

AEM-DR MANUAL

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2017 V1.2

■ Description

Provide high accuracy measurement, display and remote communication of single phase & three phase parameters (V, A, P, Q, S, PF, Hz, Kwh). Multi-circuit design and relay output modular expansion design decrease the overall cost and make the functionality more flexible. All monitored data is available via a RS485 serial ,PLC communication for the needs in energy management, alarming, and remote controlling. Embedded flash memory for Data-Logging can avoid any data missing once the communication is interrupted. Moreover, its ultra compact size DIN-rail mounting makes itself mountable in virtually any panel, enclosure or indoor Cabinet.








■ Applications

- Rental Building Electricity Charging Management
- Rental Apartment Electricity Charging Management
- Booth Electricity Charging Management
- Market/Vender/Stand Electricity Charging Management
- Distributed Generation Electricity Charging Management
- Dormitory Electricity Charging Management

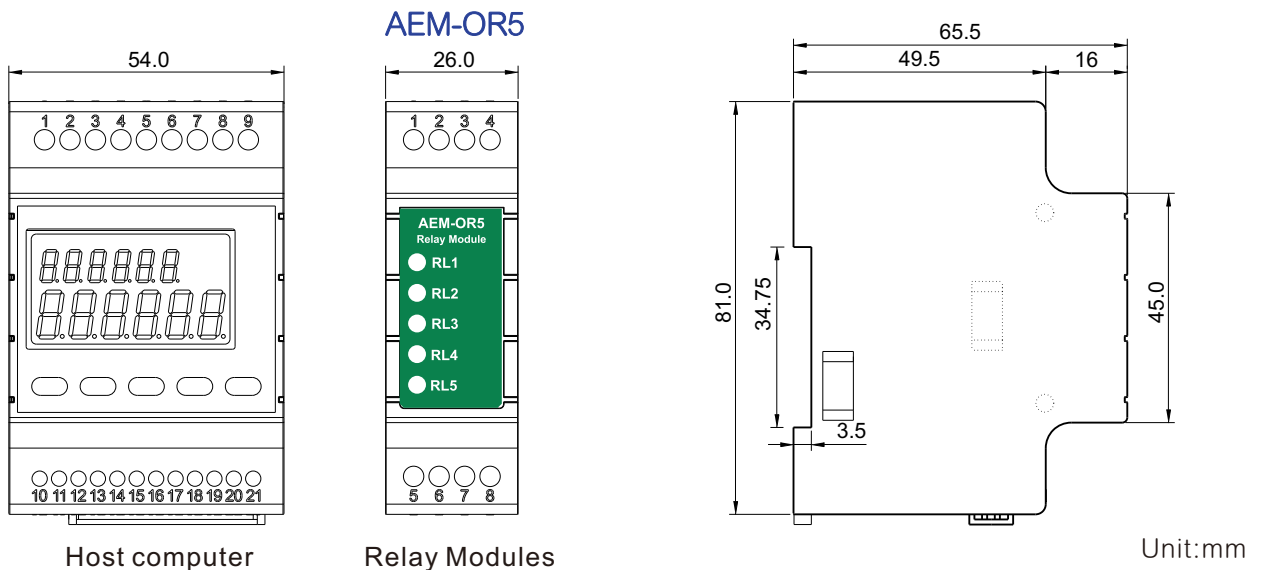
Panel Description



Key definition (from left to right)

-  **ENT** Enter(confirmation) / **FUN**
-  **Left**(left shift) / **ESC** (Leave)
-  **Right**(right shift) / **Energy** (Energy)
-  **Up**(Move) / **INC**(Addition) / **Power**(Power)
-  **Down**(Down) / **DEC**(Reduce) / **Volt/Amp** (Voltage 、 current)

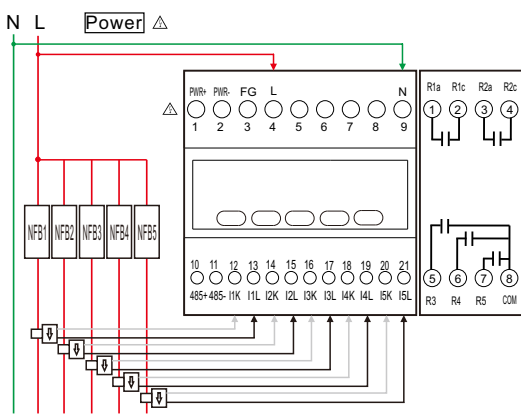
Exterior dimensions



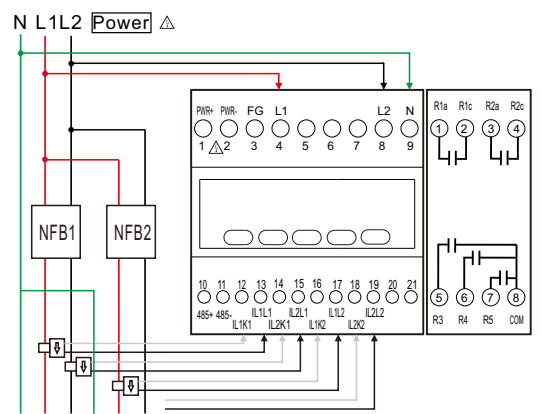
Wiring Diagram

(Secondary output wire of CT must be wiring separately as protection. DO NOT parallel or ground.)

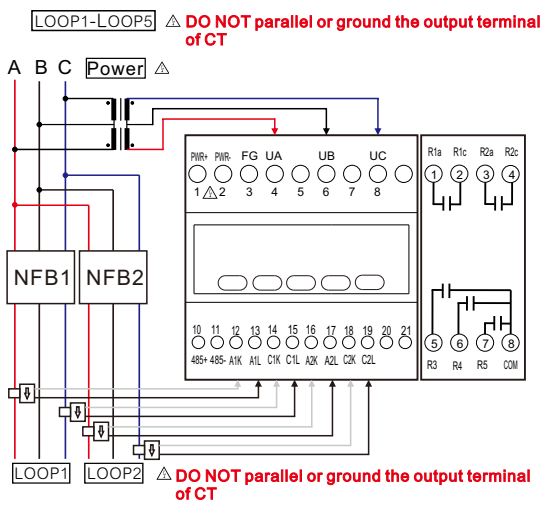
1P2W
5 Loop



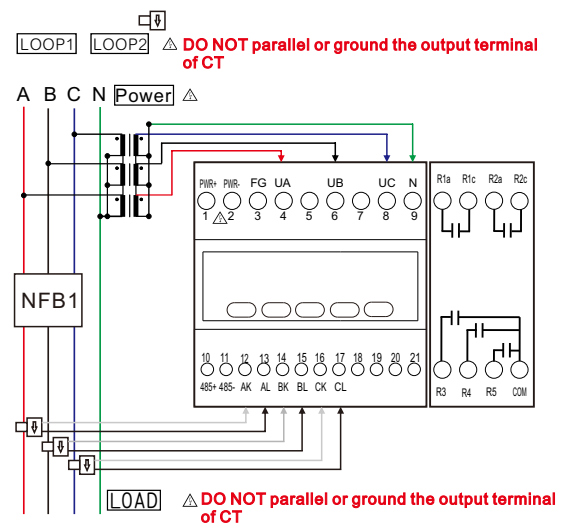
1P3W
2 Loop



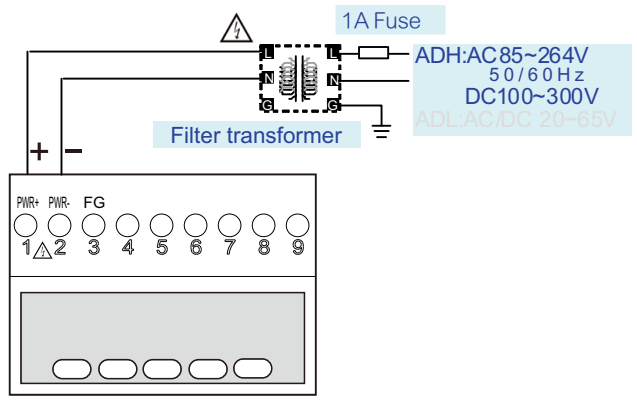
3P3W
2 Loop



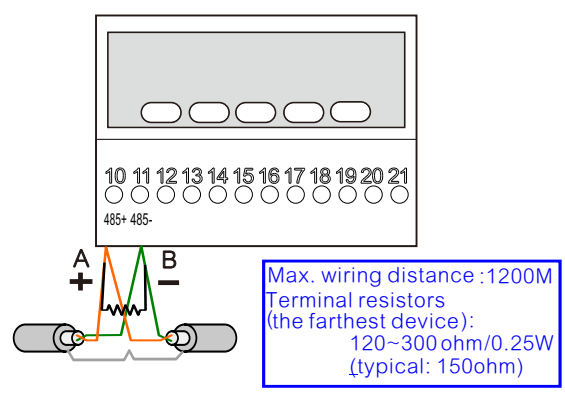
3P4W
1 Loop



Power Supply




RS485 Communication Port




Normal screen by the operation of the function keys on the following version




Press the the  button on the following version can review each phase line
Circuit voltage and current measurement value, the flow picture
Page 4 to 6 of process description





Press the the  button on the following version can review each phase line
The measured values of the circuit in the power, process screen
7 to 10 of process description

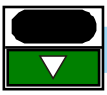


Press the the  button on the following version can review each loop
The measured values of the energy flow picture, such as Page 11
Process Description



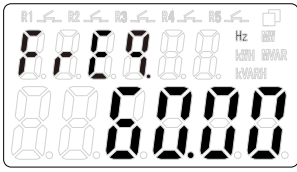
Press the the  button on the following version more than a second or more, Set the relay parameter values, Flow picture described processes such as Page 11

 Before use to understand the function of individual keys, in order to achieve the best possible mode of operation

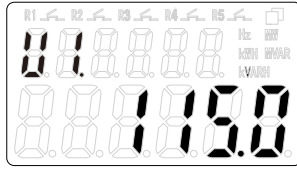


Volt/Amp (Voltage、Current) Measurement screen

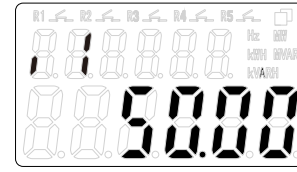
1P2W 5Loop (Single-phase two-wire five-loop)



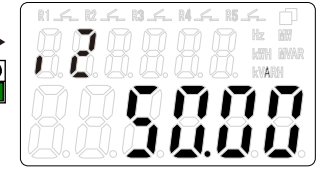
Frequency



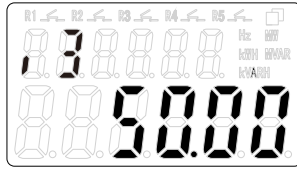
L-N Voltage U1/V



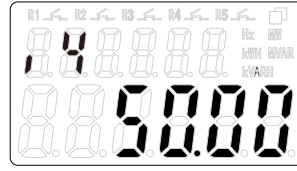
Loop 1 Current I1



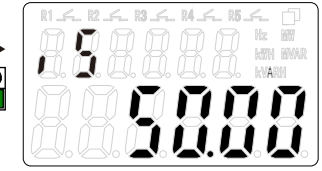
Loop 2 Current I2



Loop 3 Current I3

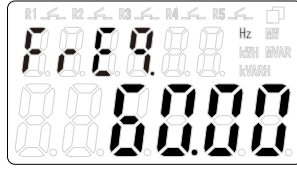


Loop 4 Current I4

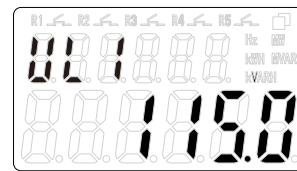


Loop 5 Current I5

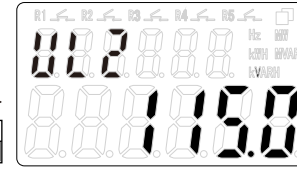
1P3W 2Loop (Single-phase three-wire two-loop)



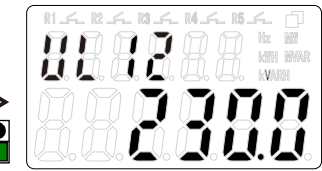
Frequency



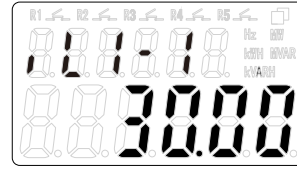
L1-N Voltage UL1/V



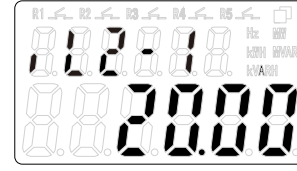
L2-N Voltage UL2/V



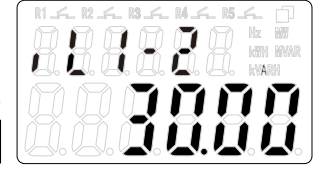
L1-L2 Voltage UL12



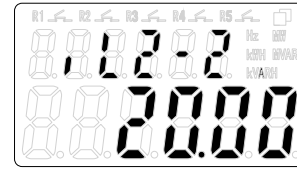
Loop 1 L1 Current IL1-1



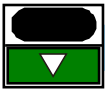
Loop 1 L2 Current IL2-1



Loop 2 L1 Current IL1-2

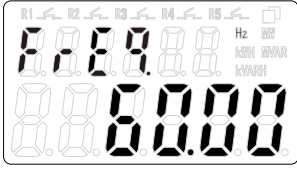


Loop 2 L2 Current IL2-2

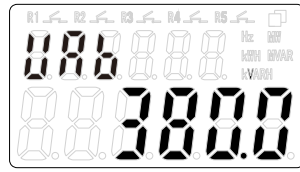


Volt/Amp (Voltage、Current) Measurement screen

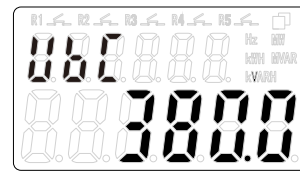
● 3P3W 2Loop (Three-phase three-wire two-loop)



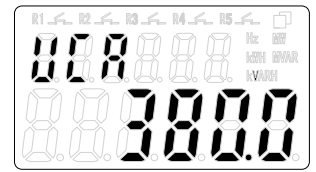
Frequency



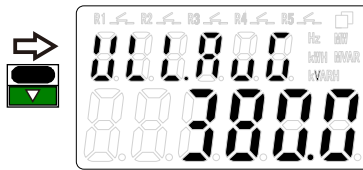
A-B-phase line voltage UAB



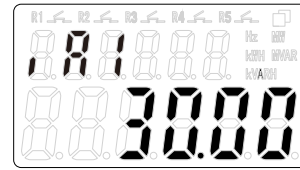
B-C-phase line voltage UBC



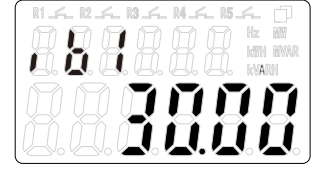
C-A-phase line voltage UCA



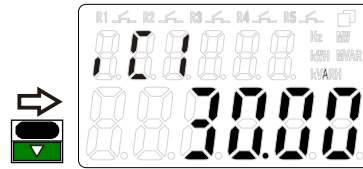
Average line voltage ULL.AVG



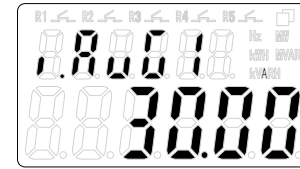
Loop1 IA current IA1



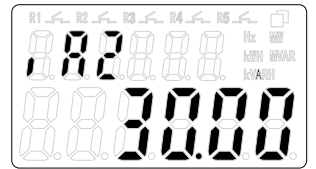
Loop 1 IB current IB1



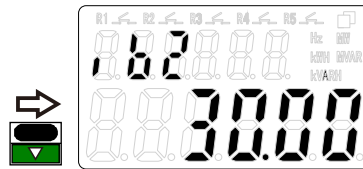
Loop 1 IC current IC1



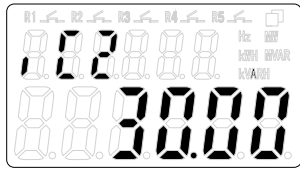
Loop1 average current I.AVG1



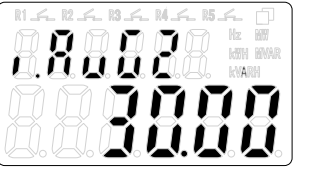
Loop2 IA current IA2



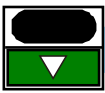
Loop2 IB current Ib2



Loop2 IC current Ic2

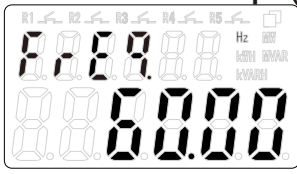


Loop2 average current I.AVG2

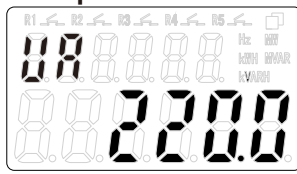


Volt/Amp (Voltage、Current) Measurement screen

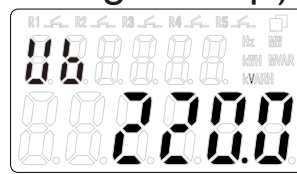
3P4W 1Loop (Three-phase four-wire single-loop)



