AFM-8A series RS-485 Modbus Register List

2025/02
V1.1

Basic setting(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
0000h	Power system setting	1	0~6		6	R/W	0: 1P2W 1: 1P3W 2: 3P3W1CT 3: 3P3W2CT 4: 3P3W3CT 5: 3P4W1CT 6: 3P4W3CT
0001h	PT primary voltage	2	100 ~ 1200000	V	600	R/W	
0003h	PT secondary voltage	1	50~600	V	600	R/W	
0004h	CT primary current	1	5~9999(1~9999)	A	5	R/W	
0005h	Password setting	1	0000~9999		1000	R/W	
0006h	Main display page setting	1	0~5		0	R/W	0: SUMMARY 1 1: SUMMARY 2 2: SUMMARY 3 3: Phasor Diagram 4: Waveform 5: Slide show
0007h	Main display slide show timer	1	00~99	sec	3	R/W	
0008h	Maximum and minimum values reset	1	0 or 55h		0	R/W	0: None 55h: Reset
0009h	Auto-wiring correction reset	1	0 or 55h		0	R/W	0: None 55h: Reset
000Ah	*CT secondary current	1	0~2		0	R/W	0: 5A 1:1A 2: 333mV
000Bh	High Low word position setting	1	0~3	bit	0	R/W	Bit 0 (floating point) 0: HIGH 1: LOW Bit 1 (Long integer) 0: HIGH 1: LOW

※If 2 words data, HIGH is at the front, the data format is as right table
For example, PT primary voltage is 1200000V (00124F80h)

0001h		0002h	
Hi	Lo	Hi	Lo
00h	12h	4Fh	80h

* CT secondary current mode (000Ah). If 333mV is specified, this address cannot be written and can only be read, and the response value is fixed at 2.

Relay function setting(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
0010h	Relay 1 mode	1	0~2		1	R/W	0: OFF 1: Alarm 2: DO
0011h	Relay 1 energize delay time setting	1	0~5999	0.1 sec	0	R/W	
0012h	1st Alarm parameters setting Relay 1	1	0~57		2	R/W	Refer to Table 1
0013h	Energize mode of 1st alarm for Relay 1	1	0~3		1	R/W	0: LO 1: Hi 2: LO.HOLD 3: Hi.HOLD
0014h	Set point of 1st alarm for Relay 1	2	Depend on parameters		1000	R/W	When the unit of active power (P) is set to kW, the unit of set value of P is also kW. The units of the reactive power (Q) and the apparent power (S) are also changed to kVAR and kVA.
0016h	2nd alarm setting of Relay 1	4					Setting format same as 1st alarm
001Ah	3rd alarm setting of Relay 1						
001Eh	4th alarm setting of Relay 1						
0022h	5th alarm setting of Relay 1						
0026h	6th alarm setting of Relay 1						
002Ah	7th alarm setting of Relay 1						
002Eh	8th alarm setting of Relay 1						
0032h	9th alarm setting of Relay 1						
0036h	10th alarm setting of Relay 1	4					Setting format same as 1st alarm
003Ah	11th alarm setting of Relay 1						
003Eh	12th alarm setting of Relay 1						
0042h	Relay 2 alarm setting	50					Setting format same as Relay 1
0074h	Relay 3 alarm setting						
00A6h	Relay 4 alarm setting						

Table 1

No.	parameter	No.	parameter	No.	parameter	No.	parameter	No.	parameter	No.	parameter	No.	parameter
0	NONE	1	FREQ	2	U1	3	U2	4	U3	5	ULN. AVG	6	U12
7	U23	8	U31	9	ULL.AVG	10	I1	11	I2	12	I3	13	I.AVG
14	IN	15	P-1	16	P-2	17	P-3	18	P.SUM	19	Q-1	20	Q-2
21	Q-3	22	Q.SUM	23	S-1	24	S-2	25	S-3	26	S.SUM	27	PF1
28	PF2	29	PF3	30	PF.AVG	31	Uunbl	32	Iunbl	33	U1 (U12). THD	34	U2 (U23). THD
35	U3 (U31). THD	36	U.AVG. THD	37	I1.THD	38	I2.THD	39	I3.THD	40	I.AVG. THD	41	P.DM
42	Q.DM	43	S.DM	44	I1.DM	45	I2.DM	46	I3.DM	47	I.AVG. DM	48	P.MAX. DM
49	Q.MAX. DM	50	S.MAX. DM	51	I1.MAX. DM	52	I2.MAX. DM	53	I3.MAX. DM	54	I.AVG. MAX.DM	55	U.SAG
56	U.Swell	57	Over Current										

AO function setting(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
00E0h	Parameter assign of AO1	1	0~30		2	R/W	Refer to Table 2
00E1h	Output type of AO1	1	0~5		4	R/W	0: 0~10V 1: 0~5V 2: 1~5V 3: 0~20mA 4: 4~20mA 5: 0~10mA
00E2h	Low scale of AO1 output	2	Depend on parameter		0	R/W	When the unit of active power (P) is set to kW, the unit of set value of P is also kW. The units of the reactive power (Q) and the apparent power (S) are also changed to kVAR and kVA.
00E4h	Hi scale of AO1 output	2	Depend on parameter		1500	R/W	
00E6h	Maximum limit of AO1 output	1	0~11000	0.01%	11000	R/W	
00E7h	Output value of AO1	1	0~9999	0.01 V or mA		R	
00E8h	AO1 Zero / Span value reset	1	0 or 55h			R/W	0: None 55h: Reset
00E9h	AO2 setting	9					Setting format same as AO1

Table 2

No.	parameter	No.	parameter	No.	parameter	No.	parameter	No.	parameter	No.	parameter	No.	parameter
0	NONE	1	FREQ	2	U1	3	U2	4	U3	5	ULN. AVG	6	U12
7	U23	8	U31	9	ULL.AVG	10	I1	11	I2	12	I3	13	I.AVG
14	IN	15	P-1	16	P-2	17	P-3	18	P.SUM	19	Q-1	20	Q-2
21	Q-3	22	Q.SUM	23	S-1	24	S-2	25	S-3	26	S.SUM	27	PF1
28	PF2	29	PF3	30	PF.AVG								

RS485 function setting(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
0100h	Device address	1	1~247		1	R/W	
0101h	Baud rate	1	0~7		3	R/W	0: 1200 1: 2400 2: 4800 3: 9600 4: 19200 5: 38400 6: 57600 7: 115200
0102h	Parity Check	1	0~3		1	R/W	0: N.8.1 1: N.8.2 2: O.8.1 3: E.8.1
0103h	Type of 2nd communication port	1	0~2			R	0: None 1: RS485 2: Ethernet
0104h	Mode of 2nd RS485	1	0~1		1	R/W	0: Master 1: Slave
0105h	Device address of 2nd RS485	1	1~247		1	R/W	Available on 2nd RS485 is slave mode
0106h	Baud rate of 2nd RS485	1	0~7		3	R/W	0: 1200 1: 2400 2: 4800 3: 9600 4: 19200 5: 38400 6: 57600 7: 115200
0107h	Parity Check of 2nd RS485	1	0~3		1	R/W	0: N.8.1 1: N.8.2 2: O.8.1 3: E.8.1

Ethernet function setting(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
0120h	DHCP setting	1	0~1		0	R/W	0: Manual 1: Automatic
0121h	IP address	2	0~255			R/W	192.168.1.250
0123h	Submask address	2	0~255			R/W	255.255.255.0
0125h	Gateway address	2	0~255			R/W	192.168.1.1
0127h	Reserved	2					
0129h	Reserved	2					
012Bh	Modbus TCP/IP port number	1	0~65535		502	R/W	
012Ch	Reserved	1					
012Dh	Ethernet reset	1	0 or 55h		0	R/W	0: None 55h: Reset
012Eh	Reserved	1					
0135h	MAC address	3				R	

※ The value of reserved registers are 0
※ IP address format as below, for example 192.168.1.250:

0121h		0122h	
Hi	Lo	Hi	Lo
192	168	1	250

Pulse output setting(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
0180h	Parameter assign of PO1	1	0~5		1	R/W	0: OFF 1: Active Energy-IMP 2: Active Energy-EXP 3: Reactive Energy-IMP 4: Reactive Energy-EXP 5: Test Pulse Output
0181h	Pulse divider of PO1	1	1~9999		1	R/W	ex:1=0.1kWh/P 100=10kWh/P
0182h	Pulse width of PO1	1	0~5000	mS	0	R/W	0 is 50% duty cycle
0183h	PO2 setting	3					Setting format same as PO1

DI setting(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
0190h	DI.1 MODE	1	0~9		7	R/W	0: Active energy reset 1: Reactive energy reset 2: Active/Reactive energy reset 3: MAX/MIN reset 4: Relay reset 5: Demand reset 6: MAX demand reset 7: DI 8: LCD backlight turn on 9: Waveform capture 10: Manual TOU start / stop(Level trigger)
0191h	DI.2 MODE						
0192h	DI.3 MODE						
0193h	DI.4 MODE						
0194h	DI.5 MODE						
0195h	DI.6 MODE						
0196h	DI.7 MODE						
0197h	DI.8 MODE						
0198h	Debounce time for DI	1	0~99	x5mS	5	R/W	

Energy function setting(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
019Eh	Unit setting for active power	1	0~1		0	R/W	0: W 1: kW
019Fh	Unit of energy	1	0~6		3	R/W	0: 0.0001kWh 1: 0.001kWh 2: 0.01kWh 3: 0.1kWh 4: 1kWh 5: 0.01MWh 6: 0.1MWh
01A0h	All energy values reset	1	0 or 55h		0	R/W	0: None 55h: Reset
01A1h	CO_2 values reset	1	0 or 55h		0	R/W	0: None 55h: Reset
01A2h	CO_2 ratio per kWh	1	0~60000	0.001Kg	638	R/W	

Date/Time/Brightness function setting(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
01A3h	Percentage of screen brightness	1	0~4		4	R/W	0: 60% 1: 70% 2: 80% 3: 90% 4: 100%
01A4h	Percentage of screen standby brightness	1	0~5		1	R/W	0: 0% 1: 10% 2: 20% 3: 30% 4: 40% 5: 50%
01A5h	Standby light on timer	1	0~99	min	1	R/W	0: Never
01A6h	Year	1	2000~2099		2018	R/W	
01A7h	Month	1	1~12		1	R/W	
01A8h	Day	1	1~31		1	R/W	
01A9h	Hour	1	0~23		0	R/W	
01AAh	Minute	1	0~59		0	R/W	
01ABh	Second	1	0~59		0	R/W	
01ACh	Operating hours reset	1	0 or 55h		0	R/W	0: None 55h: Reset
01ADh	Run hours reset	1	0 or 55h		0	R/W	0: None 55h: Reset

Demand function setting(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
01B0h	Demand calculation mode	1	0~1		0	R/W	0: Sliding 1: Fixed
01B1h	Demand calculation time interval	1	1~60	min	15	R/W	
01B2h	Demand reset	1	0 or 55h		0	R/W	0: None 55h: Reset
01B3h	Maximum demand reset	1	0 or 55h		0	R/W	0: None 55h: Reset

