A]	○	○	-	-	-	-
		Phase N	74	48	N 27HA	[A]	○	-	-	-	-	-
	29th	Phase 1	74	08	1 29HA	[A]	○	○	○	-	-	-
		Phase 2	74	1E	2 29HA	[A]	○	○(*3)	-	-	-	-
		Phase 3	74	34	3 29HA	[A]	○	○	-	-	-	-
		Phase N	74	4A	N 29HA	[A]	○	-	-	-	-	-
	31st	Phase 1	74	0A	1 31HA	[A]	○	○	○	-	-	-
		Phase 2	74	20	2 31HA	[A]	○	○(*3)	-	-	-	-
		Phase 3	74	36	3 31HA	[A]	○	○	-	-	-	-
		Phase N	74	4C	N 31HA	[A]	○	-	-	-	-	-

*3: Applicable only when 3P3W_3CT.

Logging Item			Group Number	Channel Number	Data Name	Unit	ME96SSHB-MB			ME96SSRB-MB		
							3P4W	3P3W 1P3W	1P2W	3P4W	3P3W 1P3W	1P2W
Current harmonics distortion	Total	Phase 1	71	86	1 HA	[%]	○	○	○	○	○	○
		Phase 2	71	9C	2 HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	B2	3 HA	[%]	○	○	-	○	○	-
		Phase N	71	C8	N HA	[%]	○	-	-	○	-	-
	3rd	Phase 1	71	73	1 3HA	[%]	○	○	○	○	○	○
		Phase 2	71	89	2 3HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	9F	3 3HA	[%]	○	○	-	○	○	-
		Phase N	71	B5	N 3HA	[%]	○	-	-	○	-	-
	5th	Phase 1	71	75	1 5HA	[%]	○	○	○	○	○	○
		Phase 2	71	8B	2 5HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	A1	3 5HA	[%]	○	○	-	○	○	-
		Phase N	71	B7	N 5HA	[%]	○	-	-	○	-	-
	7th	Phase 1	71	77	1 7HA	[%]	○	○	○	○	○	○
		Phase 2	71	8D	2 7HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	A3	3 7HA	[%]	○	○	-	○	○	-
		Phase N	71	B9	N 7HA	[%]	○	-	-	○	-	-
	9th	Phase 1	71	79	1 9HA	[%]	○	○	○	○	○	○
		Phase 2	71	8F	2 9HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	A5	3 9HA	[%]	○	○	-	○	○	-
		Phase N	71	BB	N 9HA	[%]	○	-	-	○	-	-
	11th	Phase 1	71	7B	1 11HA	[%]	○	○	○	○	○	○
		Phase 2	71	91	2 11HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	A7	3 11HA	[%]	○	○	-	○	○	-
		Phase N	71	BD	N 11HA	[%]	○	-	-	○	-	-
	13th	Phase 1	71	7D	1 13HA	[%]	○	○	○	○	○	○
		Phase 2	71	93	2 13HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	A9	3 13HA	[%]	○	○	-	○	○	-
		Phase N	71	BF	N 13HA	[%]	○	-	-	○	-	-
	15th	Phase 1	71	7F	1 15HA	[%]	○	○	○	○	○	○
		Phase 2	71	95	2 15HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	AB	3 15HA	[%]	○	○	-	○	○	-
		Phase N	71	C1	N 15HA	[%]	○	-	-	○	-	-
	17th	Phase 1	71	81	1 17HA	[%]	○	○	○	○	○	○
		Phase 2	71	97	2 17HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	AD	3 17HA	[%]	○	○	-	○	○	-
		Phase N	71	C3	N 17HA	[%]	○	-	-	○	-	-
	19th	Phase 1	71	83	1 19HA	[%]	○	○	○	○	○	○
		Phase 2	71	99	2 19HA	[%]	○	○(*3)	-	○	○(*3)	-
		Phase 3	71	AF	3 19HA	[%]	○	○	-	○	○	-
		Phase N	71	C5	N 19HA	[%]	○	-	-	○	-	-
	21st	Phase 1	71	85	1 21HA	[%]	○	○	○	-	-	-
		Phase 2	71	9B	2 21HA	[%]	○	○(*3)	-	-	-	-
		Phase 3	71	B1	3 21HA	[%]	○	○	-	-	-	-
		Phase N	71	C7	N 21HA	[%]	○	-	-	-	-	-
	23rd	Phase 1	74	72	1 23HA	[%]	○	○	○	-	-	-
		Phase 2	74	88	2 23HA	[%]	○	○(*3)	-	-	-	-
		Phase 3	74	9E	3 23HA	[%]	○	○	-	-	-	-
		Phase N	74	B4	N 23HA	[%]	○	-	-	-	-	-
	25th	Phase 1	74	74	1 25HA	[%]	○	○	○	-	-	-
		Phase 2	74	8A	2 25HA	[%]	○	○(*3)	-	-	-	-
		Phase 3	74	A0	3 25HA	[%]	○	○	-	-	-	-
		Phase N	74	B6	N 25HA	[%]	○	-	-	-	-	-
	27th	Phase 1	74	76	1 27HA	[%]	○	○	○	-	-	-
		Phase 2	74	8C	2 27HA	[%]	○	○(*3)	-	-	-	-
		Phase 3	74	A2	3 27HA	[%]	○	○	-	-	-	-
		Phase N	74	B8	N 27HA	[%]	○	-	-	-	-	-
	29th	Phase 1	74	78	1 29HA	[%]	○	○	○	-	-	-
		Phase 2	74	8E	2 29HA	[%]	○	○(*3)	-	-	-	-
		Phase 3	74	A4	3 29HA	[%]	○	○	-	-	-	-
		Phase N	74	BA	N 29HA	[%]	○	-	-	-	-	-
	31st	Phase 1	74	7A	1 31HA	[%]	○	○	○	-	-	-
		Phase 2	74	90	2 31HA	[%]	○	○(*3)	-	-	-	-
		Phase 3	74	A6	3 31HA	[%]	○	○	-	-	-	-
		Phase N	74	BC	N 31HA	[%]	○	-	-	-	-	-