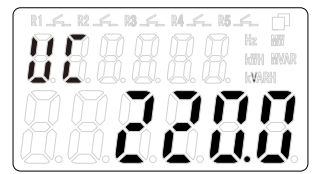
Frequency



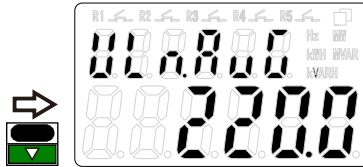
A phase voltage
UA



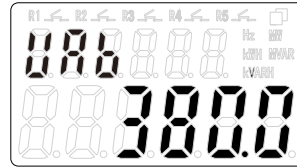
B phase voltage
UB



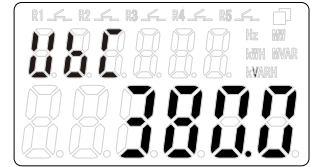
C phase voltage
UC



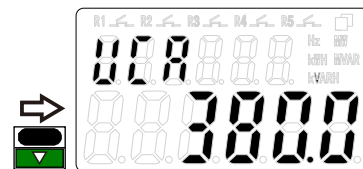
Average phase voltage
ULN.AVG



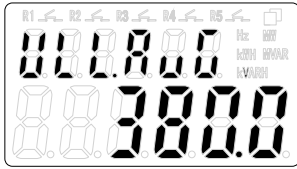
A-B line voltage
UAB



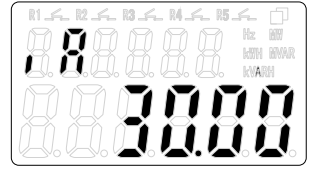
B- C line voltage
UBC



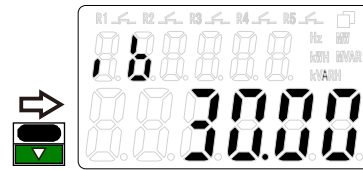
C-A line voltage
UCA



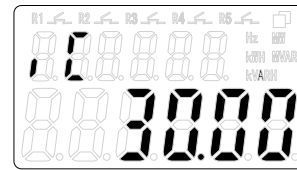
average line voltage
ULL.AVG



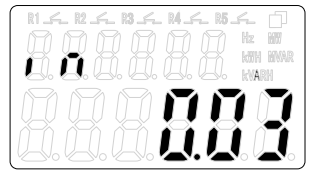
Loop 1 IA current
IA1



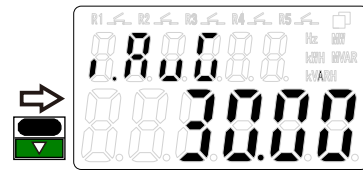
Loop1 IB current
IB1



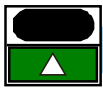
Loop1 IC current
IC



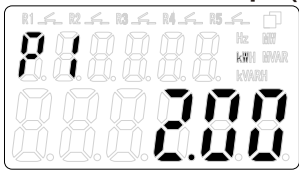
Loop1 IN current
IN



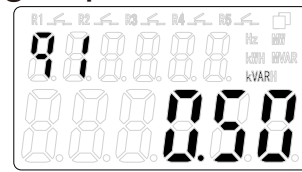
Loop 1 average current
I.AVG



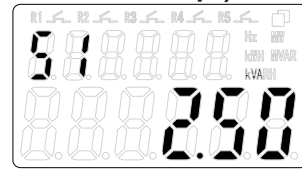
1P2W 5Loop (Single-phase two-wire five-loop)



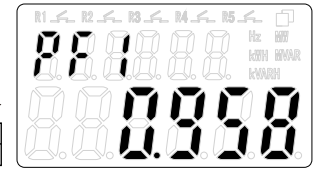
Loop 1 active power P1



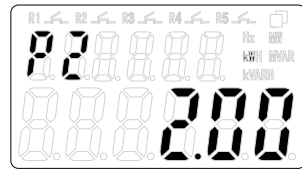
Loop 1 reactive power Q1



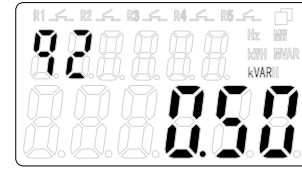
Loop 1 apparent power S1



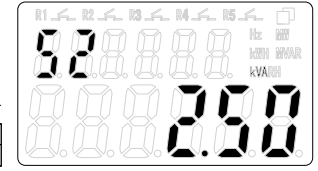
Loop 1 Power Factor Pf1



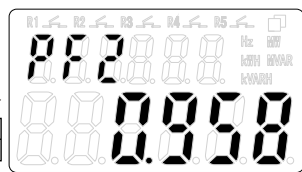
Loop 2 active power P2



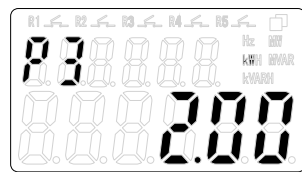
Loop 2 reactive power Q2



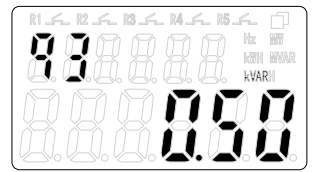
Loop 2 apparent power S2



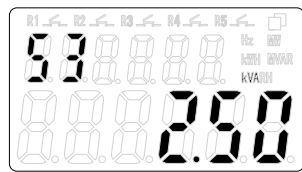
Loop 2 Power Factor Pf2



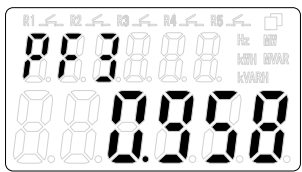
Loop 3 active power P3



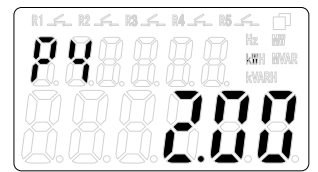
Loop 3 reactive power Q3



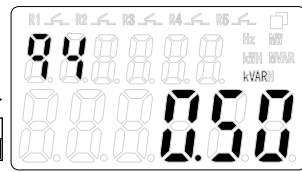
Loop 3 apparent power S3



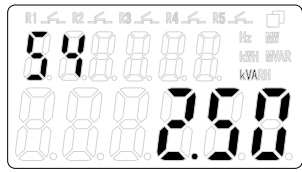
Loop 3 Power Factor Pf3



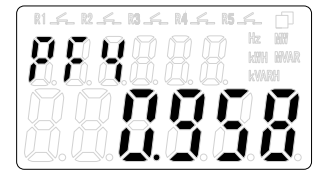
Loop 4 active power P4



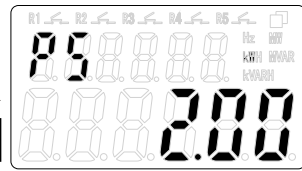
Loop 4 reactive power Q4



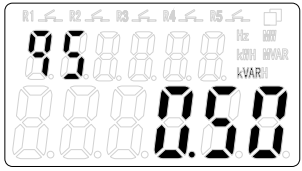
Loop 4 apparent power S4



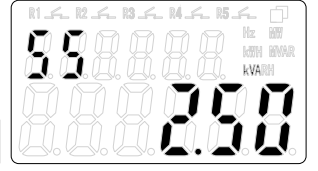
Loop 4 Power Factor Pf4



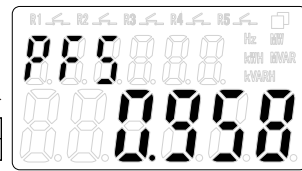
Loop 5 active power P5



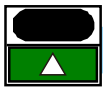
Loop 5 reactive power Q5



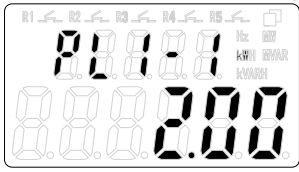
Loop 5 apparent power S5



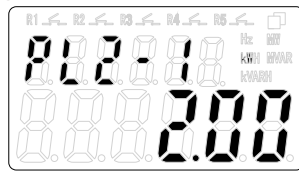
Loop 4 Power Factor Pf5



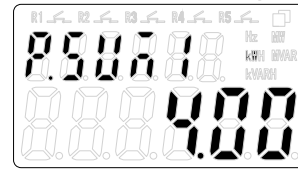
1P3W 2Loop (Single-phase three-wire two-loop)



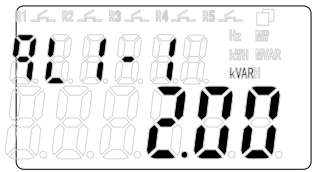
Loop 1 L1 active power PL1-1



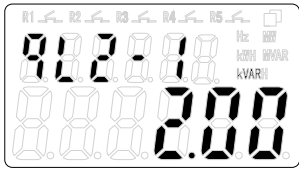
Loop 1 L2 active power PL2-1



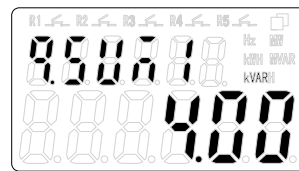
Loop 1 total active power P.SUM1



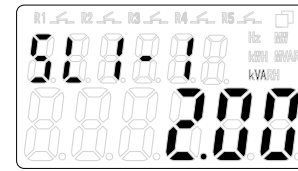
Loop 1 L1 reactive power QL1-1



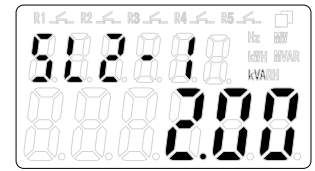
Loop 1 L2 reactive power QL2-1



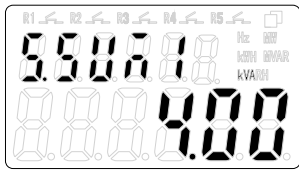
Loop 1 total reactive power Q.SUM1



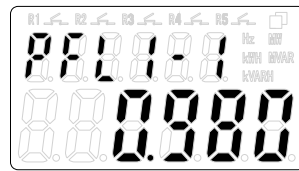
Loop 1 L1 apparent power SL1-1



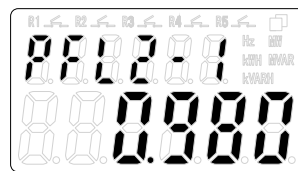
Loop 1 L2 apparent power SL2-1



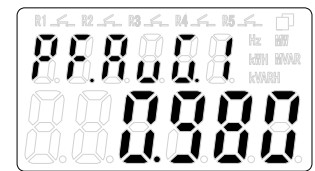
Loop 1 total apparent power S.SUM1



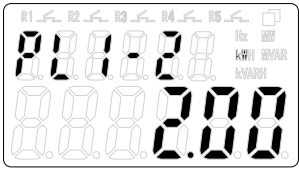
Loop 1 L1 power factor PFL1-1



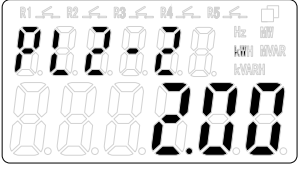
Loop 1 L2 power factor PFL2-1



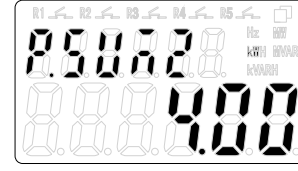
Loop 1 average power factor PF.AVG1



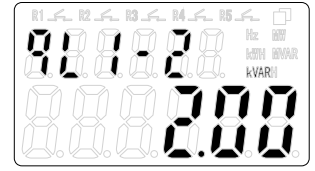
Loop 2 L1 active power PL1-2



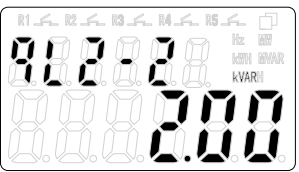
Loop 2 L2 active power PL2-2



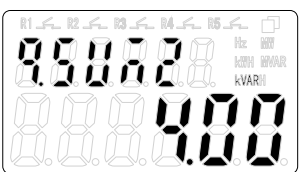
Loop 2 total active power P.SUM2



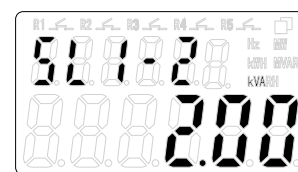
Loop 2 L1 reactive power QL1-2



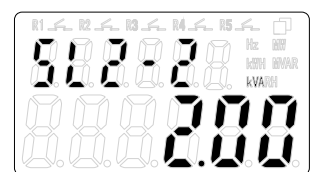
Loop 2 L2 reactive power QL2-2



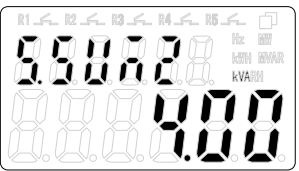
Loop 2 total reactive power Q.SUM2



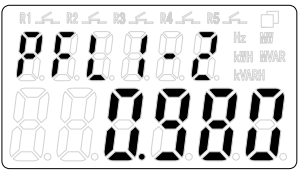
Loop 2 L1 apparent power SL1-2



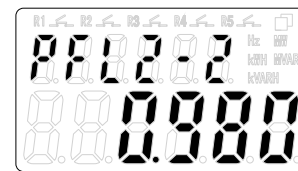
Loop 2 L2 apparent power SL2-2



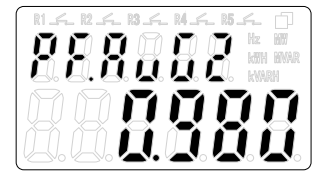
Loop 2 total apparent power S.SUM2



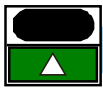
Loop 2 L1 power factor PFL1-2



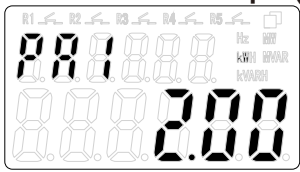
Loop 2 L2 power factor PFL2-2



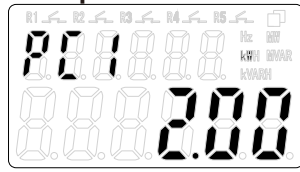
Loop 2 average power factor PF.AVG2



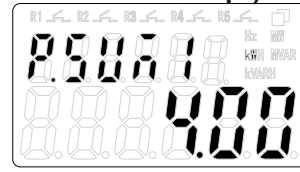
3P3W 2Loop (Three-phase three-wire two-loop)



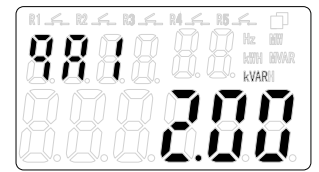
Loop 1/ AB phase active power Pa1



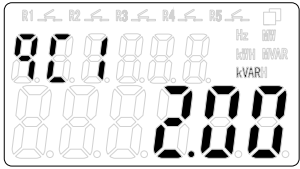
Loop 1/ BC phase active power Pc1



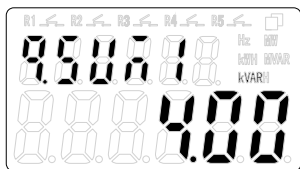
Loop 1 total effective power P.SUM1



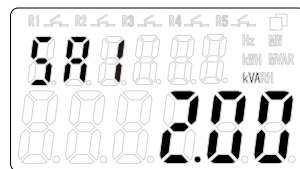
Loop 1 / AB-phase reactive power Qa1



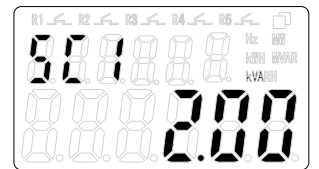
Loop 1 / BC-phase reactive power Qc1



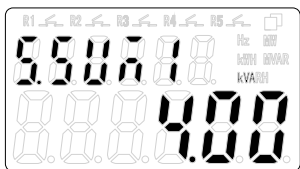
Loop 1 total reactive power Q.SUM1



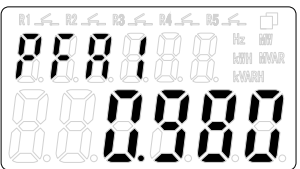
Loop 1 / AB phase apparent power Sa1



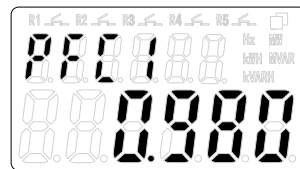
Loop 1 / BC phase apparent power Sc1



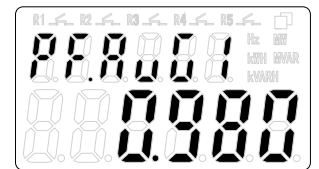
Loop 1 total apparent power S.SUM1



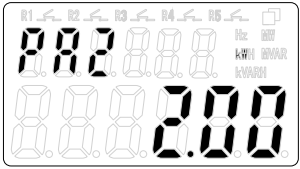
Loop 1/AB-phase power factor PFA1



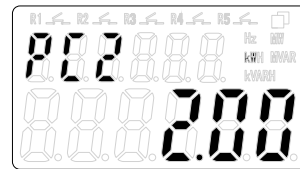
Loop 1/BC-phase power factor PFC1



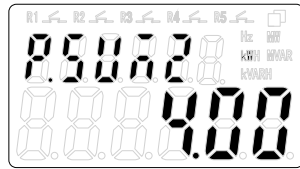
Loop 1 average power factor PF.AVG1



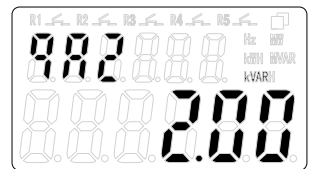
Loop 2/ AB phase active power Pa2



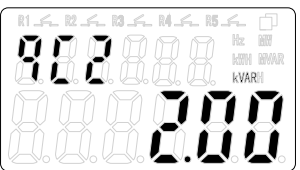
Loop 2/ BC phase active power Pc2



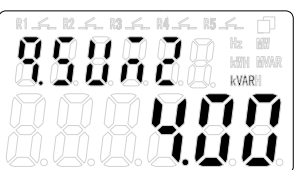
Loop 2 total active power P.SUM2



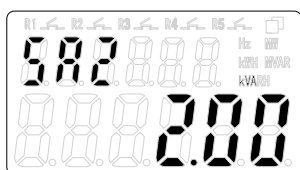
Loop 2 / AB-phase reactive power Qa2



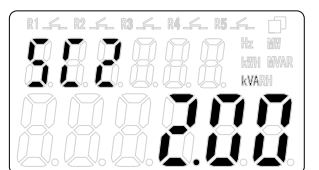
Loop 2 / BC-phase reactive power Qc2



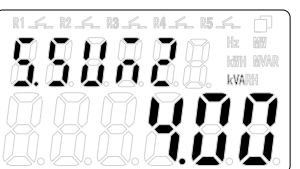
Loop 2 total reactive power Q.SUM2



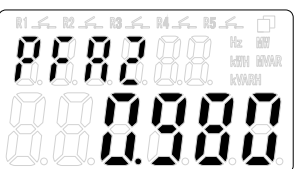
Loop 2/ AB phase apparent power Sa2



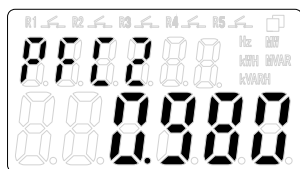
Loop 1 / BC phase apparent power Sc2



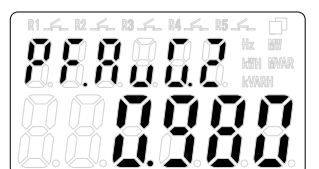
Loop 2 total apparent power S.SUM2



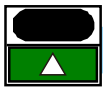
Loop 2/AB-phase power factor PFA2



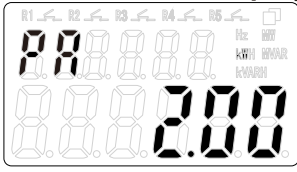
Loop 2/BC-phase power factor PFC2



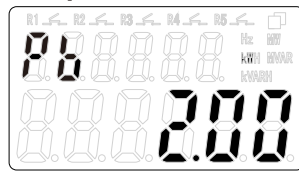
Loop 2 average power factor PF.AVG2



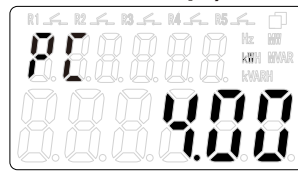
3P4W 1Loop (Three-phase four-wire two-loop)