Initialization(Code : 06h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
01B8h	System initialize	1	0000~9999		7170	W	Write 7170 to this register will reboot meter and recover all setting data

Power quality event logging and waveform capture function setting(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
01C0h	DI input to trigger waveform capture setting	1	0~65535	bit	21845	R/W	bit15bit14: DI8 bit13bit12: DI7 bit11bit10: DI6 bit9bit8: DI5 bit7bit6: DI4 bit5bit4: DI3 bit3bit2: DI2 bit1bit0: DI1 00: Prohibit 01: OFF to ON capture 10: ON to OFF capture 11: Any change to capture
01C1h	Manual capture	1	0 or 55h		0	R/W	0: None 55h: Capture
01C2h	PT Primary voltage nominal value	2	100 ~ 1200000	V	600	R/W	
01C4h	CT Primary current nominal value	1	5~9999	A	5	R/W	
01C5h	Voltage sag trigger enable	1	0~1		0	R/W	0: OFF 1: ON
01C6h	Voltage sag threshold	1	20~100	%	50	R/W	
01C7h	Voltage Sag half cycle count	1	4~200		10	R/W	
01C8h	Voltage swell trigger enable	1	0~1		0	R/W	0: OFF 1: ON
01C9h	Voltage swell threshold	1	50~140	%	100	R/W	
01CAh	Voltage swell consecutive half-cycles	1	4~200		10	R/W	
01CBh	Over current trigger enable	1	0~1		0	R/W	0: OFF 1: ON
01CCh	Over current threshold	1	50~150	%	100	R/W	
01CDh	Current swell consecutive half-cycles	1	4~200		10	R/W	
01CEh	Waveform storage mode	1	0~1		0	R/W	0: FIFO 1: Fill&Hold
01CFh	Power quality event logging function enabled	1	0~1		0	R/W	0: OFF 1: ON
01D0h	All waveforms data reset	1	0 or 55h		0	R/W	0: None 55h: Reset
01D1h	All power quality event logging reset	1	0 or 55h		0	R/W	0: None 55h: Reset

Event logging setting(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
0200h	Event logging function enable	1	0~1		0	R/W	0: OFF 1: ON
0201h	Logging enable of each log	1	0~65535	bit	0	R/W	BIT0: 1st event log BIT15: 16th event log 0: OFF 1: ON
0202h	Parameter assign of 1st event log	1	0~48		0	R/W	Refer to Table 1(P.2)
0203h	Trigger condition	1	0~2		0	R/W	0: more than(>) 1: equal(=) 2: less than(<)
0204h	Set point of 1st event log	2	Depend on parameter		1000	R/W	
0206h	Trigger delay time	1	0~3000	x10mS	0	R/W	
0207h	2nd event log setting	5				R/W	Setting format same as 1st event log setting
020Ch	3rd event log setting						
0211h	4th event log setting						
0216h	5th event log setting						
021Bh	6th event log setting						
0220h	7th event log setting						

Event logging setting(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
0225h	8th event logging setting	5				R/W	Setting format same as 1st event log setting
022Ah	9th event logging setting						
022Fh	10th event logging setting						
0234h	11th event logging setting						
0239h	12th event logging setting						
023Eh	13th event logging setting						
0243h	14th event logging setting						
0248h	15th event logging setting						
024Dh	16th event logging setting						
0252h	All event logging reset	1	0 or 55h		0	R/W	0: None 55h: Reset

External I/O module settings(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
02F0h	DI start address of I/O module 1	1	0000~FFFFh		0	R/W	
02F1h	DO start address of I/O module 1	1	0000~FFFFh		0100h	R/W	
02F2h	Reserved	1				R/W	
02F3h	Reserved	1				R/W	
02F4h	DI start address of I/O module 2	1	0000~FFFFh		0	R/W	
02F5h	DO start address of I/O module 2	1	0000~FFFFh		0100h	R/W	
02F6h	Reserved	1				R/W	
02F7h	Reserved	1				R/W	
0300h	I / O module 1 enable	1	0~1		0	R/W	0: Disable 1: Enable
0301h	I/O module 1 device address	1	1~247		1	R/W	
0302h	Type of I/O module 1	1	0~2		0	R/W	0: 8xDI+8xDO 1: 16xDI 2: 16xDO
0303h	I / O module 2 enable	1	0~1		0	R/W	0: Disable 1: Enable
0304h	I/O module 2 device address	1	1~247		1	R/W	
0305h	Type of I/O module 2	1	0~2		0	R/W	0: 8xDI+8xDO 1: 16xDI 2: 16xDO
030Ch	Modules polling time	1	10~3000	x10mS	100	R/W	All modules polling time
030Dh	I/O module Timeout time	1	10~3000	x10mS	100	R/W	

External DI function setting(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
0310h	DI.9 mode	1	0~8		7	R/W	0: Active energy reset 1: Reactive energy reset 2: Active/Reactive energy reset 3: MAX/MIN reset 4: Relay reset 5: Demand reset 6: MAX demand reset 7: DI 8: LCD backlight turn on
0311h	DI.10 mode						
0312h	DI.11 mode						
0313h	DI.12 mode						
0314h	DI.13 mode						
0315h	DI.14 mode						
0316h	DI.15 mode						
0317h	DI.16 mode						
0318h	DI.17 mode						
0319h	DI.18 mode						
031Ah	DI.19 mode						
031Bh	DI.20 mode						
031Ch	DI.21 mode						
031Dh	DI.22 mode						
031Eh	DI.23 mode						
031Fh	DI.24 mode						
0320h	DI.25 mode						
0321h	DI.26 mode						
0322h	DI.27 mode						
0323h	DI.28 mode						
0324h	DI.29 mode						
0325h	DI.30 mode						
0326h	DI.31 mode						
0327h	DI.32 mode						
0328h	DI.33 mode						
0329h	DI.34 mode						
032Ah	DI.35 mode						
032Bh	DI.36 mode						
032Ch	DI.37 mode						
032Dh	DI.38 mode						
032Eh	DI.39 mode						
032Fh	DI.40 mode						

External DO function setting(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
0380h	DO1 mode	1	0~2		2	R/W	0: OFF 1: Alarm 2: DO
0381h	DO1 trigger delay timer	1	0~3000	x10mS	0	R/W	
0382h	Parameter assign of DO1	1	0~48		2	R/W	Refer to Table 1(P.2)
0383h	Action mode of DO1	1	0~1		0	R/W	0: Level 1: Pulse
0384h	Pulse width of DO1	1	50~3000	x10mS	1000	R/W	
0385h	Set point of DO1	2	Depend on parameters		1000	R/W	
0387h	Trigger condition of DO1	1	0~2		0	R/W	0: more than(>) 1: equal(=) 2: less than(<)
0388h	DO2 setting	8				R/W	Setting format same as DO1
0390h	DO3 setting						
0398h	DO4 setting						
03A0h	DO5 setting						
03A8h	DO6 setting						
03B0h	DO7 setting						
03B8h	DO8 setting						
03C0h	DO9 setting						
03C8h	DO10 setting						
03D0h	DO11 setting						
03D8h	DO12 setting						
03E0h	DO13 setting						
03E8h	DO14 setting						
03F0h	DO15 setting						
03F8h	DO16 setting						
0400h	DO17 setting						
0408h	DO18 setting						
0410h	DO19 setting						
0418h	DO20 setting						
0420h	DO21 setting						
0428h	DO22 setting						
0430h	DO23 setting						
0438h	DO24 setting						
0440h	DO25 setting						
0448h	DO26 setting						
0450h	DO27 setting						
0458h	DO28 setting						
0460h	DO29 setting						

Reg	Description	Size	Range	Units	Default	R/W	Notes
0468h	DO30 setting	8				R/W	Setting format same as DO1
0470h	DO31 setting						
0478h	DO32 setting						

DI status(Include external DI)(Code: 02h):
bit0~bit7 : DI1~DI8 bit8~bit15 : DI9~DI16 bit16~bit31 : DI17~DI32 bit32~bit39 : DI33~DI40

Reg	Description	Size	Range	Units	Default	R/W	Notes
0000h	DI.1 ~40 status	40	0~1			R	0=untriged 1=triged

Relay function(Code: 01h,05h): bit0~bit3 : Relay1~Relay4

Reg	Description	Size	Range	Units	Default	R/W	Notes
0000h	RO1 ~4 status and control	4	05h : 0000h or FF00h 01h : 0~1			R/W	0=Relay off 1(FF00h)=Relay on

External DO function(Code: 01h,05h):
bit0~bit15 : DO1~DO16 bit16~bit31 : DO17~DO32

Reg	Description	Size	Range	Units	Default	R/W	Notes
0004h	DO1 ~32 status and control	32	05h : 0000h or FF00h 01h : 0~1			R/W	0=off 1(FF00h)=on

Metering data(Code: 03h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
1000h	Frequency	1	4,500~6,500	0.01Hz		R	FREQ
1001h	Phase voltage 1	2	0 ~ 12,000,000	0.1V		R	U1
1003h	Phase voltage 2	2	0 ~ 12,000,000	0.1V		R	U2
1005h	Phase voltage 3	2	0 ~ 12,000,000	0.1V		R	U3
1007h	Phase voltage average	2	0 ~ 12,000,000	0.1V		R	ULN.AVG
1009h	Line voltage 1	2	0 ~ 12,000,000	0.1V		R	U12
100Bh	Line voltage 2	2	0 ~ 12,000,000	0.1V		R	U23
100Dh	Line voltage 3	2	0 ~ 12,000,000	0.1V		R	U31
100Fh	Line voltage average	2	0 ~ 12,000,000	0.1V		R	ULL.AVG
1011h	Current 1	2	0~9,999,999	0.001A		R	I1
1013h	Current 2	2	0~9,999,999	0.001A		R	I2
1015h	Current 3	2	0~9,999,999	0.001A		R	I3
1017h	Current average	2	0~9,999,999	0.001A		R	I.AVG
1019h	Neutral current	2	0~9,999,999	0.001A		R	IN
101Bh	Active power 1	2	-999999,999~ 999,999,999	W		R	P-1
101Dh	Active power 2	2	-999,999,999~ 999,999,999	W		R	P-2
101Fh	Active power 3	2	-999,999,999~ 999,999,999	W		R	P-3