*3: Applicable only when 3P3W_3CT.

Logging Item			Group Number	Channel Number	Data Name	Unit	ME96SSHB-MB			ME96SSRB-MB		
							3P4W	3P3W 1P3W	1P2W	3P4W	3P3W 1P3W	1P2W
Voltage (L-N) harmonics value	Total	Phase 1-N	57	21	1N_HV	[V]	○	-	-	○	-	-
		Phase 2-N	57	41	2N_HV	[V]	○	-	-	○	-	-
		Phase 3-N	57	61	3N_HV	[V]	○	-	-	○	-	-
	1st	Phase 1-N	41	21	1N_1HV	[V]	○	-	-	○	-	-
		Phase 2-N	41	41	2N_1HV	[V]	○	-	-	○	-	-
		Phase 3-N	41	61	3N_1HV	[V]	○	-	-	○	-	-
	3rd	Phase 1-N	43	21	1N_3HV	[V]	○	-	-	○	-	-
		Phase 2-N	43	41	2N_3HV	[V]	○	-	-	○	-	-
		Phase 3-N	43	61	3N_3HV	[V]	○	-	-	○	-	-
	5th	Phase 1-N	45	21	1N_5HV	[V]	○	-	-	○	-	-
		Phase 2-N	45	41	2N_5HV	[V]	○	-	-	○	-	-
		Phase 3-N	45	61	3N_5HV	[V]	○	-	-	○	-	-
	7th	Phase 1-N	47	21	1N_7HV	[V]	○	-	-	○	-	-
		Phase 2-N	47	41	2N_7HV	[V]	○	-	-	○	-	-
		Phase 3-N	47	61	3N_7HV	[V]	○	-	-	○	-	-
	9th	Phase 1-N	49	21	1N_9HV	[V]	○	-	-	○	-	-
		Phase 2-N	49	41	2N_9HV	[V]	○	-	-	○	-	-
		Phase 3-N	49	61	3N_9HV	[V]	○	-	-	○	-	-
	11th	Phase 1-N	4B	21	1N_11HV	[V]	○	-	-	○	-	-
		Phase 2-N	4B	41	2N_11HV	[V]	○	-	-	○	-	-
		Phase 3-N	4B	61	3N_11HV	[V]	○	-	-	○	-	-
	13th	Phase 1-N	4D	21	1N_13HV	[V]	○	-	-	○	-	-
		Phase 2-N	4D	41	2N_13HV	[V]	○	-	-	○	-	-
		Phase 3-N	4D	61	3N_13HV	[V]	○	-	-	○	-	-
	15th	Phase 1-N	4F	21	1N_15HV	[V]	○	-	-	○	-	-
		Phase 2-N	4F	41	2N_15HV	[V]	○	-	-	○	-	-
		Phase 3-N	4F	61	3N_15HV	[V]	○	-	-	○	-	-
	17th	Phase 1-N	51	21	1N_17HV	[V]	○	-	-	○	-	-
		Phase 2-N	51	41	2N_17HV	[V]	○	-	-	○	-	-
		Phase 3-N	51	61	3N_17HV	[V]	○	-	-	○	-	-
	19th	Phase 1-N	53	21	1N_19HV	[V]	○	-	-	○	-	-
		Phase 2-N	53	41	2N_19HV	[V]	○	-	-	○	-	-
		Phase 3-N	53	61	3N_19HV	[V]	○	-	-	○	-	-
	21st	Phase 1-N	55	21	1N_21HV	[V]	○	-	-	-	-	-
		Phase 2-N	55	41	2N_21HV	[V]	○	-	-	-	-	-
		Phase 3-N	55	61	3N_21HV	[V]	○	-	-	-	-	-
	23rd	Phase 1-N	7A	02	1N_23HV	[V]	○	-	-	-	-	-
		Phase 2-N	7A	18	2N_23HV	[V]	○	-	-	-	-	-
		Phase 3-N	7A	2E	3N_23HV	[V]	○	-	-	-	-	-
	25th	Phase 1-N	7A	04	1N_25HV	[V]	○	-	-	-	-	-
		Phase 2-N	7A	1A	2N_25HV	[V]	○	-	-	-	-	-
		Phase 3-N	7A	30	3N_25HV	[V]	○	-	-	-	-	-
	27th	Phase 1-N	7A	06	1N_27HV	[V]	○	-	-	-	-	-
		Phase 2-N	7A	1C	2N_27HV	[V]	○	-	-	-	-	-
		Phase 3-N	7A	32	3N_27HV	[V]	○	-	-	-	-	-
	29th	Phase 1-N	7A	08	1N_29HV	[V]	○	-	-	-	-	-
		Phase 2-N	7A	1E	2N_29HV	[V]	○	-	-	-	-	-
		Phase 3-N	7A	34	3N_29HV	[V]	○	-	-	-	-	-
	31st	Phase 1-N	7A	0A	1N_31HV	[V]	○	-	-	-	-	-
		Phase 2-N	7A	20	2N_31HV	[V]	○	-	-	-	-	-
		Phase 3-N	7A	36	3N_31HV	[V]	○	-	-	-	-	-