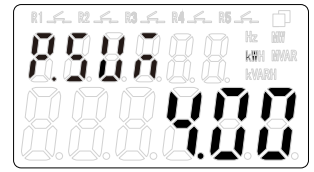
A phase effective power PA



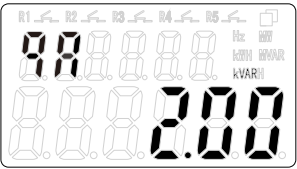
B phase effective power PB



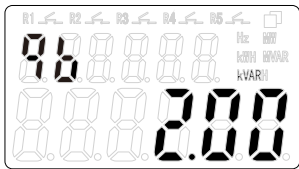
C phase effective power PC



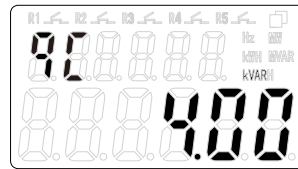
Total active power P.SUM



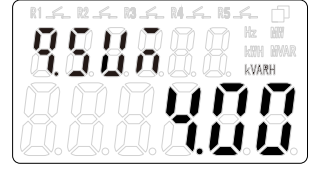
A phase reactive power QA



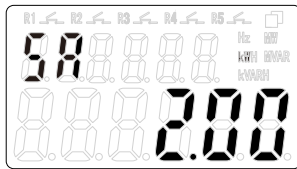
B phase reactive power QB



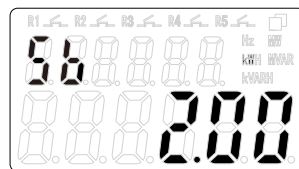
C phase reactive power QC



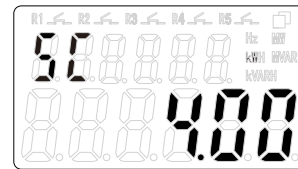
Total reactive power Q.SUM



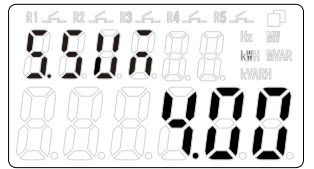
A phase apparent power SA



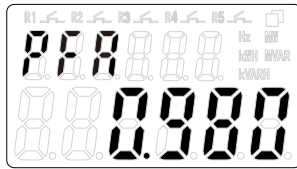
B phase apparent power SB



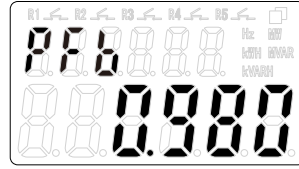
C phase apparent power SC



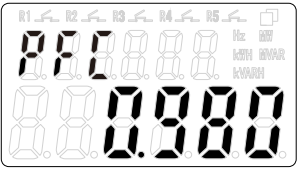
Total apparent power S.SUM



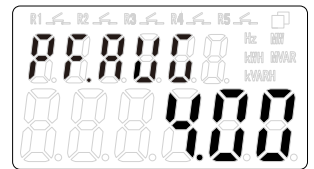
A phase power factor PFA



B phase power factor PFB



C phase power factor PFC

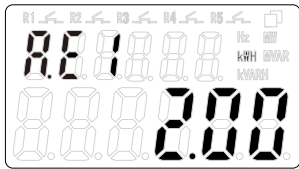


Average power factor PF.AVG

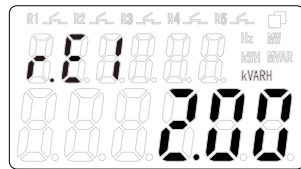


Energy (Energy)

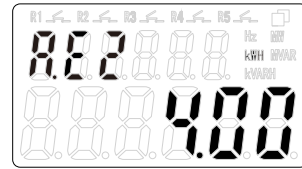
Measurement screen



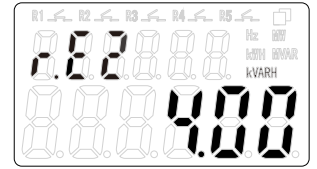
First loop total active energy A.E1



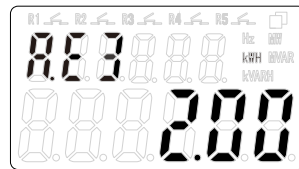
First loop total reactive energy R.E1



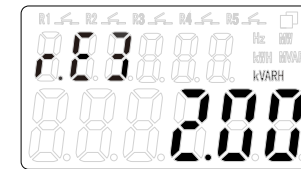
Second loop total active energy A.E2



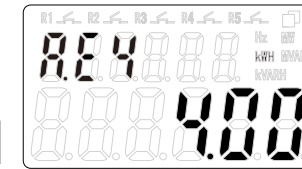
Second loop total reactive energy R.E2



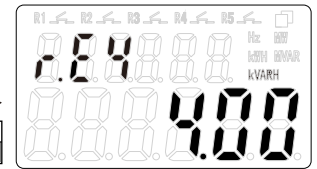
Third loop total active energy A.E3



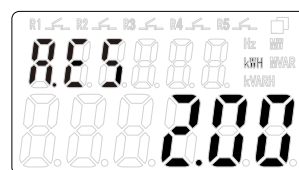
Third loop total reactive energy R.E3



Fourth loop total active energy A.E4



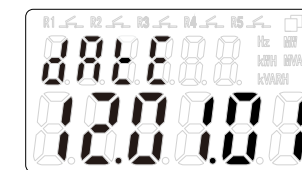
Fourth loop total reactive energy R.E4



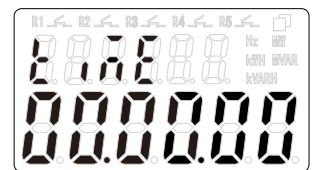
Fifth loop total active energy A.E5



Fifth loop total reactive energy R.E5

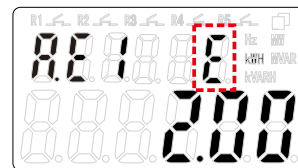


Date
12.01.01



Time
00.00.00

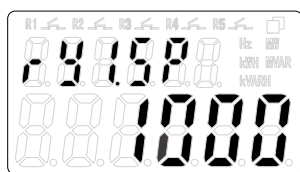
Note: If energy value overflow at display, that will appear "E" sign at upper text area as right figure.



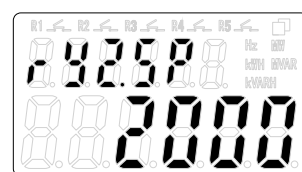
ESC (Leave)

General operating class

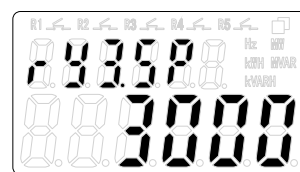
(Press and hold for more than more than one second to enter the class)



Relay 1 set point
RY1.SP/1000
Range:-32768~32767



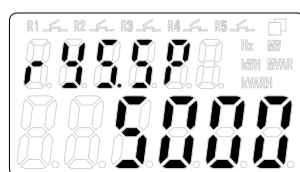
Relay 2 set point
RY2.SP/2000
Range:-32768~32767



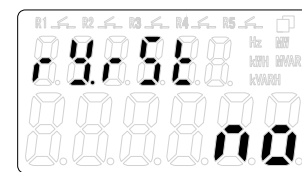
Relay 3 set point
RY3.SP/3000
Range:-32768~32767



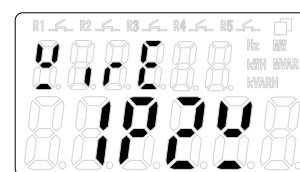
Relay 4 set point
RY4.SP/4000
Range:-32768~32767



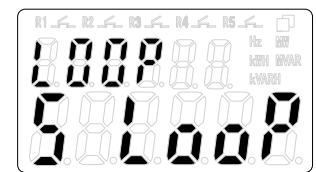
Relay 5 set point
RY5.SP/5000
Range:-32768~32767



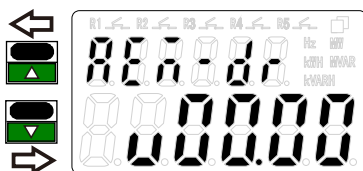
Forced reset has been activated to maintain the relay NO/YES



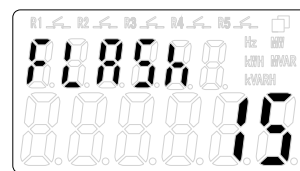
System wiring 1P2W



The number of loops/ 5
By SPEC show: 1 / 2 / 5



Software version
AEM-RD/vxx.xx

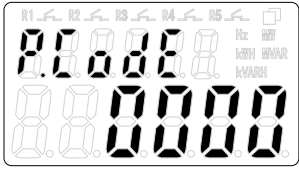


FLASH remaining time : 0~65535
Units of the same recording interval units



Enter (Confirm) / FUN

Programming Level INPUT Group



P.CODE / 0000



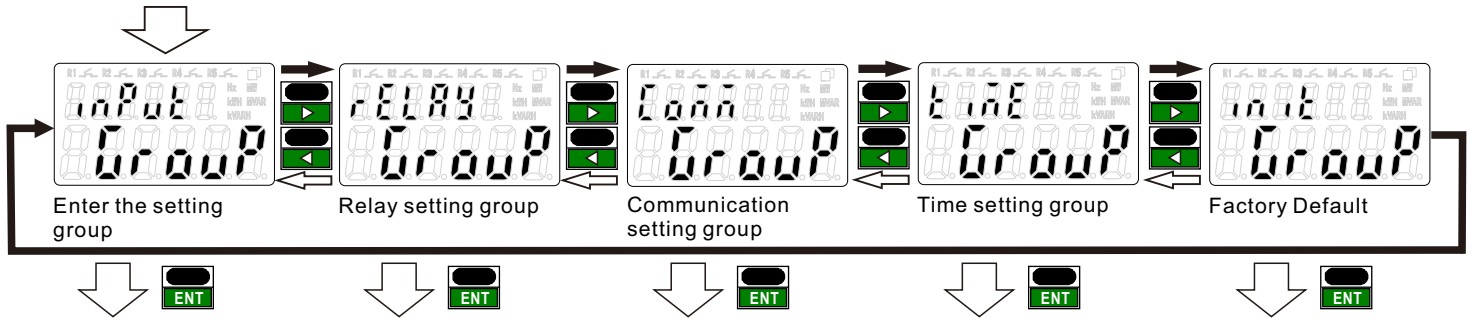
key is pressed, the rightmost 0 starts blinking can move



Left, moves to the nearest thousand, Up set to 1, the display 1000.,



Enter can enter the the parameter setting class



INTO
INPUT
GROUP
(Page 12)

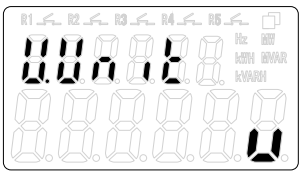
INTO
RELAY
GROUP
(Page 13~15)

INTO
COMM
GROUP
(Page 16)

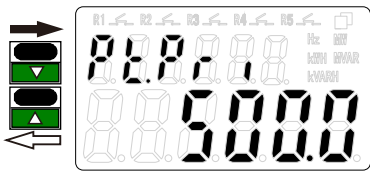
INTO
TIME
GROUP
(Page 16)

INTO
INIT
(Page 16)

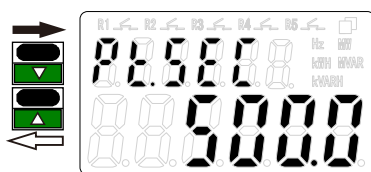
Programming Level INPUT Group



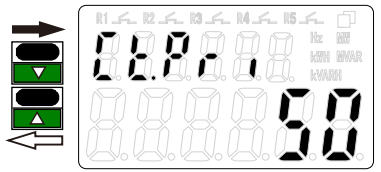
PT primary voltage
unit:U.UNIT/V



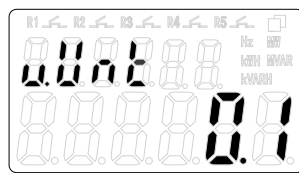
PT primary voltage:
PT.PRI/500.0



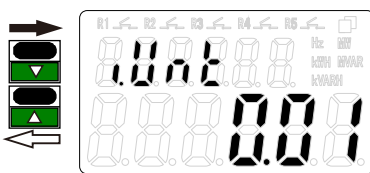
PT secondary voltage:
PT.SEC/500.0



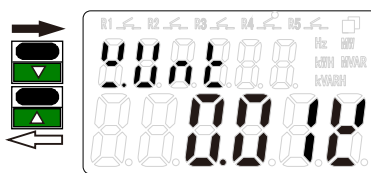
CT primary current:
CT.PRI/50



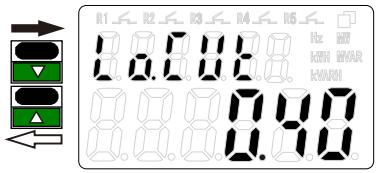
Voltage display
resolution settings:
V.UNT/0.1



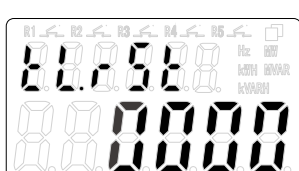
Current display
resolution setting:
I.UNT / 0.01



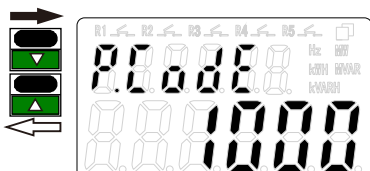
Power display
resolution setting:
W.UNT/0.01k



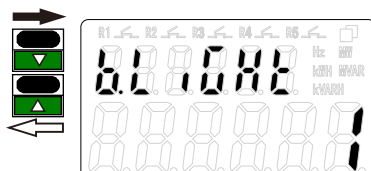
Current display
low cut:Lo.CUT/0



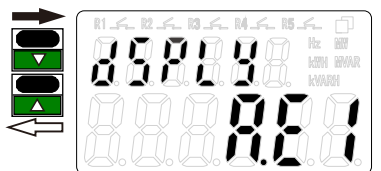
Active / reactive
energy zeroing
tlrst/0000



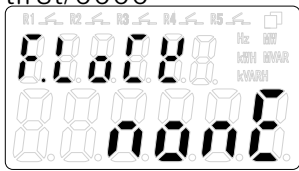
Modify the pass code
P.CODE/1000



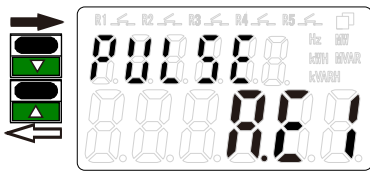
Back light time
b.Light / 1



Select Permanent
screen
display/ A.E1



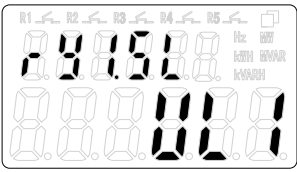
Parameter lock screen
F.LOCK/NONE



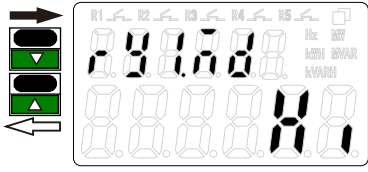
Pulse output
A.E1~A.E5/NONE

Back to PT primary
voltage

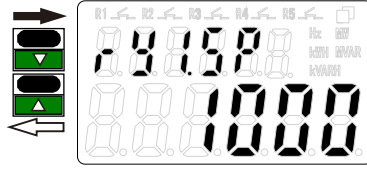
Programming Level RELAY Group



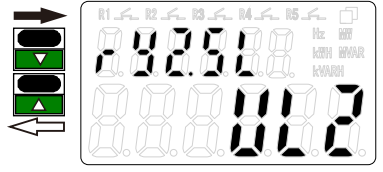
Relay 1 action parameter RY1.SL



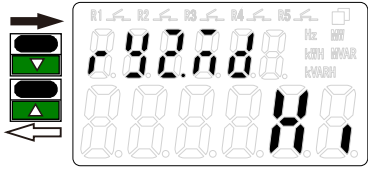
Relay 1 operation mode RY1.MD / HI
OFF/Lo/Hi/Lo.HLd/Hi.HLd/RO



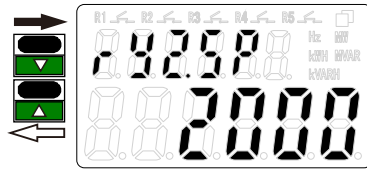
Relay 1 set point RY1.SP/1000
Range:-32768~32767



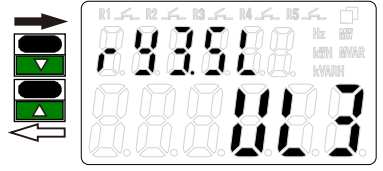
Relay 2 action parameter RY2.SL



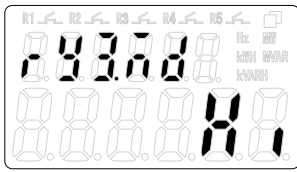
Relay 2 operation mode RY2.MD / HI
OFF/Lo/Hi/Lo.HLd/Hi.HLd/RO



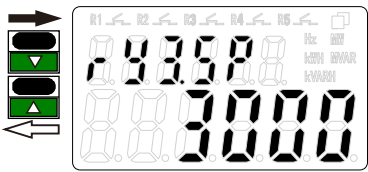
Relay 2 set point RY2.SP/2000
Range:-32768~32767



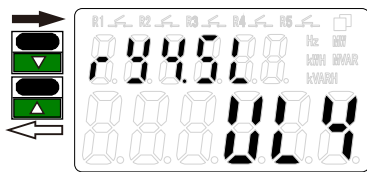
Relay 3 action parameter RY3.SL



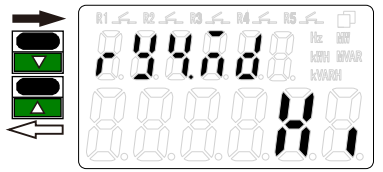
Relay 3 operation mode RY3.MD / HI
OFF/Lo/Hi/Lo.HLd/Hi.HLd/RO



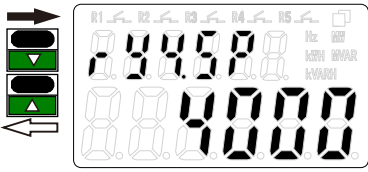
Relay 3 set point RY3.SP/3000
Range:-32768~32767



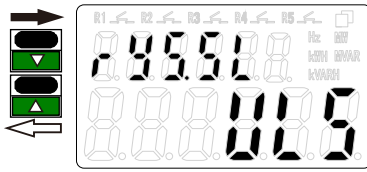
Relay 4 action parameter RY4.SL



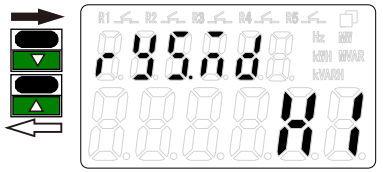
Relay 4 operation mode RY4.MD / HI
OFF/Lo/Hi/Lo.HLd/Hi.HLd/RO



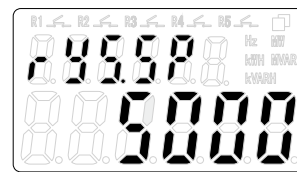
Relay 4 set point RY4.SP/4000
Range:-32768~32767