Reg	Description	Size	Range	Units	Default	R/W	Notes
1021h	Active power total	2	-999,999,999~ 999,999,999	W		R	P.SUM
1023h	Reactive power 1	2	-999,999,999~ 999,999,999	VAR		R	Q-1
1025h	Reactive power 2	2	-999,999,999~ 999,999,999	VAR		R	Q-2
1027h	Reactive power 3	2	-999,999,999~ 999,999,999	VAR		R	Q-3
1029h	Reactive power total	2	-999,999,999~ 999,999,999	VAR		R	Q.SUM
102Bh	Apparent power 1	2	0~999,999,999	VA		R	S-1
102Dh	Apparent power 2	2	0~999,999,999	VA		R	S-2
102Fh	Apparent power 3	2	0~999,999,999	VA		R	S-3
1031h	Apparent power total	2	0~999,999,999	VA		R	S.SUM
1033h	Power factor 1	1	-0.020~-1 /+1.000~0.020			R	PF1
1034h	Power factor 2	1	-0.020~-1 /+1.000~0.020			R	PF2
1035h	Power factor 3	1	-0.020~-1 /+1.000~0.020			R	PF3
1036h	Power factor average	1	-0.020~-1 /+1.000~0.020			R	PF.AVG
1037h	Voltage unbalance	1	0~3000	0.1%		R	Uunbl
1038h	Current unbalance	1	0~3000	0.1%		R	Iunbl
1039h	Load Type	1	R: 82 L: 76 C: 67			R	R: Resistive L: Inductive C: Capacitive
103Ah	Active power total demand	2	-999,999,999~ 999,999,999	W		R	P.DM
103Ch	Reactive power total demand	2	-999,999,999~ 999,999,999	VAR		R	Q.DM
103Eh	Apparent power total demand	2	0~999,999,999	VA		R	S.DM
1040h	Current 1 demand	2	0~9,999,999	0.001A		R	I1.DM
1042h	Current 2 demand	2	0~9,999,999	0.001A		R	I2.DM
1044h	Current 3 demand	2	0~9,999,999	0.001A		R	I3.DM
1046h	Current average demand	2	0~9,999,999	0.001A		R	I.AVG.DM

Reg	Description	Size	Range	Units	Default	R/W	Notes
1050h	Active energy import	2	0~999,999,999	0.1kWh		R	AE.IMP
1052h	Active energy export	2	0~999,999,999	0.1kWh		R	AE.EXP
1054h	Active energy total	2	0~999,999,999	0.1kWh		R	AE.Total
1056h	Active energy net	2	-999,999,999~ 999,999,999	0.1kWh		R	AE.Net
1058h	Reactive energy import	2	0~999,999,999	0.1 kVARh		R	RE.IMP
105Ah	Reactive energy export	2	0~999,999,999	0.1 kVARh		R	RE.EXP
105Ch	Reactive energy total	2	0~999,999,999	0.1 kVARh		R	RE.Total
105Eh	Reactive energy net	2	-999,999,999~ 999,999,999	0.1 kVARh		R	RE.Net
1060h	Apparent energy total	2	0~999,999,999	0.1 kVAh		R	SE.Total
1062h	CO_2 emission	2	0~999,999,999	0.001 kg		R	
1064h	Remaining time of data logging	1	0~65,535	Min		R	
1065h	Operating hours	2	0~59,999,999	Min		R	
1067h	Run hours	2	0~59,999,999	Min		R	

Harmonic Distortion data(Code: 03h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
1070h	2nd~63rd THD Voltage 1	62	0~1000	0.1%		R	
10AEh	2nd~63rd THD Voltage 2	62	0~1000	0.1%		R	
10ECh	2nd~63rd THD Voltage 3	62	0~1000	0.1%		R	
112Ah	2nd~63rd THD Current 1	62	0~1000	0.1%		R	
1168h	2nd~63rd THD Current 2	62	0~1000	0.1%		R	
11A6h	2nd~63rd THD Current 3	62	0~1000	0.1%		R	
11E4h	THD Voltage 1	1	0~1000	0.1%		R	U1(U12).THD
11E5h	THD Voltage 2	1	0~1000	0.1%		R	U2(U23).THD
11E6h	THD Voltage 3	1	0~1000	0.1%		R	U3(U31).THD
11E7h	THD Voltage average	1	0~1000	0.1%		R	U.AVG.THD
11E8h	THD Current 1	1	0~1000	0.1%		R	I1.THD
11E9h	THD Current 2	1	0~1000	0.1%		R	I2.THD
11EAh	THD Current 3	1	0~1000	0.1%		R	I3.THD
11EBh	THD Current average	1	0~1000	0.1%		R	I.AVG.THD

Maximum/Minimum values recording(Code: 03h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
1200h	Maximum Phase voltage 1	2	0 ~ 12,000,000	0.1V		R	
1202h	Year	1	2000~2099			R	
1203h	Month	1	1~12			R	
1204h	Day	1	1~31			R	
1205h	Hour	1	0~23			R	
1206h	Minute	1	0~59			R	
1207h	Second	1	0~59			R	
1208h	Minimum Phase voltage 1	2	0 ~ 12,000,000	0.1V		R	
120Ah	Year	1	2000~2099			R	
120Bh	Month	1	1~12			R	
120Ch	Day	1	1~31			R	
120Dh	Hour	1	0~23			R	
120Eh	Minute	1	0~59			R	
120Fh	Second	1	0~59			R	
1210h	Maximum and minimum phase voltage 2 and time stamp	16					Data format same as Maximum/Minimum Phase voltage 1
1220h	Maximum and minimum phase voltage 3 and time stamp						
1230h	Maximum and minimum phase voltage average and time stamp						
1240h	Maximum and minimum line voltage 1 and time stamp						
1250h	Maximum and minimum line voltage 2 and time stamp						
1260h	Maximum and minimum line voltage 3 and time stamp						
1270h	Maximum and minimum line voltage average and time stamp						
1280h	Maximum and minimum current 1 and time stamp						
1290h	Maximum and minimum current 2 and time stamp						
12A0h	Maximum and minimum current 3 and time stamp						
12B0h	Maximum and minimum current average and time stamp						
12C0h	Maximum and minimum active power 1 and time stamp						
12D0h	Maximum and minimum active power 2 and time stamp						
12E0h	Maximum and minimum active power 3 and time stamp						
12F0h	Maximum and minimum active power total and time stamp						
1300h	Maximum and minimum reactive power 1 and time stamp						

Reg	Description	Size	Range	Units	Default	R/W	Notes
1310h	Maximum and minimum reactive power 2 and time stamp	16					Data format same as Maximum/Minimum Phase voltage 1
1320h	Maximum and minimum reactive power 3 and time stamp						
1330h	Maximum and minimum reactive power total and time stamp						
1340h	Maximum and minimum apparent power 1 and time stamp						
1350h	Maximum and minimum apparent power 2 and time stamp						
1360h	Maximum and minimum apparent power 3 and time stamp						
1370h	Maximum and minimum apparent power total and time stamp						
1380h	Maximum power factor 1	1	-1000~1000	0.001		R	
1381h	Year	1	2000~2099			R	
1382h	Month	1	1~12			R	
1383h	Day	1	1~31			R	
1384h	Hour	1	0~23			R	
1385h	Minute	1	0~59			R	
1386h	Second	1	0~59			R	
1387h	Minimum power factor 1	1	-1000~1000	0.001		R	
1388h	Year	1	2000~2099			R	
1389h	Month	1	1~12			R	
138Ah	Day	1	1~31			R	
138Bh	Hour	1	0~23			R	
138Ch	Minute	1	0~59			R	
138Dh	Second	1	0~59			R	
138Eh	Maximum and minimum power factor 2 and time stamp	14					Data format same as Maximum/Minimum power factor 1
139Ch	Maximum and minimum power factor 3 and time stamp						
13AAh	Maximum and minimum power factor average and time stamp						
13B8h	Maximum and minimum frequency and time stamp						
13C6h	Maximum and minimum voltage unbalance and time stamp						
13D4h	Maximum and minimum current unbalance and time stamp						
13E2h	Maximum and minimum THD Voltage 1 and time stamp						
13F0h	Maximum and minimum THD Voltage 2 and time stamp						
13FEh	Maximum and minimum THD Voltage 3 and time stamp						

Reg	Description	Size	Range	Units	Default	R/W	Notes
140Ch	Maximum and minimum THD Voltage average and time stamp	14					Data format same as Maximum/Minimum power factor 1
141Ah	Maximum and minimum THD Current 1 and time stamp						
1428h	Maximum and minimum THD Current 2 and time stamp						
1436h	Maximum and minimum THD Current 3 and time stamp						
1444h	Maximum and minimum THD Current average and time stamp						
1452h	Maximum active power total demand	2	-999,999,999~ 999,999,999	W		R	
1454h	Year	1	2000~2099			R	
1455h	Month	1	1~12			R	
1456h	Day	1	1~31			R	
1457h	Hour	1	0~23			R	
1458h	Minute	1	0~59			R	
1459h	Second	1	0~59			R	
145Ah	Maximum reactive power total demand and time stamp	8				R	Data format same as Maximum active power total demand
1462h	Maximum apparent power total demand and time stamp						
146Ah	Maximum current 1 demand and time stamp						
1472h	Maximum current 2 demand and time stamp						
147Ah	Maximum current 3 demand and time stamp						
1482h	Maximum current average demand and time stamp						
148Ah	Minimum active power total demand	2	-999,999,999~ 999,999,999	W		R	
148Ch	Year	1	2000~2099			R	
148Dh	Month	1	1~12			R	
148Eh	Day	1	1~31			R	
148Fh	Hour	1	0~23			R	
1490h	Minute	1	0~59			R	
1491h	Second	1	0~59			R	
1492h	Minimum reactive power total demand and time stamp	8					Data format same as Minimum active power total demand
149Ah	Minimum apparent power total demand and time stamp						

Reg	Description	Size	Range	Units	Default	R/W	Notes
14B0h	U1 odd harmonics	1	0~1000	0.1%		R	U1 Odd THD
14B1h	U1 even harmonics	1	0~1000	0.1%		R	U1 Even THD
14B2h	U1 CF	1	0~65535	0.001		R	U1 Crest factor
14B3h	U1 THFF	1	0~10000	0.01%		R	U1 Telephone interference factor
14B4h	U2 odd harmonics	1	0~1000	0.1%		R	U2 Odd THD
14B5h	U2 even harmonics	1	0~1000	0.1%		R	U2 Even THD
14B6h	U2 CF	1	0~65535	0.001		R	U2 Crest factor
14B7h	U2 THFF	1	0~10000	0.01%		R	U2 Telephone interference factor
14B8h	U3 odd harmonics	1	0~1000	0.1%		R	U3 Odd THD
14B9h	U3 even harmonics	1	0~1000	0.1%		R	U3 Even THD
14BAh	U3 CF	1	0~65535	0.001		R	U3 Crest factor
14BBh	U3 THFF	1	0~10000	0.01%		R	U3 Telephone interference factor
14BCh	I1 odd harmonics	1	0~1000	0.1%		R	I1 Odd THD
14BDh	I1 even harmonics	1	0~1000	0.1%		R	I1 Even THD
14BEh	I1 KF	1	0~65535	0.1		R	I1 K factor
14BFh	Reserved	1					
14C0h	I2 odd harmonics	1	0~1000	0.1%		R	I2 Odd THD
14C1h	I2 even harmonics	1	0~1000	0.1%		R	I2 Even THD
14C2h	I2 KF	1	0~65535	0.1		R	I2 K factor
14C3h	Reserved	1					
14C4h	I3 odd harmonics	1	0~1000	0.1%		R	I3 Odd THD
14C5h	I3 even harmonics	1	0~1000	0.1%		R	I3 Even THD
14C6h	I3 KF	1	0~65535	0.1		R	I3 K factor
14C7h	Reserved	1					

