SCHALT

Measuring class parameter [Floating point format data]

Input Register Parameter [Function code : 04H]				Register Address [Hex]	
Description	**Length (bytes)**	**Data Format**	**Units**	**High Byte**	**Low Byte**
Phase 1 line to neutral volts.	4	Float	V	00	00
Phase 2 line to neutral volts.	4	Float	V	00	02
Phase 3 line to neutral volts.	4	Float	V	00	04
Phase 1 current.	4	Float	A	00	06
Phase 2 current.	4	Float	A	00	08
Phase 3 current.	4	Float	A	00	0A
Phase 1 active power.	4	Float	W	00	0C
Phase 2 active power.	4	Float	W	00	0E
Phase 3 active power.	4	Float	W	00	10
Phase 1 apparent power.	4	Float	VA	00	12
Phase 2 apparent power.	4	Float	VA	00	14
Phase 3 apparent power.	4	Float	VA	00	16
Phase 1 reactive power.	4	Float	var	00	18
Phase 2 reactive power.	4	Float	var	00	1A
Phase 3 reactive power.	4	Float	var	00	1C
Phase 1 power factor (1).	4	Float	None	00	1E
Phase 2 power factor (1).	4	Float	None	00	20
Phase 3 power factor (1).	4	Float	None	00	22
Phase 1 phase angle.	4	Float	Degrees	00	24
Phase 2 phase angle.	4	Float	Degrees	00	26
Phase 3 phase angle.	4	Float	Degrees	00	28
Average line to neutral volts.	4	Float	V	00	2A
Average line current.	4	Float	A	00	2E
Sum of line currents.	4	Float	A	00	30
Total system active power.	4	Float	W	00	34
Total system apparent power.	4	Float	VA	00	38
Total system reactive power.	4	Float	var	00	3C
Total system power factor (1).	4	Float	None	00	3E
Total system phase angle.	4	Float	Degrees	00	42
Frequency of supply voltages.	4	Float	Hz	00	46
Import active energy.	4	Float	kWh	00	48
Export active energy.	4	Float	kWh	00	4A
Import reactive energy.	4	Float	kvarh	00	4C
Export reactive energy.	4	Float	kvarh	00	4E
Total apparent energy.	4	Float	kVAh	00	50
Ah of the system current.	4	Float	Ah	00	52
Total system active power demand (3).	4	Float	W	00	54
Maximum total system active power demand (3).	4	Float	W	00	56
Import active power demand	4	Float	W	00	58
Maximum import active power demand	4	Float	W	00	5A

Export active power demand	4	Float	W	00	5C
Maximum export active power demand	4	Float	W	00	5E
Total system apparent power demand.	4	Float	VA	00	64
Maximum total system apparent power demand.	4	Float	VA	00	66
Neutral current demand.	4	Float	A	00	68
Maximum neutral current demand.	4	Float	A	00	6A
Total system reactive power demand (3).	4	Float	var	00	6C
Maximum total system reactive power demand (3).	4	Float	var	00	6E
Nature of L1 load (Resistive=1, inductive=2, capacitive =3, Non Load=4)	4	Float	None	00	C0
Nature of L2 load (Resistive=1, inductive=2, capacitive =3, Non Load=4)	4	Float	None	00	C2
Nature of L3 load (Resistive=1, inductive=2, capacitive =3, Non Load=4)	4	Float	None	00	C4
Nature of the system load(Resistive=1, inductive=2, capacitive =3, Non Load=4)	4	Float	None	00	C6
Line 1 to Line 2 volts.	4	Float	V	00	C8
Line 2 to Line 3 volts.	4	Float	V	00	CA
Line 3 to Line 1 volts.	4	Float	V	00	CC
Average line to line volts.	4	Float	V	00	CE
Neutral current.	4	Float	A	00	E0
Phase 1 L-N voltage THD (2).	4	Float	%	00	EA
Phase 2 L-N voltage THD (2).	4	Float	%	00	EC
Phase 3 L-N voltage THD (2).	4	Float	%	00	EE
Phase 1 current THD	4	Float	%	00	F0
Phase 2 current THD	4	Float	%	00	F2
Phase 3 current THD	4	Float	%	00	F4
Average L-N voltage THD (2).	4	Float	%	00	F8
Average line current THD.	4	Float	%	00	FA
Total system power factor (1).	4	Float	None	00	FE
Phase 1 current demand.	4	Float	A	01	02
Phase 2 current demand.	4	Float	A	01	04
Phase 3 current demand.	4	Float	A	01	06
Maximum phase 1 current demand.	4	Float	A	01	08
Maximum phase 2 current demand.	4	Float	A	01	0A
Maximum phase 3 current demand.	4	Float	A	01	0C
Line1 to line2 voltage THD (2).	4	Float	%	01	4E
Line2 to line3 voltage THD (2).	4	Float	%	01	50
Line3 to line1 voltage THD (2).	4	Float	%	01	52
Average Line to line voltage THD (2).	4	Float	%	01	54
Total active Energy.	4	Float	kWh	01	56
Total reactive Energy.	4	Float	kvarh	01	58
L1 import active Energy	4	Float	kWh	01	5A
L2 import active Energy	4	Float	kWh	01	5C
L3 import active Energy	4	Float	kWh	01	5E