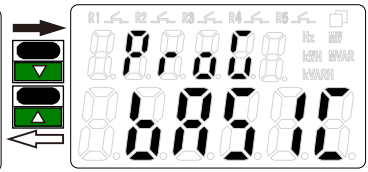
Relay 5 action parameter RY5.SL



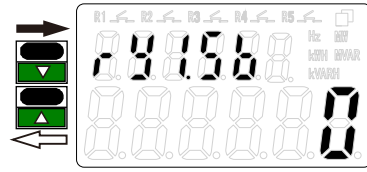
Relay 5 operation mode RY5.MD / HI
OFF/Lo/Hi/Lo.HLd/Hi.HLd/RO



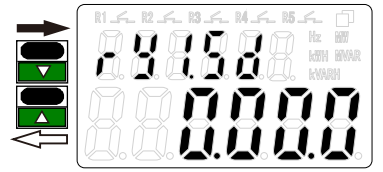
Relay 5 set point RY5.SP/5000
Range:-32768~32767



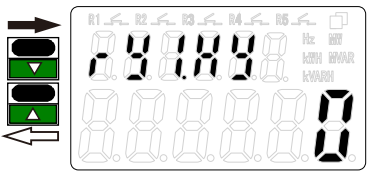
General or advanced Function
Select PROG/basic
Range:BASIC/ADVNC



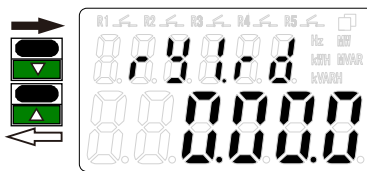
Relay 1 start band RY1.Sb/0
Range:0~ 9999 counts



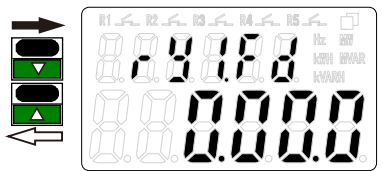
Relay 1 start delay time RY1.Sd/0.00.0
Range:0.00.0~9.59.9



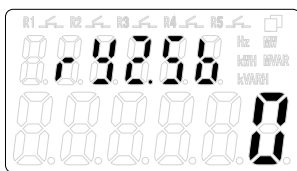
Relay 1 hysteresis time: RY1.hy/0
Range:0~ 9999 counts



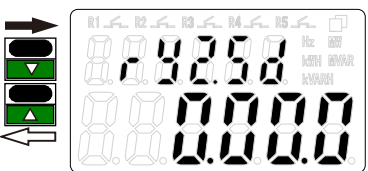
Relay 1 start delay time: RY1.rd/0.00.0
Range:0.00.0~9.59.9



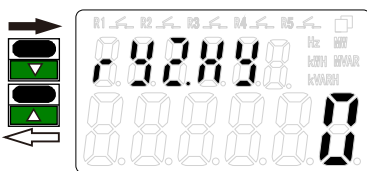
Relay 1 de-energized delay time: RY1.Fd/0.00.0
Range:0.00.0~9.59.9



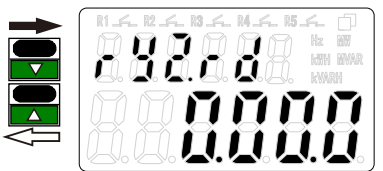
Relay 2 start band RY 2.Sb/0
Range:0~ 9999 counts



Relay 2 start delay time RY2.Sd/0.00.0
Range:0.00.0~9.59.9



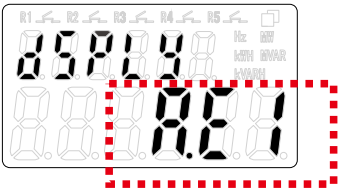
Relay 2 hysteresis time: RY2.hy/0
Range:0~ 9999 counts



Relay 2 start delay time: RY2.rd/0.00.0
Range:0.00.0~9.59.9

Programming Level parameters correspond

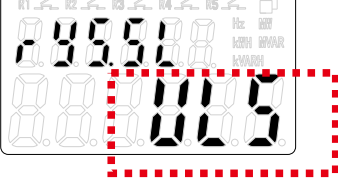
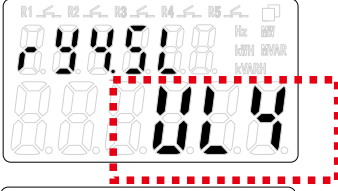
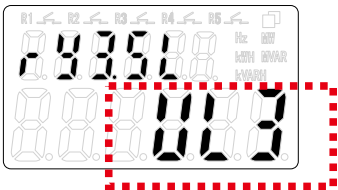
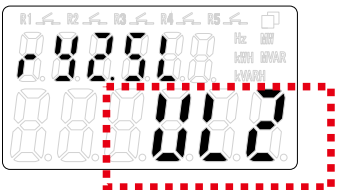
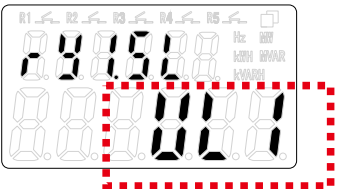
Select Permanent screen



	Loop 1	Loop 2
1P3W	Freq., UL1, UL2, UL12, IL1-1, IL2-1, PL1-1, PL2-1, P.SUM1, QL1-1, QL2-1, Q.SUM1, SL1-1, SL2-1, S.SUM1, PFL1-1, PFL2-1, PF.AVG1, A.E1, R.E1	Freq., UL1, UL2, UL12, IL1-1, IL2-1, IL1-2, IL2-2, PL1-1, PL2-1, P.SUM1, QL1-1, QL2-1, Q.SUM1, SL1-1, SL2-1, S.SUM1, PFL1-1, PFL2-1, PF.AVG1, PL1-2, PL2-2, P.SUM2, QL1-2, QL2-2, Q.SUM2, SL1-2, SL2-2, S.SUM2, PFL1-2, PFL2-2, PF.AVG2, A.E1, R.E1, A.E2, R.E2
3P3W	Freq., UAB, UBC, UCA, ULL.AVG, IA1, IB1, IC1, I.AVG1, PA1, PC1, P.SUM1, QA1, QC1, Q.SUM1, SA1, SC1, S.SUM1, PFA1, PFC1, PF.AVG1, A.E1, R.E1	Freq., UAB, UBC, UCA, ULL.AVG, IA1, IB1, IC1, I.AVG1, IA2, IB2, IC2, I.AVG2, PA1, PC1, P.SUM1, QA1, QC1, Q.SUM1, SA1, SC1, S.SUM1, PFA1, PFC1, PF.AVG1, PA2, PC2, P.SUM2, QA2, QC2, Q.SUM2, SA2, SC2, S.SUM2, PFA2, PFC2, PF.AVG2, A.E1, R.E1, A.E2, R.E2

3P4W Loop1	1P2W Loop5
Freq., UA, UB, UC, ULN.AVG, UAB, UBC, UCA, ULL.AVG, IA, IB, IC, IN, I.AVG, PA, PB, PC, P.SUM, QA, QB, QC, Q.SUM, SA, SB, SC, S.SUM, PFA, PFB, PFC, PF.AVG, A.E1, R.E1	Freq., U1, I1, I2, I3, I4, I5, P1, Q1, S1, PF1, P2, Q2, S2, PF2, P3, Q3, S3, PF3, P4, Q4, S4, PF4, P5, Q5, S5, PF5, A.E1, R.E1, A.E2, R.E2, A.E3, R.E3, A.E4, R.E4, A.E5, R.E5

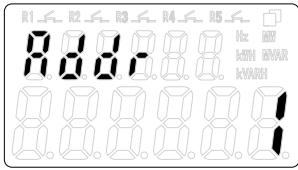
Relay parameters table



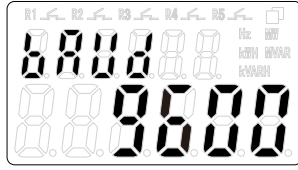
	Loop 1	Loop 2
1P3W	Freq., UL1, UL2, UL12, IL1-1 , IL2-1, PL1-1, PL2-1, P.SUM1, QL1-1, QL2-1, Q.SUM1, SL1-1, SL2-1, S.SUM1, PFL1-1, PFL2-1, PF.AVG1	Freq., UL1, UL2, UL12, IL1-1 , IL2-1, IL1-2, IL2-2, PL1-1, PL2-1, P.SUM1, QL1-1, QL2-1, Q.SUM1, SL1-1, SL2-1, S.SUM1, PFL1-1, PFL2-1, PF.AVG1, PL1-2, PL2-2, P.SUM2, QL1-2, QL2-2, Q.SUM2, SL1-2, SL2-2, S.SUM2, PFL1-2, PFL2-2, PF.AVG2
3P3W	Freq., UAB, UBC, UCA, ULL.AVG, IA1, IB1, IC1, I.AVG1 , PA1, PC1, P.SUM1, QA1, QC1, Q.SUM1, SA1, SC1, S.SUM1, PFA1, PFC1, PF.AVG1	Freq., UAB, UBC, UCA, ULL.AVG, IA1, IB1, IC1, I.AVG1 , IA2, IB2, IC2, I.AVG2, PA1, PC1, P.SUM1, QA1, QC1, Q.SUM1, SA1, SC1, S.SUM1, PFA1, PFC1, PF.AVG1, PA2, PC2, P.SUM2, QA2, QC2, Q.SUM2, SA2, SC2, S.SUM2, PFA2, PFC2, PF.AVG2

3P4W Loop1	1P2W Loop 5
Freq., UA, UB, UC, ULN.AVG, UAB, UBC, UCA, ULL.AVG, IA, IB, IC, IN, I.AVG , PA, PB, PC, P.SUM, QA, QB, QC, Q.SUM, SA, SB, SC, S.SUM, PFA, PFB, PFC, PF.AVG	Freq., U1, I1 , I2, I3, I4, I5, P1, Q1, S1, PF1, P2, Q2, S2, PF2, P3, Q3, S3, PF3, P4, Q4, S4, PF4, P5, Q5, S5, PF5

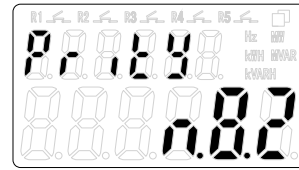
Programming Level Communication Group



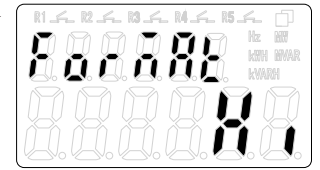
Station number
Addr/001



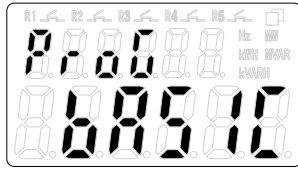
Transmission rate:
Baud/9600



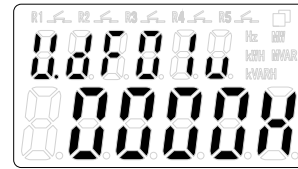
Parity Check:
Prity/N.8.2



Data Format:Forma /HI
Hi/LO (Data for the Double Word,
you can decide High Word or Low
Word first previous)



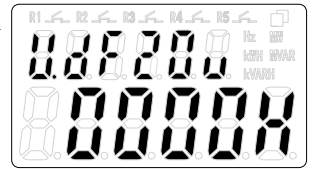
General or advanced
function selection:
Prog/Basic



User-defined address
buffer (Schedule 1)

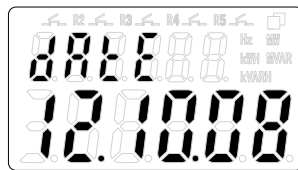


...

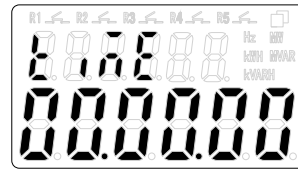


User-defined address
buffer (Schedule 1)

Programming Level TimeGroup

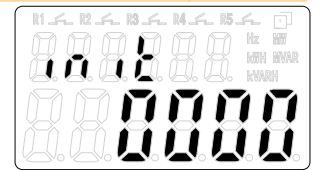


Date: Date/12.10.08
Range:
00.01.01~99.12.31



Time: Time/00.00.00
Range:
00.00.00~23.59.59

Programming Level Factory reset group



Factory reset:
Initialization : 7170

Name	Address	Range	Explain	Initial	R/W
Freq.	0000h	0.00~99.99	Frequency		R
U1	0001h	0~9999	L-N voltage		R
I1	0002h	0~9999	Group 1 loop current		R
I2	0003h	0~9999	Group 2 loop current		R
I3	0004h	0~9999	Group 3 loop current		R
I4	0005h	0~9999	Group 4 loop current		R
I5	0006h	0~9999	Group 5 loop current		R
P1	0007h	-32768~32767	Group 1 loop active power		R
Q1	0008h	-32768~32767	Group 1 loop reactive power		R
S1	0009h	0~32767	Group 1 loop apparent power		R
PF1	000Ah	-1.000~1.000	Group 1 loop power factor		R
P2	000Bh	-32768~32767	Group 2 loop active power		R
Q2	000Ch	-32768~32767	Group 2 loop reactive power		R
S2	000Dh	0~32767	Group 2 loop apparent power		R
PF2	000Eh	-1.000~1.000	Group 2 loop power factor		R
P3	000Fh	-32768~32767	Group 3 loop active power		R
Q3	0010h	-32768~32767	Group 3 loop reactive power		R
S3	0011h	0~32767	Group 3 loop apparent power		R
PF3	0012h	-1.000~1.000	Group 3 loop power factor		R
P4	0013h	-32768~32767	Group 4 loop active power		R
Q4	0014h	-32768~32767	Group 4 loop reactive power		R
S4	0015h	0~32767	Group 4 loop apparent power		R
PF4	0016h	-1.000~1.000	Group 4 loop power factor		R
P5	0017h	-32768~32767	Group 5 loop active power		R
Q5	0018h	-32768~32767	Group 5 loop reactive power		R
S5	0019h	0~32767	Group 5 loop apparent power		R
PF5	001Ah	-1.000~1.000	Group 5 loop power factor		R
Reserved		001Bh~0026h			
A.E1	0027h	0.0~	Loop1 total active energy(High Word)		R
A.E1	0028h	99999999.9kWhkWh	Loop1 total active energy(Low Word)		R
R.E1	0029h	0.0~	Loop1 reactive power(High Word)		R
R.E1	002Ah	99999999.9kWhkVARh	Loop1 reactive power(Low Word)		R
A.E2	002Bh	0.0~	Loop2 total active energy(High Word)		R
A.E2	002Ch	99999999.9kWh	Loop2 total active energy(Low Word)		R
R.E2	002Dh	0.0~	Loop2 reactive power(High Word)		R
R.E2	002Eh	99999999.9kVARh	Loop2 reactive power(Low Word)		R
A.E3	002Fh	0.0~	Loop3 total active energy(High Word)		R
A.E3	0030h	99999999.9kWh	Loop3 total active energy(Low Word)		R
R.E3	0031h	0.0~	Loop3 reactive power(High Word)		R
R.E3	0032h	99999999.9kVARh	Loop3 reactive power(Low Word)		R
A.E4	0033h	0.0~	Loop4 total active energy(High Word)		R
A.E4	0034h	99999999.9kWh	Loop4 total active energy(Low Word)		R
R.E4	0035h	0.0~	Loop4 reactive power(High Word)		R
R.E4	0036h	99999999.9kVARh	Loop4 reactive power(Low Word)		R
A.E5	0037h	0.0~	Loop5 total active energy(High Word)		R
A.E5	0038h	99999999.9kWh	Loop5 total active energy(Low Word)		R
R.E5	0039h	0.0~	Loop5 reactive power(High Word)		R
R.E5	003Ah	99999999.9kVARh	Loop5 reactive power(Low Word)		R

Relay Status and Control(CODE : 01h , 05h):

	0000h		Relay 1 status	bit0~bit4 behalf relay 1~relay 5 state, 1=on, 0=off; code 05 is relay control, at register address write Ff00h or 0000h make the relay on or off Be noted, relay mode is Ro write FF00h or 0000h, relay mode is Lo.HLd or Hi.HLd write 0000h,		R/W
	0001h		Relay 2 status			R/W
	0002h		Relay 3 status			R/W
	0003h		Relay 4 status			R/W
	0004h		Relay 5 status			R/W

General operating Level(CODE : 03h):

WIRE	003Fh	0~5	0:1P2W 1:1P3W 2:3P3W 3:3P4W 4:3P3W-b 5:3P4W-b		R
LOOP	0040h	0~1	Loop 0: 5 Loop		R
FLASH	0041h	0~65535	FLASH remaining time		R

Programming Level(CODE : 03h , 06h , 10h):Input function group

U.UNIT	0043h	0~1	PT primary voltage unit 0:V 1:kV	0	R/W
PT.PRI	0044h	0~10000	PT primary voltage	5000	R/W
PT.SEC	0045h		PT secondary voltage	5000	R/W
CT.PRI	0046h		CT primary current	50	R/W
V.UNT	0047h	0~4	Voltage display unit and resolution setting 0:0.1(V) 1:1(V) 2:0.01k(V) 3:0.1k(V) 4:1k(V)	0	R/W
I.UNT	0048h	0~3	Current display units and resolution setting 0:0.001(A) 1:0.01(A) 2:0.1(A) 3:1(A)	0	R/W
W.UNT	0049h	0~7	Power display unit and resolution settings 0:0.1(W) 1:1(W) 2:0.01k(W) 3:0.1k(W) 4:1k(W) 5:0.01M(W) 6:0.1M(W) 7:1M(W)	2	R/W
Lo.CUT	004Ah	0~10000	Current display low cut	40	R/W
P.CODE	004Bh	0~9999	Modify the P.COD	1000	R/W
b.Light	004Ch	0~15	Backlight time 0(Always lights)~15Min	1	R/W
dSPLY	004Dh	2 Loop 0~15 5 Loop 0~36	Select Permanent screen 2 Loop==> 0:Freq. 1:U1 2:I1 3:I2 4:P1 5:Q1 6:S1 7:PF1 8:P2 9:Q2 10:S2 11:PF2 12:A.E1 13:R.E1 14:A.E2 15:R.E2 5 Loop==> 0:Freq. 1:U1 2:I1 3:I2 4:I3 5:I4 6:I5 7:P1 8:Q1 9:S1 10:PF1 11:P2 12:Q2 13:S2 14:PF2 15:P3 16:Q3 17:S3 18:PF3 19:P4 20:Q4 21:S4 22:PF4 23:P5 24:Q5 25:S5 26:PF5 27:A.E1 28:R.E1 29:A.E2 30:R.E2 31:A.E3 32:R.E3 33:A.E4 34:R.E4 35:A.E5 36:R.E5	0	R/W
F.LOCK	004Eh	0~3	0:NONE 1:USER 2:ENG. 3:ALL	0	R/W
EEP STATUS	004Fh	0~3	0:OK 1: EEPROM NG 2: FLASH NG 3: EEPROM & FLASH NG	0	R
tL.rst	0050h		Clear Energy (Write 2100)	0	R/W

