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**
Voltage.	4	Float	V	00	00
Current.	4	Float	A	00	06
Active power.	4	Float	W	00	0C
Apparent power.	4	Float	VA	00	12
Reactive power.	4	Float	var	00	18
Power factor (1).	4	Float	None	00	1E
Phase angle.	4	Float	Degrees	00	24
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 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
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 load (Resistive=1, inductive=2, capacitive =3, Non Load=4)	4	Float	None	00	C0
Current demand.	4	Float	A	01	02
Maximum current demand.	4	Float	A	01	08
Total active Energy.	4	Float	kWh	01	56
Total reactive Energy.	4	Float	kvarh	01	58
Current resettable total active energy	4	Float	kWh	01	80
Current resettable total reactive energy	4	Float	kvarh	01	82
Current resettable import active energy	4	Float	kWh	01	84
Current resettable export active energy	4	Float	kWh	01	86
Current resettable import reactive energy	4	Float	kvarh	01	88
Current resettable export reactive energy	4	Float	kvarh	01	8A

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.

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**
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**
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. 5 = 1200 baud.	4	Float	00	1C	**R/W**
Serial number	The serial number of the meter	4	ULONG	00	2A	**R**
Automatic Scroll Display Time	Automatic scroll display time, unit : second	4	Float	00	3A	**R/W**

	Range 0~60，default : 0 Note: 0 mean stop automatic scroll display					
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**
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**
Reset historical data	0 = reset max. demand 10 = reset the resettable energy **(KPPA is asked)**	2	UINT	F0	10	**W**
Serial number	The serial number of the meter	4	ULONG	FC	00	**R**

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)

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