L1 export active Energy	4	Float	kWh	01	60
L2 export active Energy	4	Float	kWh	01	62
L3 export active Energy	4	Float	kWh	01	64
L1 total active Energy	4	Float	kWh	01	66
L2 total active Energy	4	Float	kWh	01	68
L3 total active Energy	4	Float	kWh	01	6A
L1 import reactive energy	4	Float	kvarh	01	6C
L2 import reactive energy	4	Float	kvarh	01	6E
L3 import reactive energy	4	Float	kvarh	01	70
L1 export reactive energy	4	Float	kvarh	01	72
L2 export reactive energy	4	Float	kvarh	01	74
L3 export reactive energy	4	Float	kvarh	01	76
L1 total reactive energy	4	Float	kvarh	01	78
L2 total reactive energy	4	Float	kvarh	01	7A
L3 total reactive energy	4	Float	kvarh	01	7C
Total active energy of rate 1	4	Float	kWh	13	0C
Total active energy of rate 2	4	Float	kWh	13	0E
Total active energy of rate 3	4	Float	kWh	13	10
Total active energy of rate 4	4	Float	kWh	13	12
Import active energy of rate 1	4	Float	kWh	13	14
Import active energy of rate 2	4	Float	kWh	13	16
Import active energy of rate 3	4	Float	kWh	13	18
Import active energy of rate 4	4	Float	kWh	13	1A
Export active energy of rate 1	4	Float	kWh	13	1C
Export active energy of rate 2	4	Float	kWh	13	1E
Export active energy of rate 3	4	Float	kWh	13	20
Export active energy of rate 4	4	Float	kWh	13	22
Total reactive energy of rate 1	4	Float	kvarh	13	24
Total reactive energy of rate 2	4	Float	kvarh	13	26
Total reactive energy of rate 3	4	Float	kvarh	13	28
Total reactive energy of rate 4	4	Float	kvarh	13	2A
Import reactive energy of rate 1	4	Float	kvarh	13	2C
Import reactive energy of rate 2	4	Float	kvarh	13	2E
Import reactive energy of rate 3	4	Float	kvarh	13	30
Import reactive energy of rate 4	4	Float	kvarh	13	32
Export reactive energy of rate 1	4	Float	kvarh	13	34
Export reactive energy of rate 2	4	Float	kvarh	13	36
Export reactive energy of rate 3	4	Float	kvarh	13	38
Export reactive energy of rate 4	4	Float	kvarh	13	3A
Monthly energy consumption for the last 12 months Note: Each set of data includes the energy of all rate segments, the energy of rate 1, the energy of rate 2, the energy of rate 3 and the energy of rate 4 respectively.					
The active energy category of current months					
The total active energy consumption of the current months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	1F	E2

