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Chloride Sensor for Water Quality User Manual

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catalogue

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To inform the user

Thank you for supporting your company. Please read the instructions in detail to help you use our products correctly.

Two, product inspection

Carefully open the package, check whether the instrument is damaged, and whether the accessories are complete, please contact the dealer or our company immediately.

Under any circumstances, the instrument shall not be removed, if such behavior, the company is no longer responsible for the warranty.

Three, product introduction

The product is a digital sensor integrating the electronic circuit and the microprocessor into the interior of the digital sensor, hereinafter referred to as the digital electrode, which has the following characteristics

1. RS-485 transmission interface, MODBUS-RTU communication protocol, two-way communication.
2. Power supply and output isolation design to ensure electrical safety.
3. Built-built protection circuit, enhance the anti-interference ability, to adapt to the complex environment.
4. The communication protocol is easy to use, can output more electrode diagnostic information, more intelligent.
5. Low-power consumption is designed for more usage situations, and the internal memory saves the calibration and setting information in case of power failure.
6. PPS housing, strong corrosion resistance, 3 / 4 front and rear threads, easy installation.

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Iv. Technical parameters

ionic concentration	measuring range	0-1000ppm
	resolution ratio	0.001 p pm
	certainty of measurement	±0.5%FS
temperature	measuring range	10.0-110.0℃
	resolution ratio	0.1℃
	certainty of measurement	±0.5℃
	Temperature type	Thermistor NTC 10K
	temperature compensation	Automatic / manual
data transmission	RS-485	MODBUS-RTU communication protocol
Other parameters	working power supply	9~27VDC
	Isolation intensity	2500Vrms
	Product power	About 0.5W
	Product material	PPS monoblock
	way to install	3 / 4 in front and rear thread

Five, wiring instructions

	pigment	function declaration
data transmission	Yellow line	RS-485 Communication T / R + (A)
	White line	RS-485 Communication T / R- (B)
Power supply	Red line	DC power supply is positive
	Black line	DC power supply ground

The instrument adopts RS-485 Modbus communication protocol RTU mode, with serial port parameters of (N, 8,1), namely no check, 8-bit data, 1-bit stop bit, the default port rate is 9600 (modifiable), and the address is 01 (modifiable).

1 Protocol description

a) In this Agreement, the letter "H" indicates that the data is 16 decimal digits.

b) All registers are bi-bytes, with high bytes first and low bytes second. The whole negative number is represented by complement, namely, -1 is represented by FFFFH and-2 by FFFEH.

c) The upper-position computer commands received by the instrument are all 8 bytes long, and the excess part is invalid, but the first 8 bytes of commands are still valid. For a 0.1 seconds pause, instructions not reaching 8 bytes are considered invalid.

d) CRC check see CRC worksheet, sending high bytes before and low bytes after. When the check code is 2A2AH, the instrument directly passes does not check.

2. Register General Description

Instrument registers are divided into three categories: floating register, parameter register and information register

a) Floating register data is the real-time measurement data of the instrument, such as conductivity value, temperature value, etc. A total of 20 register addresses, 0000H ~ 0013H (decimal 0~19), and the data can be read by the function code 03 or 04.

When reading data using function code 04, the measurement data returned by the instrument is an integer. One data contains two parts, the first part is divided into data numerical integer, occupy a register, the second part is the data decimal number and units, share a register, each occupy one byte, the unit code to see the unit code table.

When accessed with the function code 03, the measurement data returned by the instrument is floating point, and one data occupies two registers (a total of 4 bytes) to represent the floating point data in the default value.

b) The parameter register contains the calibration situation of the instrument and some parameters that can be set by the user, including 40 register addresses, 004 H ~ 004 H ~ 003 B H (decimal 20~59), read register data using function code 03, write registers with writable attributes using function code 06, such as modified communication wave rate, instrument ID, etc.

c) The information register contains the running status of the instrument and the basic information of the instrument, such as the instrument serial number, model, etc., a total of 20 register addresses, 003CH~ 004FH (decimal 60~79), read the register data using function code 03, and write the register with writable attributes using function code 06, used to control the instrument operation, such as the instrument calibration operation.

The three types of register addresses are continuously arranged continuously, but when reading the register data with the function code 03, the number of instruction read register cannot exceed the current register type.