Relay output function group

R/Y1.SL	0051h	2 Loop0~11 5 Loop0~26	Relay 1 action parameters 2 Loop==> 0:Freq. 1:U1 2:I1 3:I2 4:P1 5:Q1 6:S1 7:PF1 8:P2 9:Q2 10:S2 11:PF2 5 Loop==> 0:Freq. 1:U1 2:I1 3:I2 4:I3 5:I4 6:I5 7:P1 8:Q1 9:S1 10:PF1 11:P2 12:Q2 13:S2 14:PF2 15:P3 16:Q3 17:S3 18:PF3 19:P4 20:Q4 21:S4 22:PF4 23:P5 24:Q5 25:S5 26:PF5	2	R/W
R/Y1.MD	0052h	0~5	Relay 1 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
R/Y1.SP	0053h	-32768~32767	Relay 1 set point	1000	R/W
R/Y1.Sb	0054h	0~9999	Relay 1 start band	0	R/W
R/Y1.Sd	0055h	0000~5999 (0.1second)	Relay1start delay time	0	R/W
R/Y1.Hy	0056h	0~9999	Relay 1 hysteresis time	0	R/W
R/Y1.rd	0057h	0000~5999 (0.1second)	Relay 1 energized time	0	R/W
R/Y1.Fd	0058h	0000~5999 (0.1second)	Relay 1 de-energized delay time	0	R/W
R/Y2.SL	0059h	2 Loop0~11 5 Loop0~26	Relay 2 action parameters 2 Loop==> 0:Freq. 1:U1 2:I1 3:I2 4:P1 5:Q1 6:S1 7:PF1 8:P2 9:Q2 10:S2 11:PF2 5 Loop==> 0:Freq. 1:U1 2:I1 3:I2 4:I3 5:I4 6:I5 7:P1 8:Q1 9:S1 10:PF1 11:P2 12:Q2 13:S2 14:PF2 15:P3 16:Q3 17:S3 18:PF3 19:P4 20:Q4 21:S4 22:PF4 23:P5 24:Q5 25:S5 26:PF5	2	R/W
R/Y2.MD	005Ah	0~5	Relay 2 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
R/Y2.SP	005Bh	-32768~32767	Relay 2 set point	2000	R/W
R/Y2.Sb	005Ch	0~9999	Relay 2 start band	0	R/W
R/Y2.Sd	005Dh	0000~5999 (0.1second)	Relay 2 start delay time	0	R/W
R/Y2.Hy	005Eh	0~9999	Relay 2 hysteresis time	0	R/W
R/Y2.rd	005Fh	0000~5999 (0.1second)	Relay 2 energized time	0	R/W

RY2.Fd	0060h	0000~5999 (0.1second)	Relay 2 de-energized delay time	0	R/W
RY3.SL	0061h	2 Loop0~11 5 Loop0~26	Relay 3 action parameters 2Loop==> 0:Freq. 1:U1 2:I1 3:I2 4:P1 5:Q1 6:S1 7:PF1 8:P2 9:Q2 10:S2 11:PF2 5Loop==> 0:Freq. 1:U1 2:I1 3:I2 4:I3 5:I4 6:I5 7:P1 8:Q1 9:S1 10:PF1 11:P2 12:Q2 13:S2 14:PF2 15:P3 16:Q3 17:S3 18:PF3 19:P4 20:Q4 21:S4 22:PF4 23:P5 24:Q5 25:S5 26:PF5	2	R/W
RY3.MD	0062h	0~5	Relay 3 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
RY3.SP	0063h	-32768~32767	Relay 3 set point	3000	R/W
RY3.Sb	0064h	0~9999	Relay 3 start band	0	R/W
RY3.Sd	0065h	0000~5999 (0.1second)	Relay 3 start delay time	0	R/W
RY3.Hy	0066h	0~9999	Relay 3 hysteresis time	0	R/W
RY3.rd	0067h	0000~5999 (0.1second)	Relay 3 energized time	0	R/W
RY3.Fd	0068h	0000~5999 (0.1second)	Relay 3 de-energized delay time	0	R/W
RY4.SL	0069h	2 Loop0~11 5 Loop0~26	Relay 4 action parameters 2 Loop==> 0:Freq. 1:U1 2:I1 3:I2 4:P1 5:Q1 6:S1 7:PF1 8:P2 9:Q2 10:S2 11:PF2 5 Loop==> 0:Freq. 1:U1 2:I1 3:I2 4:I3 5:I4 6:I5 7:P1 8:Q1 9:S1 10:PF1 11:P2 12:Q2 13:S2 14:PF2 15:P3 16:Q3 17:S3 18:PF3 19:P4 20:Q4 21:S4 22:PF4 23:P5 24:Q5 25:S5 26:PF5	2	R/W
RY4.MD	006Ah	0~5	Relay 4 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
RY4.SP	006Bh	-32768~32767	Relay 4 set point	4000	R/W
RY4.Sb	006Ch	0~9999	Relay 4 start band	0	R/W
RY4.Sd	006Dh	0000~5999 (0.1second)	Relay 4 start delay time	0	R/W
RY4.Hy	006Eh	0~9999	Relay 4 hysteresis time	0	R/W
RY4.rd	006Fh	0000~5999 (0.1second)	Relay 4 energized time	0	R/W

RY4.Fd	0070h	0000~5999 (0.1second)	Relay 4 de-energized delay time	0	R/W
RY5.SL	0071h	2 Loop0~11 5 Loop0~26	Relay 5 action parameters 2 Loop==> 0:Freq. 1:U1 2:I1 3:I2 4:P1 5:Q1 6:S1 7:PF1 8:P2 9:Q2 10:S2 11:PF2 5 Loop==> 0:Freq. 1:U1 2:I1 3:I2 4:I3 5:I4 6:I5 7:P1 8:Q1 9:S1 10:PF1 11:P2 12:Q2 13:S2 14:PF2 15:P3 16:Q3 17:S3 18:PF3 19:P4 20:Q4 21:S4 22:PF4 23:P5 24:Q5 25:S5 26:PF5	2	R/W
RY5.MD	0072h	0~5	Relay 5 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
RY5.SP	0073h	-32768~32767	Relay 5 set point	5000	R/W
RY5.Sb	0074h	0~9999	Relay 5 start band	0	R/W
RY5.Sd	0075h	0000~5999 (0.1second)	Relay 5 start delay time	0	R/W
RY5.Hy	0076h	0~9999	Relay 5 hysteresis time	0	R/W
RY5.rd	0077h	0000~5999 (0.1second)	Relay 5 energized time	0	R/W
RY5.Fd	0078h	0000~5999 (0.1second)	Relay 5 de-energized delay time	0	R/W

Communication function group

Addr	007Bh	1~255	Station number	1	R/W
Baud	007Ch	0~5	Transmission rate 0:1200 1:2400 2:4800 3:9600 4:19200 5:38400	3	R/W
Prity	007Dh	0~3	Parity Check 0:N.8.1 1:N.8.2 2:E.8.1 3:O.8.1	1	R/W
Format	007Eh	0~1	0:High 1:Lo	0	R/W

Date Time function group

Year	007Fh	2000~2099	Year	2012	R/W
Month	0080h	1~12	Month	1	R/W
Day	0081h	1~31	Date	1	R/W
Hour	0082h	0~23	Time	0	R/W
Minute	0083h	0~59	Minute	0	R/W
Second	0084h	0~59	Second	0	R/W

FLASH read(CODE : 03h , 06h)

	0200h		The number of each record WORD		R
	0201h		Unread items		R
	0202h		Read the next record, if no data returned error code 0020h		R
	0203h	0~2	Read status reports 0:Clear all records 1:Give up this read 2:Read successfully		W
	0204H	0~1	Stop recording 0:Stop 1:Restart	1	R/W

※Logging data format

Address	Fuction	Byte Count	Voltage Unit		Current Unit		Power Unit		Year		Month	
			Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo
01H	03H	30H	00H	01H	00H	00H	00H	02H	07H	DFH	00H	0CH

Day		Hour		Minute		Second		Data	CRC	
Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo		Lo	Hi
00H	01H	00H	0DH	00H	19H	00H	2AH	.....	xxH	xxH

Byte Count => Number of data lenth (Read from 0200h)

Date : 2015/12/01 => 07DFH/000H/0001H

Time : 13:25:42 => 000DH:0019H:002AH

FLASH setting(CODE : 03h , 06h , 10h)

	0210h	0~1	0:Full Record 1:Individual choice	0	R/W
	0211h	1~32767	The value of the recording interval time	15	R/W
	0212h	0~3	Recording interval time units 0:sec 1:min 2:hour 3:day	1	R/W
	0213h	2000~2099	Start recording time -Year	2012	R/W
	0214h	1~12	Start recording time -Month	1	R/W
	0215h	1~31	Start recording time -Day	1	R/W
	0216h	0~23	Start recording time -Hour	0	R/W
	0217h	0~59	Start recording time -Minute	0	R/W
	0218h	0~59	Start recording time -Second	0	R/W
	0219h	2000~2099	Stop recording time-Year	2012	R/W
	021Ah	1~12	Stop recording time-Month	1	R/W
	021Bh	1~31	Stop recording time-Day	1	R/W
	021Ch	0~23	Stop recording time-Hour	0	R/W
	021Dh	0~59	Stop recording time-Minute	0	R/W
	021Eh	0~59	Stop recording time-Second	0	R/W
	021Fh	0~1	Stop / Start recording 0:Stop 1:Start	0	R/W

Record field01	0220h	2 loop 0~16 5 loop 0~37	Record field, store the recorded content index	R/W	
Record field02	0221h		2 Loop==>	R/W	
Record field03	0222h		0:none 1:Freq. 2:U1 3:I1 4:I2 5:P1	R/W	
Record field04	0223h		6:Q1 7:S1 8:PF1 9:P2 10:Q2 11:S2	R/W	
Record field05	0224h		12:PF2 13:A.E1 14:R.E1 15:A.E2 16:R.E2	R/W	
Record field06	0225h		5 Loop==>	R/W	
Record field07	0226h		0:none 1:Freq. 2:U1 3:I1 4:I2 5:I3	R/W	
Record field08	0227h		6:I4 7:I5 8:P1 9:Q1 10:S1 11:PF1	R/W	
Record field09	0228h		12:P2 13:Q2 14:S2 15:PF2 16:P3 17:Q3	R/W	
Record field10	0229h		18:S3 19:PF3 20:P4 21:Q4 22:S4 23:PF4	R/W	
Record field11	022Ah		24:P5 25:Q5 26:S5 27:PF5 28:A.E1	R/W	
Record field12	022Bh		29:R.E1 30:A.E2 31:R.E2 32:A.E3 33:R.E3	R/W	
Record field13	022Ch		34:A.E4 35:R.E4 36:A.E5 37:R.E5	R/W	
Record field14	022Dh			R/W	
Record field15	022Eh			R/W	
Record field16	022Fh			R/W	
Record field17	0230h			R/W	
Record field18	0231h			R/W	
Record field19	0232h			initial(Full Record)	R/W
Record field20	0233h			2 loop==>Record field 01~Record field	R/W
Record field21	0234h			16 Sequence 1~16,Record	R/W
Record field22	0235h			field17~Record field 41 are all 0	R/W
Record field23	0236h			5 loop==>Record field 01~Record field37	R/W
Record field24	0237h			Sequence1~37, Record38~Record field41	R/W
Record field25	0238h			are all 0	R/W
Record field26	0239h			initial	R/W
Record field27	023Ah			Record field 01~Record field 41 are all 0	R/W
Record field28	023Bh				R/W
Record field29	023Ch				R/W
Record field30	023Dh				R/W
Record field31	023Eh				R/W
Record field32	023Fh				R/W
Record field33	0240h				R/W
Record field34	0241h				R/W
Record field35	0242h				R/W
Record field36	0243h				R/W
Record field37	0244h				R/W
Record field38	0245h				R/W
Record field39	0246h				R/W
Record field40	0247h				R/W
Record field41	0248h				R/W

1P3W

Measurement screen quickly read the information(CODE : 03h):

Name	Address	Range	Explain	Initial	R/W
Freq.	0000h	45.00~65.00	Frequency		R
UL1	0001h	0~9999	L1-N Voltage		R
UL2	0002h	0~9999	L2-N Voltage		R
UL12	0003h	0~9999	L1-L2 Voltage		R
IL1-1	0004h	0~9999	Loop 1 L1 current		R
IL2-1	0005h	0~9999	Loop 1 L2 current		R
IL1-2	0006h	0~9999	Loop 2 L1 current		R
IL2-2	0007h	0~9999	Loop 2 L2 current		R
PL1-1	0008h	-32768~32767	Loop 1 L1-N phase active power		R
PL2-1	0009h	-32768~32767	Loop 1 L2-N phase active power		R
P.SUM1	000Ah	-32768~32767	Loop 1 total active power		R
QL1-1	000Bh	-32768~32767	Loop 1 L1-N phase reactive power		R
QL2-1	000Ch	-32768~32767	Loop 1 L2-N phase reactive power		R
Q.SUM1	000Dh	-32768~32767	Loop 1 total reactive power		R
SL1-1	000Eh	0~32767	Loop 1 L1-N apparent power		R
SL2-1	000Fh	0~32767	Loop 1 L2-N apparent power		R
S.SUM1	0010h	0~32767	Loop 1 total apparent power		R
PFL1-1	0011h	-1.000~1.000	Loop 1 L1-N Power Factor		R
PFL2-1	0012h	-1.000~1.000	Loop 1 L2-N Power Factor		R
PF.AVG1	0013h	-1.000~1.000	Loop 1 average power factor		R
PL1-2	0014h	-32768~32767	Loop 2 L1-N phase active power		R
PL2-2	0015h	-32768~32767	Loop 2 L2-N phase active power		R
P.SUM2	0016h	-32768~32767	Loop 2 total active power		R
QL1-2	0017h	-32768~32767	Loop 2 L1-N apparent power		R
QL2-2	0018h	-32768~32767	Loop 2 L2-N apparent power		R
Q.SUM2	0019h	-32768~32767	Loop 2 total reactive power		R
SL1-2	001Ah	0~32767	Loop 2 L1-N apparent power		R
SL2-2	001Bh	0~32767	Loop 2 L2-N apparent power		R
S.SUM2	001Ch	0~32767	Loop 2 total apparent power		R
PFL1-2	001Dh	-1.000~1.000	Loop 2 L1-N Power Factor		R
PFL2-2	001Eh	-1.000~1.000	Loop 2 L2-N Power Factor		R
PF.AVG2	001Fh	-1.000~1.000	Loop 2 average power factor		R
A.E1	0027h	0.0~	Loop 1 total active energy(High Word)		R
A.E1	0028h	99999999.9kWh	Loop 1 total active energy(Low Word)		R
R.E1	0029h	0.0~	Loop 1 total reactive energy(High Word)		R
R.E1	002Ah	99999999.9kVARh	Loop 1 total reactive energy(Low Word)		R
A.E2	002Bh	0.0~	Loop 2 total active energy(High Word)		R
A.E2	002Ch	99999999.9kWh	Loop 2 total active energy(Low Word)		R
R.E2	002Dh	0.0~	Loop 2 total reactive energy(High Word)		R
R.E2	002Eh	99999999.9kVARh	Loop 2 total reactive energy(Low Word)		R

Relay Status and Control(CODE : 01h , 05h):

	0000h		Relay 1 status	bit0~bit4 behalf relay 1~relay 5 state, 1=on, 0=off;code 05 is relay control, at register address write Ff00h or 0000hmake the relay on or off ◦ Be noted,relay mode is Ro write Ff00h or 0000h,relay mode is Lo.HLd or Hi.HLd write 0000h, rest model is non-writable		R/W
	0001h		Relay 2 status			R/W
	0002h		Relay 3 status			R/W
	0003h		Relay 4 status			R/W
	0004h		Relay 5 status			R/W

General operating Level(CODE: 03h):

WIRE	003Fh	0~5	0:1P2W 1:1P3W 2:3P3W 3:3P4W 4:3P3W-b 5:3P4W-b		R
LOOP	0040h	0~1	number of loop 0: 1 LOOP 1: 2 LOOP		R
FLASH	0041h	0~65535	FLASH remaining time		R

Programming Level(CODE : 03h , 06h , 10h)Input function group

U.UNIT	0043h	0~1	PT primary voltage unit 0:V 1:kV	0	R/W
PT.PRI	0044h		PT primary voltage	5000	R/W
PT.SEC	0045h		PT secondary voltage	5000	R/W
CT.PRI	0046h		CT primary current	50	R/W
V.UNT	0047h	0~4	Voltage display unit and resolution setting 0:0.1(V) 1:1(V) 2:0.01k(V) 3:0.1k(V) 4:1k(V)	0	R/W
I.UNT	0048h	0~3	Current display units and resolution setting 0:0.001(A) 1:0.01(A) 2:0.1(A) 3:1(A)	0	R/W
W.UNT	0049h	0~7	Power display unit and resolution settings 0:0.1(W) 1:1(W) 2:0.01k(W) 3:0.1k(W) 4:1k(W) 5:0.01M(W) 6:0.1M(W) 7:1M(W)	2	R/W
Lo.CUT	004Ah	0~10000	Current display low cut	40	R/W
P.CODE	004Bh	0~9999	Modify the P.COD	1000	R/W
b.Light	004Ch	0~15	Backlight time 0(Always lights)~15Min	1	R/W
dSPLY	004Dh	1 Loop 0~19 2 Loop 0~35	Select Permanent screen 1 Loop==> 0: Freq. 1:UL1 2:UL2 3:UL12 4:IL1-1 5:IL2-1 6:PL1-1 7:PL2-1 8:P.SUM1 9:QL1-1 10:QL2-1 11:Q.SUM1 12:SL1-1 13:SL2-1 14:S.SUM1 15:PFL1-1 16:PFL2-1 17:PF.AVG1 18:A.E1 19:R.E1 2 Loop==> 0:Freq. 1:UL1 2:UL2 3:UL12 4:IL1-1 5:IL2-1 6:IL1-2 7:IL2-2 8:PL1-1 9:PL2-1 10:P.SUM1 11:QL1-1 12:QL2-1 13:Q.SUM1 14:SL1-1 15:SL2-1 16:S.SUM1 17:PFL1-1 18:PFL2-1 19:PF.AVG1 20:PL1-2 21:PL2-2 22:P.SUM2 23:QL1-2 24:QL2-2 25:Q.SUM2 26:SL1-2 27:SL2-2 28:S.SUM2 29:PFL1-2 30:PFL2-2 31:PF.AVG2 32:A.E1 33:R.E1 34:A.E2 35:R.E2	0	R/W
F.LOCK	004Eh	0~3	0:NONE 1:USER 2:ENG. 3:ALL	0	R/W
E.EP STATUS	004Fh	0~3	0:OK 1: EEPROM NG 2: FLASH NG 3: EEPROM & FLASH NG	0	R
tL.rst	0050h		Clear Energy (Write 2100)	0	R/W

