SQLC-11OL
COMMUNICATION SPECIFICATION

(CC-Link communication protocol)

〔 HARDWARE MODEL F 〕

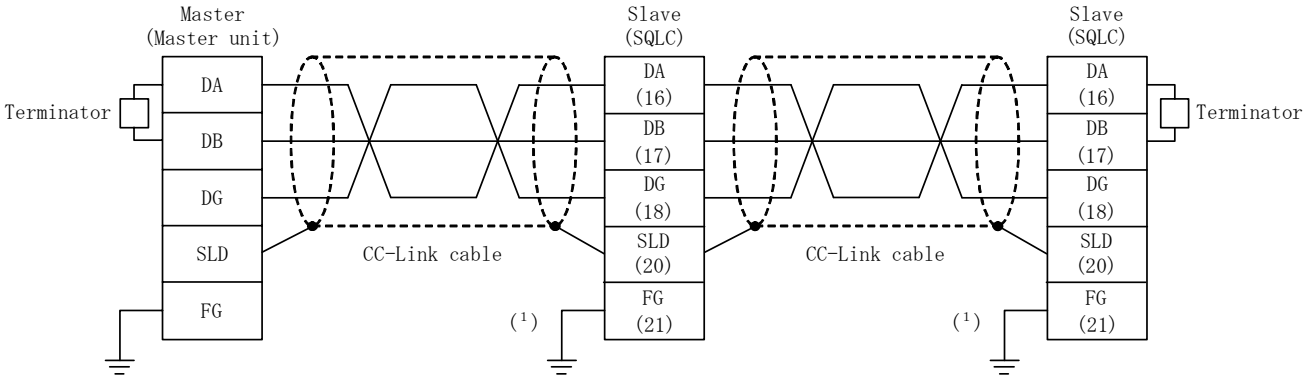
DAIICHI ELECTRONICS CO., LTD.

Content

1. Communication specification

Item	Specification
Protocol	CC-Link Ver.1.10
Transmission system	Broadcasting polling system
Synchronous system	Frame synchronization system
Transmission rate	10Mbps ／ 5Mbps ／ 2.5Mbps ／ 625kbps ／ 156kbps
Coding system	NRZI
Transmission path form	Bus form (Compliance for EIA RS485)
Transmission format	HDLC compliant
Error control system	CRC ($X^{16}+X^{12}+X^{5}+1$)
Occupation station number	Remote device station. One station occupation.
Remote input and output	RX : 32 points , RY : 32 points
Remote register	RWr : 4 points , RWw : 4 points
Maximum transmission distance	100m(10Mbps) ／ 160m(5Mbps) ／ 400m(2.5Mbps) ／ 900m(625kbps) ／ 1200m(156kbps)
Number of connection	① (1×a)＋(2×b)＋(3×c)＋(4×d) ≦ 64 station a : Number of one station occupation unit b : Number of two station occupation unit c : Number of three station occupation unit d : Number of four station occupation unit ② (16×A)＋(54×B)＋(88×C) ≦ 2304 A : Number of remote I/O station ····· MAX. 64 B : Number of remote device station ····· MAX. 42 C : Number of local station and intelligent device station ··· MAX. 26
Station address	1 to 64
Interconnection cable	CC-Link cable (Triplex twisted-pair cable with a shield)
Terminating resistance	Terminal installation (The resistance of CC-Link cable designation is selected.)

2. Communication wiring



Note(1) FG is equivalent to the function ground, so we recommend a dedicated ground or shared ground.

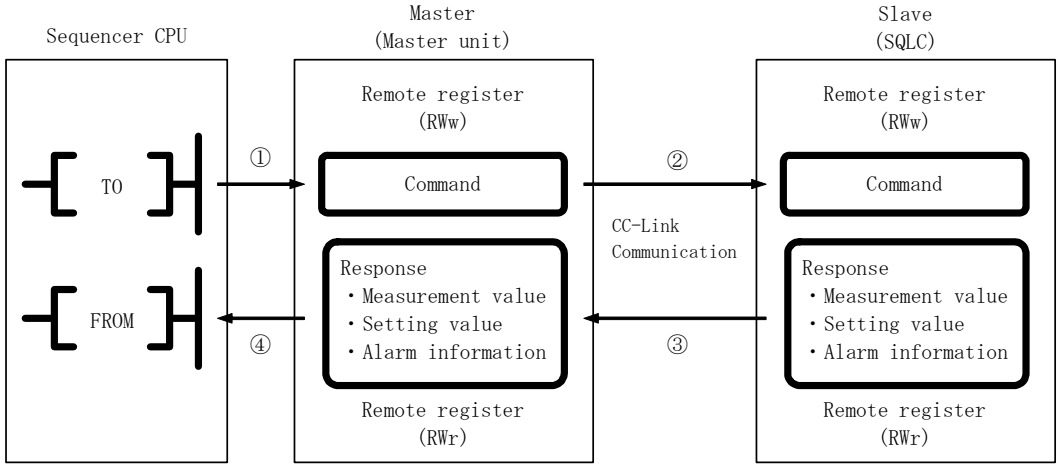
(1) Please use the connection cable only for CC-Link (Triplex twisted-pair cable with a shield).
And, mixture of the cable of a different kind cannot be performed.
In case it is intermingled, a normal data communication is not guaranteed.
Please refer to an about a cable. (CC-Link association, partner product-information, cable connector)

(2) Please be sure to connect a terminating resistance to the unit of the both ends of a CC-Link system.
Please connect a terminating resistance between DA-DB. And, the terminating resistance connected with the cable to be used is different.
CC-Link cable : 110Ω (1/2W)
CC-Link high performance cable : 130Ω (1/2W)

(3) The shielding wire of a CC-Link cable is connected to SLD of each unit.
Please do D-class grounding (with ground resistance of 100Ω or less) of the FG.
(SLD and FG are connected inside the unit.)

3. Transmission and reception outline

3.1 Normal communication



① The command is written in the remote register (RWw) of a master station.

② The command is transmitted to the remote register (RWw) of slave station from master station by the link scan.

③ The response is transmitted to the remote register (RWr) of master station from slave station by the link scan.

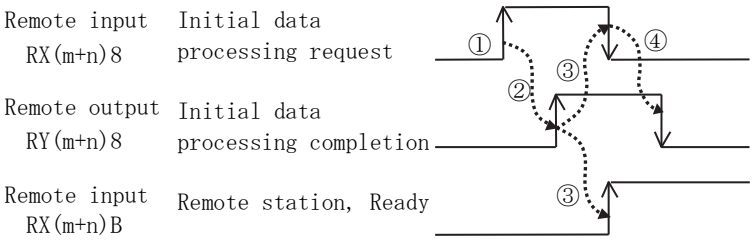
④ Response data is read from the remote register (RWr) of a master station.

Address list (Remote input / Remote output, Remote register)

Address	Remote input		Remote output		Remote register			
					Slave → Master		Master → Slave	
1	RX00	0E0H	RY00	160H	RWr00	2E0H	RWw00	1E0H
2	RX02	0E2H	RY02	162H	RWr04	2E4H	RWw04	1E4H
3	RX04	0E4H	RY04	164H	RWr08	2E8H	RWw08	1E8H
・ ・ ・	・ ・ ・	・ ・ ・	・ ・ ・	・ ・ ・	・ ・ ・	・ ・ ・	・ ・ ・	・ ・ ・
64	RX7E	15EH	RY7E	1DEH	RWrFC	3DCH	RWwFC	2DCH

3.2 Initial communication

(1) Initial data processing request / Initial data processing completion.
The carries out after auxiliary-power input of a slave station (SQLC), or communication setting change.



① Makes the auxiliary power of a slave station into OFF → ON. An initial data processing request flag is set to 0 → 1 after setting change.

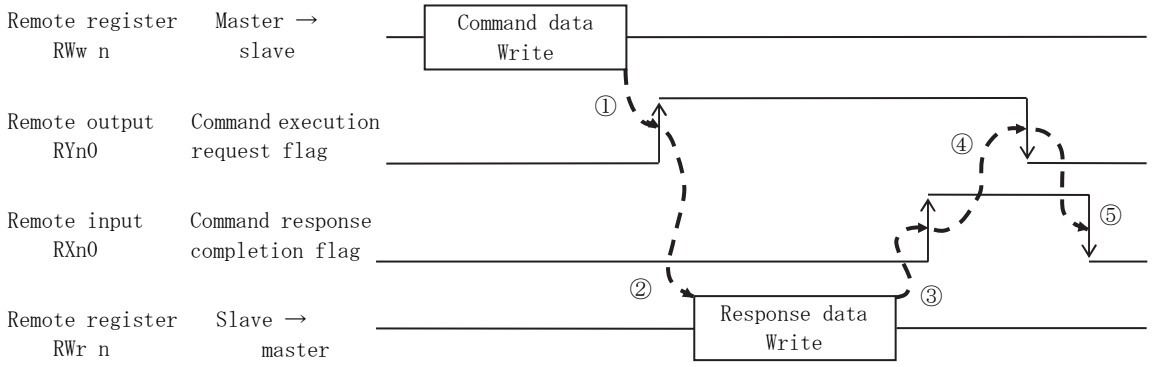
② After an initial data processing request flag's changing into 0 → 1, please set an initial data processing completion flag to 0 → 1.

③ After an initial data processing completion flag's changing into 0 → 1, an initial-data-processing-request flag is set to 1 → 0, and the remote station Ready is 0 → 1.

④ After an initial data processing request flag's changing into 1 → 0, please set an initial data processing completion flag to 1 → 0.

< Cautions > When suspending communication while depending on setting change after link establishment, please put a power supply reset or a reset of equipment (setting No. 233C) into effect. Please refer to an instruction manual about the reset method of apparatus.

3.3 Normal communication



① The command and data (it has been allocated to the item to be set or monitor), after the completion of write to the remote register RWw, please set an command execution request flag to 0 → 1.

② After writing the response data corresponding to the transmitted command, command response completion flag is set to 0 → 1.

③ After the command response completion flag is 0 → 1, please read the response data from the remote register RWr.

④ After completion of reading the response data, by the command execution request flag to 1 → 0, please cancel the command execution request.

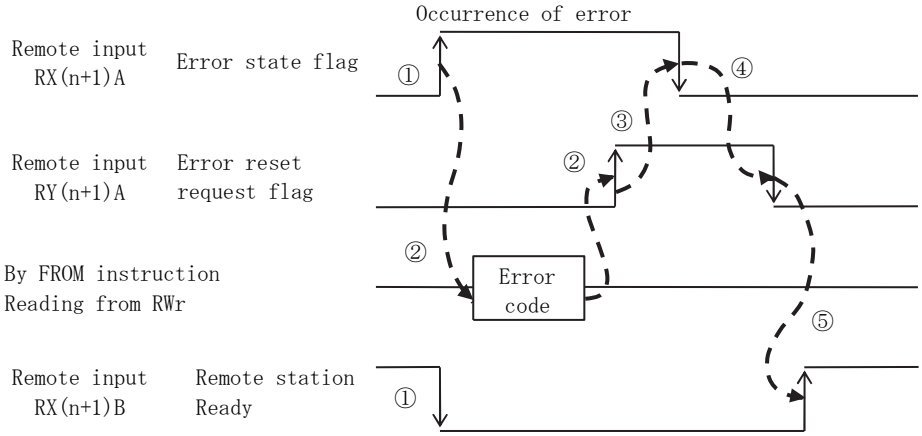
⑤ After an command execution request flag changing into 1 → 0, the command response completion is 1 → 0.

When sending commands in a continuous, please repeat the above ① to ⑤.
Remote Ready is only in the ON, transmission and reception of the command is available.

<Note> After command writing, even if you do not ON the command execution request flag, response data is written.
However, in this case, command response completion flag does not turn ON.

3.4 Error communication (Error status / Reset request)

A slave station does notice (release) by the error occurrence.



① If an error occurs in a slave station, an error status flag is 0 → 1. And, the remote station Ready is set to 1 → 0.