Logging Item			Group Number	Channel Number	Data Name	Unit	ME96SSHB-MB			ME96SSRB-MB		
							3P4W	3P3W 1P3W	1P2W	3P4W	3P3W 1P3W	1P2W
Voltage (L-N) harmonics distortion	Total	Phase 1-N	73	86	1N_HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	9C	2N_HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	B2	3N_HV	[%]	○	-	-	○	-	-
	3rd	Phase 1-N	73	73	1N_3HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	89	2N_3HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	9F	3N_3HV	[%]	○	-	-	○	-	-
	5th	Phase 1-N	73	75	1N_5HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	8B	2N_5HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	A1	3N_5HV	[%]	○	-	-	○	-	-
	7th	Phase 1-N	73	77	1N_7HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	8D	2N_7HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	A3	3N_7HV	[%]	○	-	-	○	-	-
	9th	Phase 1-N	73	79	1N_9HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	8F	2N_9HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	A5	3N_9HV	[%]	○	-	-	○	-	-
	11th	Phase 1-N	73	7B	1N_11HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	91	2N_11HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	A7	3N_11HV	[%]	○	-	-	○	-	-
	13th	Phase 1-N	73	7D	1N_13HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	93	2N_13HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	A9	3N_13HV	[%]	○	-	-	○	-	-
	15th	Phase 1-N	73	7F	1N_15HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	95	2N_15HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	AB	3N_15HV	[%]	○	-	-	○	-	-
	17th	Phase 1-N	73	81	1N_17HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	97	2N_17HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	AD	3N_17HV	[%]	○	-	-	○	-	-
	19th	Phase 1-N	73	83	1N_19HV	[%]	○	-	-	○	-	-
		Phase 2-N	73	99	2N_19HV	[%]	○	-	-	○	-	-
		Phase 3-N	73	AF	3N_19HV	[%]	○	-	-	○	-	-
	21st	Phase 1-N	73	85	1N_21HV	[%]	○	-	-	-	-	-
		Phase 2-N	73	9B	2N_21HV	[%]	○	-	-	-	-	-
		Phase 3-N	73	B1	3N_21HV	[%]	○	-	-	-	-	-
	23rd	Phase 1-N	7A	72	1N_23HV	[%]	○	-	-	-	-	-
		Phase 2-N	7A	88	2N_23HV	[%]	○	-	-	-	-	-
		Phase 3-N	7A	9E	3N_23HV	[%]	○	-	-	-	-	-
	25th	Phase 1-N	7A	74	1N_25HV	[%]	○	-	-	-	-	-
		Phase 2-N	7A	8A	2N_25HV	[%]	○	-	-	-	-	-
		Phase 3-N	7A	A0	3N_25HV	[%]	○	-	-	-	-	-
	27th	Phase 1-N	7A	76	1N_27HV	[%]	○	-	-	-	-	-
		Phase 2-N	7A	8C	2N_27HV	[%]	○	-	-	-	-	-
		Phase 3-N	7A	A2	3N_27HV	[%]	○	-	-	-	-	-
	29th	Phase 1-N	7A	78	1N_29HV	[%]	○	-	-	-	-	-
		Phase 2-N	7A	8E	2N_29HV	[%]	○	-	-	-	-	-
		Phase 3-N	7A	A4	3N_29HV	[%]	○	-	-	-	-	-
	31st	Phase 1-N	7A	7A	1N_31HV	[%]	○	-	-	-	-	-
		Phase 2-N	7A	90	2N_31HV	[%]	○	-	-	-	-	-
		Phase 3-N	7A	A6	3N_31HV	[%]	○	-	-	-	-	-