Relay output function group

Ry1.SL	0051h	1Loop 0~17 2Loop 0~31	Relay 1 action parameters 1 Loop==> 0:Freq. 1:UL1 2:UL2 3:UL12 4:IL1-1 5:IL2-1 6:PL1-1 7:PL2-1 8:P.SUM1 9:QL1-1 10:QL2-1 11:Q.SUM1 12:SL1-1 13:SL2-1 14:S.SUM1 15:PFL1-1 16:PFL2-1 17:PF.AVG1 2 Loop==> 0:Freq. 1:UL1 2:UL2 3:UL12 4:IL1-1 5:IL2-1 6:IL1-2 7:IL2-2 8:PL1-1 9:PL2-1 10:P.SUM1 11:QL1-1 12:QL2-1 13:Q.SUM1 14:SL1-1 15;SL2-1 16:S.SUM1 17:PFL1-1 18:PFL2-1 19;PF.AVG1 20:PL1-2 21:PL2-2 22:P.SUM2 23:QL1-2 24:QL2-2 25:Q.SUM2 26:SL1-2 27:SL2-2 28:S.SUM2 29:PFL1-2 30:PFL2-2 31:PF.AVG2	4	R/W
Ry1.MD	0052h	0~5	Relay 1 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
Ry1.SP	0053h	-32768~32767	Relay 1 set point	1000	R/W
Ry1.Sb	0054h	0~9999	Relay 1 start band	0	R/W
Ry1.Sd	0055h	0000~5999 (0.1second)	Relay1start delay time	0	R/W
Ry1.Hy	0056h	0~9999	Relay 1 hysteresis time	0	R/W
Ry1.rd	0057h	0000~5999 (0.1second)	Relay 1 start delay time	0	R/W
Ry1.Fd	0058h	0000~5999 (0.1second)	Relay 1 de-energizeddelay time	0	R/W
Ry2.SL	0059h	1Loop 0~17 2Loop 0~31	Relay 2 action parameters 1 Loop==> 0:Freq. 1:UL1 2:UL2 3:UL12 4:IL1-1 5:IL2-1 6:PL1-1 7:PL2-1 8:P.SUM1 9:QL1-1 10:QL2-1 11:Q.SUM1 12:SL1-1 13:SL2-1 14:S.SUM1 15:PFL1-1 16:PFL2-1 17:PF.AVG1 2 Loop==> 0:Freq. 1:UL1 2:UL2 3:UL12 4:IL1-1 5:IL2-1 6:IL1-2 7:IL2-2 8:PL1-1 9:PL2-1 10:P.SUM1 11:QL1-1 12:QL2-1 13:Q.SUM1 14:SL1-1 15;SL2-1 16:S.SUM1 17:PFL1-1 18:PFL2-1 19:PF.AVG1 20:PL1-2 21:PL2-2 22:P.SUM2 23:QL1-2 24:QL2-2 25:Q.SUM2 26:SL1-2 27:SL2-2 28:S.SUM2 29:PFL1-2 30:PFL2-2 31:PF.AVG2	4	R/W

RY2.MD	005Ah	0~5	Relay 2 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
RY2.SP	005Bh	-32768~32767	Relay 2 set point	2000	R/W
RY2.Sb	005Ch	0~9999	Relay 2 start band	0	R/W
RY2.Sd	005Dh	0000~5999 (0.1second)	Relay 2 start delay time	0	R/W
RY2.Hy	005Eh	0~9999	Relay 2 hysteresis time	0	R/W
RY2.rd	005Fh	0000~5999 (0.1second)	Relay 2 start delay time	0	R/W
RY2.Fd	0060h	0000~5999 (0.1second)	Relay 2 de-energizeddelay time	0	R/W
RY3.SL	0061h	1Loop 0~17 2Loop 0~31	Relay 3 action parameters 1 Loop==> 0:Freq. 1:UL1 2:UL2 3:UL12 4:IL1-1 5:IL2-1 6:PL1-1 7:PL2-1 8:P.SUM1 9:QL1-1 10:QL2-1 11:Q.SUM1 12:SL1-1 13:SL2-1 14:S.SUM1 15:PFL1-1 16:PFL2-1 17:PF.AVG1 2 Loop==> 0:Freq. 1:UL1 2:UL2 3:UL12 4:IL1-1 5:IL2-1 6:IL1-2 7:IL2-2 8:PL1-1 9:PL2-1 10:P.SUM1 11:QL1-1 12:QL2-1 13:Q.SUM1 14:SL1-1 15;SL2-1 16:S.SUM1 17:PFL1-1 18:PFL2-1 19;PF.AVG1 20:PL1-2 21:PL2-2 22:P.SUM2 23:QL1-2 24:QL2-2 25:Q.SUM2 26:SL1-2 27:SL2-2 28:S.SUM2 29:PFL1-2 30:PFL2-2 31:PF.AVG2	4	R/W
RY3.MD	0062h	0~5	Relay 3 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
RY3.SP	0063h	-32768~32767	Relay 3 action mode	3000	R/W
RY3.Sb	0064h	0~9999	Relay 3 start band	0	R/W
RY3.Sd	0065h	0000~5999 (0.1second)	Relay 3 start delay time	0	R/W
RY3.Hy	0066h	0~9999	Relay 3 hysteresis time	0	R/W
RY3.rd	0067h	0000~5999 (0.1second)	Relay 3 start delay time	0	R/W
RY3.Fd	0068h	0000~5999 (0.1second)	Relay 3 de-energizeddelay time	0	R/W

Ry4.SL	0069h	1 Loop0~17 2 Loop0~31	Relay 4 action parameters 1 Loop==> 0:Freq. 1:UL1 2:UL2 3:UL12 4:IL1-1 5:IL2-1 6:PL1-1 7:PL2-1 8:P.SUM1 9:QL1-1 10:QL2-1 11:Q.SUM1 12:SL1-1 13:SL2-1 14:S.SUM1 15:PFL1-1 16:PFL2-1 17:PF.AVG1 2 Loop==> 0:Freq. 1:UL1 2:UL2 3:UL12 4:IL1-1 5:IL2-1 6:IL1-2 7:IL2-2 8:PL1-1 9:PL2-1 10:P.SUM1 11:QL1-1 12:QL2-1 13:Q.SUM1 14:SL1-1 15;SL2-1 16:S.SUM1 17:PFL1-1 18:PFL2-1 19;PF.AVG1 20:PL1-2 21:PL2-2 22:P.SUM2 23:QL1-2 24:QL2-2 25:Q.SUM2 26:SL1-2 27:SL2-2 28:S.SUM2 29:PFL1-2 30:PFL2-2 31:PF.AVG2	4	R/W
Ry4.MD	006Ah	0~5	Relay 4 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
Ry4.SP	006Bh	-32768~32767	Relay 4 set point	4000	R/W
Ry4.Sb	006Ch	0~9999	Relay 4 start band	0	R/W
Ry4.Sd	006Dh	0000~5999 (0.1second)	Relay 4 start delay time	0	R/W
Ry4.Hy	006Eh	0~9999	Relay 4 hysteresis time	0	R/W
Ry4.rd	006Fh	0000~5999 (0.1second)	Relay 4 start delay time	0	R/W
Ry4.Fd	0070h	0000~5999 (0.1second)	Relay 4 de-energizeddelay time	0	R/W

Ry5.SL	0071h	1 Loop0~17 2 Loop0~31	Relay 5 action parameters 1 Loop==> 0:Freq. 1:UL1 2:UL2 3:UL12 4:IL1-1 5:IL2-1 6:PL1-1 7:PL2-1 8:P.SUM1 9:QL1-1 10:QL2-1 11:Q.SUM1 12:SL1-1 13:SL2-1 14:S.SUM1 15:PFL1-1 16:PFL2-1 17:PF.AVG1 2 Loop==> 0:Freq. 1:UL1 2:UL2 3:UL12 4:IL1-1 5:IL2-1 6:IL1-2 7:IL2-2 8:PL1-1 9:PL2-1 10:P.SUM1 11:QL1-1 12:QL2-1 13:Q.SUM1 14:SL1-1 15;SL2-1 16:S.SUM1 17:PFL1-1 18:PFL2-1 19;PF.AVG1 20:PL1-2 21:PL2-2 22:P.SUM2 23:QL1-2 24:QL2-2 25:Q.SUM2 26:SL1-2 27:SL2-2 28:S.SUM2 29:PFL1-2 30:PFL2-2 31:PF.AVG2	4	R/W
Ry5.MD	0072h	0~5	Relay 5 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
Ry5.SP	0073h	-32768~32767	Relay 5 set point	5000	R/W
Ry5.Sb	0074h	0~9999	Relay 5 start band	0	R/W
Ry5.Sd	0075h	0000~5999 (0.1second)	Relay 5 start delay time	0	R/W
Ry5.Hy	0076h	0~9999	Relay 5 hysteresis time	0	R/W
Ry5.rd	0077h	0000~5999 (0.1second)	Relay 5 start delay time	0	R/W
Ry5.Fd	0078h	0000~5999 (0.1second)	Relay 5 de-energizeddelay time	0	R/W

Communication function group

Addr	007Bh	1~255	Station number	1	R/W
Baud	007Ch	0~5	Transmission rate 0:1200 1:2400 2:4800 3:9600 4:19200 5:38400	3	R/W
Prity	007Dh	0~3	Parity Check 0:N.8.1 1:N.8.2 2:E.8.1 3:O.8.1	1	R/W
Format	007Eh	0~1	0:High 1:Lo	0	R/W

Date Time function group

Year	007Fh	2000~2099	Year	2012	R/W
Month	0080h	1~12	Month	1	R/W
Day	0081h	1~31	Date	1	R/W
Hour	0082h	0~23	Time	0	R/W
Minute	0083h	0~59	Minute	0	R/W
Second	0084h	0~59	Second	0	R/W

FLASH read(CODE : 03h , 06h)

	0200h		The number of each record WORD		
	0201h		Unread items		R
	0202h		Read the next record, if no data returned error code 0020h		R
	0203h	0~2	Read status reports 0:Clear all records 1:Give up this read 2:Read successfully		W
	0204H	0~1	Stop recording 0:Stop 1:Restart	1	R/W

※Logging data format

Address	Fuction	Byte Count	Voltage Unit		Current Unit		Power Unit		Year		Month	
			Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo
01H	03H	30H	00H	01H	00H	00H	00H	02H	07H	DFH	00H	0CH

Day		Hour		Minute		Second		Data	CRC	
Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo		Lo	Hi
00H	01H	00H	0DH	00H	19H	00H	2AH	.....	xxH	xxH

Byte Count => Number of data lenth (Read from 0200h)

Date : 2015/12/01 => 07DFH/000H/0001H

Time : 13:25:42 => 000DH:0019H:002AH

FLASH setting(CODE : 03h , 06h , 10h)

	0210h	0~1	0:Full Record 1:Individual choice	0	R/W
	0211h	1~32767	The value of the recording interval time	15	R/W
	0212h	0~3	Recording interval time units 0:sec 1:min 2:hour 3:day	1	R/W
	0213h	2000~2099	Start recording time -Year	2012	R/W
	0214h	1~12	Start recording time -Month	1	R/W
	0215h	1~31	Start recording time -Day	1	R/W
	0216h	0~23	Start recording time -Hour	0	R/W
	0217h	0~59	Start recording time -Minute	0	R/W
	0218h	0~59	Start recording time -Second	0	R/W
	0219h	2000~2099	Stop recording time-Year	2012	R/W
	021Ah	1~12	Stop recording time-Month	1	R/W
	021Bh	1~31	Stop recording time-Day	1	R/W
	021Ch	0~23	Stop recording time-Hour	0	R/W
	021Dh	0~59	Stop recording time-Minute	0	R/W
	021Eh	0~59	Stop recording time-Second	0	R/W
	021Fh	0~1	Stop / Start recording 0:Stop 1:Start	0	R/W

Record field01	0220h		Record field, store the recorded content index	R/W
Record field02	0221h		1 Loop==>	R/W
Record field03	0222h		0:none 1:Freq. 2:UL1 3:UL2 4:UL12	R/W
Record field04	0223h		5:IL1-1 6:IL2-1 7:PL1-1 8:PL2-1 9:P.SUM1	R/W
Record field05	0224h		10:QL1-1 11:QL2-1 12:Q.SUM1 13:SL1-1	R/W
Record field06	0225h		14:SL2-1 15:S.SUM1 16:PFL1-1 17:PFL2-1	R/W
Record field07	0226h		18:PF.AVG1 19:A.E1 20:R.E1	R/W
Record field08	0227h		2 Loop==>	R/W
Record field09	0228h		0:none 1:Freq. 2:UL1 3:UL2 4:UL12 5:IL1-	R/W
Record field10	0229h		1 6:IL2-1 7:IL1-2 8:IL2-2 9:PL1-1	R/W
Record field11	022Ah		10:PL2-1 11:P.SUM1 12:QL1-1 13:QL2-1	R/W
Record field12	022Bh		14:Q.SUM1 15:SL1-1 16:SL2-1 17:S.SUM1	R/W
Record field13	022Ch		18:PFL1-1 19:PFL2-1 20:PF.AVG1 21:PL1-2	R/W
Record field14	022Dh		22:PL2-2 23:P.SUM2 24:QL1-2 25:QL2-2	R/W
Record field15	022Eh		26:Q.SUM2 27:SL1-2 28:SL2-2 29:S.SUM2	R/W
Record field16	022Fh		30:PFL1-2 31:PFL2-2 32:PF.AVG2 33:A.E1	R/W
Record field17	0230h		34:R.E1 35:A.E2 36:R.E2	R/W
Record field18	0231h			R/W
Record field19	0232h		initial(Full Record)	R/W
Record field20	0233h	1loop 0~20	1 loop==>	R/W
Record field21	0234h	2loop 0~36	Record field01~Record field20 Sequence1~20, Record field21~Record field41are all 0	R/W
Record field22	0235h			R/W
Record field23	0236h		2 loop==>	R/W
Record field24	0237h		Record field01~Record field36Sequence1~36, Record field37~Record field41are all 0	R/W
Record field25	0238h			R/W
Record field26	0239h		initial	R/W
Record field27	023Ah		Record field01~Record field41are all 0	R/W
Record field28	023Bh			R/W
Record field29	023Ch			R/W
Record field30	023Dh			R/W
Record field31	023Eh			R/W
Record field32	023Fh			R/W
Record field33	0240h			R/W
Record field34	0241h			R/W
Record field35	0242h			R/W
Record field36	0243h			R/W
Record field37	0244h			R/W
Record field38	0245h			R/W
Record field39	0246h			R/W
Record field40	0247h			R/W
Record field41	0248h			R/W

3P3W

Measurement screen quickly read the information(CODE : 03h):

Name	Address	Range	Explain	Initial	R/W
Freq	0000h	45.00~65.00	Frequency		R
UAB	0001h	0~9999	A-B phase line voltage		R
UBC	0002h	0~9999	B-C phase line voltage		R
UCA	0003h	0~9999	C-A phase line voltage		R
ULL.AVG	0004h	0~9999	Average line voltage		R
IA1	0005h	0~9999	Loop 1 A phase line current		R
IB1	0006h	0~9999	Loop 1 B phase line current		R
IC1	0007h	0~9999	Loop 1 C phase line current		R
I.AVG1)	0008h	0~9999	Loop 1 Average line current		R
IA2	0009h	0~9999	Loop 2 A phase line current		R
IB2	000Ah	0~9999	Loop 2 B phase line current		R
IC2	000Bh	0~9999	Loop 2 C phase line current		R
I.AVG2	000Ch	0~9999	Loop 2 Average line current		R
PA1	000Dh	-32768~32767	Loop 1 A-B phase active power		R
PC1	000Eh	-32768~32767	Loop 1 C-B phase active power		R
P.SUM1	000Fh	-32768~32767	Loop 1 total active power		R
QA1	0010h	-32768~32767	Loop 1 A-B phase reactive power		R
QC1	0011h	-32768~32767	Loop 1 C-B phase reactive power		R
Q.SUM1	0012h	-32768~32767	Loop 1 total reactive power		R
SA1	0013h	0~32767	Loop 1 A-B apparent power		R
SC1	0014h	0~32767	Loop 1 C-B apparent power		R
S.SUM1	0015h	0~32767	Loop 1 total apparent power		R
PFA1	0016h	-1.000~1.000	Loop 1 A-B phase Power Factor		R
PFC1	0017h	-1.000~1.000	Loop 1 B-C phase Power Factor		R
PF.AVG1	0018h	-1.000~1.000	Loop 1 average power factor		R
PA2	0019h	-32768~32767	Loop 2 A-B phase active power		R
PC2	001Ah	-32768~32767	Loop 2 C-B phase active power		R
P.SUM2	001Bh	-32768~32767	Loop 2 total active power		R
QA2	001Ch	-32768~32767	Loop 2 A-B phase reactive power		R
QC2	001Dh	-32768~32767	Loop 2 C-B phase reactive power		R
Q.SUM2	001Eh	-32768~32767	Loop 2 total reactive power		R
SA2	001Fh	0~32767	Loop 2 A-B apparent power		R
SC2	0020h	0~32767	Loop 2 C-B apparent power		R
S.SUM2	0021h	0~32767	Loop 2 total apparent power		R
PFA2	0022h	-1.000~1.000	Loop 2 A-B phase Power Factor		R
PFC2	0023h	-1.000~1.000	Loop 2 B-C phase Power Factor		R
PF.AVG2	0024h	-1.000~1.000	Loop 2 average power factor		R
A.E1	0027h	0.0~	Loop 1 total active energy(High Word)		R
A.E1	0028h	99999999.9kWh	Loop 1 total active energy(Low Word)		R
R.E1	0029h	0.0~	Loop 1 total reactive energy(High Word)		R
R.E1	002Ah	99999999.9kVARh	Loop 1 total reactive energy(Low Word)		R
A.E2	002Bh	0.0~	Loop 2 total active energy(High Word)		R
A.E2	002Ch	99999999.9kWh	Loop 2 total active energy(Low Word)		R
R.E2	002Dh	0.0~	Loop 2 total reactive energy(High Word)		R
R.E2	002Eh	99999999.9kVARh	Loop 2 total reactive energy(Low Word)		R

Relay Status and Control(CODE : 01h , 05h):