Phasor Diagram data(Code: 03h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
1500h	Phasor Diagram U2 lag U1	1	0~3600	0.1		R	
1501h	Phasor Diagram U3 lag U1	1	0~3600	0.1		R	
1502h	Phasor Diagram I1 lag U1	1	0~3600	0.1		R	
1503h	Phasor Diagram I2 lag U1	1	0~3600	0.1		R	
1504h	Phasor Diagram I3 lag U1	1	0~3600	0.1		R	
1505h	Phasor Diagram U23 lag U12	1	0~3600	0.1		R	
1506h	Phasor Diagram U31 lag U12	1	0~3600	0.1		R	
1507h	Phasor Diagram I1 lag U12	1	0~3600	0.1		R	
1508h	Phasor Diagram I2 lag U12	1	0~3600	0.1		R	
1509h	Phasor Diagram I3 lag U12	1	0~3600	0.1		R	

Waveform record data(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
1510h	Active waveform	1	0~8			R	
1511h	New waveform flag	1	0~255	bit		R	0: No new waveform 1~255: New waveform BIT0: First group flag BIT7: Eighth group flag 0: OFF 1: ON
1512h	Specify waveform reading	1	1~8		1	R/W	
1513h	Specify waveform trigger time - year	1	2000~2099			R	
1514h	Specify waveform trigger time - month	1	1~12			R	
1515h	Specify waveform trigger time - day	1	1~31			R	
1516h	Specify waveform trigger time - time	1	0~23			R	
1517h	Specified waveform trigger time - minutes	1	0~59			R	
1518h	Specify waveform trigger time - second	1	0~59			R	
1519h	Specified waveform trigger time - 0.1 milliseconds	1	0~9999	0.1mS		R	
151Ah	Specify waveform trigger source	1	1~5		1	R	1: Manual 2: DI 3: SAG 4: SWELL 5: OVER CURRENT
151Bh	Specify Waveform DI Trigger Edge	1	0~1		0	R	0: positive edge 1: negative edge
151Ch	Voltage ratio	2				R	Floating Data
151Eh	Current ratio	2				R	Floating Data
1530h	Front 8 cycles of U1	512	-32768~32767			R	
1730h	Front 8 cycles of U2	512	-32768~32767			R	
1930h	Front 8 cycles of U3	512	-32768~32767			R	
1B30h	Front 8 cycles of current 1	512	-32768~32767			R	
1D30h	Front 8 cycles of current 2	512	-32768~32767			R	
1F30h	Front 8 cycles of current 3	512	-32768~32767			R	
2130h	Rear 8 cycles of U1	512	-32768~32767			R	
2330h	Rear 8 cycles of U2	512	-32768~32767			R	
2530h	Rear 8 cycles of U3	512	-32768~32767			R	
2730h	Rear 8 cycles of current 1	512	-32768~32767			R	
2930h	Rear 8 cycles of current 2	512	-32768~32767			R	
2B30h	Rear 8 cycles of current 3	512	-32768~32767			R	

Power quality event logging data(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
2D80h	Numbers of new logging data	1	0~50000		0	R	0: None 1~50000: News number
2D81h	Logging number to read	1	1~50000		1	R/W	If has new record, the number is valid when less than or equal to the newest number
2D82h	Read the number of records each time	1	1~9		1	R/W	
1st power quality event logging data							
2D83h	Year	1	2000~2099			R	
2D84h	Month	1	1~12			R	
2D85h	Day	1	1~31			R	
2D86h	Hour	1	0~23			R	
2D87h	Minute	1	0~59			R	
2D88h	Second	1	0~59			R	
2D89h	Trigger source	1	0~1056	bit		R	High Byte: 0: Voltage sag 1: Voltage swell 2: Current swell Low Byte: 0: U1/U12 (voltage), I1 (current) 1: U2/U23 (voltage), I2 (current) 2: U3/U31 (voltage), I3 (current)
2D8Ah	Set point	2	U: 5~1200000 I : 0~9999999			R	
2D8Ch	Trigger threshold	1	20~150	%		R	Voltage sag: 20~100 Voltage swell: 50~140 Over current: 50~150
2D8Dh	Half cycle count	1	4~200			R	Voltage sag: 4~200 Voltage swell: 4~200 Over current: 4~200
2D8Eh	Event value	2	U: 5~1200000 I : 0~9999999			R	
2D90h	2nd power quality event logging data	13					Data format same as 1st power quality event logging data
2D9Dh	3rd power quality event logging data						
2DAAh	4th power quality event logging data						
2DB7h	5th power quality event logging data						
2DC4h	6th power quality event logging data						
2DD1h	7th power quality event logging data						
2DDEh	8th power quality event logging data						
2DEBh	9th power quality event logging data						

Event logging data(Code: 03h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
2E80h	News number	1	0~16		0	R	0: None 1~16: News number
1st event logging data							
2E81h	Trigger source	1				R	High Byte: 0: Event log 1: Relay 2: External DO Low Byte: 1~16: Event log NO. 1~16 1~4: Relay NO. 1~4 1~32: External DO NO. 1~32
2E82h	Status	1	0~1			R	0: Recover 1: Alert
2E83h	Parameter	1	0~54			R	Refer to Table 1(P.2)
2E84h	Value	2	Depend on parameter			R	
2E86h	Year	1	2000~2099			R	
2E87h	Month	1	1~12			R	
2E88h	Day	1	1~31			R	
2E89h	Hour	1	0~23			R	
2E8Ah	Minute	1	0~59			R	
2E8Bh	Second	1	0~59			R	
2E8Ch	2nd event logging data	11					Data format same as 1st event logging data
2E97h	3rd event logging data						
2EA2h	4th event logging data						
2EADh	5th event logging data						
2EB8h	6th event logging data						
2EC3h	7th event logging data						
2ECEh	8th event logging data						
2ED9h	9th event logging data						
2EE4h	10th event logging data						
2EEFh	11th event logging data						
2EFAh	12th event logging data						
2F05h	13th event logging data						
2F10h	14th event logging data						
2F1Bh	15th event logging data						
2F26h	16th event logging data						

Data logging function(Code: 03h , 06h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
4000h	Byte count of each recording	1				R	
4001h	Number of unread data	1				R	
4002h	Data read	1				R	Reply 0020h if data empty
4003h	Status reply after read	1	0~2			W	0: Clear logging data (Index reset) 1: Abort this time read (Index will not any shift) 2: Read success (Index will shift to current position)

※Logging data format description

Request:

Address	Code	Starting Reg		Byte count		CRC	
		Hi	Lo	Hi	Lo	Lo	Hi
01h	03h	40h	02h	xxh	xxh	xxh	xxh

Byte count: Read from 4000h

Response:

Address	Code	Byte count	Year		Month		Day		Hour		Minute		Second		Values	CRC	
			Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo		Lo	Hi
01h	03h	xxh	07h	DFh	00h	0Ch	00h	01h	00h	0Dh	00h	19h	00h	2Ah	.....	xxh	xxh

Date : 07DFh=>2015 000Ch=>12 0001h=>01
Time : 000Dh=>13 0019h=>25 002Ah=>42

Data logging setting(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
4010h	Recording interval time mode	1	0~1		0	R/W	0:Relative mode 1:Absolute mode
4011h	Data record interval duration	1	1~32767		15	R/W	
4012h	Unit of interval Duration	1	0~3		1	R/W	0: sec 1: min 2: hour 3: day
4013h	Year	1	2000~2099		2018	R/W	Date/Time for recording start
4014h	Month	1	1~12		1	R/W	
4015h	Day	1	1~31		1	R/W	
4016h	Hour	1	0~23		0	R/W	
4017h	Minute	1	0~59		0	R/W	
4018h	Second	1	0~59		0	R/W	
4019h	Year	1	2000~2099		2019	R/W	Date/Time for recording stop
401Ah	Month	1	1~12		1	R/W	
401Bh	Day	1	1~31		1	R/W	
401Ch	Hour	1	0~23		0	R/W	
401Dh	Minute	1	0~59		0	R/W	
401Eh	Second	1	0~59		0	R/W	
401Fh	Recording Stop/Start	1	0~1		0	R/W	0: Stop 1: Start
4020h	Parameter code assign field 01~50	50			0	R/W	Assign needed parameters to this field. Data recorded will be according to the assigned sequence when enable logging. Parameters code refer to Table 3.

Table 3

No.	parameter	No.	parameter	No.	parameter	No.	parameter	No.	parameter	No.	parameter	No.	parameter
0	NONE	1	FREQ	2	U1	3	U2	4	U3	5	ULN. AVG	6	U12
7	U23	8	U31	9	ULL.AVG	10	I1	11	I2	12	I3	13	I.AVG
14	IN	15	P-1	16	P-2	17	P-3	18	P.SUM	19	Q-1	20	Q-2
21	Q-3	22	Q.SUM	23	S-1	24	S-2	25	S-3	26	S.SUM	27	PF1
28	PF2	29	PF3	30	PF.AVG	31	Uunbl	32	Iunbl	33	Load Type*	34	P.DM
35	Q.DM	36	S.DM	37	I1.DM	38	I2.DM	39	I3.DM	40	I.AVG. DM	41	AE.IMP
42	AE.EXP	43	RE.IMP	44	RE.EXP	45	SE. Total	46	U1 (U12). THD	47	U2 (U23). THD	48	U3 (U31). THD
49	U.AVG. THD	50	I1.THD	51	I2.THD	52	I3.THD	53	I.AVG. THD	54	Phasor Diagram V2 lag V1	55	Phasor Diagram V3 lag V1
56	Phasor Diagram I1 lag V1	57	Phasor Diagram I2 lag V1	58	Phasor Diagram I3 lag V1	59	Phasor Diagram V23 lag V12	60	Phasor Diagram V31 lag V12	61	Phasor Diagram I1 lag V12	62	Phasor Diagram I2 lag V12
63	Phasor Diagram I3 lag V12	64	U1(U12). THD.MAX	65	U1(U12). THD.MIN	66	U2(U23). THD.MAX	67	U2(U23). THD.MIN	68	U3(U31). THD.MAX	69	U3(U31). THD.MIN
70	U.AVG. THD.MAX	71	U.AVG. THD.MIN	72	I1.THD. MAX	73	I1.THD. MIN	74	I2.THD. MAX	75	I2.THD. MIN	76	I3.THD. MAX
77	I3.THD. MIN	78	I.AVG. THD.MAX	79	I.AVG. THD.MIN	80	P.DM. MAX	81	P.DM. MIN	82	Q.DM. MAX	83	Q.DM. MIN
84	S.DM. MAX	85	S.DM. MIN	86	I1.DM. MAX	87	I2.DM. MAX	88	I3.DM. MAX	89	I.AVG. DM.MAX	90	AO1
91	AO2	*Load type: R: 82 L: 76 C: 67(ASCII code)											