3 Read the floating register data command format function code 03 or 04

Upper-computer instruction format	From the machine address	FC	Register address range	Number of read registers: N	CRC
	01H~F7H	03 Or 04	0000H~0013H	1~20	CRC tall CRC low
	1 Bytes	1 Bytes	2 Bytes	2 Bytes	2 Bytes

Lower position machine responds normally	From the machine address	FC	Byte number	Data for the N registers	CRC
	01H~F7H	03 Or 04	N*2	data	CRC tall CRC low
	1 Bytes	1 Bytes	1 Bytes	N * 2 bytes	2 Bytes

Read floating register floating point data instruction example: (send and answer data in headecimal format)

Example: Read 10 floating registers from the 0000H address

Computer bit send: 01 03 00 00 00 0A C5 CD

Lower position response: 01 03 14 0000 4120 333342 C8 00 00 00 00 00 00 00 00 E3 E8 41 C7 43 0C

Send interpretation:

On the machine to send	01	03	0000	000A	C5CD
decimal system	1	3	0	10	
unscramble	Device with a slave address of 1	Read the floating register floating-point data	Start with the address of 0000H	Read the 10 registers	CRC verification

Response interpretation: (see floating register address table)

Lower machine response	01	03	14
decimal system	1	3	20
unscramble	Device with a slave address of 1	Answer the floating register Floating-point data reading instruction	Ten registers The length is 20 bytes

Lower machine response	0000	4120	3333	42C8
Register address	0000H	0001H	0002H	0003H
Register name	Ion concentration values		Electrode signal value	
floating number	10.00		100.1	
unscramble	Ion concentration value: 10.00ppm		Electrode signal value: 100.1mV	

Lower machine response	0000	0000	0000	0000
Register address	0004H	0005H	0006H	0007H
Register name				
floating number				
unscramble	insignificance		insignificance	

Lower machine response	E3E8	41C7	430C
Register address	0008H	0009H	
Register name	temperature scale		
floating number	24.986282		
unscramble	Temperature value: 25.0℃		CRC verification

Read floating register integer data instruction Example: (send and answer data in hexadecimal format)

Example: Read 10 floating register integer data starting from the 0000H address

On-board bit send: 01 04 00 00 00 0A 70 0D

Lower position response: 01 04 14 03EB 02 11 03 EC 01 00 00 00 00 00 00 00 00 00 00 FA 01 0B C7 51

Send interpretation:

On the machine to send	01	04	0000	000A	700D
decimal system	1	4	0	10	
unscramble	Device with a slave address of 1	Read the floating register integer data	Start with the address of 0000H	Read the 10 registers	CRC verification

Response interpretation: (see floating register address table)

Lower machine response	01	04	14
decimal system			20
unscramble	Device with a slave address of 1	Answer the floating register Whole data reading instruction	Ten registers The length is 20 bytes

Lower machine response	03EB	0211		03EC	0100	
Register address	0000H	0001H		0002H	0003H	
Register name	Ion concentration values numeric value	Ion concentration values		Electrode signal value numeric value	Electrode signal value	
		decimal	unit		decimal	unit
		02	11		01	00
decimal system	1000			1001		
unscramble	Ion concentration value: 10.00p pm			Electrode signal value: 100.1mV		

Lower machine response	0000	0000		0000	0000	
Register address	0004H	0005H		0006H	0007H	
Register name						
decimal system						
unscramble	insignificance			insignificance		

Lower machine response	00FA	010B		C751
Register address	0008H	0009H		
Register name	temperature scale numeric value	temperature scale		
		decimal	unit	
		01	0B	
decimal system	250			
unscramble	Temperature value: 25.0℃			CRC verification

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4 Read the parameter register data instruction format function code 03

Upper-computer instruction format	From the machine address	FC	Register address range	Number of read registers: N	CRC
	01H~F7H	03	00014H~003BH	1~40	CRC tall CRC low
	1 Bytes	1 Bytes	2 Bytes	2 Bytes	2 Bytes

Lower position machine responds normally	From the machine address	FC	Byte number	Data for the N registers	CRC
	01H~F7H	03	N*2	data	CRC tall CRC low
	1 Bytes	1 Bytes	1 Bytes	N * 2 bytes	2 Bytes

Read parameter register data instruction Example: (send and answer data in hex format)