	0000h		Relay 1 status	bit0~bit4 behalf relay 1~relay 5 state, 1=on, 0=off; code 05 is relay control, at register address write Ff00h or 0000h make the relay on or off. Be noted, relay mode is Ro write FF00h or 0000h, relay mode is Lo.HLd or Hi.HLd write 0000h, rest model is non-writable		R/W
	0001h		Relay 2 status			R/W
	0002h		Relay 3 status			R/W
	0003h		Relay 4 status			R/W
	0004h		Relay 5 status			R/W

General operating Level(CODE : 03h , 06h , 10h): Input Group

WIRE	003Fh	0~5	0:1P2W 1:1P3W 2:3P3W 3:3P4W 4:3P3W-b 5:3P4W-b		R
LOOP	0040h	0~1	number of loop 0: 1LOOP 1: 2LOOP		R
FLASH	0041h	0~65535	FLASH remaining time		R
U.UNIT	0043h	0~1	PT primary voltage unit 0:V 1:kV	0	R/W
PT.PRI	0044h		PT primary voltage	5000	R/W
PT.SEC	0045h		PT primary voltage	5000	R/W
CT.PRI	0046h		CT primary current	50	R/W
V.UNT	0047h	0~4	Voltage display unit and resolution setting 0:0.1 1:1 2:0.01k 3:0.1k 4:1k (V)	0	R/W
I.UNT	0048h	0~3	Current display units and resolution setting 0:0.001 1:0.01 2:0.1 3:1 (A)	0	R/W
W.UNT	0049h	0~7	Power display unit and resolution settings 0:0.1 1:1 2:0.01k 3:0.1k 4:1k 5:0.01M 6:0.1M 7:1M (W)	0	R/W
Lo.CUT	004Ah	0~10000	Current display low cut	40	R/W
P.CODE	004Bh	0~9999	Modify the P.COD	1000	R/W
b.Light	004Ch	0~15	Backlight time 0(Always lights)~15Min	1	R/W
dSPLY	004Dh	1Loop0~22 2Loop0~40	Select Permanent screen 1Loop==>0:Freq. 1:UAB 2:UBC 3:UCA 4:ULL.AVG 5:IA1 6:IB1 7:IC1 8:I.AVG1 9:PA1 10:PC1 11:P.SUM1 12:QA1 13:QC1 14:Q.SUM1 15:SA1 16:SC1 17:S.SUM1 18:PFA1 19:PFC1 20:PF.AVG1 21:A.E1 22:R.E1 2Loop==>0:Freq. 1:UAB 2:UBC 3:UCA 4:ULL.AVG 5:IA1 6:IB1 7:IC1 8:I.AVG1 9:IA2 10:IB2 11:IC2 12:I.AVG2 13:PA1 14:PC1 15:P.SUM1 16:QA1 17:QC1 18:Q.SUM1 19:SA1 20:SC1 21:S.SUM1 22:PFA1 23:PFC1 24:PF.AVG1 25:PA2 26:PC2 27:P.SUM2 28:QA2 29:QC2 30:Q.SUM2 31:SA2 32:SC2 33:S.SUM2 34:PFA2 35:PFC2 36:PF.AVG2 37:A.E1 38:R.E1 39:A.E2 40:R.E2	0	R/W
F.LOCK	004Eh	0~3	0:NONE 1:USER 2:ENG. 3:ALL	0	R/W
EEP STATUS	004Fh	0~3	0:OK 1:EEPROM NG 2:FLASH NG 3:EEPROM & FLASH NG	0	R
tL.rst	0050h		Clear Energy (Write 2100)	0	R/W

Relay output function group

Ry1.SL	0051h	1Loop0~20 2Loop0~36	Relay 1 action parameters 1 Loop==> 0:Freq. 1:UAB 2:UBC 3:UCA 4:ULL.AVG 5:IA1 6:IB1 7:IC1 8:I.AVG1 9:PA1 10:PC1 11:P.SUM1 12:QA1 13:QC1 14:Q.SUM1 15:SA1 16:SC1 17:S.SUM1 18:PFA1 19:PFC1 20:PF.AVG1 2 Loop==> 0:Freq. 1:UAB 2:UBC 3:UCA 4:ULL.AVG 5:IA1 6:IB1 7:IC1 8:I.AVG1 9:IA2 10:IB2 11:IC2 12:I.AVG2 13:PA1 14:PC1 15:P.SUM1 16:QA1 17:QC1 18:Q.SUM1 19:SA1 20:SC1 21:S.SUM1 22:PFA1 23:PFC1 24:PF.AVG1 25:PA2 26:PC2 27:P.SUM2 28:QA2 29:QC2 30:Q.SUM2 31:SA2 32:SC2 33:S.SUM2 34:PFA2 35:PFC2 36:PF.AVG2	8	R/W
Ry1.MD	0052h	0~5	Relay 1 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
Ry1.SP	0053h	-32768~32767	Relay 1 set point	1000	R/W
Ry1.Sb	0054h	0~9999	Relay 1 start band	0	R/W
Ry1.Sd	0055h	0000~5999 (0.1second)	Relay1 start delay time	0	R/W
Ry1.Hy	0056h	0~9999	Relay 1 hysteresis time	0	R/W
Ry1.rd	0057h	0000~5999 (0.1second)	Relay 1 start delay time	0	R/W
Ry1.Fd	0058h	0000~5999 (0.1second)	Relay 1 de-energizeddelay time	0	R/W

Ry2.SL	0059h	1Loop 0~20 2Loop 0~36	Relay 2 action parameters 1Loop==> 0:Freq. 1:UAB 2:UBC 3:UCA 4:ULL.AVG 5:IA1 6:IB1 7:IC1 8:I.AVG1 9:PA1 10:PC1 11:P.SUM1 12:QA1 13:QC1 14:Q.SUM1 15:SA1 16:SC1 17:S.SUM1 18:PFA1 19:PFC1 20:PF.AVG1 2 Loop==> 0:Freq. 1:UAB 2:UBC 3:UCA 4:ULL.AVG 5:IA1 6:IB1 7:IC1 8:I.AVG1 9:IA2 10:IB2 11:IC2 12:I.AVG2 13:PA1 14:PC1 15:P.SUM1 16:QA1 17:QC1 18:Q.SUM1 19:SA1 20:SC1 21:S.SUM1 22:PFA1 23:PFC1 24:PF.AVG1 25:PA2 26:PC2 27:P.SUM2 28:QA2 29:QC2 30:Q.SUM2 31:SA2 32:SC2 33:S.SUM2 34:PFA2 35:PFC2 36:PF.AVG2	8	R/W
Ry2.MD	005Ah	0~5	Relay 2 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
Ry2.SP	005Bh	-32768~32767	Relay 2 set point	2000	R/W
Ry2.Sb	005Ch	0~9999	Relay 2 start band	0	R/W
Ry2.Sd	005Dh	0000~5999 (0.1second)	Relay 2 start delay time	0	R/W
Ry2.Hy	005Eh	0~9999	Relay 2 hysteresis time	0	R/W
Ry2.rd	005Fh	0000~5999 (0.1second)	Relay 2 start delay time	0	R/W
Ry2.Fd	0060h	0000~5999 (0.1second)	Relay 2 de-energizeddelay time	0	R/W

R/3	0061h	1Loop 0~20 2Loop 0~36	Relay 3 action parameters 1 Loop==> 0:Freq. 1:UAB 2:UBC 3:UCA 4:ULL.AVG 5:IA1 6:IB1 7:IC1 8:I.AVG1 9:PA1 10:PC1 11:P.SUM1 12:QA1 13:QC1 14:Q.SUM1 15:SA1 16:SC1 17:S.SUM1 18:PFA1 19:PFC1 20:PF.AVG1 2 Loop==> 0:Freq. 1:UAB 2:UBC 3:UCA 4:ULL.AVG 5:IA1 6:IB1 7:IC1 8:I.AVG1 9:IA2 10:IB2 11:IC2 12:I.AVG2 13:PA1 14:PC1 15:P.SUM1 16:QA1 17:QC1 18:Q.SUM1 19:SA1 20:SC1 21:S.SUM1 22:PFA1 23:PFC1 24:PF.AVG1 25:PA2 26:PC2 27:P.SUM2 28:QA2 29:QC2 30:Q.SUM2 31:SA2 32:SC2 33:S.SUM2 34:PFA2 35:PFC2 36:PF.AVG2	8	R/W
R/3.MD	0062h	0~5	Relay 3 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
R/3.SP	0063h	-32768~32767	Relay 3 action mode	3000	R/W
R/3.Sb	0064h	0~9999	Relay 3 start band	0	R/W
R/3.Sd	0065h	0000~5999 (0.1second)	Relay 3 start delay time	0	R/W
R/3.Hy	0066h	0~9999	Relay 3 hysteresis time	0	R/W
R/3.rd	0067h	0000~5999 (0.1second)	Relay 3 start delay time	0	R/W
R/3.Fd	0068h	0000~5999 (0.1second)	Relay 3 de-energizeddelay time	0	R/W

RY4.SL	0069h	1Loop 0~20 2Loop 0~36	Relay 4 action parameters 1 Loop==> 0:Freq. 1:UAB 2:UBC 3:UCA 4:ULL.AVG 5:IA1 6:IB1 7:IC1 8:I.AVG1 9:PA1 10:PC1 11:P.SUM1 12:QA1 13:QC1 14:Q.SUM1 15:SA1 16:SC1 17:S.SUM1 18:PFA1 19:PFC1 20:PF.AVG1 2 Loop==> 0:Freq. 1:UAB 2:UBC 3:UCA 4:ULL.AVG 5:IA1 6:IB1 7:IC1 8:I.AVG1 9:IA2 10:IB2 11:IC2 12:I.AVG2 13:PA1 14:PC1 15:P.SUM1 16:QA1 17:QC1 18:Q.SUM1 19:SA1 20:SC1 21:S.SUM1 22:PFA1 23:PFC1 24:PF.AVG1 25:PA2 26:PC2 27:P.SUM2 28:QA2 29:QC2 30:Q.SUM2 31:SA2 32:SC2 33:S.SUM2 34:PFA2 35:PFC2 36:PF.AVG2	8	R/W
RY4.MD	006Ah	0~5	Relay 4 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
RY4.SP	006Bh	-32768~32767	Relay 4 set point	4000	R/W
RY4.Sb	006Ch	0~9999	Relay 4 start band	0	R/W
RY4.Sd	006Dh	0000~5999 (0.1second)	Relay 4 start delay time	0	R/W
RY4.Hy	006Eh	0~9999	Relay 4 hysteresis time	0	R/W
RY4.rd	006Fh	0000~5999 (0.1second)	Relay 4 start delay time	0	R/W
RY4.Fd	0070h	0000~5999 (0.1second)	Relay 4 de-energizeddelay time	0	R/W

Ry5.SL	0071h	1Loop 0~20 2Loop 0~36	Relay 5 action parameters 1Loop==> 0:Freq. 1:UAB 2:UBC 3:UCA 4:ULL.AVG 5:IA1 6:IB1 7:IC1 8:I.AVG1 9:PA1 10:PC1 11:P.SUM1 12:QA1 13:QC1 14:Q.SUM1 15:SA1 16:SC1 17:S.SUM1 18:PFA1 19:PFC1 20:PF.AVG1 2 Loop==> 0:Freq. 1:UAB 2:UBC 3:UCA 4:ULL.AVG 5:IA1 6:IB1 7:IC1 8:I.AVG1 9:IA2 10:IB2 11:IC2 12:I.AVG2 13:PA1 14:PC1 15:P.SUM1 16:QA1 17:QC1 18:Q.SUM1 19:SA1 20:SC1 21:S.SUM1 22:PFA1 23:PFC1 24:PF.AVG1 25:PA2 26:PC2 27:P.SUM2 28:QA2 29:QC2 30:Q.SUM2 31:SA2 32:SC2 33:S.SUM2 34:PFA2 35:PFC2 36:PF.AVG2	8	R/W
Ry5.MD	0072h	0~5	Relay 5 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
Ry5.SP	0073h	-32768~32767	Relay 5 set point	5000	R/W
Ry5.Sb	0074h	0~9999	Relay 5 start band	0	R/W
Ry5.Sd	0075h	0000~5999 (0.1second)	Relay 5 start delay time	0	R/W
Ry5.Hy	0076h	0~9999	Relay 5 hysteresis time	0	R/W
Ry5.rd	0077h	0000~5999 (0.1second)	Relay 5 start delay time	0	R/W
Ry5.Fd	0078h	0000~5999 (0.1second)	Relay 5 de-energizeddelay time	0	R/W

Communication function group

Addr	007Bh	1~255	Station number	1	R/W
Baud	007Ch	0~5	Transmission rate 0:1200 1:2400 2:4800 3:9600 4:19200 5:38400	3	R/W
Prity	007Dh	0~3	Parity Check 0:N.8.1 1:N.8.2 2:E.8.1 3:O.8.1	1	R/W
Format	007Eh	0~1	0:High 1:Lo	0	R/W

Date Time function group

Year	007Fh	2000~2099	Year	2012	R/W
Month	0080h	1~12	Month	1	R/W
Day	0081h	1~31	Date	1	R/W
Hour	0082h	0~23	Hour	0	R/W
Minute	0083h	0~59	Time	0	R/W
Second	0084h	0~59	Second	0	R/W

FLASH read(CODE : 03h , 06h)

	0200h		The number of each record WORD		R
	0201h		Unread items		R
	0202h		Read the next record, if no data returned error code 0020h		R
	0203h	0~2	Read status reports 0:Clear all records 1:Give up this read 2:Read successfully		W
	0204h	0~1	Stop recording 0:Stop 1:Restart	1	R/W

※ Logging data format

Address	Fuction	Byte Count	Voltage Unit		Current Unit		Power Unit		Year		Month	
			Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo
01H	03H	30H	00H	01H	00H	00H	00H	02H	07H	DFH	00H	0CH

Day		Hour		Minute		Second		Data	CRC	
Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo		Lo	Hi
00H	01H	00H	0DH	00H	19H	00H	2AH	.....	xxH	xxH

Byte Count => Number of data lenth (Read from 0200h)

Date : 2015/12/01 => 07DFH/000H/0001H

Time : 13:25:42 => 000DH:0019H:002AH

FLASH setting(CODE : 03h , 06h , 10h)

	0210h	0~1	0:Full Record 1:Individual choice	0	R/W
	0211h	1~32767	The value of the recording interval time	15	R/W
	0212h	0~3	Recording interval time units 0:sec 1:min 2:hour 3:day	1	R/W
	0213h	2000~2099	Start recording time -Year	2012	R/W
	0214h	1~12	Start recording time -Month	1	R/W
	0215h	1~31	Start recording time -Day	1	R/W
	0216h	0~23	Start recording time -Hour	0	R/W
	0217h	0~59	Start recording time -Minute	0	R/W
	0218h	0~59	Start recording time -Second	0	R/W
	0219h	2000~2099	Stop recording time-Year	2012	R/W
	021Ah	1~12	Stop recording time-Month	1	R/W
	021Bh	1~31	Stop recording time-Day	1	R/W
	021Ch	0~23	Stop recording time-Hour	0	R/W
	021Dh	0~59	Stop recording time-Minute	0	R/W
	021Eh	0~59	Stop recording time-Second	0	R/W
	021Fh	0~1	Stop / Start recording 0:Stop 1:Start	0	R/W

Record field01	0220h	1Loop0~23 2Loop0~41 1Loop(Balanced) 0~15 2Loop(Balanced) 0~25	Record field, store the recorded content index	R/W
Record field02	0221h		1Loop==>	R/W
Record field03	0222h		0:none 1:Freq. 2:UAB 3:UBC 4:UCA	R/W
Record field04	0223h		5:ULL.AVG 6:IA1 7:IB1 8:IC1 9:I.AVG1	R/W
Record field05	0224h		10PA1 11:PC1 12:P.SUM1 13:QA1 14:QC1	R/W
Record field06	0225h		15:Q.SUM1 16:SA1 17:SC1 18:S.SUM1	R/W
Record field07	0226h		19:PFA1 20:PFC1 21:PF.AVG1 22:A.E1	R/W
Record field08	0227h		23:R.E1	R/W
Record field09	0228h		2Loop==>	R/W
Record field10	0229h		0:none 1:Freq. 2:UAB 3:UBC 4:UCA	R/W
Record field11	022Ah		5:ULL.AVG 6:IA1 7:IB1 8:IC1 9:I.AVG1	R/W
Record field12	022Bh		10:IA2 11:IB2 12:IC2 13:I.AVG2 14:PA1	R/W
Record field13	022Ch		15:PC1 16:P.SUM1 17:QA1 18:QC1	R/W
Record field14	022Dh		19:Q.SUM1 20:SA1 21:SC1 22:S.SUM1	R/W
Record field15	022Eh		23:PFA1 24:PFC1 25:PF.AVG1 26:PA2	R/W
Record field16	022Fh		27:PC2 28:P.SUM2 29:QA2 30:QC2	R/W
Record field17	0230h		31:Q.SUM2 32:SA2 33:SC2 34:S.SUM2	R/W
Record field18	0231h		35:PFA2 36:PFC2 37:PF.AVG2 38:A.E1	R/W
Record field19	0232h		39:R.E1 40:A.E2 41:R.E2	R/W
Record field20	0233h		1Loop(Balanced)==>	R/W
Record field21	0234h		0:none 1:Freq. 2:UAB 3:UBC 4:UCA	R/W
Record field22	0235h		5:ULL.AVG 6:IA1 7:PA1 8:P.SUM1 9:QA1	R/W
Record field23	0236h		10:Q.SUM1 11:SA1 12:S.SUM1 13:PFA1	R/W
Record field24	0237h		14:A.E1 15:R.E1	R/W
Record field25	0238h		2Loop(Balanced)==>	R/W
Record field26	0239h		0:none 1:Freq. 2:UAB 3:UBC 4:UCA	R/W
Record field27	023Ah		5:ULL.AVG 6:IA1 7:IA2 8:PA1 9:P.SUM1	R/W
Record field28	023Bh		10:QA1 11:Q.SUM1 12:SA1 13:S.SUM1	R/W
Record field29	023Ch		14:PFA1 15:PA2 16:P.SUM2 17:QA2	R/W
Record field30	023Dh		18:Q.SUM2 19:SA2 20:S.SUM2 21:PFA2	R/W
Record field31	023Eh		22:A.E1 23:R.E1 24:A.E2 25:R.E2	R/W
Record field21	023Fh		initial(Full Record)	R/W
Record field33	0240h		1loop==>	R/W
Record field34	0241h		Record field 01Record field23 Sequence 1~23, Record field24~Record field41 all 0	R/W
Record field35	0242h			R/W
Record field36	0243h		2loop==>	R/W
Record field37	0244h		Record field01~Record field 41Sequence 1~41	R/W
Record field38	0245h		1loop(Balanced)==>	R/W
Record field39	0246h		Record field 01~Record field15Sequence1~15, Sequence16~Sequence41all 0	R/W
Record field40	0247h			R/W
Record field41	0248h		2loop(Balanced)==>	R/W
		Record field01~Record field 25 Sequence1~25, Sequence26~Sequence41all 0		
		initial Record field01~Record field 41all 0		