The import active energy consumption of the current months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	1F	EC
The export active energy consumption of the current months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	1F	F6
Total active energy category					
The total active energy consumption of the last 1 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	00
The total active energy consumption of the last 2 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	0A
The total active energy consumption of the last 3 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	14
The total active energy consumption of the last 4 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	1E
The total active energy consumption of the last 5 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	28
The total active energy consumption of the last 6 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	32
The total active energy consumption of the last 7 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	3C
The total active energy consumption of the last 8 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	46
The total active energy consumption of the last 9 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	50
The total active energy consumption of the last 10 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	5A
The total active energy consumption of the last 11 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	64
The total active energy consumption of the last 12 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	6E
Import active energy category					
The import active energy consumption of the last 1 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	78
The import active energy consumption of the last 2 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	82
The import active energy consumption of the last 3 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	8C
The import active energy consumption of the last 4 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	96
The import active energy consumption of the last 5 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	A0
The import active energy consumption of the last 6 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	AA
The import active energy consumption of the last 7 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	B4
The import active energy consumption of the last 8 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	BE

The import active energy consumption of the last 9 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	C8
The import active energy consumption of the last 10 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	D2
The import active energy consumption of the last 11 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	DC
The import active energy consumption of the last 12 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	E6
Export active energy category					
The export active energy consumption of the last 1 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	F0
The export active energy consumption of the last 2 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	20	FA
The export active energy consumption of the last 3 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	21	04
The export active energy consumption of the last 4 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	21	0E
The export active energy consumption of the last 5 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	21	18
The export active energy consumption of the last 6 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	21	22
The export active energy consumption of the last 7 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	21	2C
The export active energy consumption of the last 8 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	21	36
The export active energy consumption of the last 9 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	21	40
The export active energy consumption of the last 10 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	21	4A
The export active energy consumption of the last 11 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	21	54
The export active energy consumption of the last 12 months (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	21	5E
Daily energy consumption for the last 31 days Note: Each set of data includes the energy of all rate segments, the energy of rate 1, the energy of rate 2, the energy of rate 3 and the energy of rate 4 respectively.					
The total active energy consumption of the current days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	00
The total active energy consumption of the last 1 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	0A
The total active energy consumption of the last 2 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	14
The total active energy consumption of the last 3 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	1E
The total active energy consumption of the last 4 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	28

The total active energy consumption of the last 5 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	32
The total active energy consumption of the last 6 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	3C
The total active energy consumption of the last 7 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	46
The total active energy consumption of the last 8 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	50
The total active energy consumption of the last 9 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	5A
The total active energy consumption of the last 10 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	64
The total active energy consumption of the last 11 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	6E
The total active energy consumption of the last 12 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	78
The total active energy consumption of the last 13 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	82
The total active energy consumption of the last 14 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	8C
The total active energy consumption of the last 15 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	96
The total active energy consumption of the last 16 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	A0
The total active energy consumption of the last 17 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	AA
The total active energy consumption of the last 18 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	B4
The total active energy consumption of the last 19 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	BE
The total active energy consumption of the last 20 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	C8
The total active energy consumption of the last 21 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	D2
The total active energy consumption of the last 22 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	DC
The total active energy consumption of the last 23 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	E6
The total active energy consumption of the last 24 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	F0
The total active energy consumption of the last 25 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	28	FA
The total active energy consumption of the last 26 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	29	04
The total active energy consumption of the last 27 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	29	0E