Example: Read the 7 parameter registers starting from the 001EH address

Host bit transmission: 01 03 00 1E 00 06 A5C E

Next position response: 01 03 0C 00 01 00 03 00 01 00 00 00 00 00 01 527C

Send interpretation:

On the machine to send	01	03	001E	0006	A5CE
decimal system	1	3	30	6	
unscramble	Device with a slave address of 1	Read register data	Start with the address, 001EH	Read the 6 registers	CRC verification

Response interpretation: (See parameter register address table)

Lower machine response	01	03	0C
decimal system	1	3	12
unscramble	Device with a slave address of 1	Answer the parameter register data read instruction	The six registers are 12 bytes in length

Lower machine response	0001	0003	0001	0000
Register address	001EH	001FH	0020H	0021H
Register name	This machine address	traffic rate	Temperature fill type	Temperature offset set point Or for the manual temperature settings
decimal system	1	3	1	0
unscramble	The native address is 1	3 Corresponding to 9,600, Note 1	1 Corresponding to the automatic temperature supplement note 1	0 Represents the bias 0.0℃ Note 2

Lower machine response	0000	0001	527C
Register address	0022H	0023H	
Register name	unused	ionic valency 0: No ionic price is set 1: Monovalent ion 2: Divalent ions	
decimal system	0	0	
unscramble		1 Corresponding to one price	CRC verification

Note 1 The corresponding significance of the data value in some interpretation only lists the corresponding meaning of the current value, and please see the parameter register for the other corresponding meaning for details.

Note 2 The Temperature bias setting value or the manual temperature setting value (0021H) register is determined by the temperature supplement type register (0020H). If the temperature supplement setting type is the manual temperature setting value, this register is the manual temperature setting value. This register is a temperature offset setting if the temperature supplement type is automatic. This register is a 10 x value, such as a read to 00FAH, and is converted to a decimal to 250, representing 25.0℃. To write 10.0℃ to the register, the hexadecimal value of 0064H corresponding to 100 is written.

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5 Read the information register data instruction format function code 03

Upper-computer instruction format	From the machine address	FC	Register address range	Number of read registers: N	CRC
	01H~F7H	03	0003CH~004FH	1~20	CRC tall CRC low
	1 Bytes	1 Bytes	2 Bytes	2 Bytes	2 Bytes

Lower position machine responds normally	From the machine address	FC	Byte number	Data for the N registers	CRC
	01H~F7H	03	N*2	data	CRC tall CRC low
	1 Bytes	1 Bytes	1 Bytes	N * 2 bytes	2 Bytes

Read Information Register data instructions Example: (Send and answer data in hexformat)

Example: Read the 10 information registers starting from the 0040H address

Computer bit send: 01 03 00 40 00 0A C4 19

Response: 0103140010000000000000000101210010001011234 AB CD 5935

Send interpretation:

On the machine to send	01	03	0040	000A	C419
decimal system				10	
unscramble	Device with a slave address of 1	Read register data	Start with the address of 0040H	Read the 10 registers	CRC verification

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Response Interpretation: (See Information Register Address Table)

Lower machine response	01	03	14
decimal system			20
unscramble	Device with a slave address of 1	Answer the information register data read instructions	Ten registers are 20 bytes in length

Lower machine response	0010	0000	0000	0000
Register address	0040H	0041H	0042H	0043H
Register name	work pattern	Pattern parameter 1	Work events	State instructions
unscramble	Currently in measurement mode	There's no point here	There's no point here	There's no point here

Lower machine response	0010	1210	0100	0101
Register address	0044H	0045H	0046H	0047H
Register name	device type	unit type	software release	Hardware version
unscramble	Device model: ION 1210		1.00	1.01

Lower machine response	1234	ABCD	5935
Register address	0048H	0049H	
Register name	Serial number is high	Serial number is low	
unscramble	Device Serial number 1234ABCD		CRC verification

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6 Modify a single parameter or information register data instruction format function code 06

Upper-computer instruction format	From the machine address	FC	Register address to be modified	modified value	CRC
	01H~F7H	06	The address of the register in the register that has writable properties	data	CRC tall CRC low
	1 Bytes	1 Bytes	2 Bytes	2 Bytes	2 Bytes

Lower position machine responds normally	From the machine address	FC	Modified register address	Modified value	CRC
	01H~F7H	06	Register address	data	CRC tall CRC low
	1 Bytes	1 Bytes	2 Bytes	2 Bytes	2 Bytes