User defined field(Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
5000h	User defined field 1	1	1000h~1046h 1050h~1067h 11E4h~11EBh 14B0h~14C7h 1500h~1509h		1000h	R/W	
5001h	User defined field 2				1001h		
5002h	User defined field 3				1002h		
5003h	User defined field 4				1003h		
5004h	User defined field 5				1004h		
5005h	User defined field 6				1005h		
5006h	User defined field 7				1006h		
5007h	User defined field 8				1007h		
5008h	User defined field 9				1008h		
5009h	User defined field 10				1009h		
500Ah	User defined field 11				100Ah		
500Bh	User defined field 12				100Bh		
500Ch	User defined field 13				100Ch		
500Dh	User defined field 14				100Dh		
500Eh	User defined field 15				100Eh		
500Fh	User defined field 16				100Fh		
5010h	User defined field 17				1010h		
5011h	User defined field 18				1011h		
5012h	User defined field 19				1012h		
5013h	User defined field 20				1013h		
5014h	User defined field 21				1014h		
5015h	User defined field 22				1015h		
5016h	User defined field 23				1016h		
5017h	User defined field 24				1017h		
5018h	User defined field 25				1018h		
5019h	User defined field 26				1019h		
501Ah	User defined field 27				101Ah		
501Bh	User defined field 28				101Bh		
501Ch	User defined field 29				101Ch		
501Dh	User defined field 30				101Dh		
501Eh	User defined field 31				101Eh		
501Fh	User defined field 32				101Fh		
5020h	User defined field 33				1020h		
5021h	User defined field 34				1021h		
5022h	User defined field 35				1022h		
5023h	User defined field 36				1023h		

Reg	Description	Size	Range	Units	Default	R/W	Notes
5024h	User defined field 37	1	1000h~1046h 1050h~1067h 11E4h~11EBh 14B0h~14C7h 1500h~1509h		1024h	R/W	
5025h	User defined field 38				1025h		
5026h	User defined field 39				1026h		
5027h	User defined field 40				1027h		
5028h	User defined field 41				1028h		
5029h	User defined field 42				1029h		
502Ah	User defined field 43				102Ah		
502Bh	User defined field 44				102Bh		
502Ch	User defined field 45				102Ch		
502Dh	User defined field 46				102Dh		
502Eh	User defined field 47				102Eh		
502Fh	User defined field 48				102Fh		
5030h	User defined field 49				1030h		
5031h	User defined field 50				1031h		
5032h	User defined field 51				1032h		
5033h	User defined field 52				1033h		
5034h	User defined field 53				1034h		
5035h	User defined field 54				1035h		
5036h	User defined field 55				1036h		
5037h	User defined field 56				1037h		
5038h	User defined field 57				1038h		
5039h	User defined field 58				1039h		
503Ah	User defined field 59				103Ah		
503Bh	User defined field 60				103Bh		
503Ch	User defined field 61				103Ch		
503Dh	User defined field 62				103Dh		
503Eh	User defined field 63				103Eh		
503Fh	User defined field 64				103Fh		
5040h	User defined field 65				1040h		
5041h	User defined field 66				1041h		
5042h	User defined field 67				1042h		
5043h	User defined field 68				1043h		
5044h	User defined field 69				1044h		
5045h	User defined field 70				1045h		
5046h	User defined field 71				1046h		
5047h	User defined field 72				1050h		

Reg	Description	Size	Range	Units	Default	R/W	Notes
5048h	User defined field 73	1	1000h~1046h 1050h~1067h 11E4h~11EBh 14B0h~14C7h 1500h~1509h		1051h	R/W	
5049h	User defined field 74				1052h		
504Ah	User defined field 75				1053h		
504Bh	User defined field 76				1054h		
504Ch	User defined field 77				1055h		
504Dh	User defined field 78				1056h		
504Eh	User defined field 79				1057h		
504Fh	User defined field 80				1058h		
5050h	Reading of user defined field 1~80	80				R	

User define field function description:

User define field, assign parameters in same field, convenience for collecting data in one command reading.
Assign needed parameters to 5000h~504Fh, Issue command to read data from 5050h~509Fh to collect all data.

For example:

If 1001h write to 5000h (High word register of U1 phase voltage) , and 1002h write to 5001h (Low word register of U1 phase voltage)
Read 5050h and 5051h will collect U1 Phase Voltage data. Other parameters can be assigned as above. .

Current month TOU energy (Code: 03h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
6000h	Active energy import (sharp)	2	0~999,999,999	0.1kWh		R	
6002h	Active energy export (sharp)	2	0~999,999,999	0.1kWh		R	
6004h	Reactive energy import (sharp)	2	0~999,999,999	0.1 kVARh		R	
6006h	Reactive energy export (sharp)	2	0~999,999,999	0.1 kVARh		R	
6008h	Apparent energy (sharp)	2	0~999,999,999	0.1 kVAh		R	
600Ah	TOU energy (peak)	10				R	Data format same as TOU energy (sharp)
6014h	TOU energy (valley)						
601Eh	TOU energy (normal)						
6028h	TOU energy (summary)						

Last month TOU energy (Code: 03h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
6032h	Active energy import (sharp)	2	0~999,999,999	0.1kWh		R	
6034h	Active energy export (sharp)	2	0~999,999,999	0.1kWh		R	
6036h	Reactive energy import (sharp)	2	0~999,999,999	0.1 kVARh		R	
6038h	Reactive energy export (sharp)	2	0~999,999,999	0.1 kVARh		R	
603Ah	Apparent energy (sharp)	2	0~999,999,999	0.1 kVAh		R	
603Ch	TOU energy (peak)	10					Data format same as TOU energy (sharp)
6046h	TOU energy (valley)						
6050h	TOU energy (normal)						
605Ah	TOU energy (summary)						

Maximum TOU energy demand (Code: 03h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
6064h	Maximum active power total demand (sharp)	2	-999,999,999~ 999,999,999	W		R	
6066h	Year	1	2000~2099			R	
6067h	Month	1	1~12			R	
6068h	Day	1	1~31			R	
6069h	Hour	1	0~23			R	
606Ah	Minute	1	0~59			R	
606Bh	Second	1	0~59			R	
606Ch	Maximum reactive power total demand (sharp)	2	-999,999,999~ 999,999,999	VAR		R	
606Eh	Year	1	2000~2099			R	
606Fh	Month	1	1~12			R	

Reg	Description	Size	Range	Units	Default	R/W	Notes
6070h	Day	1	1~31			R	
6071h	Hour	1	0~23			R	
6072h	Minute	1	0~59			R	
6073h	Second	1	0~59			R	
6074h	Maximum apparent power total demand (sharp)	2	0 ~ 999,999,999	VA		R	
6076h	Year	1	2000~2099			R	
6077h	Month	1	1~12			R	
6078h	Day	1	1~31			R	
6079h	Hour	1	0~23			R	
607Ah	Minute	1	0~59			R	
607Bh	Second	1	0~59			R	
607Ch	Maximum current 1 demand (sharp)	2	0~9,999,999	0.001A		R	
607Eh	Year	1	2000~2099			R	
607Fh	Month	1	1~12			R	
6080h	Day	1	1~31			R	
6081h	Hour	1	0~23			R	
6082h	Minute	1	0~59			R	
6083h	Second	1	0~59			R	
6084h	Maximum current 2 demand (sharp)	2	0~9,999,999	0.001A		R	
6086h	Year	1	2000~2099			R	
6087h	Month	1	1~12			R	
6088h	Day	1	1~31			R	
6089h	Hour	1	0~23			R	
608Ah	Minute	1	0~59			R	
608Bh	Second	1	0~59			R	
608Ch	Maximum current 3 demand (sharp)	2	0~9,999,999	0.001A		R	
608Eh	Year	1	2000~2099			R	
608Fh	Month	1	1~12			R	
6090h	Day	1	1~31			R	
6091h	Hour	1	0~23			R	
6092h	Minute	1	0~59			R	
6093h	Second	1	0~59			R	

Reg	Description	Size	Range	Units	Default	R/W	Notes
6094h	Maximum current average demand (sharp)	2	0~9999999	0.001A		R	
6096h	Year	1	2000~2099			R	
6097h	Month	1	1~12			R	
6098h	Day	1	1~31			R	
6099h	Hour	1	0~23			R	
609Ah	Minute	1	0~59			R	
609Bh	Second	1	0~59			R	
609Ch	TOU MAX demand (peak)	56					Data format same as Max TOU energy demand (sharp)
60D4h	TOU MAX demand (valley)						
610Ch	TOU MAX demand (normal)						
6144h	TOU MAX demand (summary)						
617Ch	TOU MAX demand reset	1	0 or 55h		0	R/W	0: None 55h: Reset

TOU function setting (Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
617Dh	Number of time zone	1	1~4		1	R/W	
617Eh	Number of time table	1	1~8		1	R/W	
617Fh	Time table of Saturday	1	1~8		1	R/W	
6180h	Time table of Sunday	1	1~8		1	R/W	
6181h	TOU function enable	1	0~1		0	R/W	0: Disable 1: Enable
6182h	TOU initialization	1	0~1		0	R/W	0: None 1: Restore to factory defaults
6183h	Calculation date of TOU	1	0~1		0	R/W	0: End of month 1: Specify day ※If change calculation date , energy and demand data will save to last month data area instantly
6184h	Date and time of caculation	1	1~31		1	R/W	Day
6185h		1	0~23		0	R/W	Hour
6186h		1	0~59		0	R/W	Minute
6187h		1	0~59		0	R/W	Second
6188h	Error code	1	0~1			R	0: Correct 1: Error bit0: The date setting of the time zone is non-closed loop bit1: The time table setting of the time zone is greater than number of time table bit2: Year setting of multi-year holiday error or greater than 5 years or the time table setting of the multi-year holiday is greater than number of time table bit3: The time setting of the time table is non-closed loop bit4: The time table setting of the weekly holiday is greater than number of time table bit5: The time table setting of the single year holiday is greater than number of time table If there is a setting error or TOU is diable, TOU calculation will not be performed

Season setting (Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
6189h	1st time zone setting	1	1~12		1	R/W	Month
618Ah		1	1~31		1	R/W	Day
618Bh		1	1~8		1	R/W	Time table number
618Ch	2nd time zone setting	1	1~12		1	R/W	Month
618Dh		1	1~31		1	R/W	Day
618Eh		1	1~8		1	R/W	Time table number
618Fh	3rd time zone setting	1	1~12		1	R/W	Month
6190h		1	1~31		1	R/W	Day
6191h		1	1~8		1	R/W	Time table number
6192h	4th time zone setting	1	1~12		1	R/W	Month
6193h		1	1~31		1	R/W	Day
6194h		1	1~8		1	R/W	Time table number