The total active energy consumption of the last 28 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	29	18
The total active energy consumption of the last 29 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	29	22
The total active energy consumption of the last 30 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	29	2C
The total active energy consumption of the last 31 days (Total、Rate1、Rate2、Rate3、Rate4)	20	Float	kWh	29	36
The maximum demand and occurrence time of total active power per month.					
The maximum demand and occurrence time of total active power for the current months. (4) Data definition: The maximum demand value of total active power - year-month-day-hour-minute-second. Note: 1). The data format for the maximum demand value of total active power is a floating-point number, with a data length of 4 bytes. 2). The data format for the year, month, day, hour, minute, second is a BCD, and the data length for each parameter is 1 byte. 3). The year,month,day,hour,minute,second represents the time when the maximum demand occurs.	10	Custom	None	30	00
The maximum demand and occurrence time of total active power for the last 1 months. Data definition: Same as above.	10	Custom	None	30	05
The maximum demand and occurrence time of total active power for the last 2 months. Data definition: Same as above.	10	Custom	None	30	0A
The maximum demand and occurrence time of total active power for the last 3 months. Data definition: Same as above.	10	Custom	None	30	0F
The maximum demand and occurrence time of total active power for the last 4 months. Data definition: Same as above.	10	Custom	None	30	14
The maximum demand and occurrence time of total active power for the last 5 months. Data definition: Same as above.	10	Custom	None	30	19
The maximum demand and occurrence time of total active power for the last 6 months. Data definition: Same as above.	10	Custom	None	30	1E
The maximum demand and occurrence time of total active power for the last 7 months. Data definition: Same as above.	10	Custom	None	30	23
The maximum demand and occurrence time of total active power for the last 8 months.	10	Custom	None	30	28

Data definition: Same as above.					
The maximum demand and occurrence time of total active power for the last 9 months. Data definition: Same as above.	10	Custom	None	30	2D
The maximum demand and occurrence time of total active power for the last 10 months. Data definition: Same as above.	10	Custom	None	30	32
The maximum demand and occurrence time of total active power for the last 11 months. Data definition: Same as above.	10	Custom	None	30	37
The maximum demand and occurrence time of total active power for the last 12 months. Data definition: Same as above.	10	Custom	None	30	3C
The maximum demand and occurrence time of total active power per day.					
The maximum demand and occurrence time of total active power for the current days. (4) Data definition: The maximum demand value of total active power - year-month-day-hour-minute-second. Note: 1). The data format for the maximum demand value of total active power is a floating-point number, with a data length of 4 bytes. 2). The data format for the year, month, day, hour, minute, second is a BCD, and the data length for each parameter is 1 byte. 3). The year,month,day,hour,minute,second represents the time when the maximum demand occurs.	10	Custom	None	40	00
The maximum demand and occurrence time of total active power for the last 1 days. Data definition: Same as above.	10	Custom	None	40	05
The maximum demand and occurrence time of total active power for the last 2 days. Data definition: Same as above.	10	Custom	None	40	0A
The maximum demand and occurrence time of total active power for the last 3 days. Data definition: Same as above.	10	Custom	None	40	0F
The maximum demand and occurrence time of total active power for the last 4 days. Data definition: Same as above.	10	Custom	None	40	14
The maximum demand and occurrence time of total active power for the last 5 days. Data definition: Same as above.	10	Custom	None	40	19
The maximum demand and occurrence time of total active power for the last 6 days. Data definition: Same as above.	10	Custom	None	40	1E

The maximum demand and occurrence time of total active power for the last 7 days. Data definition: Same as above.	10	Custom	None	40	23
The maximum demand and occurrence time of total active power for the last 8 days. Data definition: Same as above.	10	Custom	None	40	28
The maximum demand and occurrence time of total active power for the last 9 days. Data definition: Same as above.	10	Custom	None	40	2D
The maximum demand and occurrence time of total active power for the last 10 days. Data definition: Same as above.	10	Custom	None	40	32
The maximum demand and occurrence time of total active power for the last 11 days. Data definition: Same as above.	10	Custom	None	40	37
The maximum demand and occurrence time of total active power for the last 12 days. Data definition: Same as above.	10	Custom	None	40	3C
The maximum demand and occurrence time of total active power for the last 13 days. Data definition: Same as above.	10	Custom	None	40	41
The maximum demand and occurrence time of total active power for the last 14 days. Data definition: Same as above.	10	Custom	None	40	46
The maximum demand and occurrence time of total active power for the last 15 days. Data definition: Same as above.	10	Custom	None	40	4B
The maximum demand and occurrence time of total active power for the last 16 days. Data definition: Same as above.	10	Custom	None	40	50
The maximum demand and occurrence time of total active power for the last 17 days. Data definition: Same as above.	10	Custom	None	40	55
The maximum demand and occurrence time of total active power for the last 18 days. Data definition: Same as above.	10	Custom	None	40	5A
The maximum demand and occurrence time of total active power for the last 19 days. Data definition: Same as above.	10	Custom	None	40	5F
The maximum demand and occurrence time of total active power for the last 20 days. Data definition: Same as above.	10	Custom	None	40	64
The maximum demand and occurrence time of total active power for the last 21 days. Data definition: Same as above.	10	Custom	None	40	69
The maximum demand and occurrence time of total	10	Custom	None	40	6E