② If an error status flag is 0 → 1, please read an error code and cope with an error item.
Please refer to the "5.1.1 communication error condition" for the error code.
Then, please give an error reset request flag as 0 → 1 at the case of a slave station and resumption of communication.

③ After an error reset request flag's changing into 0 → 1, an error status flag is 1 → 0.

④ After an error status flag's changing into 1 → 0, please set an error reset request flag to 1 → 0.

⑤ After an error reset request flag's changing into 1 → 0, the remote station Ready is 0 → 1.

4. Remote input and output (RX, RY)

Communicates between a master station and a slave station (SQLC), it uses the data of a bit unit.

4.1 Remote input (RX) : Slave station (SQLC) → Master station

Device No.	Address (2)	Signal name	Contents		Note
			0	1	
RXn0	0E0H	Command response completion flag	Response completion cancellation	Response completion	
RXn1		Unused	—	—	
RXn2		Unused	—	—	
RXn3		Unused	—	—	
RXn4		Unused	—	—	
RXn5		Unused	—	—	
RXn6		Unused	—	—	
RXn7		Unused	—	—	
RXn8		Unused	—	—	
RXn9		Unused	—	—	
RXnA		Unused	—	—	
RXnB		Unused	—	—	
RXnC		Unused	—	—	
RXnD		Unused	—	—	
RXnE		Unused	—	—	
RXnF		Unused	—	—	
RX(n＋1)0	0E1H	Non-usable	—	—	System region
RX(n＋1)1		Non-usable	—	—	
RX(n＋1)2		Non-usable	—	—	
RX(n＋1)3		Non-usable	—	—	
RX(n＋1)4		Non-usable	—	—	
RX(n＋1)5		Non-usable	—	—	
RX(n＋1)6		Non-usable	—	—	
RX(n＋1)7		Non-usable	—	—	
RX(n＋1)8		Initial data processing request flag	・POWER OFF ・Remote Ready ON ・Error status flag ON	・POWER OFF→ON ・At reset occurrence	
RX(n＋1)9		Non-usable	—	—	
RX(n＋1)A		Error status flag	With no error occurrence	With error occurrence	
RX(n＋1)B		Remote station Ready	Command transmission impossible	At usual communication (Command transmission possible)	
RX(n＋1)C		Non-usable	—	—	
RX(n＋1)D		Non-usable	—	—	
RX(n＋1)E		Non-usable	—	—	
RX(n＋1)F		Non-usable	—	—	

n : The value decided by address setting.

Note(2) In case of address 1. (In case of other than the address 1, remote input / output of the 3-page, refer to the address table of remote register)

4.2 Remote output (RY) : Master station → Slave station (SQLC)

Device No.	Address (3)	Signal name	Contents		Note
			0	1	
RYn0	160H	Command execution request flag	Execution request cancellation	Execution request	
RYn1		Unused	—	—	
RYn2		Unused	—	—	
RYn3		Unused	—	—	
RYn4		Unused	—	—	
RYn5		Unused	—	—	
RYn6		Unused	—	—	
RYn7		Unused	—	—	
RYn8		Unused	—	—	
RYn9		Unused	—	—	
RYnA		Unused	—	—	
RYnB		Unused	—	—	
RYnC		Unused	—	—	
RYnD		Unused	—	—	
RYnE		Unused	—	—	
RYnF		Unused	—	—	
RY(n+1)0	161H	Non-usable	—	—	System region
RY(n+1)1		Non-usable	—	—	
RY(n+1)2		Non-usable	—	—	
RY(n+1)3		Non-usable	—	—	
RY(n+1)4		Non-usable	—	—	
RY(n+1)5		Non-usable	—	—	
RY(n+1)6		Non-usable	—	—	
RY(n+1)7		Non-usable	—	—	
RY(n+1)8		Initial data processing completion flag	At remote Ready request cancellation	At remote Ready request	
RY(n+1)9		Non-usable	—	—	
RY(n+1)A		Error reset request flag	With no reset request	With reset request	
RY(n+1)B		Reserve	—	—	
RY(n+1)C		Non-usable	—	—	
RY(n+1)D		Non-usable	—	—	
RY(n+1)E		Non-usable	—	—	
RY(n+1)F		Non-usable	—	—	

n : The value decided by address setting.

Note(3) In case of address 1. (In case of other than the address 1, remote input / output of the 3-page, refer to the address table of remote register)

5. Remote register (RWr, RWw)

Remote register (RWr) : Slave → Master				Remote register (RWw) : M aster → Slave		
Address (4)		Contents		Address (4)		Contents
		Usual communication	Error occurrence			
RWr n	2E0H	Response data (5 bytes)	Error code	RWw n	1E0H	Command (4 bytes)
			00H			
RWr n+1	2E1H		00H	RWw n+1	1E1H	
			00H			
RWr n+2	2E2H		00H	RWw n+2	1E2H	Unused
		Unused				Unused
RWr n+3	2E3H	Unused		RWw n+3	1E3H	Unused
		Unused				Unused

n : The value decided by address setting.

Note(4) In case of address 1. (In case of other than the address 1, remote input / output of the 3-page, refer to the address table of remote register)

5.1 Remote register (RWr) details

5.1.1 Error code (Each bits. At error occurrence : 1, No error : 0)

RWr n(L)	Contents of error
Bit 0	The command non-given a definition
Bit 1	Protocol version difference
Bit 2	Outside of the designating factor range (Measurement value monitor)
Bit 3	Outside of the setting range (Setting change)
Bit 4	0
Bit 5	0
Bit 6	0
Bit 7	0

5.1.2 Response data

Address	Signal name		Contents		Note
	Usual communication	Error occurrence	Usual communication	Error occurrence	
RWr n (L)	・Measurement value (primary) data ・Set value data ・Alarm status 4 bytes	Error code	RWr n(L) : Bit 0 (Low) To RWr n+1(H) : Bit 7 (High)	Bit 0 to 7	Refers to the next page for details.
RWr n (H)		00H		00H	
RWr n+1(L)		00H		00H	
RWr n+1(H)		00H		00H	
RWr n+2(L)	Magnification data	00H	The exponential part of integer ten's power.	00H	
RWr n+2(H)	Unused		—		
RWr n+3(L)	Unused		—		
RWr n+3(H)	Unused		—		

(1) Alarm status (Each bit, With detection : 1, With no detection : 0)
High order byte "RWr n+2(L) to RWr n+1(L)" transmits 0.

RWr n(L)	Contents	RWr n(H)	Contents
Bit 0	Voltage upper and lower limit alarm	Bit 0	Harmonic voltage, 5th conversion content, upper limit alarm
Bit 1	Demand current upper limit alarm	Bit 1	Harmonic voltage, n-th content, upper limit alarm (5)
Bit 2	Demand power upper limit alarm	Bit 2	Alarm-output 1, condition monitoring
Bit 3	Leakage current upper limit alarm	Bit 3	Alarm-output 2, condition monitoring
Bit 4	Harmonic current distortion-rate upper limit alarm	Bit 4	0
Bit 5	Harmonic current 5th conversion content upper limit alarm	Bit 5	0
Bit 6	Harmonic current n-th content upper limit alarm (5)	Bit 6	0
Bit 7	Harmonic voltage, distortion-rate upper limit alarm	Bit 7	0

Note(5) The high alarm of the n-th content is based on a detection factor (n= 3, 4, 5, 7, 9, 11, 13, 15).

(2) Magnification data

It transmits the exponential part of integer ten's power. (10^n n=-4,-3,-2,-1,0,1,2,3,4)

Communication data	Magnification	Communication data	Magnification
-4 (FCH)	×0.0001 (10^{-4})	0 (00H)	×1 (10^0)
-3 (FDH)	×0.001 (10^{-3})	1 (01H)	×10 (10^1)
-2 (FEH)	×0.01 (10^{-2})	2 (02H)	×100 (10^2)
-1 (FFH)	×0.1 (10^{-1})	3 (03H)	×1000 (10^3)
		4 (04H)	×10000 (10^4)

(3) Measurement value data

The treatment which does scaling of the communication data with measurement value data and magnification data in a high order side is needed.

Primary scaling data = Measurement value data × Magnification

(Example) In case of current 100.0A. 1000(Measurement value data)×0.1(Magnification : 10^{-1})

Measurement factor	Contents	Example of communication data
Voltage, Minimum voltage, Maximum voltage	The unit of transmit data is V. The number of digits and magnification are based on range setting (appendix table 1 reference). And, in the case of two ranges, it is at the same VT ratio, according to a range with many digits, it does scaling of the data. (Example) 300V range is the same scaling as 300.0V.	6600V range 6600×1=6600V
Current, Minimum current, Maximum current (Maximum demand, Minimum demand, Demand),	The unit of transmit data is A. The number of digits and magnification are based on range setting (appendix table 2 reference). And, in the case of two ranges, it is at the same CT ratio, according to a range with many digits, it does scaling of the data. (Example) 100A range is the same scaling as 100.0A.	100.0A range 1000×0.1=100.0A
Power, Minimum power, Maximum power (Maximum demand, Minimum demand, Demand)	The unit of transmit data is kW. The number of digits and magnification are based on voltage and a current range (appendix table 3 to 5 reference).	6600V, 100.0A range 1200×1=1200kW
Reactive power, Minimum reactive power, Maximum reactive power	The unit of transmit data is kvar. The number of digits and magnification are based on voltage and a current range (appendix table 3 to 5 reference). Polarity is + : LAG and − : LEAD.	6600V, 100.0A range 1200×1=LAG1200kvar -1200×1=LEAD1200kvar
Apparent power, Minimum apparent power, Maximum apparent power	The unit of transmit data is kVA. The number of digits and magnification are based on voltage and a current range (appendix table 3 to 5 reference).	6600V, 100.0A range 1200×1=1200kVA
Power-factor, Minimum power-factor, Maximum power-factor	The unit of transmit data is %. Magnification is ×0.1 (fixation). Polarity is + : LAG and − : LEAD. The transmit data at the time of LEAD0 are 80000000H.	1000×0.1=100.0% =LAG1.000
Frequency, Minimum frequency, Maximum frequency	The unit of transmit data is Hz. Magnification is ×0.01 (fixation).	5000×0.01=50.00Hz
Active energy (Receiving / transmission)	The unit of transmit data is kWh (6 digits). The number of digits and magnification are based on voltage and a current range (appendix table 3 to 5 reference).	123456×100 =12345600kWh
Reactive energy (Receiving / transmission, LAG/LEAD)	The unit of transmit data is kvarh (6 digits). The number of digits and magnification are based on voltage and a current range (appendix table 3 to 5 reference).	123456×100 =12345600kvarh
Leakage current, Maximum leakage current	The unit of transmit data is A. Magnification is ×0.0001 (fixation).	8000×0.0001=0.8000A

Measurement factor	Contents	Example of communication data
Distortion rate (Maximum phase, Maximum line), Harmonic n-th content Harmonic 5th conversion content (Maximum phase, Maximum line)	The unit of transmit data is %. Magnification is ×0.1 (fixation).	1000×0.1=100.0%
Harmonic effective value (Fundamental wave, n-th), Harmonic 5th conversion effective value (Maximum phase, Maximum line)	The unit of transmit data is V and A. The number of digits and magnification are based on range setting (appendix table 1,2 reference). (The same scaling as voltage and current of general measurement.)	9000V range 6600×1=6600V 100.0A range 1000×0.1=100.0A

(4) Set value data

Item	Contents
Voltage range, Current range	Transmits by the same scaling as measurement value data (rated value). (Appendix table 1,2 reference)
Upper limit, lower limit alarm setting	Transmits by the same scaling as measurement value data. (Appendix table 1,2 reference) Transmits 0H at the case of upper limit and lower limit setting value OFF.
Alarm-output factor	0 : OFF 1 : Demand current 2 : Demand power 3 : Leakage current 4 : Harmonic current distortion rate 5 : Harmonic current 5th conversion content 6 : Harmonic current n-th content 7 : Harmonic voltage distortion rate 8 : Harmonic voltage 5th conversion content 9 : Harmonic voltage n-th content 10 : Voltage
Demand interval	0 second to 30 minutes／0 to 1800 (seconds)
Phase wire	1 : 3φ3W (2VT･2CT) 2 : 1φ3W (U-W-N) 3 : 1φ3W (U-V-N) 4 : 1φ3W (V-W-N) 5 : 1φ2W 6 : 3φ4W 7 : 3φ3W (2VT･3CT)
n-th content degree	Transmits degree data. (3,4,5,7,9,11,13,15)

5.2 Remote register (RWw) details

5.2.1 Command data

Address	Signal name	Contents				
		Measurement value monitor	Alarm monitor	Set value monitor	Setting change	Reset
RWw n(L)	Factor (6)	(1), (2), (3)	00H	(4)	(6), (7)	(8)
RWw n(H)		00H : Value of now 01H : Maximum value 02H : Minimum value	00H	00H	(5)	00H
RWw n+1(L)	Measurement mode	00H : General measurement 01H : Harmonic voltage 02H : Harmonic current	00H	10H : Set value	10H : Set value	00H
RWw n+1(H)	Command	01H : Measurement value monitor	02H : Alarm status monitor	10H : Set value monitor	11H : Set value change	20H : The maximum value and minimum value reset 21H : Maximun minimun batch reset 31H : Integrated-value batch reset
RWw n+2(L)	Unused	—				
RWw n+2(H)						
RWw n+3(L)	Unused	—				
RWw n+3(H)						

Note(6) Please refer to the following list and the accompanying sheet for factors (1) to (8).