Time table setting (Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
6195h	Number of period in 1st time table	1	1~8		1	R/W	
6196h	1st period time and tariff number of 1st time table	1	0~23		0	R/W	Hour
6197h		1	0~59		0	R/W	Minute
6198h		1	0~3		0	R/W	Tariff Number 0: Sharp 1: Peak 2: Valley 3: Normal
6199h	2nd period time and tariff number of 1st time table	1	0~23		0	R/W	Hour
619Ah		1	0~59		0	R/W	Minute
619Bh		1	0~3		0	R/W	Tariff Number 0: Sharp 1: Peak 2: Valley 3: Normal
619Ch	3rd period time and tariff number of 1st time table	1	0~23		0	R/W	Hour
619Dh		1	0~59		0	R/W	Minute
619Eh		1	0~3		0	R/W	Tariff Number 0: Sharp 1: Peak 2: Valley 3: Normal
619Fh	4th period time and tariff number of 1st time table	1	0~23		0	R/W	Hour
61A0h		1	0~59		0	R/W	Minute
61A1h		1	0~3		0	R/W	Tariff Number 0: Sharp 1: Peak 2: Valley 3: Normal
61A2h	5th period time and tariff number of 1st time table	1	0~23		0	R/W	Hour
61A3h		1	0~59		0	R/W	Minute
61A4h		1	0~3		0	R/W	Tariff Number 0: Sharp 1: Peak 2: Valley 3: Normal

Reg	Description	Size	Range	Units	Default	R/W	Notes
61A5h	6th period time and tariff number of 1st time table	1	0~23		0	R/W	Hour
61A6h		1	0~59		0	R/W	Minute
61A7h		1	0~3		0	R/W	Tariff Number 0: Sharp 1: Peak 2: Valley 3: Normal
61A8h	7th period time and tariff number of 1st time table	1	0~23		0	R/W	Hour
61A9h		1	0~59		0	R/W	Minute
61AAh		1	0~3		0	R/W	Tariff Number 0: Sharp 1: Peak 2: Valley 3: Normal
61ABh	8th period time and tariff number of 1st time table	1	0~23		0	R/W	Hour
61ACh		1	0~59		0	R/W	Minute
61ADh		1	0~3		0	R/W	Tariff Number 0: Sharp 1: Peak 2: Valley 3: Normal
61AEh	2nd time table setting	25					Setting format same as 1st time table
61C7h	3rd time table setting						
61E0h	4th time table setting						
61F9h	5th time table setting						
6212h	6th time table setting						
622Bh	7th time table setting						
6244h	8th time table setting						

Multi-year holiday Setting (Code: 03h,06h,10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
625Dh	Multi-year holiday function enable	1	0~1		0	R/W	0: Disable 1: Enable
625Eh	Start year	1	2000~2099		2015	R/W	Range≤5
625Fh	Stop year	1	2000~2099		2015	R/W	
6260h	Number of holiday	1	0~20		0	R/W	
6261h	Date and time table number of 1st holiday	1	1~12		1	R/W	Month
6262h		1	1~31		1	R/W	Day
6263h		1	1~8		1	R/W	Time table number
6264h	2nd holiday setting	3					Setting format same as 1st holiday
6267h	3rd holiday setting						
626Ah	4th holiday setting						
626Dh	5th holiday setting						
6270h	6th holiday setting						
6273h	7th holiday setting						
6276h	8th holiday setting						
6279h	9th holiday setting						
627Ch	10th holiday setting						

Reg	Description	Size	Range	Units	Default	R/W	Notes
627Fh	11th holiday setting	3					Setting format same as 1st holiday
6282h	12th holiday setting						
6285h	13th holiday setting						
6288h	14th holiday setting						
628Bh	15th holiday setting						
628Eh	16th holiday setting						
6291h	17th holiday setting						
6294h	18th holiday setting						
6297h	19th holiday setting						
629Ah	20th holiday setting						

The 1st year holiday setting (**Code** : **03h , 06h , 10h**):

Reg	Description	Size	Range	Unit	Default	R/W	Notes
629Dh	Setup of 1st year	1	2000~2099		2015	R/W	
629Eh	Number of holiday for the 1st year	1	0~20		1	R/W	
629Fh	Setting of the first special day date and the used day time table number	1	1~12		1	R/W	Month
62A0h		1	1~31		1	R/W	Day
62A1h		1	1~8		1	R/W	Time table of the 1st holiday
62A2h	2nd holiday	3					Setting format same as 1st holiday
62A5h	3rd holiday						
62A8h	4th holiday						
62ABh	5th holiday						
62AEh	6th holiday						
62B1h	7th holiday						
62B4h	8th holiday						
62B7h	9th holiday						
62BAh	10th holiday						
62BDh	11th holiday						
62C0h	12th holiday						
62C3h	13th holiday						
62C6h	14th holiday						
62C9h	15th holiday						
62CCh	16th holiday						
62CFh	17th holiday						
62D2h	18th holiday						
62D5h	19th holiday						
62D8h	20th holiday						

Today TOU energy (Code: 03h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
6400h	Active energy import (sharp)	2	0~999,999,999	0.1kWh		R	
6402h	Active energy export (sharp)	2	0~999,999,999	0.1kWh		R	
6404h	Reactive energy import (sharp)	2	0~999,999,999	0.1 kVARh		R	
6406h	Reactive energy export (sharp)	2	0~999,999,999	0.1 kVARh		R	
6408h	Apparent energy (sharp)	2	0~999,999,999	0.1 kVAh		R	
640Ah	TOU energy (peak)	10				R	Data format same as TOU energy (sharp)
6414h	TOU energy (valley)						
641Eh	TOU energy (normal)						
6428h	TOU energy (summary)						

Yesterday TOU energy (Code: 03h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
6432h	Active energy import (sharp)	2	0~999,999,999	0.1kWh		R	
6434h	Active energy export (sharp)	2	0~999,999,999	0.1kWh		R	
6436h	Reactive energy import (sharp)	2	0~999,999,999	0.1 kVARh		R	
6438h	Reactive energy export (sharp)	2	0~999,999,999	0.1 kVARh		R	
643Ah	Apparent energy (sharp)	2	0~999,999,999	0.1 kVAh		R	
643Ch	TOU energy (peak)	10					Data format same as TOU energy (sharp)
6446h	TOU energy (valley)						
6450h	TOU energy (normal)						
645Ah	TOU energy (summary)						

TOU status (Code: 03h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
6480h	TOU function	1	0~1			R	0: Disable 1: Enable
6481h	Number of time table in use	1	1~8			R	
6482h	Current period	1	1~8			R	
6483h	In-use tariff	1	0~3			R	0: Sharp 1: Peak 2: Valley 3: Normal
6484h	Error code	1	0~1			R	0: Correct 1: Error bit0: The date setting of the time zone is non-closed loop bit1: The time table setting of the time zone is greater than number of time table bit2: Year setting of multi-year holiday error or greater than 5 years or the time table setting of the multi-year holiday is greater than number of time table bit3: The time setting of the time table is non-closed loop bit4: The time table setting of the weekly holiday is greater than number of time table bit5: The time table setting of the single year holiday is greater than number of time table If there is a setting error or TOU is diable, TOU calculation will not be performed

Special TOU parameter setting(Code:03h, 06h, 10h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
6500h	Special TOU auto record setting	1	0~1		0	R/W	0: Disable 1: Enable
6501h	Manual settlement method	1	0~4		0	R/W	0: not used 1: DI start/settlement (Hi: start Low: settlement) 2: DI settlement (trigger signal to execute settlement) 3: Communication start/settlement (00h: settlement 55h: start) 4: Communication settlement (55h: activation and settlement)
6502h	Communication start and settlement	1	0 or 55h		0	R/W	0:Settlement 55h:Enable/Settlement
6503h	Time period settlement method	1	0~2		0	R/W	0: Not used 1: Hourly settlement 2: Settlement according to set time period
6504h	Record interval time at time period	1	0~3		0	R/W	0: Continuous 1: 10min 2: 15min 3: 30min
6505h	Clear all special TOU record	1	0~32		0	R/W	Clear: write 7150 to clear all records Clear status read: High byte: 0: There is no clear command after booting 1: Clearing 2: Error 4: Clearing is complete Low byte: currently cleared items or error items 0: None 2: Month 4: Day 6: Hours 8: Time period 10: DI settlement 12: Communication settlement 14: Maximum demand 32: Memory failure

6510h	The first time period start time	1	0~23	Hour		R/W	
6511h		1	0~59	Minute		R/W	
6512h	The first time period end time	1	0~23	Hour		R/W	
6513h		1	0~59	Minute		R/W	
6514h	The second time period start time	1	0~23	Hour		R/W	
6515h		1	0~59	Minute		R/W	
6516h	The second time period end time	1	0~23	Hour		R/W	
6517h		1	0~59	Minute		R/W	
6518h	The third time period start time	1	0~23	Hour		R/W	
6519h		1	0~59	Minute		R/W	
651Ah	The third time period end time	1	0~23	Hour		R/W	
651Bh		1	0~59	Minute		R/W	
651Ch	The fourth time period start time	1	0~23	Hour		R/W	
651Dh		1	0~59	Minute		R/W	
651Eh	The fourth time period end time	1	0~23	Hour		R/W	
651Fh		1	0~59	Minute		R/W	

Special TOU data read setting(Code:10h, Need to write two addresses consecutively):

Reg	Description	Size	Range	Units	Default	R/W	Notes
6530h	Settlement method	1	0~5		1	R/W	0: Monthly settlement 1: Daily settlement 2: Hourly settlement 3: Settlement at time period 4: DI settlement 5: Communication settlement For all settlement transactions, the first one is always the latest data, and the last one is the oldest data
6531h	Data index	1	1~4 1~144		0101h	R/W	High byte: Number of time period: 1~4 Other settlement methods: 0 Low byte: Monthly: 1~12 Daily: 1~31 Hourly: 1~72 Number of periods in time period: 1~144 DI: 1~8 Communication: 1~8
6532h	Data preparation status	1	0~1		1	R	0: Unfinished 1: Finish Reading can be started after data preparation is completed

Special TOU data time stamp(Code:03h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
6540h	Data start recording time	1	2000~2099	Year		R	
6541h		1	1~12	Month		R	
6542h		1	1~31	Day		R	
6543h		1	0~23	Hour		R	
6544h		1	0~59	Minute		R	
6545h		1	0~9	Second		R	
6546h	Data end recording time	1	2000~2099	Year		R	
6547h		1	1~12	Month		R	
6548h		1	1~31	Day		R	
6549h		1	0~23	Hour		R	
654Ah		1	0~59	Minute		R	
654Bh		1	0~59	Second		R	

Special TOU data read address(Code: 03h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
654Ch	Active energy delivered(sharp)	2	0~999,999,999	0.1kWh		R	
654Eh	Active energy received(sharp)	2	0~999,999,999	0.1kWh		R	
6550h	Reactive energy delivered(sharp)	2	0~999,999,999	0.1 kVARh		R	
6552h	Reactive energy received(sharp)	2	0~999,999,999	0.1 kVARh		R	
6554h	TOU energy(sharp)	2	0~999,999,999	0.1 kVAh		R	
6556h	TOU energy(peak)	10					Setting format same as TOU energy(sharp)
6560h	TOU energy(valley)	10					
656Ah	TOU energy(normal)	10					
6574h	TOU energy(summary)	10					