active power for the last 22 days. Data definition: Same as above.					
The maximum demand and occurrence time of total active power for the last 23 days. Data definition: Same as above.	10	Custom	None	40	73
The maximum demand and occurrence time of total active power for the last 24 days. Data definition: Same as above.	10	Custom	None	40	78
The maximum demand and occurrence time of total active power for the last 25 days. Data definition: Same as above.	10	Custom	None	40	7D
The maximum demand and occurrence time of total active power for the last 26 days. Data definition: Same as above.	10	Custom	None	40	82
The maximum demand and occurrence time of total active power for the last 27 days. Data definition: Same as above.	10	Custom	None	40	87
The maximum demand and occurrence time of total active power for the last 28 days. Data definition: Same as above.	10	Custom	None	40	8C
The maximum demand and occurrence time of total active power for the last 29 days. Data definition: Same as above.	10	Custom	None	40	91
The maximum demand and occurrence time of total active power for the last 30 days. Data definition: Same as above.	10	Custom	None	40	96
The maximum demand and occurrence time of total active power for the last 31 days. Data definition: Same as above.	10	Custom	None	40	9B

Notes:

1. The power factor has its sign adjusted to indicate the direction of the current. Positive refers to forward current, negative refers to reverse current.
2. In 3P3W mode, the voltage harmonic of L-N is equal to 0. In 3P4W, 1P2W, 1P3W and other modes, the voltage harmonic of line to line is equal to 0.
3. The power sum demand calculation is for import – export.
4. Example: If the maximum demand value for total active power is equal to 3300W at 10:40:30 on March 26, 2024, the data obtained by reading the register(displayed in HEX format) is: 45 4E 40 00 24 03 26 10 40 30, where 45 4E 40 00 is the floating-point data of 3300, and 24 03 26 10 40 30 represents March 26, 2024 at 10:40:30.

Set class parameters

Holding Register Parameter [Read : Function code : 03H ; Write : Function code : 10H]				Register Address [Hex]		
Parameter	**Description**	**Length (bytes)**	**Data Format**	**High Byte**	**Low Byte**	**Mode**
Demand Time	Read minutes into first demand calculation. When the Demand Time reaches the Demand Period then the demand values are valid.	4	Float	00	00	**R**
Demand Period	Write demand period: 0~60 minutes, Default 60. Range: 0~60, 0 means function update every second.	4	Float	00	02	**R/W**
Slide time	Default 1, min. Range：1 ~ (Demand Period -1).	4	Float	00	04	**R/W**
System Type	Write system type: 1 = 1P2W; 2 = 3P3W; 3 = 3P4W,(default); 4 = 2P3W; **(KPPA is asked)**	4	Float	00	0A	**R/W**
Pulse 1 Width	Write pulse on period in milliseconds: 60, 100 or 200, default 100.	4	Float	00	0C	**R/W**
Key Parameter Programming Authorization (KPPA)	Read: to get the status of the KPPA 0 = not authorized；1 = authorized Write the correct password to get KPPA, enable to program key parameters.	4	Float	00	0E	**R/W**
Parity and stop bit	Write the network port parity/stop bits for MODBUS Protocol, where: 0 = One stop bit and no parity, default. 1 = One stop bit and even parity. 2 = One stop bit and odd parity. 3 = Two stop bits and no parity.	4	Float	00	12	**R/W**
Modbus address	Write the modbus address Range: 1 to 247 for MODBUS Protocol, default 1.	4	Float	00	14	**R/W**
Pulse 1 Rate	Write pulse rate index: n = 0 to 5 0 : 0.001 kwh/imp 1 : 0.01 kwh/imp, default 2 : 0.1 kwh/imp 3 : 1 kwh/imp 4 : 10 kwh/imp 5 : 100 kwh/imp	4	Float	00	16	**R/W**