(1) Factor (Measurement mode : General measurement)

RWw n(L)		General measurement factor						
Decimal	Hexadecimal	3φ3W(2VT・2CT)	3φ3W(2VT・3CT)	1φ3W(U-W-N)	1φ3W(V-W-N)	1φ3W(U-V-N)	1φ2W	3φ4W
1	01	—	—	—	—	—	—	Voltage (UN)
2	02	—	—	—	—	—	—	Voltage (VN)
3	03	—	—	—	—	—	—	Voltage (WN)
4	04	Voltage (UV)	Voltage (UV)	Voltage (UN)	Voltage (VN)	Voltage (UN)	Voltage	Voltage (UV)
5	05	Voltage (VW)	Voltage (VW)	Voltage (WN)	Voltage (WN)	Voltage (VN)	—	Voltage (VW)
6	06	Voltage (WU)	Voltage (WU)	Voltage (UW)	Voltage (VW)	Voltage (UV)	—	Voltage (WU)
7	07	Current (U)	Current (U)	Current (U)	Current (V)	Current (U)	Current	Current (U)
8	08	Current (V)	Current (V)	Current (N)	Current (N)	Current (N)	—	Current (V)
9	09	Current (W)	Current (W)	Current (W)	Current (W)	Current (V)	—	Current (W)
10	0A	—	—	—	—	—	—	Current (N)
11	0B	Demand current (U)	Demand current (U)	Demand current (U)	Demand current (V)	Demand current (U)	Demand current	Demand current (U)
12	0C	Demand current (V)	Demand current (V)	Demand current (N)	Demand current (N)	Demand current (N)	—	Demand current (V)
13	0D	Demand current (W)	Demand current (W)	Demand current (W)	Demand current (W)	Demand current (V)	—	Demand current (W)
14	0E	—	—	—	—	—	—	Demand current (N)
15	0F	Power						
16	10	Demand power						
17	11	Reactive power						
18	12	Power-factor						
19	13	Frequency						
20	14	Leakage current						—
21	15	—						Apparent power
22	16	Active energy (receiving)						
23	17	Active energy (transmission)						
24	18	Reactive energy (receiving, LAG)						
25	19	Reactive energy (receiving, LEAD)						
26	1A	Reactive energy (transmission, LAG)						
27	1B	Reactive energy (transmission, LEAD)						

<Cautions> If leakage current (14H) is required to the not leakage measurement option and "—" the above factor, error treatment will be done and an error code will be transmitted.
Reference to "3.4 Error communication" (4 pages) and "5.1.1 Error code" (7 pages).

(2) Factor (Measurement mode : Harmonic current)

RWw n(L)		Harmonic current factor						
Decimal	Hexadecimal	3φ3W(2VT・2CT)	3φ3W(2VT・3CT)	1φ3W(U-W-N)	1φ3W(V-W-N)	1φ3W(U-V-N)	1φ2W	3φ4W
1	01	Distortion rate (U)	Distortion rate (U)	Distortion rate (U)	Distortion rate (V)	Distortion rate (U)	Distortion rate	Distortion rate (U)
2	02	—	Distortion rate (V)	—	—	—	—	Distortion rate (V)
3	03	Distortion rate (W)	Distortion rate (W)	Distortion rate (W)	Distortion rate (W)	Distortion rate (V)	—	Distortion rate (W)
4	04	5th conversion content (U)	5th conversion content (U)	5th conversion content (U)	5th conversion content (V)	5th conversion content (U)	5th conversion content	5th conversion content (U)
5	05	—	5th conversion content (V)	—	—	—	—	5th conversion content (V)
6	06	5th conversion content (W)	5th conversion content (W)	5th conversion content (W)	5th conversion content (W)	5th conversion content (V)	—	5th conversion content (W)
7	07	3rd content (U)	3rd content (U)	3rd content (U)	3rd content (V)	3rd content (U)	3rd content	3rd content (U)
8	08	—	3rd content (V)	—	—	—	—	3rd content (V)
9	09	3rd content (W)	3rd content (W)	3rd content (W)	3rd content (W)	3rd content (V)	—	3rd content (W)
10	0A	4th content (U)	4th content (U)	4th content (U)	4th content (V)	4th content (U)	4th content	4th content (U)
11	0B	—	4th content (V)	—	—	—	—	4th content (V)
12	0C	4th content (W)	4th content (W)	4th content (W)	4th content (W)	4th content (V)	—	4th content (W)
13	0D	5th content (U)	5th content (U)	5th content (U)	5th content (V)	5th content (U)	5th content	5th content (U)
14	0E	—	5th content (V)	—	—	—	—	5th content (V)
15	0F	5th content (W)	5th content (W)	5th content (W)	5th content (W)	5th content (V)	—	5th content (W)
16	10	7th content (U)	7th content (U)	7th content (U)	7th content (V)	7th content (U)	7th content	7th content (U)
17	11	—	7th content (V)	—	—	—	—	7th content (V)
18	12	7th content (W)	7th content (W)	7th content (W)	7th content (W)	7th content (V)	—	7th content (W)
19	13	9th content (U)	9th content (U)	9th content (U)	9th content (V)	9th content (U)	9th content	9th content (U)
20	14	—	9th content (V)	—	—	—	—	9th content (V)
21	15	9th content (W)	9th content (W)	9th content (W)	9th content (W)	9th content (V)	—	9th content (W)
22	16	11th content (U)	11th content (U)	11th content (U)	11th content (V)	11th content (U)	11th content	11th content (U)
23	17	—	11th content (V)	—	—	—	—	11th content (V)
24	18	11th content (W)	11th content (W)	11th content (W)	11th content (W)	11th content (V)	—	11th content (W)
25	19	13th content (U)	13th content (U)	13th content (U)	13th content (V)	13th content (U)	13th content	13th content (U)
26	1A	—	13th content (V)	—	—	—	—	13th content (V)
27	1B	13th content (W)	13th content (W)	13th content (W)	13th content (W)	13th content (V)	—	13th content (W)
28	1C	15th content (U)	15th content (U)	15th content (U)	15th content (V)	15th content (U)	15th content	15th content (U)
29	1D	—	15th content (V)	—	—	—	—	15th content (V)
30	1E	15th content (W)	15th content (W)	15th content (W)	15th content (W)	15th content (V)	—	15th content (W)
31	1F	5th conversion effective value (U)	5th conversion effective value (U)	5th conversion effective value (U)	5th conversion effective value (V)	5th conversion effective value (U)	5th conversion effective value	5th conversion effective value (U)

RWw n(L)		Harmonic current factor						
Decimal	Hexadecimal	3φ3W(2VT・2CT)	3φ3W(2VT・3CT)	1φ3W(U-W-N)	1φ3W(V-W-N)	1φ3W(U-V-N)	1φ2W	3φ4W
32	20	—	5th conversion effective value (V)	—	—	—	—	5th conversion effective value (V)
33	21	5th conversion effective value (W)	5th conversion effective value (W)	5th conversion effective value (W)	5th conversion effective value (W)	5th conversion effective value (V)	—	5th conversion effective value (W)
34	22	Fundamental-wave effective value (U)	Fundamental-wave effective value (U)	Fundamental-wave effective value (U)	Fundamental-wave effective value (V)	Fundamental-wave effective value (U)	Fundamental-wave effective value	Fundamental-wave effective value (U)
35	23	—	Fundamental-wave effective value (V)	—	—	—	—	Fundamental-wave effective value (V)
36	24	Fundamental-wave effective value (W)	Fundamental-wave effective value (W)	Fundamental-wave effective value (W)	Fundamental-wave effective value (W)	Fundamental-wave effective value (V)	—	Fundamental-wave effective value (W)
37	25	3rd effective value (U)	3rd effective value (U)	3rd effective value (U)	3rd effective value (V)	3rd effective value (U)	3rd effective value	3rd effective value (U)
38	26	—	3rd effective value (V)	—	—	—	—	3rd effective value (V)
39	27	3rd effective value (W)	3rd effective value (W)	3rd effective value (W)	3rd effective value (W)	3rd effective value (V)	—	3rd effective value (W)
40	28	4th effective value (U)	4th effective value (U)	4th effective value (U)	4th effective value (V)	4th effective value (U)	4th effective value	4th effective value (U)
41	29	—	4th effective value (V)	—	—	—	—	4th effective value (V)
42	2A	4th effective value (W)	4th effective value (W)	4th effective value (W)	4th effective value (W)	4th effective value (V)	—	4th effective value (W)
43	2B	5th effective value (U)	5th effective value (U)	5th effective value (U)	5th effective value (V)	5th effective value (U)	5th effective value	5th effective value (U)
44	2C	—	5th effective value (V)	—	—	—	—	5th effective value (V)
45	2D	5th effective value (W)	5th effective value (W)	5th effective value (W)	5th effective value (W)	5th effective value (V)	—	5th effective value (W)
46	2E	7th effective value (U)	7th effective value (U)	7th effective value (U)	7th effective value (V)	7th effective value (U)	7th effective value	7th effective value (U)
47	2F	—	7th effective value (V)	—	—	—	—	7th effective value (V)
48	30	7th effective value (W)	7th effective value (W)	7th effective value (W)	7th effective value (W)	7th effective value (V)	—	7th effective value (W)
49	31	9th effective value (U)	9th effective value (U)	9th effective value (U)	9th effective value (V)	9th effective value (U)	9th effective value	9th effective value (U)
50	32	—	9th effective value (V)	—	—	—	—	9th effective value (V)
51	33	9th effective value (W)	9th effective value (W)	9th effective value (W)	9th effective value (W)	9th effective value (V)	—	9th effective value (W)
52	34	11th effective value (U)	11th effective value (U)	11th effective value (U)	11th effective value (V)	11th effective value (U)	11th effective value	11th effective value (U)
53	35	—	11th effective value (V)	—	—	—	—	11th effective value (V)
54	36	11th effective value (W)	11th effective value (W)	11th effective value (W)	11th effective value (W)	11th effective value (V)	—	11th effective value (W)
55	37	13th effective value (U)	13th effective value (U)	13th effective value (U)	13th effective value (V)	13th effective value (U)	13th effective value	13th effective value (U)
56	38	—	13th effective value (V)	—	—	—	—	13th effective value (V)
57	39	13th effective value (W)	13th effective value (W)	13th effective value (W)	13th effective value (W)	13th effective value (V)	—	13th effective value (W)
58	3A	15th effective value (U)	15th effective value (U)	15th effective value (U)	15th effective value (V)	15th effective value (U)	15th effective value	15th effective value (U)
59	3B	—	15th effective value (V)	—	—	—	—	15th effective value (V)
60	3C	15th effective value (W)	15th effective value (W)	15th effective value (W)	15th effective value (W)	15th effective value (V)	—	15th effective value (W)

〈Cautions〉 If the data of "—" of the above factor is required, error treatment will be done and an error code will be transmitted. Reference to "3.4 Error communication" (4 pages) and "5.1.1 Error code" (7 pages).