Reg	Description	Size	Range	Units	Default	R/W	Notes
657Eh	Max active power demand(sharp)	2	-999,999,999~ 999,999,999	W		R	
6580h	Year	1	2000~2099			R	
6581h	Month	1	1~12			R	
6582h	Day	1	1~31			R	
6583h	Hour	1	0~23			R	
6584h	Minute	1	0~59			R	
6585h	Second	1	0~59			R	
6586h	Max reactive power demand(sharp)	2	-999,999,999~ 999,999,999	VAR		R	
6588h	Year	1	2000~2099			R	
6589h	Month	1	1~23			R	
658Ah	Day	1	1~31			R	
658Bh	Hour	1	0~23			R	
658Ch	Minute	1	0~59			R	
658Dh	Second	1	0~59			R	
658Eh	Max apparent power demand(sharp)	2	0~999,999,999	VA		R	
6590h	Year	1	2000~2099			R	
6591h	Month	1	1~12			R	
6592h	Day	1	1~31			R	
6593h	Hour	1	0~23			R	
6594h	Minute	1	0~59			R	
6595h	Second	1	0~59			R	

Reg	Description	Size	Range	Units	Default	R/W	Notes
6596h	Max current I1 demand(sharp)	2	0~9,999,999	0.001A		R	
6598h	Year	1	2000~2099			R	
6599h	Month	1	1~12			R	
659Ah	Day	1	1~31			R	
659Bh	Hour	1	0~23			R	
659Ch	Minute	1	0~59			R	
659Dh	Second	1	0~59			R	
659Eh	Max current I2 demand(sharp)	2	0~9,999,999	0.001A		R	
65A0h	Year	1	2000~2099			R	
65A1h	Month	1	1~23			R	
65A2h	Day	1	1~31			R	
65A3h	Hour	1	0~23			R	
65A4h	Minute	1	0~59			R	
65A5h	Second	1	0~59			R	
65A6h	Max current I3 demand(sharp)	2	0~9,999,999	0.001A		R	
65A8h	Year	1	2000~2099			R	
65A9h	Month	1	1~12			R	
65AAh	Day	1	1~31			R	
65ABh	Hour	1	0~23			R	
65ACh	Minute	1	0~59			R	
65ADh	Second	1	0~59			R	
65AEh	Max current demand average(sharp)	2	0~9,999,999	0.001A		R	
65B0h	Year	1	2000~2099			R	
65B1h	Month	1	1~23			R	
65B2h	Day	1	1~31			R	
65B3h	Hour	1	0~23			R	
65B4h	Minute	1	0~59			R	
65B5h	Second	1	0~59			R	
65B6h	Max active power demand(peak)	2	-999,999,999~ 999,999,999	W		R	
65B8h	Year	1	2000~2099			R	
65B9h	Month	1	1~12			R	
65BAh	Day	1	1~31			R	
65BBh	Hour	1	0~23			R	
65BCh	Minute	1	0~59			R	
65BDh	Second	1	0~59			R	

Reg	Description	Size	Range	Units	Default	R/W	Notes
65BEh	Max reactive power demand(peak)	2	-999,999,999~ 999,999,999	VAR		R	
65C0h	Year	1	2000~2099			R	
65C1h	Month	1	1~12			R	
65C2h	Day	1	1~31			R	
65C3h	Hour	1	0~23			R	
65C4h	Minute	1	0~59			R	
65C5h	Second	1	0~59			R	
65C6h	Max apparent power demand(peak)	2	0~999,999,999	VA		R	
65C8h	Year	1	2000~2099			R	
65C9h	Month	1	1~23			R	
65CAh	Day	1	1~31			R	
65CBh	Hour	1	0~23			R	
65CCh	Minute	1	0~59			R	
65CDh	Second	1	0~59			R	
65CEh	Max current I1 demand(peak)	2	0~9,999,999	0.001A		R	
65D0h	Year	1	2000~2099			R	
65D1h	Month	1	1~12			R	
65D2h	Day	1	1~31			R	
65D3h	Hour	1	0~23			R	
65D4h	Minute	1	0~59			R	
65D5h	Second	1	0~59			R	
65D6h	Max current I2 demand(peak)	2	0~9,999,999	0.001A		R	
65D8h	Year	1	2000~2099			R	
65D9h	Month	1	1~23			R	
65DAh	Day	1	1~31			R	
65DBh	Hour	1	0~23			R	
65DCh	Minute	1	0~59			R	
65DDh	Second	1	0~59			R	
65DEh	Max current I3 demand(peak)	2	0~9,999,999	0.001A		R	
65E0h	Year	1	2000~2099			R	
65E1h	Month	1	1~12			R	
65E2h	Day	1	1~31			R	
65E3h	Hour	1	0~23			R	
65E4h	Minute	1	0~59			R	
65E5h	Second	1	0~59			R	

Reg	Description	Size	Range	Units	Default	R/W	Notes
65E6h	Max current average demand(peak)	2	0~9,999,999	0.001A		R	
65E8h	Year	1	2000~2099			R	
65E9h	Month	1	1~12			R	
65EAh	Day	1	1~31			R	
65EBh	Hour	1	0~23			R	
65ECh	Minute	1	0~59			R	
65EDh	Second	1	0~59			R	
65EEh	Max active power demand(valley)	2	-999,999,999~ 999,999,999	W		R	
65F0h	Year	1	2000~2099			R	
65F1h	Month	1	1~23			R	
65F2h	Day	1	1~31			R	
65F3h	Hour	1	0~23			R	
65F4h	Minute	1	0~59			R	
65F5h	Second	1	0~59			R	
65F6h	Max reactive power demand(valley)	2	-999,999,999~ 999,999,999	VAR		R	
65F8h	Year	1	2000~2099			R	
65F9h	Month	1	1~12			R	
65FAh	Day	1	1~31			R	
65FBh	Hour	1	0~23			R	
65FCh	Minute	1	0~59			R	
65FDh	Second	1	0~59			R	
65FEh	Max apparent power demand(valley)	2	0~999,999,999	VA		R	
6600h	Year	1	2000~2099			R	
6601h	Month	1	1~23			R	
6602h	Day	1	1~31			R	
6603h	Hour	1	0~23			R	
6604h	Minute	1	0~59			R	
6605h	Second	1	0~59			R	
6606h	Max current I1 demand(valley)	2	0~9,999,999	0.001A		R	
6608h	Year	1	2000~2099			R	
6609h	Month	1	1~12			R	
660Ah	Day	1	1~31			R	
660Bh	Hour	1	0~23			R	
660Ch	Minute	1	0~59			R	
660Dh	Second	1	0~59			R	

Reg	Description	Size	Range	Units	Default	R/W	Notes
660Eh	Max current I2 demand(valley)	2	0~9,999,999	0.001A		R	
6610h	Year	1	2000~2099			R	
6611h	Month	1	1~12			R	
6612h	Day	1	1~31			R	
6613h	Hour	1	0~23			R	
6614h	Minute	1	0~59			R	
6615h	Second	1	0~59			R	
6616h	Max current I3 demand(valley)	2	0~9,999,999	0.001A		R	
6618h	Year	1	2000~2099			R	
6619h	Month	1	1~23			R	
661Ah	Day	1	1~31			R	
661Bh	Hour	1	0~23			R	
661Ch	Minute	1	0~59			R	
661Dh	Second	1	0~59			R	
661Eh	Max current average demand(valley)	2	0~9,999,999	0.001A		R	
6620h	Year	1	2000~2099			R	
6621h	Month	1	1~12			R	
6622h	Day	1	1~31			R	
6623h	Hour	1	0~23			R	
6624h	Minute	1	0~59			R	
6625h	Second	1	0~59			R	
6626h	Max active power demand(normal)	2	-999,999,999~ 999,999,999	W		R	
6628h	Year	1	2000~2099			R	
6629h	Month	1	1~23			R	
662Ah	Day	1	1~31			R	
662Bh	Hour	1	0~23			R	
662Ch	Minute	1	0~59			R	
662Dh	Second	1	0~59			R	
662Eh	Max reactive power demand(normal)	2	-999,999,999~ 999,999,999	VAR		R	
6630h	Year	1	2000~2099			R	
6631h	Month	1	1~12			R	
6632h	Day	1	1~31			R	
6633h	Hour	1	0~23			R	
6634h	Minute	1	0~59			R	
6635h	Second	1	0~59			R	

Reg	Description	Size	Range	Units	Default	R/W	Notes
6636h	Max apparent power demand(normal)	2	0~9,999,999	VA		R	
6638h	Year	1	2000~2099			R	
6639h	Month	1	1~12			R	
663Ah	Day	1	1~31			R	
663Bh	Hour	1	0~23			R	
663Ch	Minute	1	0~59			R	
663Dh	Second	1	0~59			R	
663Eh	Max current I1 demand(normal)	2	0~9,999,999	0.001A		R	
6640h	Year	1	2000~2099			R	
6641h	Month	1	1~23			R	
6642h	Day	1	1~31			R	
643Bh	Hour	1	0~23			R	
6644h	Minute	1	0~59			R	
6645h	Second	1	0~59			R	
6646h	Max current I2 demand(normal)	2	0~9,999,999	0.001A		R	
6648h	Year	1	2000~2099			R	
6649h	Month	1	1~12			R	
664Ah	Day	1	1~31			R	
664Bh	Hour	1	0~23			R	
664Ch	Minute	1	0~59			R	
664Dh	Second	1	0~59			R	
664Eh	Max current I3 demand(normal)	2	0~9,999,999	0.001A		R	
6650h	Year	1	2000~2099			R	
6651h	Month	1	1~23			R	
6652h	Day	1	1~31			R	
6653h	Hour	1	0~23			R	
6654h	Minute	1	0~59			R	
6655h	Second	1	0~59			R	
6656h	Max current average demand(normal)	2	0~9,999,999	0.001A		R	
6658h	Year	1	2000~2099			R	
6659h	Month	1	1~12			R	
665Ah	Day	1	1~31			R	
665Bh	Hour	1	0~23			R	
665Ch	Minute	1	0~59			R	
665Dh	Second	1	0~59			R	