3P4W Measurement screen quickly read the information(CODE : 03h):

Name	Address	Range	Explain	Initial	R/W
Freq.	0000h	45.00~65.00	Frequency		R
UA	0001h	0~9999	A phase-phase voltage		R
UB	0002h	0~9999	B phase-phase voltage		R
UC	0003h	0~9999	C phase-phase voltage		R
ULN.AVG	0004h	0~9999	Average phase voltage		R
UAB	0005h	0~9999	A-B phase line voltage		R
UBC	0006h	0~9999	B-C phase line voltage		R
UCA	0007h	0~9999	C-A phase line voltage		R
ULL.AVG	0008h	0~9999	Average line voltage		R
IA	0009h	0~9999	A phase line current		R
IB	000Ah	0~9999	B phase line current		R
IC	000Bh	0~9999	C phase line current		R
IN	000Ch	0~9999	Neutral current		R
I.AVG	000Dh	0~9999	Average current		R
PA	000Eh	-32768~32767	A phase active power		R
PB	000Fh	-32768~32767	B phase active power		R
PC	0010h	-32768~32767	C phase active power		R
P.SUM	0011h	-32768~32767	total active power		R
QA	0012h	-32768~32767	A phase reactive power		R
QB	0013h	-32768~32767	B phase reactive power		R
QC	0014h	-32768~32767	C phase reactive power		R
Q.SUM	0015h	-32768~32767	total reactive power		R
SA	0016h	0~32767	A apparent power		R
SB	0017h	0~32767	B apparent power		R
SC	0018h	0~32767	C apparent power		R
S.SUM	0019h	0~32767	total apparent power		R
PFA	001Ah	-1.000~1.000	A phase Power Factor		R
PFB	001Bh	-1.000~1.000	B phase Power Factor		R
PFC	001Ch	-1.000~1.000	C phase Power Factor		R
PF.AVG	001Dh	-1.000~1.000	average power factor		R
A.E1	0027h	0.0~	Loop 1 total active energy(High Word)		R
A.E1	0028h	99999999.9kWh	Loop 1 total active energy(Low Word)		R
R.E1	0029h	0.0~	Loop 1 total reactive energy(High Word)		R
R.E1	0030h	99999999.9kVARh	Loop 1 total reactive energy(Low Word)		R

Relay Status and Control(CODE : 01h , 05h):

	0000h		Relay 1 status	bit0~bit4 behalf relay 1~relay 5 state, 1=on, 0=off;code 05 is relay control, at register address write Ff00h or 0000hmake the relay on or off ◦ Be noted,relay mode is Ro write FF00h or 0000h,relay mode is Lo.HLd or Hi.HLd write 0000h, rest model is non-writable		R/W
	0001h		Relay 2 status			R/W
	0002h		Relay 3 status			R/W
	0003h		Relay 4 status			R/W
	0004h		Relay 5 status			R/W

General operating Level(CODE : 03h , 06h , 10h):

WIRE	003Fh	0~5	0:1P2W 1:1P3W 2:3P3W 3:3P4W 4:3P3W-b 5:3P4W-b		R
LOOP	0040h	0	number of loop 0: 1LOOP		R
FLASH	0041h	0~65535	FLASH remaining time		R

General operating Level(CODE : 03h , 06h , 10h): Input Group

U.UNIT	0043h	0~1	PT primary voltage unit 0:V 1:kV	0	R/W
PT.PRI	0044h		PT primary voltage	5000	R/W
PT.SEC	0045h		PT secondary voltage	5000	R/W
CT.PRI	0046h		CT primary current	50	R/W
V.UNT	0047h	0~4	Voltage display unit and resolution setting 0:0.1(V) 1:1(V) 2:0.01k(V) 3:0.1k(V) 4:1k(V)	0	R/W
I.UNT	0048h	0~3	Current display units and resolution setting 0:0.001(A) 1:0.01(A) 2:0.1(A) 3:1(A)	0	R/W
W.UNT	0049h	0~7	Power display unit and resolution settings 0:0.1(W) 1:1(W) 2:0.01k(W) 3:0.1k(W) 4:1k(W) 5:0.01M(W) 6:0.1M(W) 7:1M(W)	2	R/W
Lo.CUT	004Ah	0~10000	Current display low cut	40	R/W
P.CODE	004Bh	0~9999	Modify the P.COD	1000	R/W
b.Light	004Ch	0~15	Backlight time 0(Always lights)~15Min	1	R/W
dSPLY	004Dh	0~31	Select Permanent screen 0:Freq. 1:UA 2:UB 3:UC 4:ULN.AVG 5:UAB 6:UBC 7:UCA 8:ULL.AVG 9:IA 10:IB 11:IC 12:IN 13:I.AVG 14:PA 15:PB 16:PC 17:P.SUM 18:QA 19:QB 20:QC 21:Q.SUM 22:SA 23:SB 24:SC 25:S.SUM 26:PFA 27:PFB 28:PFC 29:PF.AVG 30:A.E1 31:R.E1	0	R/W

F.LOCK	004Eh	0~3	0:NONE 1:USER 2:ENG. 3:ALL	0	R/W
EEP STATUS	004Fh	0~3	0:OK 1:EEPROM NG 2:FLASH NG 3:EEPROM & FLASH NG	0	R
tL.rst	0050h		Clear Energy (Write 2100)	0	R/W

Relay Status and Control(CODE : 01h , 05h):

	0000h		Relay 1 status	bit0~bit4 behalf relay 1~relay 5 state, 1=on, 0=off; code 05 is relay control, at register address write Ff00h or 0000h make the relay on or off. Be noted, relay mode is Ro write FF00h or 0000h, relay mode is Lo.HLd or Hi.HLd write 0000h, rest model is non-writable		R/W
	0001h		Relay 2 status			R/W
	0002h		Relay 3 status			R/W
	0003h		Relay 4 status			R/W
	0004h		Relay 5 status			R/W

Relay output function group

RY1.SL	0051h	0~29	Relay 1 action parameters 0:Freq. 1:UA 2:UB 3:UC 4:ULN.AVG 5:UAB 6:UBC 7:UCA 8:ULL.AVG 9:IA 10:IB 11:IC 12:IN 13:I.AVG 14:PA 15:PB 16:PC 17:P.SUM 18:QA 19:QB 20:QC 21:Q.SUM 22:SA 23:SB 24:SC 25:S.SUM 26:PFA 27:PFB 28:PFC 29:PF.AVG	13	R/W
RY1.MD	0052h	0~5	Relay 1 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
RY1.SP	0053h	-32768~32767	Relay 1 set point	1000	R/W
RY1.Sb	0054h	0~9999	Relay 1 start band	0	R/W
RY1.Sd	0055h	0000~5999 (0.1second)	Relay1start delay time	0	R/W
RY1.Hy	0056h	0~9999	Relay 1 hysteresis time	0	R/W
RY1.rd	0057h	0000~5999 (0.1second)	Relay 1 start delay time	0	R/W
RY1.Fd	0058h	0000~5999 (0.1second)	Relay 1 de-energizeddelay time	0	R/W
RY2.SL	0059h	0~29	Relay 2 action parameters 0:Freq. 1:UA 2:UB 3:UC 4:ULN.AVG 5:UAB 6:UBC 7:UCA 8:ULL.AVG 9:IA 10:IB 11:IC 12:IN 13:I.AVG 14:PA 15:PB 16:PC 17:P.SUM 18:QA 19:QB 20:QC 21:Q.SUM 22:SA 23:SB 24:SC 25:S.SUM 26:PFA 27:PFB 28:PFC 29:PF.AVG	13	R/W
RY2.MD	005Ah	0~5	Relay 2 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
RY2.SP	005Bh	-32768~32767	Relay 2 set point	2000	R/W
RY2.Sb	005Ch	0~9999	Relay 2 start band	0	R/W
RY2.Sd	005Dh	0000~5999 (0.1second)	Relay 2 start delay time	0	R/W
RY2.Hy	005Eh	0~9999	Relay 2 hysteresis time	0	R/W
RY2.rd	005Fh	0000~5999 (0.1second)	Relay 2 start delay time	0	R/W
RY2.Fd	0060h	0000~5999 (0.1second)	Relay 2 de-energizeddelay time	0	R/W

RY3.SL	0061h	0~29	Relay 3 action parameters 0:Freq. 1:UA 2:UB 3:UC 4:ULN.AVG 5:UAB 6:UBC 7:UCA 8:ULL.AVG 9:IA 10:IB 11:IC 12:IN 13:I.AVG 14:PA 15:PB 16:PC 17:P.SUM 18:QA 19:QB 20:QC 21:Q.SUM 22:SA 23:SB 24:SC 25:S.SUM 26:PFA 27:PFB 28:PFC 29:PF.AVG	13	R/W
RY3.MD	0062h	0~5	Relay 3 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:DO	2	R/W
RY3.SP	0063h	-32768~32767	Relay 3 action mode	3000	R/W
RY3.Sb	0064h	0~9999	Relay 3 start band	0	R/W
RY3.Sd	0065h	0000~5999 (0.1second)	Relay 3 start delay time	0	R/W
RY3.Hy	0066h	0~9999	Relay 3 hysteresis time	0	R/W
RY3.rd	0067h	0000~5999 (0.1second)	Relay 3 start delay time	0	R/W
RY3.Fd	0068h	0000~5999 (0.1second)	Relay 3 de-energizeddelay time	0	R/W
RY4.SL	0069h	0~29	Relay 4 action parameters 0:Freq. 1:UA 2:UB 3:UC 4:ULN.AVG 5:UAB 6:UBC 7:UCA 8:ULL.AVG 9:IA 10:IB 11:IC 12:IN 13:I.AVG 14:PA 15:PB 16:PC 17:P.SUM 18:QA 19:QB 20:QC 21:Q.SUM 22:SA 23:SB 24:SC 25:S.SUM 26:PFA 27:PFB 28:PFC 29:PF.AVG	13	R/W
RY4.MD	006Ah	0~5	Relay 4 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
RY4.SP	006Bh	-32768~32767	Relay 4 set point	4000	R/W
RY4.Sb	006Ch	0~9999	Relay 4 start band	0	R/W
RY4.Sd	006Dh	0000~5999 (0.1second)	Relay 4 start delay time	0	R/W
RY4.Hy	006Eh	0~9999	Relay 4 hysteresis time	0	R/W
RY4.rd	006Fh	0000~5999 (0.1second)	Relay 4 start delay time	0	R/W
RY4.Fd	0070h	0000~5999 (0.1second)	Relay 4 de-energizeddelay time	0	R/W

RY5.SL	0071h	0~29	Relay 5 action parameters 0:Freq. 1:UA 2:UB 3:UC 4:ULN.AVG 5:UAB 6:UBC 7:UCA 8:ULL.AVG 9:IA 10:IB 11:IC 12:IN 13:I.AVG 14:PA 15:PB 16:PC 17:P.SUM 18:QA 19:QB 20:QC 21:Q.SUM 22:SA 23:SB 24:SC 25:S.SUM 26:PFA 27:PFB 28:PFC 29:PF.AVG	13	R/W
RY5.MD	0072h	0~5	Relay 5 action mode 0:OFF 1:Lo 2:Hi 3:Lo.HLd 4:Hi.HLd 5:RO	2	R/W
RY5.SP	0073h	-32768~32767	Relay 5 set point	5000	R/W
RY5.Sb	0074h	0~9999	Relay 5 start band	0	R/W
RY5.Sd	0075h	0000~5999 (0.1second)	Relay 5 start delay time	0	R/W
RY5.Hy	0076h	0~9999	Relay 5 hysteresis time	0	R/W
RY5.rd	0077h	0000~5999 (0.1second)	Relay 5 start delay time	0	R/W
RY5.Fd	0078h	0000~5999 (0.1second)	Relay 5 de-energizeddelay time	0	R/W

Communication function group

Addr	007Bh	1~255	Station number	1	R/W
Baud	007Ch	0~5	Transmission rate 0:1200 1:2400 2:4800 3:9600 4:19200 5:38400	3	R/W
Prity	007Dh		Parity Check 0:N.8.1 1:N.8.2 2:E.8.1 3:O.8.1	1	R/W
Format	007Eh	0~1	0:High 1:Lo	0	R/W

Date Time function group

Year	007Fh	2000~2099	Year	2012	R/W
Month	0080h	1~12	Month	1	R/W
Day	0081h	1~31	Date	1	R/W
Hour	0082h	0~23	Time	0	R/W
Minute	0083h	0~59	Minute	0	R/W
Second	0084h	0~59	Second	0	R/W

FLASH read(CODE : 03h , 06h)

	0200h		The number of each record WORD		R
	0201h		Unread items		R
	0202h		Read the next record, if no data returned error code 0020h		R
	0203h	0~2	Read status reports 0:Clear all records 1:Give up this read 2:Read successfully		W
	0204h	0~1	Stop recording 0:Stop 1:Restart	1	R/W

※Logging data format

Address	Fuction	Byte Count	Voltage Unit		Current Unit		Power Unit		Year		Month	
			Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo
01H	03H	30H	00H	01H	00H	00H	00H	02H	07H	DFH	00H	0CH

Day		Hour		Minute		Second		Data	CRC	
Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo		Lo	Hi
00H	01H	00H	0DH	00H	19H	00H	2AH	.....	xxH	xxH

Byte Count => Number of data lenth (Read from 0200h)

Date : 2015/12/01 => 07DFH/000H/0001H

Time : 13:25:42 => 000DH:0019H:002AH

FLASH setting(CODE : 03h , 06h , 10h)

	0210h	0~1	0:Full Record 1:Individual choice	0	R/W
	0211h	1~32767	The value of the recording interval time	15	R/W
	0212h	0~3	Recording interval time units 0:sec 1:min 2:hour 3:day	1	R/W
	0213h	2000~2099	Start recording time -Year	2012	R/W
	0214h	1~12	Start recording time -Month	1	R/W
	0215h	1~31	Start recording time -Day	1	R/W
	0216h	0~23	Start recording time -Hour	0	R/W
	0217h	0~59	Start recording time -Minute	0	R/W
	0218h	0~59	Start recording time -Second	0	R/W
	0219h	2000~2099	Stop recording time-Year	2012	R/W
	021Ah	1~12	Stop recording time-Month	1	R/W
	021Bh	1~31	Stop recording time-Day	1	R/W
	021Ch	0~23	Stop recording time-Hour	0	R/W
	021Dh	0~59	Stop recording time-Minute	0	R/W
	021Eh	0~59	Stop recording time-Second	0	R/W
	021Fh	0~1	Stop / Start recording 0:Stop 1:Start	0	R/W

Record field01	0220h	1Loop0~32 1Loop(Balanced) 0~19	Record field, store the recorded content index	R/W	
Record field02	0221h		1Loop==>	R/W	
Record field03	0222h		0:none 1:Freq. 2:UA 3:UB 4:UC	R/W	
Record field04	0223h		5:ULN.AVG 6:UAB 7:UBC 8:UCA	R/W	
Record field05	0224h		9:ULL.AVG 10:IA 11:IB 12:IC 13:IN	R/W	
Record field06	0225h		14:I.AVG 15:PA 16:PB 17:PC 18:P.SUM	R/W	
Record field07	0226h		19:QA 20:QB 21:QC 22:Q.SUM 23:SA	R/W	
Record field08	0227h		24:SB 25:SC 26:S.SUM 27:PFA 28:PFB	R/W	
Record field09	0228h		29:PFC 30:PF.AVG 31:A.E1 32:R.E1	R/W	
Record field10	0229h		1 loop(Balanced)==>	R/W	
Record field11	022Ah		0:none 1:Freq. 2:UA 3:UB 4:UC	R/W	
Record field12	022Bh		5:ULN.AVG 6:UAB 7:UBC 8:UCA	R/W	
Record field13	022Ch		9:ULL.AVG 10:IA 11:PA 12:P.SUM 13:QA	R/W	
Record field14	022Dh		14:Q.SUM 15:SA 16:S.SUM 17:PFA	R/W	
Record field15	022Eh		18:A.E1 19:R.E1	R/W	
Record field16	022Fh			R/W	
Record field17	0230h			R/W	
Record field18	0231h			R/W	
Record field19	0232h			initial(Full Record)	R/W
Record field20	0233h			1loop==>	R/W
Record field21	0234h			Record field01~Record field20 Sequence1~20,	R/W
Record field22	0235h			Record field21~Record field41all 0	R/W
Record field23	0236h			2loop==>	R/W
Record field24	0237h			Record field01~Record field36 Sequence1~36,	R/W
Record field25	0238h			Record field37~Record field41all 0	R/W
Record field26	0239h			initial	R/W
Record field27	023Ah			Record field 01~Record field 41all 0	R/W
Record field28	023Bh				R/W
Record field29	023Ch				R/W
Record field30	023Dh				R/W
Record field31	023Eh				R/W
Record field32	023Fh				R/W
Record field33	0240h				R/W
Record field34	0241h				R/W
Record field35	0242h				R/W
Record field36	0243h				R/W
Record field37	0244h				R/W
Record field38	0245h				R/W
Record field39	0246h				R/W
Record field40	0247h				R/W
Record field41	0248h				R/W

Defined class Address defined group

※Write this area To define the address, fill in the following table. Done memorandum
For example, 0000h is written to address 1100h, read address 0100h will read the frequency
User-defined area(CODE : 03h , 06h, 10h) :

Defined position UI display	Defined parameter value Temporary Addresses	Read / Write	Predefined address	Defined address parameter temporary	Read / Write
U.DF01V	0100h	R		1100h	R/W
U.DF02V	0101h	R		1101h	R/W
U.DEF03	0102h	R		1102h	R/W
U.DEF04	0103h	R		1103h	R/W
U.DEF05	0104h	R		1104h	R/W
U.DEF06	0105h	R		1105h	R/W
U.DEF07	0106h	R		1106h	R/W
U.DEF08	0107h	R		1107h	R/W
U.DEF09	0108h	R		1108h	R/W
U.DEF10	0109h	R		1109h	R/W
U.DEF11	010Ah	R		110Ah	R/W
U.DEF12	010Bh	R		110Bh	R/W
U.DEF13	010Ch	R		110Ch	R/W
U.DEF14	010Dh	R		110Dh	R/W
U.DEF15	010Eh	R		110Eh	R/W
U.DEF16	010Fh	R		110Fh	R/W
U.DEF17	0110h	R		1110h	R/W
U.DEF18	0111h	R		1111h	R/W
U.DEF19	0112h	R		1112h	R/W
U.DEF20	0113h	R		1113h	R/W

Usage Examples

The conditions: 1P3W 2Loop When you want to planning U.DF01V
defined to read RS485 QL2-1 address 000Ch value of 1000