Password	Read: to get the password of the meter Write: to program the new password of the meter Default : 0000 **(KPPA is asked)**	4	Float	00	18	**R/W**
Network Baud Rate	Write the network port baud rate for MODBUS Protocol, where: 0 = 2400 baud. 1 = 4800 baud. 2 = 9600 baud, default. 3 = 19200 baud. 4 = 38400 baud.	4	Float	00	1C	**R/W**
Serial number	The serial number of the meter	4	ULONG	00	2A	**R**
PT1	PT1 Range 30 - 500000V, Default 230 **(KPPA is asked)**	4	Float	00	2E	**R/W**
PT2	PT2 Range 30- 500V, Default 230 **(KPPA is asked)**	4	Float	00	30	**R/W**
	1A/5A VERSION:					
CT1	CT1 Range 1-9999A，Default 1000， **(KPPA is asked)**	4	Float	00	32	**R/W**
CT2	CT2 Range: 1A or 5A ,Default 5A **(KPPA is asked)**	4	Float	00	34	**R/W**
	333mV VERSION:					
CT1	CT1 Range 1-9999A，Default 1000， **(KPPA is asked)**	4	Float	00	32	**R/W**
CT2	CT2 = 0.333mV	4	Float	00	34	**R**
	Rogowski Coil VERSION:					
CT1	CT1 = 1000A	4	Float	00	32	**R**
CT2	CT2 Range: 100mV, 85mV or 50mV , Default 100mV **(KPPA is asked)**	4	Float	00	34	**R/W**
	Note: CT1=1000A, CT2=100mV indicate the Rogowski coil parameter is 100mV/kA.					
Backlit time	Backlit time, unit: minute. Default 60. Range 0~120 or 255，0 means backlit always on，255 means backlit always off.	4	Float	00	3C	**R/W**
Pulse 1 Energy Type	Write MODBUS Protocol input parameter for pulse output 1： 1: import active energy 2: total active energy 4: export active energy, default	4	Float	00	56	**R/W**

	5: import reactive energy 6: total reactive energy 8: export reactive energy					
Ethernet communication Parameter	Ethernet communication parameter includes: IP address (4byte), subnet mask (4byte), default gateway (4byte), IP port(2 byte), DHCP(2byte) Data format: IP Address-Subnet mask-default gateway- IP port-DHCP， High byte first. **Default: IP Address = 192-168-1-200** **Subnet mask = 255-255-255-0** **Gate way = 192-168-1-1** **IP Port = 502** **DHCP = 00 01 (Disable)** Note1: The DHCP field, 00 01 represents disable the DHCP function, and 00 02 represents enable the DHCP function. Note2: DHCP represents the automatic acquisition of IP function. When enabled, the IP address of the meter will be automatically obtained from devices such as routers. **(KPPA is asked)**	16	HEX	50	31	**R/W**
Ethernet TCP/IP working mode	Ethernet TCP/IP working mode 1 = **slave mode** (the Ethernet port is only used for TCP/IP communication for this meter); 2 = **master mode** (the meter can be worked as an RS485-TCP/IP gateway. Via the Ethernet port, it can read the devices connected to its RS485 port on the same Bus line.) **(KPPA is asked)**	2	UINT	50	39	**R/W**
Start reading IP address information	Write 1 to start the reading of IP address information for the meter. Reading this register represents the status of obtaining IP address information, and returning 1 indicates that the IP address information was not successfully obtained; Returning 0 indicates that the IP address information has been successfully obtained. Note: After successfully obtaining the IP address information for 1 minute, the status will automatically change to 1.	2	UINT	50	3A	**R/W**