Modify a single parameter or information register instruction Example: (data is hexadecimal)

Example 1: Change the ion valence (register 0023H) to bivalent

Computer bit sent: 01 06 00 23 00 02 F9C 1

Response: 01 06 00 23 00 02 F9C 1

Send interpretation:

On the machine to send	01	06	0023	0002	F9C 1
decimal system					
unscramble	Device with a slave address of 1	Modify the register data instructions	Ion valence register address	Modify the value to a 2-price value	CRC verification

Answer interpretation:

Lower machine response	01	06	0023	0002	F9C 1
decimal system					
unscramble	Device with a slave address of 1	Answer the modified register data instruction	Ion valence register address	The value was modified to a 2 price	CRC verificati on

Example 2: Set the temperature offset value (register 0021H) to-5.0℃

Send on the computer bit: 01 06 00 21 FF CE 19 A4

Lower position response: 01 06 00 21 FF CE 19 A4

Send interpretation:

On the machine to send	01	06	0021	FFCE	19A4
decimal system				-50	
unscramble	Device with a slave address of 1	Modify the register data instructions	Temperature offset register address	Modify the value to -5.0℃	CRC verification

Answer interpretation:

Lower machine response	01	06	0021	FFCE	19A4
decimal system				-50	
unscramble	Device with a slave address of 1	Answer the modified register data instruction	Temperature offset register address	The value was modified to-5.0℃	CRC verification

7 Error instruction answer format

Lower machine error answer	From the machine address	FC	Error code	CRC
	01H~F7H	Receive command function code + 80H	Error code is shown in the protocol description	CRC tall CRC low
	1 Bytes	1 Bytes	1 Bytes	2 Bytes

Function code: When the instrument receives an error instruction, it will add 80H as the function code of the answer data frame. If the upper computer uses the 03 function code, and the function code is 83H, then the instruction of the upper computer is wrong, and the specific error needs to check the error code.

Error code:

01: Function code error. This protocol only supports access to function code 03,04,06. If the function code is of other values, the error code is returned.

02: The register address is wrong, which is returned when the register address accessible by the function code exceeds the corresponding allowable range.

03: The number of registers is wrong, the number of registers to be read exceeds the range of subsequent registers of the current type, and return this error code.

04: The modified value is wrong, the data of the register to be modified is beyond the value range of this register data, and this error code is returned.

05: CRC error, the check result is inconsistent, this error code is returned.

06: Write error, you have performed a write (modify) operation on the read-only register, namely, access the read-only register with the function code 06, and return this error code.

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8 Floating register address (whole type)

Register address	Register name	scope	high byte	lower byte	Read / write	remarks
0000H	Ion concentration values	0ppm~20000ppm	16 Plastic 0~20000		R	0x7FFF 0x8000 Over the lower limit
0001H	Ion concentration values Numbers and units		decimal digits	Unit (check the form)	R	
0002H	The electrode signal	-750.0mV~750.0mV	16-7500~7500		R	0x7FFF 0x8000 Over the lower limit
0003H	Electrode signal decimal and unit		decimal digits	Unit (check the form)	R	
0004H						
0005H						
0006H						
0007H						
0008H	temperature scale	-10.0℃~110.0℃	16-bit Plastic-100~1100		R	0x7FFF 0x8000 Over the lower limit
0009H	temperature scale Numbers and units		decimal digits	Unit (check the form)	R	

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9 Floating register address (floating-point type)

Register address	Register name	scope	data type	Read / write	remarks
0000H	Ion concentration values	0.000~20000p pm	Floating-point data unit ppm	R	
0001H					
0002H	The electrode signal	.0-750mV~750mV.0	Floating-point data unit mV	R	
0003H					
0004H					
0005H					
0006H					
0007H					
0008H	temperature scale	-10.0℃~110.0℃	Floating-point data unit: ℃	R	110.1 Over the upper limit -10.1℃ Over the lower limit
0009H					