Logging Item			Group Number	Channel Number	Data Name	Unit	ME96SSHB-MB			ME96SSRB-MB		
							3P4W	3P3W 1P3W	1P2W	3P4W	3P3W 1P3W	1P2W
Voltage (L-L) harmonics value	Total	Phase 1-2	6F	21	12 HV	[V]	-	○	○	-	○	○
		Phase 2-3	6F	41	23 HV	[V]	-	○	-	-	○	-
	1st	Phase 1-2	59	21	12 1HV	[V]	-	○	○	-	○	○
		Phase 2-3	59	41	23 1HV	[V]	-	○	-	-	○	-
	3rd	Phase 1-2	5B	21	12 3HV	[V]	-	○	○	-	○	○
		Phase 2-3	5B	41	23 3HV	[V]	-	○	-	-	○	-
	5th	Phase 1-2	5D	21	12 5HV	[V]	-	○	○	-	○	○
		Phase 2-3	5D	41	23 5HV	[V]	-	○	-	-	○	-
	7th	Phase 1-2	5F	21	12 7HV	[V]	-	○	○	-	○	○
		Phase 2-3	5F	41	23 7HV	[V]	-	○	-	-	○	-
	9th	Phase 1-2	61	21	12 9HV	[V]	-	○	○	-	○	○
		Phase 2-3	61	41	23 9HV	[V]	-	○	-	-	○	-
	11th	Phase 1-2	63	21	12 11HV	[V]	-	○	○	-	○	○
		Phase 2-3	63	41	23 11HV	[V]	-	○	-	-	○	-
	13th	Phase 1-2	65	21	12 13HV	[V]	-	○	○	-	○	○
		Phase 2-3	65	41	23 13HV	[V]	-	○	-	-	○	-
	15th	Phase 1-2	67	21	12 15HV	[V]	-	○	○	-	○	○
		Phase 2-3	67	41	23 15HV	[V]	-	○	-	-	○	-
	17th	Phase 1-2	69	21	12 17HV	[V]	-	○	○	-	○	○
		Phase 2-3	69	41	23 17HV	[V]	-	○	-	-	○	-
	19th	Phase 1-2	6B	21	12 19HV	[V]	-	○	○	-	○	○
		Phase 2-3	6B	41	23 19HV	[V]	-	○	-	-	○	-
	21st	Phase 1-2	6D	21	12 21HV	[V]	-	○	○	-	-	-
		Phase 2-3	6D	41	23 21HV	[V]	-	○	-	-	-	-
	23rd	Phase 1-2	79	02	12 23HV	[V]	-	○	○	-	-	-
		Phase 2-3	79	18	23 23HV	[V]	-	○	-	-	-	-
	25th	Phase 1-2	79	04	12 25HV	[V]	-	○	○	-	-	-
		Phase 2-3	79	1A	23 25HV	[V]	-	○	-	-	-	-
	27th	Phase 1-2	79	06	12 27HV	[V]	-	○	○	-	-	-
		Phase 2-3	79	1C	23 27HV	[V]	-	○	-	-	-	-
	29th	Phase 1-2	79	08	12 29HV	[V]	-	○	○	-	-	-
		Phase 2-3	79	1E	23 29HV	[V]	-	○	-	-	-	-
	31st	Phase 1-2	79	0A	12 31HV	[V]	-	○	○	-	-	-
		Phase 2-3	79	20	23 31HV	[V]	-	○	-	-	-	-
Voltage (L-L) harmonics distortion	Total	Phase 1-2	72	86	12 HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	9C	23 HV	[%]	-	○	-	-	○	-
	3rd	Phase 1-2	72	73	12 3HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	89	23 3HV	[%]	-	○	-	-	○	-
	5th	Phase 1-2	72	75	12 5HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	8B	23 5HV	[%]	-	○	-	-	○	-
	7th	Phase 1-2	72	77	12 7HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	8D	23 7HV	[%]	-	○	-	-	○	-
	9th	Phase 1-2	72	79	12 9HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	8F	23 9HV	[%]	-	○	-	-	○	-
	11th	Phase 1-2	72	7B	12 11HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	91	23 11HV	[%]	-	○	-	-	○	-
	13th	Phase 1-2	72	7D	12 13HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	93	23 13HV	[%]	-	○	-	-	○	-
	15th	Phase 1-2	72	7F	12 15HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	95	23 15HV	[%]	-	○	-	-	○	-
	17th	Phase 1-2	72	81	12 17HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	97	23 17HV	[%]	-	○	-	-	○	-
	19th	Phase 1-2	72	83	12 19HV	[%]	-	○	○	-	○	○
		Phase 2-3	72	99	23 19HV	[%]	-	○	-	-	○	-
	21st	Phase 1-2	72	85	12 21HV	[%]	-	○	○	-	-	-
		Phase 2-3	72	9B	23 21HV	[%]	-	○	-	-	-	-
	23rd	Phase 1-2	79	72	12 23HV	[%]	-	○	○	-	-	-
		Phase 2-3	79	88	23 23HV	[%]	-	○	-	-	-	-
	25th	Phase 1-2	79	74	12 25HV	[%]	-	○	○	-	-	-
		Phase 2-3	79	8A	23 25HV	[%]	-	○	-	-	-	-
	27th	Phase 1-2	79	76	12 27HV	[%]	-	○	○	-	-	-
		Phase 2-3	79	8C	23 27HV	[%]	-	○	-	-	-	-
	29th	Phase 1-2	79	78	12 29HV	[%]	-	○	○	-	-	-
		Phase 2-3	79	8E	23 29HV	[%]	-	○	-	-	-	-
	31st	Phase 1-2	79	7A	12 31HV	[%]	-	○	○	-	-	-
		Phase 2-3	79	90	23 31HV	[%]	-	○	-	-	-	-