Meter code	The code of the meter	2	HEX	56	01	**R**
Software version number	Software version number : XX.YY Data definition : The first byte represents XX, and the second byte represents YY	2	HEX	56	04	**R**
Hardware version number	Hardware version number : XX.YY Data definition : The first byte represents XX, and the second byte represents YY	2	HEX	56	05	**R**
version number of displayed	version number of displayed : XX.YY Data definition : The first byte represents XX, and the second byte represents YY	2	HEX	56	06	**R**
System time	Data definition： Second-Minute-Hour-Week-Date-Month-Year-20	8	BCD	F0	00	**R/W**
Reset historical data	0 = reset max. demand 8 = reset daily energy consumption 9 = reset monthly energy consumption 12 = reset daily max.demand 13 = reset monthly max. demand **(KPPA is asked)**	2	UINT	F0	10	**W**
Tariff	Data definition： Tariff number-Min-Hour Tariff number：00，01，02，03，04；00 mean invalid tariff number Min：00-59 Hour：00-23	24	BCD	F7	00	**R/W**
Running time（Data in units of minutes）	Running time. Unit : minute. **Write 0 to reset the running time with load. No response if write other value.** **Note: The meter starts timing when it's powered on**	4	Float	F9	30	**R/W**
Running time with load（Data in units of minutes）	Running time with load. Unit : minute. **Write 0 to reset the running time with load. No response if write other value.** **Note: The meter starts timing when power greater than 0 detected**	4	Float	F9	32	**R/W**
Serial number	The serial number of the meter	4	ULONG	FC	00	**R**

SCHALT

Example:

1, Read Input Registers

Example: Read “Phase 1 line to neutral volts”

Request: 01 04 00 00 00 02 71 CB

Where, 01 = Meter address

04 = Function code

00 = High byte of registers starting address

00 = Low byte of registers starting address

00 = High byte of registers number

02 = Low byte of registers number

71 = CRC Low

CB = CRC High

Response: 01 04 04 43 66 33 34 1B 38

Where, 01 = Meter address

04 = Function code

04= Byte count

43 = Data, (High Word, High Byte)

66 = Data, (High Word, Low Byte)

33 = Data, (Low Word, High Byte)

34 = Data, (Low Word, Low Byte)

1B = CRC Low

38 = CRC High

Note: 43 66 33 34(Hex) = 230.2 (Floating point)

2, Read Holding Registers

Example: Read “Slide time”

Request: 01 03 00 04 00 02 85 CA

Where, 01 = Meter address

03 = Function code

00 = High byte of registers starting address

04 = Low byte of registers starting address

00 = High byte of registers number

02 = Low byte of registers number

85 = CRC Low

CA = CRC High

Response: 01 03 04 40 A0 00 00 EF D1

Where, 01 = Meter address

03 = Function code

04= Byte Count

40 = Data, (High Word, High Byte)

A0 = Data, (High Word, Low Byte)

00 = Data, (Low Word, High Byte)

00 = Data, (Low Word, Low Byte)

EF = CRC Low

D1 = CRC High

Note: 40 A0 00 00(Hex) = 5 (Floating point)

SCHALT

3, Write Holding Registers

Example: Write “Demand Period” = 30

Request: 01 10 00 02 00 02 04 41 F0 00 00 66 79

Where, 01 = Meter address

10 = Function code

00 = High byte of registers starting address

02 = Low byte of registers starting address

00 = High byte of registers number

02 = Low byte of registers number

04 = Byte Count

41 = Data, (High Word, High Byte)

F0 = Data, (High Word, Low Byte)

00 = Data, (Low Word, High Byte)

00 = Data, (Low Word, Low Byte)

66 = CRC Low

79 = CRC High

Note: 41 F0 00 00(Hex) = 30 (Floating point)

Response: 01 10 00 02 00 02 E0 08

Where, 01 = Meter address

10 = Function code

00 = High byte of registers starting address

02 = Low byte of registers starting address

00 = High byte of registers number

02 = Low byte of registers number

E0 = CRC Low

08 = CRC High