10 Parameter register address

Register address	Register name	span	explain	Read / write / long arms	Windows default
0019H	Electrode calibration Note 4	0: Not calibrated 1: Calibrated	BIT2チ0.1ppm BIT3チ1ppm BIT4チ10ppm BIT5チ100ppm BIT5チ1000ppm	R/D	Not calibrated
001AH					
001BH					
001CH	Electrode efficiency	70.0% ~130.0%	16 Plastic Surgery 700~1300 Default is one decimal unit of%	R/D	100.0%
001DH	The number of points has been calibrated	0~5			0
001EH	This machine address	1~247	The 255 (FFH) is the general address	R/W	1
001FH	traffic rate	0チ1200 1チ2400 2チ4800 3チ9600 4チ19200		R/W	9600
0020H	Temperature fill type	0: Manual temperature supplement 1: Automatic temperature	This register value determines the next register significance	R/W/D	Automatic warm fill

		supplement			
0021H	Temperature setting value (Manual warm stoppage time)	-10.0℃~110.0℃	The 10 x value was read to 250 The actual value is 25.0℃ Note 5	R/W/D	25.0℃
	Temperature bias value (Automatic warm stoppage time)	-10.0℃~10.0℃			0.0℃

Read and write slow attribute, R means readable, W means itable, D means to perform the recovery factory setting operation This register will be overwritten to the default value, no D means that the register is not affected by the recovery factory setting operation.

Note 4 Reference to the standard fluid code and calibration section

Note 5 register values are plastic, so such registers are 10 or 100 times the actual value, like the temperature reference read to 00FAH, converted to decimal to 250, representing 25.0℃. To write 10.0℃ to the register, the hexadecimal value of 0064H corresponding to 100 is written.

11. Information register address

Register address	Register name	span	Read / write	remarks
0040H	work pattern	0010H: Measurement mode 0050H: Set the mode 0060H: Calibration mode	R/W	Note 6
0041H	Pattern parameters		R/W	Refer to the specific working mode section introduction
0042H	Work events		R	
0043H	Calibration status and operation		R/W	
0044H	Instrument type	0010Hチ ION	R	
0045H	Instrument model	1210H	R	BCD a sign or object indicating number
0046H	software release		R	BCD a sign or object indicating number
0047H	Hardware version		R	BCD a sign or object indicating number
0048H	Instrument serial number 1		R	BCD a sign or object indicating number
0049H	Instrument serial number 2		R	BCD a sign or object indicating number

Note 6 When accessing the next machine operating mode register, the return value will be at the bottom of hexadx is not 0, press 0. If the working mode register is read, the return value is 0011H, or 0010H, indicating that the instrument is currently in the measurement mode.

12 Ion standard liquid code and calibration situation

The ion can be calibrated at five points, and the standard liquid is represented by BIT 6~BIT2 in a binary of a 16-bit integer value. The correspondence is shown in the table below

	Unused	1000ppm	100ppm	10ppm	1ppm	0.1ppm	Unused
The 16-digit type	BIT15~BIT 7	BIT 6	BIT 5	BIT 4	BIT3	BIT 2	BIT1┴BIT0

Like 0.1ppm standard liquid, the code is 0002H

1ppm Standard liquid, code 0004H.

10ppm Standard liquid, with the code of 0008H.

100ppm Standard liquid, with the code 0010H.

1000ppm Standard fluid, code 0020H.

If the calibration case register value is 000CH, then both the 1ppm point and the 10ppm points have been calibrated.

13 Unit control table

data	00H	01H	02H	03H	04H	05H	06H
unit	mV	nA	uA	mA	Ω	KΩ	MΩ
data	07H	08H	09H	0AH	0BH	0CH	0DH
unit	uS	mS	S	pH	℃	℉	ug/L
data	0EH	0FH	10H	11H	12H	13H	14H
unit	mg/L	g/L	ppb	ppm	ppt	%	mbar
data	15H	16H					
unit	bar	mmHg					

7. Set up the mode

The user can use the upper computer computer to send instructions through the RS485 interface to enable the instrument to enter the setting mode, in which the instrument can be used to restore the factory setting. The specific operation procedure is as follows:

a) Enter the setup mode. Use the 06H function code to write a value (0050H) in the working mode register (address 0040H) to bring the instrument into the setup mode.

Upper computer sent: 01 06 00 40 00 50 88 22

Next machine reply: 01 06 00 40 00 50 88 22

b) Write recovery instructions. After the instrument enters the setting mode, use the 06H function code to write the value (7FFFH) in the mode parameter register (address 0041H), the instrument will clear all calibration information and restore the temperature mode and temperature bias to the default value (automatic temperature supplement, offset 0.0℃), and the parameter register needs to restore to the default value, and then restart.