7.2 List of system log codes

System log code	Meaning
001	ME-0000BU-SS96 was booted.
100	Power failure occurred.
150	Power failure occurred during communication with the SD memory card. Data in the memory card may be broken, so format the memory card in the way specified in this document. (Refer to "6.5.Format the SD memory card")
201	The present time data was reset due to power-off with battery voltage low.
202	Logging data and system log data were erased due to power-off with battery voltage low.
203	The ME96 was replaced to the other. All logging data is erased.
301	Logging condition was changed. All logging data is erased.
302	Logging ID was changed.
303	The present time setting was changed. All logging data is erased when you change the present time setting more than 31days from the before the change.
304	Logging data was cleared.
305	Either "Phase wire system", "Primary voltage (Use or non-use of VT , Direct Voltage , Primary voltage with VT)", "Primary current" setting of ME96 was changed. All logging data is erased.
306	"Logging-item pattern" setting of ME96 was changed. All logging data is erased.
307	"Detailed data logging cycle" setting of ME96 was changed. All logging data is erased.
902, 907	Change of logging condition was failed when using the setting data file. Please review the logging condition. Measurement items which the ME96 cannot measure are set as the logging item.
801	Fall of battery voltage was detected. It is impossible for customer to exchange the battery. Please consider renewal.
941	The SD memory card was connected with the write protect switch "ON". Turn the write protect switch to "OFF" position.
942~951	SD memory card error occurred. T The SD memory card may be out of capacity or be formatted wrong. Format the SD memory card in the way specified in this manual. (Refer to "6.5.Format the SD memory card")

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