(3) Factor (Measurement mode：Harmonic voltage)

RWw n(L)		Harmonic voltage factor						
Decimal	Hexadecimal	3φ3W(2VT･2CT)	3φ3W(2VT･3CT)	1φ3W(U-W-N)	1φ3W(V-W-N)	1φ3W(U-V-N)	1φ2W	3φ4W
1	01	Distortion rate (UV)	Distortion rate (UV)	Distortion rate (UN)	Distortion rate (VN)	Distortion rate (UN)	Distortion rate	Distortion rate (UN)
2	02	Distortion rate (VW)	Distortion rate (VW)	Distortion rate (WN)	Distortion rate (WN)	Distortion rate (VN)	—	Distortion rate (VN)
3	03	—	—	—	—	—	—	Distortion rate (WN)
4	04	5th conversion content (UV)	5th conversion content (UV)	5th conversion content (UN)	5th conversion content (VN)	5th conversion content (UN)	5th conversion content	5th conversion content (UN)
5	05	5th conversion content (VW)	5th conversion content (VW)	5th conversion content (WN)	5th conversion content (WN)	5th conversion content (VN)	—	5th conversion content (VN)
6	06	—	—	—	—	—	—	5th conversion content (WN)
7	07	3rd content (UV)	3rd content (UV)	3rd content (UN)	3rd content (VN)	3rd content (UN)	3rd content	3rd content (UN)
8	08	3rd content (VW)	3rd content (VW)	3rd content (WN)	3rd content (WN)	3rd content (VN)	—	3rd content (VN)
9	09	—	—	—	—	—	—	3rd content (WN)
10	0A	4th content (UV)	4th content (UV)	4th content (UN)	4th content (VN)	4th content (UN)	4th content	4th content (UN)
11	0B	4th content (VW)	4th content (VW)	4th content (WN)	4th content (WN)	4th content (VN)	—	4th content (VN)
12	0C	—	—	—	—	—	—	4th content (WN)
13	0D	5th content (UV)	5th content (UV)	5th content (UN)	5th content (VN)	5th content (UN)	5th content	5th content (UN)
14	0E	5th content (VW)	5th content (VW)	5th content (WN)	5th content (WN)	5th content (VN)	—	5th content (VN)
15	0F	—	—	—	—	—	—	5th content (WN)
16	10	7th content (UV)	7th content (UV)	7th content (UN)	7th content (VN)	7th content (UN)	7th content	7th content (UN)
17	11	7th content (VW)	7th content (VW)	7th content (WN)	7th content (WN)	7th content (VN)	—	7th content (VN)
18	12	—	—	—	—	—	—	7th content (WN)
19	13	9th content (UV)	9th content (UV)	9th content (UN)	9th content (VN)	9th content (UN)	9th content	9th content (UN)
20	14	9th content (VW)	9th content (VW)	9th content (WN)	9th content (WN)	9th content (VN)	—	9th content (VN)
21	15	—	—	—	—	—	—	9th content (WN)
22	16	11th content (UV)	11th content (UV)	11th content (UN)	11th content (VN)	11th content (UN)	11th content	11th content (UN)
23	17	11th content (VW)	11th content (VW)	11th content (WN)	11th content (WN)	11th content (VN)	—	11th content (VN)
24	18	—	—	—	—	—	—	11th content (WN)
25	19	13th content (UV)	13th content (UV)	13th content (UN)	13th content (VN)	13th content (UN)	13th content	13th content (UN)
26	1A	13th content (VW)	13th content (VW)	13th content (WN)	13th content (WN)	13th content (VN)	—	13th content (VN)
27	1B	—	—	—	—	—	—	13th content (WN)
28	1C	15th content (UV)	15th content (UV)	15th content (UN)	15th content (VN)	15th content (UN)	15th content	15th content (UN)
29	1D	15th content (VW)	15th content (VW)	15th content (WN)	15th content (WN)	15th content (VN)	—	15th content (VN)
30	1E	—	—	—	—	—	—	15th content (WN)
31	1F	5th conversion effective value (UV)	5th conversion effective value (UV)	5th conversion effective value (UN)	5th conversion effective value (VN)	5th conversion effective value (UN)	5th conversion effective value	5th conversion effective value (UN)

RWw n(L)		Harmonic voltage factor						
Decimal	Hexadecimal	3φ3W(2VT･2CT)	3φ3W(2VT･3CT)	1φ3W(U-W-N)	1φ3W(V-W-N)	1φ3W(U-V-N)	1φ2W	3φ4W
32	20	5th conversion effective value (VW)	5th conversion effective value (VW)	5th conversion effective value (WN)	5th conversion effective value (WN)	5th conversion effective value (VN)	—	5th conversion effective value (VN)
33	21	—	—	—	—	—	—	5th conversion effective value (WN)
34	22	Fundamental-wave effective value (UV)	Fundamental-wave effective value (UV)	Fundamental-wave effective value (UN)	Fundamental-wave effective value (VN)	Fundamental-wave effective value (UN)	Fundamental-wave effective value	Fundamental-wave effective value (UN)
35	23	Fundamental-wave effective value (VW)	Fundamental-wave effective value (VW)	Fundamental-wave effective value (WN)	Fundamental-wave effective value (WN)	Fundamental-wave effective value (VN)	—	Fundamental-wave effective value (VN)
36	24	—	—	—	—	—	—	Fundamental-wave effective value (WN)
37	25	3rd effective value (UV)	3rd effective value (UV)	3rd effective value (UN)	3rd effective value (VN)	3rd effective value (UN)	3rd effective value	3rd effective value (UN)
38	26	3rd effective value (VW)	3rd effective value (VW)	3rd effective value (WN)	3rd effective value (WN)	3rd effective value (VN)	—	3rd effective value (VN)
39	27	—	—	—	—	—	—	3rd effective value (WN)
40	28	4th effective value (UV)	4th effective value (UV)	4th effective value (UN)	4th effective value (VN)	4th effective value (UN)	4th effective value	4th effective value (UN)
41	29	4th effective value (VW)	4th effective value (VW)	4th effective value (WN)	4th effective value (WN)	4th effective value (VN)	—	4th effective value (VN)
42	2A	—	—	—	—	—	—	4th effective value (WN)
43	2B	5th effective value (UV)	5th effective value (UV)	5th effective value (UN)	5th effective value (VN)	5th effective value (UN)	5th effective value	5th effective value (UN)
44	2C	5th effective value (VW)	5th effective value (VW)	5th effective value (WN)	5th effective value (WN)	5th effective value (VN)	—	5th effective value (VN)
45	2D	—	—	—	—	—	—	5th effective value (WN)
46	2E	7th effective value (UV)	7th effective value (UV)	7th effective value (UN)	7th effective value (VN)	7th effective value (UN)	7th effective value	7th effective value (UN)
47	2F	7th effective value (VW)	7th effective value (VW)	7th effective value (WN)	7th effective value (WN)	7th effective value (VN)	—	7th effective value (VN)
48	30	—	—	—	—	—	—	7th effective value (WN)
49	31	9th effective value (UV)	9th effective value (UV)	9th effective value (UN)	9th effective value (VN)	9th effective value (UN)	9th effective value	9th effective value (UN)
50	32	9th effective value (VW)	9th effective value (VW)	9th effective value (WN)	9th effective value (WN)	9th effective value (VN)	—	9th effective value (VN)
51	33	—	—	—	—	—	—	9th effective value (WN)
52	34	11th effective value (UV)	11th effective value (UV)	11th effective value (UN)	11th effective value (VN)	11th effective value (UN)	11th effective value	11th effective value (UN)
53	35	11th effective value (VW)	11th effective value (VW)	11th effective value (WN)	11th effective value (WN)	11th effective value (VN)	—	11th effective value (VN)
54	36	—	—	—	—	—	—	11th effective value (WN)
55	37	13th effective value (UV)	13th effective value (UV)	13th effective value (UN)	13th effective value (VN)	13th effective value (UN)	13th effective value	13th effective value (UN)
56	38	13th effective value (VW)	13th effective value (VW)	13th effective value (WN)	13th effective value (WN)	13th effective value (VN)	—	13th effective value (VN)
57	39	—	—	—	—	—	—	13th effective value (WN)
58	3A	15th effective value (UV)	15th effective value (UV)	15th effective value (UN)	15th effective value (VN)	15th effective value (UN)	15th effective value	15th effective value (UN)
59	3B	15th effective value (VW)	15th effective value (VW)	15th effective value (WN)	15th effective value (WN)	15th effective value (VN)	—	15th effective value (VN)
60	3C	—	—	—	—	—	—	15th effective value (WN)

<Cautions> If the data of "—" of the above factor is required, error treatment will be done and an error code will be transmitted. Reference to "3.4 Error communication" (4 pages) and "5.1.1 Error code" (7 pages).

(4) Factor (Set value monitor) (9)

RWw n(L)		Item
Decimal	Hexadecimal	
1	01	Phase wire
2	02	Voltage measurement range
3	03	Current measurement range
4	04	Voltage upper limit setting value (Phase voltage) (7)
5	05	Voltage lower limit setting value (Phase voltage) (7)
6	06	Voltage upper limit setting value (Line voltage)
7	07	Voltage lower limit setting value (Line voltage)
8	08	Demand current upper limit setting value
9	09	Demand power upper limit setting value
10	0A	Leakage current upper limit setting value (8)
11	0B	Harmonic current distortion rate upper limit setting value
12	0C	Harmonic current 5th conversion content upper limit setting value
13	0D	Harmonic current n-th content alarm factor
14	0E	Harmonic current n-th content upper limit setting value
15	0F	Harmonic voltage distortion rate upper limit setting value
16	10	Harmonic voltage 5th conversion content upper limit setting value
17	11	Harmonic voltage n-th content alarm factor
18	12	Harmonic voltage n-th content upper limit setting value
19	13	Demand current interval
20	14	Demand power interval
21	15	Alarm-output 1 factor (Contact output) (8)
22	16	Alarm-output 2 factor (Contact output) (8)

Note(7) Transmits an error code, if this factor is required by 3φ3W and 1φ2W specification.
note(8) Transmits an error code, if they have no option and this factor is required.
Note(9) Transmits an data 0(0000000000H), if the upper limit and low-limit-setting value of each factor are OFF

(5) Factor (Set value change)

RWw n(H)		Item
Decimal	Hexadecimal	
1	01	—
2	02	Voltage measurement range
3	03	Current measurement range

(6) Factor (Set value change : Voltage range) (10)

RWw n(L)		Voltage range (VT ratio)	RWw n(L)		Voltage range (VT ratio)
Decimal	Hexadecimal		Decimal	Hexadecimal	
1	01	150.0V (110.0V)	18	12	15.00kV (11k/110V)
2	02	150V (110V)	19	13	18.00kV (13.2k/110V)
3	03	300.0V (220/110V)	20	14	18.00kV (13.8k/110V)
4	04	300V (220/110V)	21	15	24.00kV (16.5k/110V)
5	05	500V (380/110V)	22	16	25.00kV (18.4k/110V)
6	06	600V (440/110V)	23	17	30.0kV (22k/110V)
7	07	600V (460/110V)	24	18	45.0kV (33k/110V)
8	08	600V (480/110V)	25	19	90.0kV (66k/110V)
9	09	1200V (880/110V)	26	1A	105.0kV (77k/110V)
10	0A	1500V (1100/110V)	27	1B	150.0kV (110k/110V)
11	0B	2400V (1650/110V)	28	1C	180.0kV (132k/110V)
12	0C	3000V (2200/110V)	29	1D	210.0kV (154k/110V)
13	0D	3.00kV (2200/110V)	30	1E	255.0kV (187k/110V)
14	0E	4500V (3300/110V)	31	1F	300.0kV (220k/110V)
15	0F	4.50kV (3300/110V)	32	20	375.0kV (275k/110V)
16	10	9000V (6600/110V)	33	21	500.0kV (380k/110V)
17	11	9.00kV (6600/110V)	34	22	750.0kV (550k/110V)

Note(10) If setting change of the combination from which a power range is set to more than 1000MW is carried out, a set value change is not made but it transmits the data before setting change.

