A, Function Code 04

Address (Register)	Input Register Parameter				Modbus Protocol Start Address Hex	
	Description	Length (bytes)	Data Format	Units	Hi Byte	Lo Byte
30001	Voltage.	4	Float	V	00	00
30007	Current.	4	Float	A	00	06
30013	Active power.	4	Float	W	00	0C
30019	Apparent power.	4	Float	VA	00	12
30025	Reactive power.	4	Float	VAr	00	18
30031	Power factor (1).	4	Float	None	00	1E
30037	Phase 1 phase angle.	4	Float	Degrees	00	24
30071	Frequency of supply voltages.	4	Float	Hz	00	46
30073	Import active energy .	4	Float	kWh	00	48
30075	Export active energy .	4	Float	kWH	00	4A
30077	Import reactive energy .	4	Float	kVArh	00	4C
30079	Export reactive energy .	4	Float	kVArh	00	4E
30081	Total apparent energy.	4	Float	kVAh	00	50
30085	Active power demand (2) .	4	Float	W	00	54
30087	Maximum active power demand (2).	4	Float	W	00	56
30101	Apparent power demand.	4	Float	VA	00	64
30103	Maximum apparent power demand.	4	Float	VA	00	66
30109	Reactive power demand. (2)	4	Float	VAr	00	6C
30111	Maximum reactive power demand(2)	4	Float	VAr	00	6E
30259	Current demand.	4	Float	A	01	02
30265	Maximum current demand.	4	Float	A	01	08
30343	Total active Energy	4	Float	kWh	01	56
30345	Total reactive Energy	4	Float	kVArh	01	58

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.

B, Function Code 03/10

Address Register	Parameter	Modbus Protocol Start Address Hex		Valid range	Mode
		High Byte	High Byte		

40001	Demand Time	00	00	Read minutes into first demand calculation. When the Demand Time reaches the Demand Period then the demand values are valid. **Length : 4 byte** **Data Format : Float**	ro
40003	Demand Period	00	02	Write demand period: 0~60 minutes, Default 60. Range: 0~60, 0 means function closed **Length : 4 byte** **Data Format : Float**	r/w
40005	Slide time	00	04	Default 1, min. Range ： 1 ~ (Demand Period -1). **Length : 4 byte** **Data Format : Float**	r/w
40013	Pulse 1 Width	00	OC	Write pulse on period in milliseconds: 60, 100 or 200, default 100. Note: if the pulse constant is equal to 1000imp/kWh, the pulse width cannot be set to 200ms. **Length : 4 byte** **Data Format : Float**	r/w
40019	Parity and stop bit	00	12	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. **Length : 4 byte** **Data Format : Float**	r/w
40021	Modbus address	00	14	Write the network port node Address: 1 to 247 for MODBUS Protocol, default 1. **Length : 4 byte** **Data Format : Float**	r/w
40023	Pulse 1 Rate	00	16	Write pulse rate index: n = 0 to 3 0-- 1000 imp/kWh 1-- 100 imp/kWh 2-- 10 imp/kWh 3-- 1000 imp/kWh **Length : 4 byte** **Data Format : Float** Note: if the pulse width =200ms, the pulse constant cannot be set to 1000imp/kWh.	r/w
40025	Password	00	18	Read: to get the password of the meter Write: to program the new password of the meter Default 1000 **Length : 4 byte** **Data Format : Float**	r/w
40029	Network Baud Rate	00	1C	Write the network port baud rate for MODBUS Protocol, where: 0 = 2400 baud. 1 = 4800 baud.	r/w

				2 = 9600 baud, default. 5 = 1200 band **Length : 4 byte** **Data Format : Float**	
40059	Automatic Scroll Display Time	00	3A	Default 5，second Range 1~255 **Length : 4 byte** **Data Format : Float**	r/w
40061	Backlit time	00	3C	Default 60, min Range 0~121，0 means backlit always on ，121 means backlit always off **Length : 4byte** **Data Format : Float**	r/w
40087	Pulse 1 Energy Type	00	56	Write MODBUS Protocol input parameter for pulse output 1： 2: total active energy, default 6: total reactive energy **Length : 4 byte** **Data Format : Float**	r/w
41025	Alarm Parameter (1)	04	00	Alarm parameter Range: 0~29，and 255； Default: 255 = null **Length : 2 byte** **Data Format : unsigned int16**	r/w
41027	Alarm Value	04	02	When the value measured by the meter exceeds the alarm value, the relay is automatically open and needs to be restored manually **Length : 4 byte** **Data Format : Float**	r/w
461457	Reset historical data	F0	10	**00 00 = reset demand info** **Length : 2 byte** **Data Format: Hex**	wo
463777	Measurement mode	F9	20	00 01：total = import 00 02：total = import + export 00 03：total = import – export 00 04：total = export 00 05：total = export – import **Length : 2 byte** **Data Format : Hex**	r/w
464511	Meter fault information	FB	FE	00 00 Represents fault free 00 01 Represents the relay of meter cannot be open **Length : 2 byte** **Data Format : Hex** **Note: Only read.**	r/w
464513	Serial number	FC	00	Serial number **Length : 4 byte** **Data Format : unsigned int32**	ro

				Note: Only read	
464769	Relay control command	FD	00	FF 00 Represents built-in relay close 00 00 Represents built-in relay open When alarm is triggered, the relay will open, it can be manually closed by this command to remove the alarm. **Length : 2 byte** **Data Format : Hex**	wo

Note:

(1) Table-1 Alarm Parameter

Number	Alarm parameter
0	Voltage.
1	Current.
2	Active power
3	Reactive power.
4	Apparent power.
5	Frequency of supply voltages.

C, Function Code 01，

Address Register	Parameter	Modbus Protocol Start Address Hex		Valid range	Mode
		High Byte	High Byte		
00001	DO-1 status	00	00	DO-1 status,1=ON, 0=OFF **Length : 1 bit** **Data Format : Binary**	ro

D, Function Code 05，

Address Register	Parameter	Modbus Protocol Start Address Hex		Valid range	Mode
		High Byte	High Byte		
00001	Control DO-1	00	00	0xFF00=ON, 0x0000=OFF **Length :2 byte** **Data Format :Hex**	w

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 Time" = 60 min

Request: 01 10 00 02 00 02 04 42 70 00 00 67 D5

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

42 = Data, (High Word, High Byte)

70 = Data, (High Word, Low Byte)

00 = Data, (Low Word, High Byte)

00 = Data, (Low Word, Low Byte)

67 = CRC Low

D5 = CRC High

Note: 42 70 00 00 (Hex) = 60 (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

0A = Low byte of registers starting address

00 = High byte of registers number

02 = Low byte of registers number

E0 = CRC Low

08 = CRC High

IF you have any question, please feel free to contact our sales team.

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