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
Reactive power.	4	Float	var	00	12
Apparent power.	4	Float	VA	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	30
Nature of load (Resistive=1, inductive=2, capacitive =3, Non Load=4)	4	Float	None	00	4E
Active power demand (2).	4	Float	W	00	8C
Reactive power demand (2).	4	Float	var	00	8E
Apparent power demand.	4	Float	VA	00	90
Current demand.	4	Float	A	00	92
Import active power demand	4	Float	W	00	9A
Export active power demand	4	Float	W	00	9C
Maximum active power demand (2).	4	Float	W	00	A2
Maximum reactive power demand (2).	4	Float	var	00	A4
Maximum apparent power demand.	4	Float	VA	00	A6
Maximum current demand.	4	Float	A	00	A8
Maximum import active power demand	4	Float	W	00	B0
Maximum export active power demand	4	Float	W	00	B2
Total import active energy.	4	Float	kWh	05	00
Total export active energy.	4	Float	kWh	05	02
Total active Energy.	4	Float	kWh	05	04
Total import reactive energy.	4	Float	kvarh	05	08
Total export reactive energy.	4	Float	kvarh	05	0A
Total reactive Energy.	4	Float	kvarh	05	0C

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. The power sum demand calculation is for import – export.

Measuring class parameter [Integer format data]

Holding Register Parameter [Read : Function code : 03H]				Register Address [Hex]	
Description	**Length (bytes)**	**Data Format**	**Units**	**High Byte**	**Low Byte**
Voltage.	4	ULONG	0.01V	00	00
Current.	4	ULONG	0.001A	00	06
Active power.	4	LONG	0.001kW	00	0C
Reactive power.	4	LONG	0.001kvar	00	12
Apparent power.	4	ULONG	0.001kVA	00	18
Power factor (1).	2	INT	0.001	00	1E
Phase angle.	2	INT	0.01°	00	21
Frequency of supply voltages.	2	UINT	0.01Hz	00	2A
Nature of load (Resistive=1, inductive=2, capacitive =3, Non Load=4)	2	UINT	None	00	46
Active power demand (2).	4	LONG	0.001kW	00	66
Reactive power demand (2).	4	LONG	0.001kvar	00	68
Apparent power demand.	4	ULONG	0.001kVA	00	6A
Current demand.	4	ULONG	0.001A	00	6C
Import active power demand	4	ULONG	0.001kW	00	74
Export active power demand	4	ULONG	0.001kW	00	76
Maximum active power demand (2).	4	LONG	0.001kW	00	7C
Maximum reactive power demand (2).	4	LONG	0.001kvar	00	7E
Maximum apparent power demand.	4	ULONG	0.001kVA	00	80
Maximum current demand.	4	ULONG	0.001A	00	82
Maximum import active power demand	4	ULONG	0.001kW	00	8A
Maximum export active power demand	4	ULONG	0.001kW	00	8C
Total import active energy.	4	ULONG	0.01kWh	04	00
Total export active energy.	4	ULONG	0.01kWh	04	02
Total active Energy.	4	ULONG	0.01kWh	04	04
Total import reactive energy.	4	ULONG	0.01kvarh	04	08
Total export reactive energy.	4	ULONG	0.01kvarh	04	0A
Total reactive Energy.	4	ULONG	0.01kvarh	04	0C

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. 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**
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.	2	UINT	50	00	**R/W**
Demand Period	Write demand period: 0~60 minutes, Default 60. Range: 0~60, 0 means function update every second.	2	UINT	50	02	**R/W**
Slide time	Default 1, min. Range：1 ~ (Demand Period -1).	2	UINT	50	03	**R/W**
Modbus address	Write the modbus address Range: 1 to 247 for MODBUS Protocol, default 1.	2	UINT	50	05	**R/W**
Network Baud Rate	Write the network port baud rate for MODBUS Protocol, where: 0 = 1200 baud. 1 = 2400 baud. 2 = 4800 baud. 3 = 9600 baud, default. 4 = 19200 baud.	2	UINT	50	06	**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.	2	UINT	50	07	**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)**	2	UINT	50	08	**R/W**
Automatic Scroll Display Time	Automatic scroll display time, unit : second Range 0~60，default : 0 Note: 0 mean stop automatic scroll display	2	UINT	50	18	**R/W**
Backlit time	Backlit time, unit : minute. Default 60. Range 0~120 or 255，0 means backlit always on，255 means backlit always off.	2	UINT	50	19	**R/W**

Reset historical data	0 = reset max. demand **(KPPA is asked)**	2	UINT	56	00	**W**
Meter code	The code of the meter	2	HEX	56	01	**R**
Serial number	The serial number of the meter	4	ULONG	56	02	**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**

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)

Example: Read "Phase 1 line to neutral volts" (ULONG Format)

Request: 01 03 00 00 00 02 C4 B0

Where, 01 = Meter address

03 = 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

C4 = CRC Low

B0 = CRC High

Response: 01 03 04 00 00 61 AA 53 DC

Where, 01 = Meter address

04 = Function code

04= Byte count

00 = Data, (High Word, High Byte)

00 = Data, (High Word, Low Byte)

61 = Data, (Low Word, High Byte)

AA = Data, (Low Word, Low Byte)

53 = CRC Low

DC = CRC High

Note: 00 00 61 AA(Hex) = 25002(ULONG) * 0.01V = 250.02V

2, Read Holding Registers

Example: Read "Slide time"

Request: 01 03 50 03 00 01 65 0A

Where, 01 = Meter address

03 = Function code

50 = High byte of registers starting address

03 = Low byte of registers starting address

00 = High byte of registers number

01 = Low byte of registers number

65 = CRC Low

0A = CRC High

Response: 01 03 02 00 05 78 47

Where, 01 = Meter address

03 = Function code

04= Byte Count

00 = Data, (High Byte)

05 = Data, (Low Byte)

78 = CRC Low

47 = CRC High

Note: 00 05 (Hex) = 5 (UINT)

3, Write Holding Registers

Example: Write "Demand Period" = 30

Request: 01 10 50 02 00 01 02 00 1E 77 BF

Where, 01 = Meter address

10 = Function code

50 = High byte of registers starting address

02 = Low byte of registers starting address

00 = High byte of registers number

01 = Low byte of registers number

02 = Byte Count

00 = Data, (High Byte)

1E = Data, (Low Byte)

77 = CRC Low

BF = CRC High

Note: 00 1E (Hex) = 30(UINT)

Response: 01 10 50 02 00 01 B1 09

Where, 01 = Meter address

10 = Function code

50 = High byte of registers starting address

02 = Low byte of registers starting address

00 = High byte of registers number

01 = Low byte of registers number

B1 = CRC Low

09 = CRC High