(7) Factor (Set value change : Current range) (11)

RWw n(L)		Current	RWw n(L)		Current	RWw n(L)		Current
Decimal	Hexadecimal	range	Decimal	Hexadecimal	range	Decimal	Hexadecimal	range
1	01	5.00A	27	1B	150A	53	35	2.50kA
2	02	6.00A	28	1C	200.0A	54	36	3000A
3	03	7.50A	29	1D	200A	55	37	3.00kA
4	04	8.00A	30	1E	250.0A	56	38	4000A
5	05	10.00A	31	1F	250A	57	39	4.00kA
6	06	10.0A	32	20	300.0A	58	3A	5000A
7	07	12.00A	33	21	300A	59	3B	5.00kA
8	08	12.0A	34	22	400A	60	3C	6000A
9	09	15.00A	35	23	500A	61	3D	6.00kA
10	0A	15.0A	36	24	600A	62	3E	7500A
11	0B	20.00A	37	25	750A	63	3F	7.50kA
12	0C	20.0A	38	26	800A	64	40	8000A
13	0D	25.00A	39	27	900A	65	41	8.00kA
14	0E	25.0A	40	28	1000A	66	42	9.00kA
15	0F	30.00A	41	29	1.00kA	67	43	10.00kA
16	10	30.0A	42	2A	1200A	68	44	10.0 kA
17	11	40.0A	43	2B	1.20kA	69	45	12.00kA
18	12	50.0A	44	2C	1500A	70	46	12.0 kA
19	13	60.0A	45	2D	1.50kA	71	47	15.00kA
20	14	75.0A	46	2E	1600A	72	48	15.0 kA
21	15	80.0A	47	2F	1.60kA	73	49	20.00kA
22	16	100.0A	48	30	1800A	74	4A	20.0 kA
23	17	100A	49	31	1.80kA	75	4B	30.00kA
24	18	120.0A	50	32	2000A	76	4C	30.0 kA
25	19	120A	51	33	2.00kA			
26	1A	150.0A	52	34	2500A			

Note(11) If setting change of the combination from which a power range is set to more than 1000MW is carried out, a set value change is not made but it transmits the data before setting change.

(8) Factor (Maximum and minimum reset) (13)
Factor (Integrated-value reset) (12)(13)

RWw n(L)		Item
Decimal	Hexadecimal	
1	01	Voltage
2	02	Current
3	03	Demand current
4	04	Power
5	05	Demand power
6	06	Reactive power
7	07	Power-factor
8	08	Frequency
9	09	Leakage current
10	0A	Apparent power
11	0B	Harmonic current
12	0C	Harmonic voltage
255	FF	All factors

Note(12) Integrated-value reset uses only all factors.
Note(13) It transmits data -1(FFFFFFFFFFH), after reset of each factor.

Appendix table 1. Voltage measurement data and magnification data (unit is V).

Voltage range	Communication data	Voltage range	Communication data	Voltage range	Communication data
110.0V	1100×0.1	2.20kV	2200×1	66.0kV	6600×10
110V	1100×0.1	3300V	3300×1	77.0kV	770×100
220.0V	2200×0.1	3.30kV	3300×1	110.0kV	1100×100
220V	2200×0.1	6600V	6600×1	132.0kV	1320×100
380V	3800×0.1	6.60kV	6600×1	154.0kV	1540×100
440V	4400×0.1	11.00kV	1100×10	187.0kV	1870×100
460V	4600×0.1	13.20kV	1320×10	220.0kV	2200×100
480V	4800×0.1	13.80kV	1380×10	275.0kV	2750×100
880V	880×1	16.50kV	1650×10	380.0kV	3800×100
1100V	1100×1	18.40kV	1840×10	550.0kV	5500×100
1650V	1650×1	22.0kV	2200×10		
2200V	2200×1	33.0kV	3300×10		

<Cautions> The above communication data is data at the case of a rated voltage input. (110V or 220V)

Appendix table 2. Current measurement data and magnification data (unit is A)

Current range	Communication data	Current range	Communication data	Current range	Communication data
5.00A	5000×0.001	150A	1500×0.1	2.50kA	2500×1
6.00A	6000×0.001	200.0A	2000×0.1	3000A	3000×1
7.50A	7500×0.001	200A	2000×0.1	3.00kA	3000×1
8.00A	8000×0.001	250.0A	2500×0.1	4000A	4000×1
10.00A	1000×0.01	250A	2500×0.1	4.00kA	4000×1
10.0A	1000×0.01	300.0A	3000×0.1	5000A	5000×1
12.00A	1200×0.01	300A	3000×0.1	5.00kA	5000×1
12.0A	1200×0.01	400A	4000×0.1	6000A	6000×1
15.00A	1500×0.01	500A	5000×0.1	6.00kA	6000×1
15.0A	1500×0.01	600A	6000×0.1	7500A	7500×1
20.00A	2000×0.01	750A	7500×0.1	7.50kA	7500×1
20.0A	2000×0.01	800A	8000×0.1	8000A	8000×1
25.00A	2500×0.01	900A	9000×0.1	8.00kA	8000×1
25.0A	2500×0.01	1000A	1000×1	9.00kA	9000×1
30.00A	3000×0.01	1.00kA	1000×1	10.00kA	1000×10
30.0A	3000×0.01	1200A	1200×1	10.0kA	1000×10
40.0A	4000×0.01	1.20kA	1200×1	12.00kA	1200×10
50.0A	5000×0.01	1500A	1500×1	12.0kA	1200×10
60.0A	6000×0.01	1.50kA	1500×1	15.00kA	1500×10
75.0A	7500×0.01	1600A	1600×1	15.0kA	1500×10
80.0A	8000×0.01	1.60kA	1600×1	20.00kA	2000×10
100.0A	1000×0.1	1800A	1800×1	20.0kA	2000×10
100 A	1000×0.1	1.80kA	1800×1	30.00kA	3000×10
120.0A	1200×0.1	2000A	2000×1	30.0kA	3000×10
120 A	1200×0.1	2.00kA	2000×1		
150.0A	1500×0.1	2500A	2500×1		

<Cautions> The above communication data is data at the case of a rated current input. (5A or 1A)

Appendix table 3-1. 3φ3W, 3φ4W : Power, reactive power, apparent power data and magnification data (Unit is kW, kvar, kVA) and electric-energy magnification data.

Active energy magnification data	V range / A range	550.0kV [kW]	380.0kV [kW]	275.0kV [kW]	220.0kV [kW]	187.0kV [kW]	154.0kV [kW]	132.0kV [kW]	110.0kV [kW]	77.0kV [kW]	66.0kV [kW]	33.0kV [kW]	22.0kV [kW]	18.40kV [kW]	16.50kV [kW]	13.80kV [kW]	Active energy magnification data
	5A	5000×1	3455×1	2500×1	2000×1	1700×1	1400×1	1200×1	1000×1	7000×0.1	6000×0.1	3000×0.1	2000×0.1	1673×0.1	1500×0.1	1255×0.1	
	6A	6000×1	4145×1	3000×1	2400×1	2040×1	1680×1	1440×1	1200×1	8400×0.1	7200×0.1	3600×0.1	2400×0.1	2007×0.1	1800×0.1	1505×0.1	
	7.5A	7500×1	5182×1	3750×1	3000×1	2550×1	2100×1	1800×1	1500×1	1050×1	9000×0.1	4500×0.1	3000×0.1	2509×0.1	2250×0.1	1882×0.1	
	8A	8000×1	5527×1	4000×1	3200×1	2720×1	2240×1	1920×1	1600×1	1120×1	9600×0.1	4800×0.1	3200×0.1	2676×0.1	2400×0.1	2007×0.1	
×10	10A	1000×10	6909×1	5000×1	4000×1	3400×1	2800×1	2400×1	2000×1	1400×1	1200×1	6000×0.1	4000×0.1	3345×0.1	3000×0.1	2509×0.1	
	12A	1200×10	8291×1	6000×1	4800×1	4080×1	3360×1	2880×1	2400×1	1680×1	1440×1	7200×0.1	4800×0.1	4015×0.1	3600×0.1	3011×0.1	
	15A	1500×10	1036×10	7500×1	6000×1	5100×1	4200×1	3600×1	3000×1	2100×1	1800×1	9000×0.1	6000×0.1	5018×0.1	4500×0.1	3764×0.1	
	20A	2000×10	1382×10	1000×10	8000×1	6800×1	5600×1	4800×1	4000×1	2800×1	2400×1	1200×1	8000×0.1	6691×0.1	6000×0.1	5018×0.1	
	25A	2500×10	1727×10	1250×10	1000×10	8500×1	7000×1	6000×1	5000×1	3500×1	3000×1	1500×1	1000×1	8364×0.1	7500×0.1	6273×0.1	
	30A	3000×10	2073×10	1500×10	1200×10	1020×10	8400×1	7200×1	6000×1	4200×1	3600×1	1800×1	1200×1	1004×1	9000×0.1	7527×0.1	
	40A	4000×10	2764×10	2000×10	1600×10	1360×10	1120×10	9600×1	8000×1	5600×1	4800×1	2400×1	1600×1	1338×1	1200×1	1004×1	×1
	50A	5000×10	3455×10	2500×10	2000×10	1700×10	1400×10	1200×10	1000×10	7000×1	6000×1	3000×1	2000×1	1673×1	1500×1	1255×1	
	60A	6000×10	4145×10	3000×10	2400×10	2040×10	1680×10	1440×10	1200×10	8400×1	7200×1	3600×1	2400×1	2007×1	1800×1	1505×1	
	75A	7500×10	5182×10	3750×10	3000×10	2550×10	2100×10	1800×10	1500×10	1050×10	9000×1	4500×1	3000×1	2509×1	2250×1	1882×1	
	80A	8000×10	5527×10	4000×10	3200×10	2720×10	2240×10	1920×10	1600×10	1120×10	9600×1	4800×1	3200×1	2676×1	2400×1	2007×1	
×100	100A	1000×100	6909×10	5000×10	4000×10	3400×10	2800×10	2400×10	2000×10	1400×10	1200×10	6000×1	4000×1	3345×1	3000×1	2509×1	
	120A	1200×100	8291×10	6000×10	4800×10	4080×10	3360×10	2880×10	2400×10	1680×10	1440×10	7200×1	4800×1	4015×1	3600×1	3011×1	
	150A	1500×100	1036×100	7500×10	6000×10	5100×10	4200×10	3600×10	3000×10	2100×10	1800×10	9000×1	6000×1	5018×1	4500×1	3764×1	
	200A	2000×100	1382×100	1000×100	8000×10	6800×10	5600×10	4800×10	4000×10	2800×10	2400×10	1200×10	8000×1	6691×1	6000×1	5018×1	
	250A	2500×100	1727×100	1250×100	1000×100	8500×10	7000×10	6000×10	5000×10	3500×10	3000×10	1500×10	1000×10	8364×1	7500×1	6273×1	
	300A	3000×100	2073×100	1500×100	1200×100	1020×100	8400×10	7200×10	6000×10	4200×10	3600×10	1800×10	1200×10	1004×10	9000×1	7527×1	
	400A	4000×100	2764×100	2000×100	1600×100	1360×100	1120×100	9600×10	8000×10	5600×10	4800×10	2400×10	1600×10	1338×10	1200×10	1004×10	×10
	500A	5000×100	3455×100	2500×100	2000×100	1700×100	1400×100	1200×100	1000×100	7000×10	6000×10	3000×10	2000×10	1673×10	1500×10	1255×10	
	600A	6000×100	4145×100	3000×100	2400×100	2040×100	1680×100	1440×100	1200×100	8400×10	7200×10	3600×10	2400×10	2007×10	1800×10	1505×10	
	750A	7500×100	5182×100	3750×100	3000×100	2550×100	2100×100	1800×100	1500×100	1050×100	9000×10	4500×10	3000×10	2509×10	2250×10	1882×10	
	800A	8000×100	5527×100	4000×100	3200×100	2720×100	2240×100	1920×100	1600×100	1120×100	9600×10	4800×10	3200×10	2676×10	2400×10	2007×10	
	900A	9000×100	6218×100	4500×100	3600×100	3060×100	2520×100	2160×100	1800×100	1260×100	1080×100	5400×10	3600×10	3011×10	2700×10	2258×10	
×1000	1000A	1000×1000	6909×100	5000×100	4000×100	3400×100	2800×100	2400×100	2000×100	1400×100	1200×100	6000×10	4000×10	3345×10	3000×10	2509×10	
	1200A		8291×100	6000×100	4800×100	4080×100	3360×100	2880×100	2400×100	1680×100	1440×100	7200×10	4800×10	4015×10	3600×10	3011×10	
	1500A			7500×100	6000×100	5100×100	4200×100	3600×100	3000×100	2100×100	1800×100	9000×10	6000×10	5018×10	4500×10	3764×10	
	1600A			8000×100	6400×100	5440×100	4480×100	3840×100	3200×100	2240×100	1920×100	9600×10	6400×10	5353×10	4800×10	4015×10	
	1800A			9000×100	7200×100	6120×100	5040×100	4320×100	3600×100	2520×100	2160×100	1080×100	7200×10	6022×10	5400×10	4516×10	
	2000A			1000×1000	8000×100	6800×100	5600×100	4800×100	4000×100	2800×100	2400×100	1200×100	8000×10	6691×10	6000×10	5018×10	
	2500A				1000×1000	8500×100	7000×100	6000×100	5000×100	3500×100	3000×100	1500×100	1000×100	8364×10	7500×10	6273×10	
	3000A						8400×100	7200×100	6000×100	4200×100	3600×100	1800×100	1200×100	1004×100	9000×10	7527×10	
	4000A							9600×100	8000×100	5600×100	4800×100	2400×100	1600×100	1338×100	1200×100	1004×100	×100
	5000A								1000×1000	7000×100	6000×100	3000×100	2000×100	1673×100	1500×100	1255×100	
	6000A									8400×100	7200×100	3600×100	2400×100	2007×100	1800×100	1505×100	
	7500A										9000×100	4500×100	3000×100	2509×100	2250×100	1882×100	
	8000A										9600×100	4800×100	3200×100	2676×100	2400×100	2007×100	
	9000A											5400×100	3600×100	3011×100	2700×100	2258×100	
	10000A											6000×100	4000×100	3345×100	3000×100	2509×100	
	12000A											7200×100	4800×100	4015×100	3600×100	3011×100	
	15000A											9000×100	6000×100	5018×100	4500×100	3764×100	
	20000A												8000×100	6691×100	6000×100	5018×100	
	30000A														9000×100	7527×100	×1000