Host computer sent: 01 06 00 41 7F FF B9 AE

Next bit computer reply: 01 06 00 41 7F FF B9 AE

Viii. Calibration process

The universal ion digital electrode cannot calculate the ion concentration value without being calibrated, and it can only be calibrated with two or more different standard concentration fluids.In order to ensure the accuracy and correctness of the measurement, users also need to use a standard solution to calibrate the electrodes regularly. The calibration mode of this instrument is to send the command through the RS485 interface.

1 Calibration process

a) Place the electrodes into the standard solution.

b) Write the standard fluid code in the calibration state register (0043H).

c) Wait for the calibration to complete. The calibration can be viewed by reading the value of the calibration status register (0043H). The reading value is corresponding to the following conditions as follows:

0: Successful calibration (returned to measurement mode).

1: Calibrating (still in calibration mode, please read the status later).

2: No correct standard fluid value was received (the measurement mode was returned).

3:1 The signal cannot stabilize or exceed the measurement range within 180 seconds (the measurement mode is returned).

4: Sensor performance (slope or offset value) is outside the allowable range (measurement mode is returned).

d) To calibrate the other points, repeat this process.

2. Calibration instructions

a) The electrode can be calibrated at up to five points, and the calibration point can be calibrated again, indicating error 2, and the correct standard fluid is not received.

b) After each successful calibration point, if the ion price is set, the electrode will calculate the efficiency to determine the performance. If the allowable range is exceeded, the error 4 will be indicated, and the calibration will fail.Sensor performance can be viewed by reading registers such as calibration conditions, electrode slope, etc.

c) Writing the 7FFFH in the calibration state register (0043H) clears all of the calibration information.

3. Examples of the calibration instructions

a) Calibrate the midpoint and write the 1ppm standard fluid code (0004H) to the calibration status register (0043H)

Send on board: 01 06 00 43 00 04 79 DD

Position response: 01 06 00 43 00 04 79 DD

) Query the calibration state, and the read state indicates the register

Computer bit sent: 01 03 00 43 00 01 75 DE

Lower position response: 01 03 02 00 00 B8 44

See the underscore in the answer for the interpretation in the calibration process.

c) After the calibration, the device will return to the measurement status, regardless whether the calibration is successful, pay attention to modify the code of different standard fluids and recalculate the CRC. See the common instruction section for specific instructions.

9. Commonly used instructions

1 Read the register (take the device address 01H as an example)

Directive meaning	device address	FC	Read the register first address	Number of read registers	CRC verification
Read all of the floating registers The whole data	01	04	00 00	00 0A	70 0D
Read all of the floating registers Floating point type data	01	03	00 00	00 0A	C5 CD
Read all of the parameter registers	01	03	00 19	00 0C	94 08
Read all of the information registers	01	03	00 40	00 0A	C4 19

2 Modify the register

Directive meaning	device address	FC	The address of the register that you want to modify	modified value	CRC verification
Modify the device address to 02	01	06	00 1E	00 02	68 0D
Modifies the Porter rate to 2,400	01	06	00 1F	00 01	79 CC
Modify the temperature supplement type to manual	01	06	00 20	00 00	88 00
Modify the temperature supplement type to automatic	01	06	00 20	00 01	49 C0
Modify the temperature bias value of-5.0℃	01	06	00 21	FF CE	19 A4
Ion price is changed to 1 price	01	06	00 23	00 01	B9 C0
Ion price is changed to 2 price	01	06	00 23	00 02	F9 C1

3. Restore the factory settings (execute the following two instructions)

Directive meaning	device address	FC	The address of the register that you want to modify	modified value	CRC verification
Put the device into the setup mode	01	06	00 40	00 50	88 22
Send a restore factory command	01	06	00 41	7FFF	B9 AE

4 Electrode calibration

Directive meaning	device address	FC	The address of the register that you want to modify	modified value	CRC verification
Clear all of the calibration points	01	06	00 43	7F FF	18 6E
calibration 0.1ppm	01	06	00 43	00 02	F9 DF
calibration 1ppm	01	06	00 43	00 04	79 DD
calibration 10ppm	01	06	00 43	00 08	79 D8
calibration 100ppm	01	06	00 43	00 10	79 D2
calibration 1000ppm	01	06	00 43	00 20	79 C6
Query calibration status	01	03	00 43	00 01	75 DE