Reg	Description	Size	Range	Units	Default	R/W	Notes
665Eh	Max active power demand(summary)	2	-999,999,999~ 999,999,999	W		R	
6660h	Year	1	2000~2099			R	
6661h	Month	1	1~12			R	
6662h	Day	1	1~31			R	
6663h	Hour	1	0~23			R	
6664h	Minute	1	0~59			R	
6665h	Second	1	0~59			R	
6666h	Max reactive power demand(summary)	2	-999,999,999~ 999,999,999	VAR		R	
6668h	Year	1	2000~2099			R	
6669h	Month	1	1~23			R	
666Ah	Day	1	1~31			R	
666Bh	Hour	1	0~23			R	
666Ch	Minute	1	0~59			R	
666Dh	Second	1	0~59			R	
666Eh	Max apparent power demand(summary)	2	0~999,999,999	VA		R	
6270h	Year	1	2000~2099			R	
6671h	Month	1	1~12			R	
6672h	Day	1	1~31			R	
6673h	Hour	1	0~23			R	
6674h	Minute	1	0~59			R	
6675h	Second	1	0~59			R	
6676h	Max current I1 demand(summary)	2	0~9,999,999	0.001A		R	
6678h	Year	1	2000~2099			R	
6679h	Month	1	1~23			R	
667Ah	Day	1	1~31			R	
667Bh	Hour	1	0~23			R	
667Ch	Minute	1	0~59			R	
667Dh	Second	1	0~59			R	
667Eh	Max current I2 demand(summary)	2	0~9,999,999	0.001A		R	
6680h	Year	1	2000~2099			R	
6681h	Month	1	1~12			R	
6682h	Day	1	1~31			R	
6683h	Hour	1	0~23			R	
6684h	Minute	1	0~59			R	
6685h	Second	1	0~59			R	

Reg	Description	Size	Range	Units	Default	R/W	Notes
6686h	Max current I3 demand(summary)	2	0~9,999,999	0.001A		R	
6688h	Year	1	2000~2099			R	
6689h	Month	1	1~12			R	
668Ah	Day	1	1~31			R	
668Bh	Hour	1	0~23			R	
668Ch	Minute	1	0~59			R	
668Dh	Second	1	0~59			R	
668Eh	Max current average demand(summary)	2	0~9,999,999	0.001A		R	
6690h	Year	1	2000~2099			R	
6691h	Month	1	1~23			R	
6692h	Day	1	1~31			R	
6693h	Hour	1	0~23			R	
6694h	Minute	1	0~59			R	
6695h	Second	1	0~59			R	

Metering floating data(Code: 03h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
7000h	Frequency	2	45.0000~65.0000	Hz		R	FREQ
7002h	Phase voltage 1	2	0.0 ~ 1,200,000.0	V		R	U1
7004h	Phase voltage 2	2	0.0 ~ 1,200,000.0	V		R	U2
7006h	Phase voltage 3	2	0.0 ~ 1,200,000.0	V		R	U3
7008h	Phase voltage average	2	0.0 ~ 1,200,000.0	V		R	ULN.AVG
700Ah	Line voltage 1	2	0.0 ~ 1,200,000.0	V		R	U12
700Ch	Line voltage 2	2	0.0 ~ 1,200,000.0	V		R	U23
700Eh	Line voltage 3	2	0.0 ~ 1,200,000.0	V		R	U31
7010h	Line voltage average	2	0.0 ~ 1,200,000.0	V		R	ULL.AVG
7012h	Current 1	2	0.000~9,999.999	A		R	I1
7014h	Current 2	2	0.000~9,999.999	A		R	I2
7016h	Current 3	2	0.000~9,999.999	A		R	I3
7018h	Current average	2	0.000~9,999.999	A		R	I.AVG
701Ah	Neutral current	2	0.000~9,999.999	A		R	IN
701Ch	Active power 1	2	-999,999,999~ 999,999,999	W		R	P-1
701Eh	Active power 2	2	-999,999,999~ 999,999,999	W		R	P-2
7020h	Active power 3	2	-999,999,999~ 999,999,999	W		R	P-3
7022h	Active power total	2	-999,999,999~ 999,999,999	W		R	P.SUM
7024h	Reactive power 1	2	-999,999,999~ 999,999,999	VAR		R	Q-1
7026h	Reactive power 2	2	-999,999,999~ 999,999,999	VAR		R	Q-2
7028h	Reactive power 3	2	-999,999,999~ 999,999,999	VAR		R	Q-3
702Ah	Reactive power total	2	-999,999,999~ 999,999,999	VAR		R	Q.SUM
702Ch	Apparent power 1	2	0~999,999,999	VA		R	S-1
702Eh	Apparent power 2	2	0~999,999,999	VA		R	S-2
7030h	Apparent power 3	2	0~999,999,999	VA		R	S-3
7032h	Apparent power total	2	0~999,999,999	VA		R	S.SUM
7034h	Power factor 1	2	-0.020~ -1/+1.000~ 0.020			R	PF1

Reg	Description	Size	Range	Units	Default	R/W	Notes
7036h	Power factor 2	2	-0.020~ -1/+1.000~ 0.020			R	PF2
7038h	Power factor 3	2	-0.020~ -1/+1.000~ 0.020			R	PF3
703Ah	Power factor average	2	-0.020~ -1/+1.000~ 0.020			R	PF.AVG
703Ch	Voltage unbalance	2	0.0~300.0	%		R	Uunbl
703Eh	Current unbalance	2	0.0~300.0	%		R	Iunbl
7040h	Load Type	2	R: 82 L: 76 C: 67			R	R: Resistive L: Inductive C: Capacitive
7042h	Active power total demand	2	-999,999,999 ~ 999,999,999	W		R	P.DM
7044h	Reactive power total demand	2	-999,999,999 ~ 999,999,999	VAR		R	Q.DM
7046h	Apparent power total demand	2	0 ~ 999,999,999	VA		R	S.DM
7048h	Current 1 demand	2	0.000~9,999.999	A		R	I1.DM
704Ah	Current 2 demand	2	0.000~9,999.999	A		R	I2.DM
704Ch	Current 3 demand	2	0.000~9,999.999	A		R	I3.DM
704Eh	Current average demand	2	0.000~9,999.999	A		R	I.AVG.DM
7050h	THD Voltage 1	2	0.0~100.0	%		R	U1(U12).THD
7052h	THD Voltage 2	2	0.0~100.0	%		R	U2(U23).THD
7054h	THD Voltage 3	2	0.0~100.0	%		R	U3(U31).THD
7056h	THD Voltage average	2	0.0~100.0	%		R	U.AVG.THD
7058h	THD Current 1	2	0.0~100.0	%		R	I1.THD
705Ah	THD Current 2	2	0.0~100.0	%		R	I2.THD
705Ch	THD Current 3	2	0.0~100.0	%		R	I3.THD
705Eh	THD Current average	2	0.0~100.0	%		R	I.AVG.THD
7060h	Active energy import	2	0.0~99,999,999.9	kWh		R	AE.IMP
7062h	Active energy export	2	0.0~99,999,999.9	kWh		R	AE.EXP
7064h	Active energy total	2	0.0~99,999,999.9	kWh		R	AE.Total
7066h	Active energy net	2	-99,999,999.9~ 99,999,999.9	kWh		R	AE.Net
7068h	Reactive energy import	2	0.0~99,999,999.9	kVARh		R	RE.IMP
706Ah	Reactive energy export	2	0.0~99,999,999.9	kVARh		R	RE.EXP
706Ch	Reactive energy total	2	0.0~99,999,999.9	kVARh		R	RE.Total
706Eh	Reactive energy net	2	-99,999,999.9~ 99,999,999.9	kVARh		R	RE.Net
7070h	Apparent energy total	2	0.0~99,999,999.9	kVAh		R	SE.Total
7072h	CO_2 emission	2	0.000~ 999,999.999	kg		R	

Metering floating data refreshes with high speed(Code: 03h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
7100h	Frequency	2	45.0000~65.0000	Hz		R	FREQ
7102h	Phase voltage 1	2	0.0 ~ 1,200,000.0	V		R	U1
7104h	Phase voltage 2	2	0.0 ~ 1,200,000.0	V		R	U2
7106h	Phase voltage 3	2	0.0 ~ 1,200,000.0	V		R	U3
7108h	Phase voltage average	2	0.0 ~ 1,200,000.0	V		R	ULN.AVG
710Ah	Line voltage 1	2	0.0 ~ 1,200,000.0	V		R	U12
710Ch	Line voltage 2	2	0.0 ~ 1,200,000.0	V		R	U23
710Eh	Line voltage 3	2	0.0 ~ 1,200,000.0	V		R	U31
7110h	Line voltage average	2	0.0 ~ 1,200,000.0	V		R	ULL.AVG
7112h	Current 1	2	0.000~9,999.999	A		R	I1
7114h	Current 2	2	0.000~9,999.999	A		R	I2
7116h	Current 3	2	0.000~9,999.999	A		R	I3
7118h	Current average	2	0.000~9,999.999	A		R	I.AVG
711Ah	Neutral current	2	0.000~9,999.999	A		R	IN
711Ch	Active power 1	2	-999,999,999~ 999,999,999	W		R	P-1
711Eh	Active power 2	2	-999,999,999~ 999,999,999	W		R	P-2
7120h	Active power 3	2	-999,999,999~ 999,999,999	W		R	P-3
7122h	Active power total	2	-999,999,999~ 999,999,999	W		R	P.SUM
7124h	Reactive power 1	2	-999,999,999~ 999,999,999	VAR		R	Q-1
7126h	Reactive power 2	2	-999,999,999~ 999,999,999	VAR		R	Q-2
7128h	Reactive power 3	2	-999,999,999~ 999,999,999	VAR		R	Q-3
712Ah	Reactive power total	2	-999,999,999~ 999,999,999	VAR		R	Q.SUM
712Ch	Apparent power 1	2	0~999,999,999	VA		R	S-1
712Eh	Apparent power 2	2	0~999,999,999	VA		R	S-2
7130h	Apparent power 3	2	0~999,999,999	VA		R	S-3
7132h	Apparent power total	2	0~999,999,999	VA		R	S.SUM
7134h	Power factor 1	2	-0.020~ -1/+1.000~ 0.020			R	PF1

Reg	Description	Size	Range	Units	Default	R/W	Notes
7136h	Power factor 2	2	-0.020~ -1/+1.000~ 0.020			R	PF2
7138h	Power factor 3	2	-0.020~ -1/+1.000~ 0.020			R	PF3
713Ah	Power factor average	2	-0.020~ -1/+1.000~ 0.020			R	PF.AVG

Reg	Description	Size	Range	Units	Default	R/W	Notes
7150h	THD Voltage 1	2	0.0~100.0	%		R	U1(U12).THD
7152h	THD Voltage 2	2	0.0~100.0	%		R	U2(U23).THD
7154h	THD Voltage 3	2	0.0~100.0	%		R	U3(U31).THD
7156h	THD Voltage average	2	0.0~100.0	%		R	U.AVG.THD
7158h	THD Current 1	2	0.0~100.0	%		R	I1.THD
715Ah	THD Current 2	2	0.0~100.0	%		R	I2.THD
715Ch	THD Current 3	2	0.0~100.0	%		R	I3.THD
715Eh	THD Current average	2	0.0~100.0	%		R	I.AVG.THD

Reg	Description	Size	Range	Units	Default	R/W	Notes
7174h	FREQ (Non-averaged)	2	45.0000~65.0000	Hz		R	FREQ floating point

Metering average floating data refreshes with high speed(Code: 03h):

Reg	Description	Size	Range	Units	Default	R/W	Notes
7222h	Active power total	2	-999,999,999~ 999,999,999	W		R	P.SUM