<Cautions> The above communication data is data at the case of a rated input. (Example : 110V, 5A, 1kW) And, if setting of the above blank is changed by the set value change-request command, error treatment will be done and an error code will be transmitted. (Reference to "3.3 Error communication" (4 pages))

Appendix table 3-2. 3φ3W, 3φ4W : Power, reactive power, apparent power data and magnification data (unit is kW, kvar, and kVA) and electric-energy magnification data.

Active energy magnification data	V range / A range	13.20kV [kW]	11.00kV [kW]	6600V [kW]	3300V [kW]	2200V [kW]	1650V [kW]	1100V [kW]	880V [kW]	480V [kW]	460V [kW]	440V [kW]	380V [kW]	220V [kW]	110V [kW]	Active energy magnification data
	5A	1200×0.1	1000×0.1	6000×0.01	3000×0.01	2000×0.01	1500×0.01	1000×0.01	8000×0.001	4364×0.001	4182×0.001	4000×0.001	3455×0.001	2000×0.001	1000×0.001	×0.001
	6A	1440×0.1	1200×0.1	7200×0.01	3600×0.01	2400×0.01	1800×0.01	1200×0.01	9600×0.001	5236×0.001	5018×0.001	4800×0.001	4145×0.001	2400×0.001	1200×0.001	
	7.5A	1800×0.1	1500×0.1	9000×0.01	4500×0.01	3000×0.01	2250×0.01	1500×0.01	1200×0.01	6545×0.001	6273×0.001	6000×0.001	5182×0.001	3000×0.001	1500×0.001	
	8A	1920×0.1	1600×0.1	9600×0.01	4800×0.01	3200×0.01	2400×0.01	1600×0.01	1280×0.01	6982×0.001	6691×0.001	6400×0.001	5527×0.001	3200×0.001	1600×0.001	
	10A	2400×0.1	2000×0.1	1200×0.1	6000×0.01	4000×0.01	3000×0.01	2000×0.01	1600×0.01	8727×0.001	8364×0.001	8000×0.001	6909×0.001	4000×0.001	2000×0.001	
	12A	2880×0.1	2400×0.1	1440×0.1	7200×0.01	4800×0.01	3600×0.01	2400×0.01	1920×0.01	1047×0.01	1004×0.01	9600×0.001	8291×0.001	4800×0.001	2400×0.001	
	15A	3600×0.1	3000×0.1	1800×0.1	9000×0.01	6000×0.01	4500×0.01	3000×0.01	2400×0.01	1309×0.01	1255×0.01	1200×0.01	1036×0.01	6000×0.001	3000×0.001	
	20A	4800×0.1	4000×0.1	2400×0.1	1200×0.1	8000×0.01	6000×0.01	4000×0.01	3200×0.01	1745×0.01	1673×0.01	1600×0.01	1382×0.01	8000×0.001	4000×0.001	
	25A	6000×0.1	5000×0.1	3000×0.1	1500×0.1	1000×0.1	7500×0.01	5000×0.01	4000×0.01	2182×0.01	2091×0.01	2000×0.01	1727×0.01	1000×0.01	5000×0.001	
	30A	7200×0.1	6000×0.1	3600×0.1	1800×0.1	1200×0.1	9000×0.01	6000×0.01	4800×0.01	2618×0.01	2509×0.01	2400×0.01	2073×0.01	1200×0.01	6000×0.001	
×1	40A	9600×0.1	8000×0.1	4800×0.1	2400×0.1	1600×0.1	1200×0.1	8000×0.01	6400×0.01	3491×0.01	3345×0.01	3200×0.01	2764×0.01	1600×0.01	8000×0.001	
	50A	1200×1	1000×1	6000×0.1	3000×0.1	2000×0.1	1500×0.1	1000×0.1	8000×0.01	4364×0.01	4182×0.01	4000×0.01	3455×0.01	2000×0.01	1000×0.01	×0.01
	60A	1440×1	1200×1	7200×0.1	3600×0.1	2400×0.1	1800×0.1	1200×0.1	9600×0.01	5236×0.01	5018×0.01	4800×0.01	4145×0.01	2400×0.01	1200×0.01	
	75A	1800×1	1500×1	9000×0.1	4500×0.1	3000×0.1	2250×0.1	1500×0.1	1200×0.1	6545×0.01	6273×0.01	6000×0.01	5182×0.01	3000×0.01	1500×0.01	
	80A	1920×1	1600×1	9600×0.1	4800×0.1	3200×0.1	2400×0.1	1600×0.1	1280×0.1	6982×0.01	6691×0.01	6400×0.01	5527×0.01	3200×0.01	1600×0.01	
	100A	2400×1	2000×1	1200×1	6000×0.1	4000×0.1	3000×0.1	2000×0.1	1600×0.1	8727×0.01	8364×0.01	8000×0.01	6909×0.01	4000×0.01	2000×0.01	
	120A	2880×1	2400×1	1440×1	7200×0.1	4800×0.1	3600×0.1	2400×0.1	1920×0.1	1047×0.1	1004×0.1	9600×0.01	8291×0.01	4800×0.01	2400×0.01	
	150A	3600×1	3000×1	1800×1	9000×0.1	6000×0.1	4500×0.1	3000×0.1	2400×0.1	1309×0.1	1255×0.1	1200×0.1	1036×0.1	6000×0.01	3000×0.01	
	200A	4800×1	4000×1	2400×1	1200×1	8000×0.1	6000×0.1	4000×0.1	3200×0.1	1745×0.1	1673×0.1	1600×0.1	1382×0.1	8000×0.01	4000×0.01	
	250A	6000×1	5000×1	3000×1	1500×1	1000×1	7500×0.1	5000×0.1	4000×0.1	2182×0.1	2091×0.1	2000×0.1	1727×0.1	1000×0.1	5000×0.01	
	300A	7200×1	6000×1	3600×1	1800×1	1200×1	9000×0.1	6000×0.1	4800×0.1	2618×0.1	2509×0.1	2400×0.1	2073×0.1	1200×0.1	6000×0.01	
×10	400A	9600×1	8000×1	4800×1	2400×1	1600×1	1200×1	8000×0.1	6400×0.1	3491×0.1	3345×0.1	3200×0.1	2764×0.1	1600×0.1	8000×0.01	
	500A	1200×10	1000×10	6000×1	3000×1	2000×1	1500×1	1000×1	8000×0.1	4364×0.1	4182×0.1	4000×0.1	3455×0.1	2000×0.1	1000×0.1	×0.1
	600A	1440×10	1200×10	7200×1	3600×1	2400×1	1800×1	1200×1	9600×0.1	5236×0.1	5018×0.1	4800×0.1	4145×0.1	2400×0.1	1200×0.1	
	750A	1800×10	1500×10	9000×1	4500×1	3000×1	2250×1	1500×1	1200×1	6545×0.1	6273×0.1	6000×0.1	5182×0.1	3000×0.1	1500×0.1	
	800A	1920×10	1600×10	9600×1	4800×1	3200×1	2400×1	1600×1	1280×1	6982×0.1	6691×0.1	6400×0.1	5527×0.1	3200×0.1	1600×0.1	
	900A	2160×10	1800×10	1080×10	5400×1	3600×1	2700×1	1800×1	1440×1	7855×0.1	7527×0.1	7200×0.1	6218×0.1	3600×0.1	1800×0.1	
	1000A	2400×10	2000×10	1200×10	6000×1	4000×1	3000×1	2000×1	1600×1	8727×0.1	8364×0.1	8000×0.1	6909×0.1	4000×0.1	2000×0.1	
	1200A	2880×10	2400×10	1440×10	7200×1	4800×1	3600×1	2400×1	1920×1	1047×1	1004×1	9600×0.1	8291×0.1	4800×0.1	2400×0.1	
	1500A	3600×10	3000×10	1800×10	9000×1	6000×1	4500×1	3000×1	2400×1	1309×1	1255×1	1200×1	1036×1	6000×0.1	3000×0.1	
	1600A	3840×10	3200×10	1920×10	9600×1	6400×1	4800×1	3200×1	2560×1	1396×1	1338×1	1280×1	1105×1	6400×0.1	3200×0.1	
	1800A	4320×10	3600×10	2160×10	1080×10	7200×1	5400×1	3600×1	2880×1	1571×1	1505×1	1440×1	1244×1	7200×0.1	3600×0.1	
	2000A	4800×10	4000×10	2400×10	1200×10	8000×1	6000×1	4000×1	3200×1	1745×1	1673×1	1600×1	1382×1	8000×0.1	4000×0.1	
	2500A	6000×10	5000×10	3000×10	1500×10	1000×10	7500×1	5000×1	4000×1	2182×1	2091×1	2000×1	1727×1	1000×1	5000×0.1	
	3000A	7200×10	6000×10	3600×10	1800×10	1200×10	9000×1	6000×1	4800×1	2618×1	2509×1	2400×1	2073×1	1200×1	6000×0.1	
×100	4000A	9600×10	8000×10	4800×10	2400×10	1600×10	1200×10	8000×1	6400×1	3491×1	3345×1	3200×1	2764×1	1600×1	8000×0.1	
	5000A	1200×100	1000×100	6000×10	3000×10	2000×10	1500×10	1000×10	8000×1	4364×1	4182×1	4000×1	3455×1	2000×1	1000×1	×1
	6000A	1440×100	1200×100	7200×10	3600×10	2400×10	1800×10	1200×10	9600×1	5236×1	5018×1	4800×1	4145×1	2400×1	1200×1	
	7500A	1800×100	1500×100	9000×10	4500×10	3000×10	2250×10	1500×10	1200×10	6545×1	6273×1	6000×1	5182×1	3000×1	1500×1	
	8000A	1920×100	1600×100	9600×10	4800×10	3200×10	2400×10	1600×10	1280×10	6982×1	6691×1	6400×1	5527×1	3200×1	1600×1	
	9000A	2160×100	1800×100	1080×100	5400×10	3600×10	2700×10	1800×10	1440×10	7855×1	7527×1	7200×1	6218×1	3600×1	1800×1	
	10000A	2400×100	2000×100	1200×100	6000×10	4000×10	3000×10	2000×10	1600×10	8727×1	8364×1	8000×1	6909×1	4000×1	2000×1	
	12000A	2880×100	2400×100	1440×100	7200×10	4800×10	3600×10	2400×10	1920×10	1047×10	1004×10	9600×1	8291×1	4800×1	2400×1	
	15000A	3600×100	3000×100	1800×100	9000×10	6000×10	4500×10	3000×10	2400×10	1309×10	1255×10	1200×10	1036×10	6000×1	3000×1	
	20000A	4800×100	4000×100	2400×100	1200×100	8000×10	6000×10	4000×10	3200×10	1745×10	1673×10	1600×10	1382×10	8000×1	4000×1	
×1000	30000A	7200×100	6000×100	3600×100	1800×100	1200×100	9000×10	6000×10	4800×10	2618×10	2509×10	2400×10	2073×10	1200×10	6000×1	×10

