Heat meters MODBUS protocol

Heat meters MODBUS provisions:

2400 baud rate, parity, 8 data bits, 1 stop bit.

The factory default is 01 modbus address.

MODBUS register table

Register Address	Register number	The corresponding value name	type of data	Remark
0001-0001	1	Instantaneous flow	INTEGER	*
0002-0002	1	Set aside (not enabled)	INTEGER	
0003-0003	1	Instantaneous flow unit	INTEGER	*
0004-0005	2	power	LONG	
0006-0006	1	Power Units	INTEGER	*
0007-0008	2	Cumulative flow	LONG	*
0009-0009	1	Cumulative flow units	INTEGER	*
0010-0011	2	Cumulative heat	LONG	*
0012-0012	1	The cumulative thermal units	INTEGER	*
0013-0014	2	The cumulative amount of cold	LONG	*
0015-0015	1	Cumulative cold units	INTEGER	*
0016-0017	2	Inlet temperature T1	LONG	x0.01 ℃
0018-0019	2	Return water temperature T2	LONG	x0.01 ℃
0020-0020	1	status	INTEGER	*
0021-0022	2	operating hours	LONG	*
0023-0024	2	clock	BCD	MMSS - -HH
0025-0026	2	date	BCD	MMDD YYYY
0027-0027	1	4-20mA output current value	INTEGER	x0.01mA
0028-0029	2	4mA base value	LONG	*
0030-0031	2	20mA base value	LONG	*
0032-0032	1	caliber	INTEGER	Example 0x0100: diameter of DN100
0033-0034	2	Table No.	BCD	No. 8 188 Low
0035-0035	1	MODBUS address	INTEGER	*
0036-0036	1	Table Type	INTEGER	0: meter 1: Hot Table

0037-0037	1	Type of Communication	INTEGER	0: MODBUS
0038-0038	1	version number	INTEGER	0

* Unit Analysis:

Accumulated flow:

0C 14 units 10L

0C 15 units 100L

0C 16 units of 1 m3

Instantaneous flow:

0B 3B unit 1L / h

0B 3C units 10L / h

0B 3D units of 100L / h

Power unit:

0B 2C unit is 10W

0B 2D unit is 100W

0B 2E unit is KW

Thermal units:

0C 06 units KWh

0C 0E units 1MJ

0C 0F unit is 10MJ

0C 10 units 1GJ

temperature:

Inlet temperature unit is 0.01 ℃

Return temperature unit is 0.01 ℃

For example: the cumulative flow: register 7 is: 0XE240

Value register 8: 0X0001

Register 9 is: 0X0C14

Resolves to: register value lower cumulative flow 7 16-bit value, the value of the accumulated flow register 8

The high 16-bit values, integrated flow rate value and the register 8 and the value register 7, so that the cumulative

Flow 0X0001E240 (HEX) = 123456 (decimal), i.e. 0X0C14 unit 10L, so tired

Excluding traffic is 123456 * 10L = 1234560L = 1234.56 m3

Instantaneous flow: register value 1: 0X0CB2

Register value 3: 0X0B3B

Resolves to: instantaneous flow 0X0CB2 (HEX) = 3250 (decimal), i.e. 0X0B3B units 1L / h, the

Instantaneous flow rate of 3250 * 1L / h = 3250L / h = 3.250 m3 / h

Power and thermal analysis method above.

*Data Format:

32-bit data type LONG, INTEGER data type is 16 bits. Thus, two registers are used to keep the

Storing a data type LONG. A first register (lower address), lower than the 16-bit data storage. the second

Register (high address), higher than the 16-bit data storage. Is a hexadecimal number.

Set MODBUS address:

68 20 00 00 00 00 00 00 00 15 0a a0 18 00 01 00 00 00 00 00 00 00 60 16

00 is the factory default address; 02 is the new modbus address; 60 for the checksum.

Successfully set back several formats: 68 20 02 00 00 00 00 00 00 95 03 a0 18 00 DA 16

Note: MODBUS address table using the lowest bit number 188, write command MODBUS protocol is compatible with the 188.

For example: read modbus address to the watch 02:

Send: 02 03 00 01 00 26 95 E3

modbus address Control word 1 start register 38 is the end of the CRC register low byte high byte CRC check

Reception: 02 03 4C 00 00 00 00 0B 3D 00 00 00 00

modbus address control data word length of instantaneous flow reserve (unused) instantaneous unit Power (low) power (high)

0B 2E 00 A6 00 00 0C 16 F8 55 00 06 0C 06

Power units total flow (low) Accumulated flow (high) Cumulative total flow per unit of heat (low) Cumulative calories (high) thermal units

30 39 00 00 0C 06 07 FB 00 00 08 17 00 00

Cumulative cold (low) amount of accumulated cold (high) refrigeration unit Water temperature (low) water temperature (higher) return water temperature (low) return water temperature (higher)

00 0,400,000,000,000,000 0,000,000,000,000,000 0,000,000,000,000,000

Table state

Not yet enabled

00 11 11 11 11 00 02 00 01 00 01 00 00 0B B0

No. MODBUS address low byte CRC check CRC check high byte

Analysis: calories: 0X0006F855 (HEX) = 456789, the unit KWh, so the heat is

456789KWh, Similarly, the cooling capacity of 12345 KWh, 0KW power, instantaneous 0.0 m3 / h,

Total flow 166 m35.

Read registers that can be selected according to: heat Table 1-20 General register read it.

Status bit

Status bit have the following meanings: Status 2 bytes, high byte reserved unused, from low to high low byte

Bits represented sequentially as meaning: short circuit, anhydrous, bad circuit board, through flow, low voltage, high

2

Bits are unused. When a status bit 00 indicates normal operation. Bit to 0 indicates that the status is normal, for example:

Status bit is 0X0026, showing: Low + + disconnection anhydrous

Status bit interpretation: water meter or a thermal short-circuiting means inside the table temperature probe short circuit, heat meter by meter means

Inside breaking temperature probe, there are no pipe anhydrous represents water or water pipe is not full, a circuit board bad abnormality,

Overcurrent table showing the water flow rate exceeds the measurement range, low-voltage indicates that the battery voltage is low.

01- 02- short circuit breaker

04- 08- anhydrous bad

20 low voltage overcurrent 10-

00- normal operation

High Byte Low Low byte

Low Low byte

00,111,111

Low pressure overcurrent Bad Anhydrous Open circuit Short circuit

(0: 1 does not appear the following phenomena: that following phenomena occur)

Note:For example:26 (H)

00,100,110

Low-voltage circuit breaker anhydrous

note:

Meter only: instantaneous, cumulative flow, temperatures T1, no heat, refrigeration, power, T2.