<Cautions> The above communication data is data at the case of a rated input. (Example : 110V, 5A, 1kW)

Appendix table 4.　1φ3W：Power, reactive power data and magnification data (unit is kW and kvar) and electric-energy magnification data.

V range / A range	110V [kW]	Active energy magnification data
5A	1000×0.001	
6A	1200×0.001	
7.5A	1500×0.001	
8A	1600×0.001	
10A	2000×0.001	
12A	2400×0.001	
15A	3000×0.001	
20A	4000×0.001	
25A	5000×0.001	
30A	6000×0.001	
40A	8000×0.001	×0.01
50A	1000×0.01	
60A	1200×0.01	
75A	1500×0.01	
80A	1600×0.01	
100A	2000×0.01	
120A	2400×0.01	
150A	3000×0.01	
200A	4000×0.01	
250A	5000×0.01	
300A	6000×0.01	
400A	8000×0.01	×0.1
500A	1000×0.1	
600A	1200×0.1	
750A	1500×0.1	
800A	1600×0.1	
900A	1800×0.1	
1000A	2000×0.1	
1200A	2400×0.1	
1500A	3000×0.1	
1600A	3200×0.1	
1800A	3600×0.1	
2000A	4000×0.1	
2500A	5000×0.1	
3000A	6000×0.1	
4000A	8000×0.1	×1
5000A	1000×1	
6000A	1200×1	
7500A	1500×1	
8000A	1600×1	
9000A	1800×1	
10000A	2000×1	
12000A	2400×1	
15000A	3000×1	
20000A	4000×1	
30000A	6000×1	×10

<Cautions> The above communication data is data at the case of a rated input. (Example：110V, 5A, 1kW)

Appendix table 5-1. 1φ2W : Power, reactive power data and magnification data (unit is kW and kvar) and electric-energy magnification data.

Active energy magnification data	V range / A range	550.0kV [kW]	380.0kV [kW]	275.0kV [kW]	220.0kV [kW]	187.0kV [kW]	154.0kV [kW]	132.0kV [kW]	110.0kV [kW]	77.0kV [kW]	66.0kV [kW]	33.0kV [kW]	22.0kV [kW]	18.40kV [kW]	16.50kV [kW]	13.80kV [kW]	Active energy magnification data
	5A	2500×1	1727×1	1250×1	1000×1	8500×0.1	7000×0.1	6000×0.1	5000×0.1	3500×0.1	3000×0.1	1500×0.1	1000×0.1	8364×0.01	7500×0.01	6273×0.01	
	6A	3000×1	2073×1	1500×1	1200×1	1020×1	8400×0.1	7200×0.1	6000×0.1	4200×0.1	3600×0.1	1800×0.1	1200×0.1	1004×0.1	9000×0.01	7527×0.01	
	7.5A	3750×1	2591×1	1875×1	1500×1	1275×1	1050×1	9000×0.1	7500×0.1	5250×0.1	4500×0.1	2250×0.1	1500×0.1	1255×0.1	1125×0.1	9409×0.01	×0.1
	8A	4000×1	2764×1	2000×1	1600×1	1360×1	1120×1	9600×0.1	8000×0.1	5600×0.1	4800×0.1	2400×0.1	1600×0.1	1388×0.1	1200×0.1	1004×0.1	
	10A	5000×1	3455×1	2500×1	2000×1	1700×1	1400×1	1200×1	1000×1	7000×0.1	6000×0.1	3000×0.1	2000×0.1	1673×0.1	1500×0.1	1255×0.1	
	12A	6000×1	4145×1	3000×1	2400×1	2040×1	1680×1	1440×1	1200×1	8400×0.1	7200×0.1	3600×0.1	2400×0.1	2007×0.1	1800×0.1	1505×0.1	
×10	15A	7500×1	5182×1	3750×1	3000×1	2550×1	2100×1	1800×1	1500×1	1050×1	9000×0.1	4500×0.1	3000×0.1	2509×0.1	2250×0.1	1882×0.1	
	20A	1000×10	6909×1	5000×1	4000×1	3400×1	2800×1	2400×1	2000×1	1400×1	1200×1	6000×0.1	4000×0.1	3345×0.1	3000×0.1	2509×0.1	
	25A	1250×10	8636×1	6250×1	5000×1	4250×1	3500×1	3000×1	2500×1	1750×1	1500×1	7500×0.1	5000×0.1	4182×0.1	3750×0.1	3136×0.1	
	30A	1500×10	1036×10	7500×1	6000×1	5100×1	4200×1	3600×1	3000×1	2100×1	1800×1	9000×0.1	6000×0.1	5018×0.1	4500×0.1	3764×0.1	
	40A	2000×10	1382×10	1000×10	8000×1	6800×1	5600×1	4800×1	4000×1	2800×1	2400×1	1200×1	8000×0.1	6691×0.1	6000×0.1	5018×0.1	
	50A	2500×10	1727×10	1250×10	1000×10	8500×1	7000×1	6000×1	5000×1	3500×1	3000×1	1500×1	1000×1	8364×0.1	7500×0.1	6273×0.1	
	60A	3000×10	2073×10	1500×10	1200×10	1020×10	8400×1	7200×1	6000×1	4200×1	3600×1	1800×1	1200×1	1004×1	9000×0.1	7527×0.1	
	75A	3750×10	2591×10	1875×10	1500×10	1275×10	1050×10	9000×1	7500×1	5250×1	4500×1	2250×1	1500×1	1255×1	1125×1	9409×0.1	×1
	80A	4000×10	2764×10	2000×10	1600×10	1360×10	1120×10	9600×1	8000×1	5600×1	4800×1	2400×1	1600×1	1338×1	1200×1	1004×1	
	100A	5000×10	3455×10	2500×10	2000×10	1700×10	1400×10	1200×10	1000×10	7000×1	6000×1	3000×1	2000×1	1673×1	1500×1	1255×1	
	120A	6000×10	4145×10	3000×10	2400×10	2040×10	1680×10	1440×10	1200×10	8400×1	7200×1	3600×1	2400×1	2007×1	1800×1	1505×1	
×100	150A	7500×10	5182×10	3750×10	3000×10	2550×10	2100×10	1800×10	1500×10	1050×10	9000×1	4500×1	3000×1	2509×1	2250×1	1882×1	
	200A	1000×100	6909×10	5000×10	4000×10	3400×10	2800×10	2400×10	2000×10	1400×10	1200×10	6000×1	4000×1	3345×1	3000×1	2509×1	
	250A	1250×100	8636×10	6250×10	5000×10	4250×10	3500×10	3000×10	2500×10	1750×10	1500×10	7500×1	5000×1	4182×1	3750×1	3136×1	
	300A	1500×100	1036×100	7500×10	6000×10	5100×10	4200×10	3600×10	3000×10	2100×10	1800×10	9000×1	6000×1	5018×1	4500×1	3764×1	
	400A	2000×100	1382×100	1000×100	8000×10	6800×10	5600×10	4800×10	4000×10	2800×10	2400×10	1200×10	8000×1	6691×1	6000×1	5018×1	
	500A	2500×100	1727×100	1250×100	1000×100	8500×10	7000×10	6000×10	5000×10	3500×10	3000×10	1500×10	1000×10	8364×1	7500×1	6273×1	
	600A	3000×100	2073×100	1500×100	1200×100	1020×100	8400×10	7200×10	6000×10	4200×10	3600×10	1800×10	1200×10	1004×10	9000×1	7527×1	
	750A	3750×100	2591×100	1875×100	1500×100	1275×100	1050×100	9000×10	7500×10	5250×10	4500×10	2250×10	1500×10	1255×10	1125×10	9409×1	×10
	800A	4000×100	2764×100	2000×100	1600×100	1360×100	1120×100	9600×10	8000×10	5600×10	4800×10	2400×10	1600×10	1338×10	1200×10	1004×10	
	900A	4500×100	3109×100	2250×100	1800×100	1530×100	1260×100	1080×100	9000×10	6300×10	5400×10	2700×10	1800×10	1505×10	1350×10	1129×10	
	1000A	5000×100	3455×100	2500×100	2000×100	1700×100	1400×100	1200×100	1000×100	7000×10	6000×10	3000×10	2000×10	1673×10	1500×10	1255×10	
	1200A	6000×100	4145×100	3000×100	2400×100	2040×100	1680×100	1440×100	1200×100	8400×10	7200×10	3600×10	2400×10	2007×10	1800×10	1505×10	
	1500A	7500×100	5182×100	3750×100	3000×100	2550×100	2100×100	1800×100	1500×100	1050×100	9000×10	4500×10	3000×10	2509×10	2250×10	1882×10	
	1600A	8000×100	5527×100	4000×100	3200×100	2720×100	2240×100	1920×100	1600×100	1120×100	9600×10	4800×10	3200×10	2676×10	2400×10	2007×10	
×1000	1800A	9000×100	6218×100	4500×100	3600×100	3060×100	2520×100	2160×100	1800×100	1260×100	1080×100	5400×10	3600×10	3011×10	2700×10	2258×10	
	2000A		6909×100	5000×100	4000×100	3400×100	2800×100	2400×100	2000×100	1400×100	1200×100	6000×10	4000×10	3345×10	3000×10	2509×10	
	2500A		8636×100	6250×100	5000×100	4250×100	3500×100	3000×100	2500×100	1750×100	1500×100	7500×10	5000×10	4182×10	3750×10	3136×10	
	3000A			7500×100	6000×100	5100×100	4200×100	3600×100	3000×100	2100×100	1800×100	9000×10	6000×10	5018×10	4500×10	3764×10	
	4000A				8000×100	6800×100	5600×100	4800×100	4000×100	2800×100	2400×100	1200×100	8000×10	6691×10	6000×10	5018×10	
	5000A					8500×100	7000×100	6000×100	5000×100	3500×100	3000×100	1500×100	1000×100	8364×10	7500×10	6273×10	
	6000A						8400×100	7200×100	6000×100	4200×100	3600×100	1800×100	1200×100	1004×100	9000×10	7527×10	
	7500A							9000×100	7500×100	5250×100	4500×100	2250×100	1500×100	1255×100	1125×100	9409×10	×100
	8000A							9600×100	8000×100	5600×100	4800×100	2400×100	1600×100	1338×100	1200×100	1004×100	
	9000A								9000×100	6300×100	5400×100	2700×100	1800×100	1505×100	1350×100	1129×100	
	10000A									7000×100	6000×100	3000×100	2000×100	1673×100	1500×100	1255×100	
	12000A									8400×100	7200×100	3600×100	2400×100	2007×100	1800×100	1505×100	
	15000A										9000×100	4500×100	3000×100	2509×100	2250×100	1882×100	
	20000A											6000×100	4000×100	3345×100	3000×100	2509×100	
	30000A											9000×100	6000×100	5018×100	4500×100	3764×100	×1000

<Cautions> The above communication data is data at the case of a rated input. (Example : 110V, 5A, 500W) And, if setting of the above blank is changed by the set value change-request command, error treatment will be done and an error code will be transmitted. (Reference to "3.3 Error communication" (4 pages))

Appendix table 5-2. 1φ2W : Power, reactive power data and magnification data (unit is kW and kvar) and electric-energy magnification data.

Active energy magnification data	V range / A range	13.20kV [kW]	11.00kV [kW]	6600V [kW]	3300V [kW]	2200V [kW]	1650V [kW]	1100V [kW]	880V [kW]	480V [kW]	460V [kW]	440V [kW]	380V [kW]	220V [kW]	110V [kW]	Active energy magnification data
	5A	6000×0.01	5000×0.01	3000×0.01	1500×0.01	1000×0.01	7500×0.001	5000×0.001	4000×0.001	2182×0.001	2091×0.001	2000×0.001	1727×0.001	1000×0.001	5000×0.0001	
	6A	7200×0.01	6000×0.01	3600×0.01	1800×0.01	1200×0.01	9000×0.001	6000×0.001	4800×0.001	2618×0.001	2509×0.001	2400×0.001	2073×0.001	1200×0.001	6000×0.0001	
	7.5A	9000×0.01	7500×0.01	4500×0.01	2250×0.01	1500×0.01	1125×0.01	7500×0.001	6000×0.001	3273×0.001	3136×0.001	3000×0.001	2591×0.001	1500×0.001	7500×0.0001	
×0.1	8A	9600×0.01	8000×0.01	4800×0.01	2400×0.01	1600×0.01	1200×0.01	8000×0.001	6400×0.001	3491×0.001	3345×0.001	3200×0.001	2764×0.001	1600×0.001	8000×0.0001	×0.001
	10A	1200×0.1	1000×0.1	6000×0.01	3000×0.01	2000×0.01	1500×0.01	1000×0.01	8000×0.001	4364×0.001	4182×0.001	4000×0.001	3455×0.001	2000×0.001	1000×0.001	
	12A	1440×0.1	1200×0.1	7200×0.01	3600×0.01	2400×0.01	1800×0.01	1200×0.01	9600×0.001	5236×0.001	5018×0.001	4800×0.001	4145×0.001	2400×0.001	1200×0.001	
	15A	1800×0.1	1500×0.1	9000×0.01	4500×0.01	3000×0.01	2250×0.01	1500×0.01	1200×0.01	6545×0.001	6273×0.001	6000×0.001	5182×0.001	3000×0.001	1500×0.001	
	20A	2400×0.1	2000×0.1	1200×0.1	6000×0.01	4000×0.01	3000×0.01	2000×0.01	1600×0.01	8727×0.001	8364×0.001	8000×0.001	6909×0.001	4000×0.001	2000×0.001	
	25A	3000×0.1	2500×0.1	1500×0.1	7500×0.01	5000×0.01	3750×0.01	2500×0.01	2000×0.01	1091×0.01	1045×0.01	1000×0.01	8636×0.001	5000×0.001	2500×0.001	
	30A	3600×0.1	3000×0.1	1800×0.1	9000×0.01	6000×0.01	4500×0.01	3000×0.01	2400×0.01	1309×0.01	1255×0.01	1200×0.01	1036×0.01	6000×0.001	3000×0.001	
	40A	4800×0.1	4000×0.1	2400×0.1	1200×0.1	8000×0.01	6000×0.01	4000×0.01	3200×0.01	1745×0.01	1673×0.01	1600×0.01	1382×0.01	8000×0.001	4000×0.001	
	50A	6000×0.1	5000×0.1	3000×0.1	1500×0.1	1000×0.1	7500×0.01	5000×0.01	4000×0.01	2182×0.01	2091×0.01	2000×0.01	1727×0.01	1000×0.01	5000×0.001	
	60A	7200×0.1	6000×0.1	3600×0.1	1800×0.1	1200×0.1	9000×0.01	6000×0.01	4800×0.01	2618×0.01	2509×0.01	2400×0.01	2073×0.01	1200×0.01	6000×0.001	
	75A	9000×0.1	7500×0.1	4500×0.1	2250×0.1	1500×0.1	1125×0.1	7500×0.01	6000×0.01	3273×0.01	3136×0.01	3000×0.01	2591×0.01	1500×0.01	7500×0.001	
×1	80A	9600×0.1	8000×0.1	4800×0.1	2400×0.1	1600×0.1	1200×0.1	8000×0.01	6400×0.01	3491×0.01	3345×0.01	3200×0.01	2764×0.01	1600×0.01	8000×0.001	×0.01
	100A	1200×1	1000×1	6000×0.1	3000×0.1	2000×0.1	1500×0.1	1000×0.1	8000×0.01	4364×0.01	4182×0.01	4000×0.01	3455×0.01	2000×0.01	1000×0.01	
	120A	1440×1	1200×1	7200×0.1	3600×0.1	2400×0.1	1800×0.1	1200×0.1	9600×0.01	5236×0.01	5018×0.01	4800×0.01	4145×0.01	2400×0.01	1200×0.01	
	150A	1800×1	1500×1	9000×0.1	4500×0.1	3000×0.1	2250×0.1	1500×0.1	1200×0.1	6545×0.01	6273×0.01	6000×0.01	5182×0.01	3000×0.01	1500×0.01	
	200A	2400×1	2000×1	1200×1	6000×0.1	4000×0.1	3000×0.1	2000×0.1	1600×0.1	8727×0.01	8364×0.01	8000×0.01	6909×0.01	4000×0.01	2000×0.01	
	250A	3000×1	2500×1	1500×1	7500×0.1	5000×0.1	3750×0.1	2500×0.1	2000×0.1	1091×0.1	1045×0.1	1000×0.1	8636×0.01	5000×0.01	2500×0.01	
	300A	3600×1	3000×1	1800×1	9000×0.1	6000×0.1	4500×0.1	3000×0.1	2400×0.1	1309×0.1	1255×0.1	1200×0.1	1036×0.1	6000×0.01	3000×0.01	
	400A	4800×1	4000×1	2400×1	1200×1	8000×0.1	6000×0.1	4000×0.1	3200×0.1	1745×0.1	1673×0.1	1600×0.1	1382×0.1	8000×0.01	4000×0.01	
	500A	6000×1	5000×1	3000×1	1500×1	1000×1	7500×0.1	5000×0.1	4000×0.1	2182×0.1	2091×0.1	2000×0.1	1727×0.1	1000×0.1	5000×0.01	
	600A	7200×1	6000×1	3600×1	1800×1	1200×1	9000×0.1	6000×0.1	4800×0.1	2618×0.1	2509×0.1	2400×0.1	2073×0.1	1200×0.1	6000×0.01	
	750A	9000×1	7500×1	4500×1	2250×1	1500×1	1125×1	7500×0.1	6000×0.1	3273×0.1	3136×0.1	3000×0.1	2591×0.1	1500×0.1	7500×0.01	
×10	800A	9600×1	8000×1	4800×1	2400×1	1600×1	1200×1	8000×0.1	6400×0.1	3491×0.1	3345×0.1	3200×0.1	2764×0.1	1600×0.1	8000×0.01	
	900A	1080×10	9000×1	5400×1	2700×1	1800×1	1350×1	9000×0.1	7200×0.1	3927×0.1	3764×0.1	3600×0.1	3109×0.1	1800×0.1	9000×0.01	×0.1
	1000A	1200×10	1000×10	6000×1	3000×1	2000×1	1500×1	1000×1	8000×0.1	4364×0.1	4182×0.1	4000×0.1	3455×0.1	2000×0.1	1000×0.1	
	1200A	1440×10	1200×10	7200×1	3600×1	2400×1	1800×1	1200×1	9600×0.1	5236×0.1	5018×0.1	4800×0.1	4145×0.1	2400×0.1	1200×0.1	
	1500A	1800×10	1500×10	9000×1	4500×1	3000×1	2250×1	1500×1	1200×1	6545×0.1	6273×0.1	6000×0.1	5182×0.1	3000×0.1	1500×0.1	
	1600A	1920×10	1600×10	9600×1	4800×1	3200×1	2400×1	1600×1	1280×1	6982×0.1	6691×0.1	6400×0.1	5527×0.1	3200×0.1	1600×0.1	
	1800A	2160×10	1800×10	1080×10	5400×1	3600×1	2700×1	1800×1	1440×1	7855×0.1	7527×0.1	7200×0.1	6218×0.1	3600×0.1	1800×0.1	
	2000A	2400×10	2000×10	1200×10	6000×1	4000×1	3000×1	2000×1	1600×1	8727×0.1	8364×0.1	8000×0.1	6909×0.1	4000×0.1	2000×0.1	
	2500A	3000×10	2500×10	1500×10	7500×1	5000×1	3750×1	2500×1	2000×1	1091×1	1045×1	1000×1	8636×0.1	5000×0.1	2500×0.1	
	3000A	3600×10	3000×10	1800×10	9000×1	6000×1	4500×1	3000×1	2400×1	1309×1	1255×1	1200×1	1036×1	6000×0.1	3000×0.1	
	4000A	4800×10	4000×10	2400×10	1200×10	8000×1	6000×1	4000×1	3200×1	1745×1	1673×1	1600×1	1382×1	8000×0.1	4000×0.1	
	5000A	6000×10	5000×10	3000×10	1500×10	1000×10	7500×1	5000×1	4000×1	2182×1	2091×1	2000×1	1727×1	1000×1	5000×0.1	
	6000A	7200×10	6000×10	3600×10	1800×10	1200×10	9000×1	6000×1	4800×1	2618×1	2509×1	2400×1	2073×1	1200×1	6000×0.1	
	7500A	9000×10	7500×10	4500×10	2250×10	1500×10	1125×10	7500×1	6000×1	3273×1	3136×1	3000×1	2591×1	1500×1	7500×0.1	
×100	8000A	9600×10	8000×10	4800×10	2400×10	1600×10	1200×10	8000×1	6400×1	3491×1	3345×1	3200×1	2764×1	1600×1	8000×0.1	
	9000A	1080×100	9000×10	5400×10	2700×10	1800×10	1350×10	9000×1	7200×1	3927×1	3764×1	3600×1	3109×1	1800×1	9000×0.1	×1
	10000A	1200×100	1000×100	6000×10	3000×10	2000×10	1500×10	1000×10	8000×1	4364×1	4182×1	4000×1	3455×1	2000×1	1000×1	
	12000A	1440×100	1200×100	7200×10	3600×10	2400×10	1800×10	1200×10	9600×1	5236×1	5018×1	4800×1	4145×1	2400×1	1200×1	
	15000A	1800×100	1500×100	9000×10	4500×10	3000×10	2250×10	1500×10	1200×10	6545×1	6273×1	6000×1	5182×1	3000×1	1500×1	
	20000A	2400×100	2000×100	1200×100	6000×10	4000×10	3000×10	2000×10	1600×10	8727×1	8364×1	8000×1	6909×1	4000×1	2000×1	
×1000	30000A	3600×100	3000×100	1800×100	9000×10	6000×10	4500×10	3000×10	2400×10	1309×10	1255×10	1200×10	1036×10	6000×1	3000×1	×10

<Cautions> The above communication data is data at the case of a rated input. (Example : 110V, 5A, 500W)

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