ECA-ORP Modbus communication protocol

register address	The address of the message	data type	Reading and writing	Length	Description
40001	0x0000	Unsigned int	R	1	Alarm code
40002	0x0001	float	R	2	ORP value (mV)
40004	0x0003	float	R	2	NC
40006	0x0005	float	R	2	temperature data
40008	0x0007	float	R	2	ORP signal value (mV)
40010	0x0009	----	----	7	NC
40017	0x0010	String	R	8	Product Name(16Byte)
40025	0x0018	String	R	8	Serial Number (16Byte)
40033	0x0020	String	R	1	Hardware version (1Byte)
40034	0x0021	String	R	2	Software Version (4 Byte)
40036	0x0023	Unsigned int	R/W	1	Correspondence address (initial value: 5)
40037	0x0024	Unsigned int	R/W	1	Baud rate (initial value: 9600)
40038	0x0025	Unsigned int	R	1	type of equipment
40039	0x0026	----	----	11	NC
40050	0x0031	Float	R/W	2	the first point signal value
40052	0x0033	Float	R/W	2	The first point calibration value
40054	0x0035	Float	R/W	2	second point signal value
40056	0x0037	Float	R/W	2	second point calibration value
40058	0x0039	Unsigned int	R/W	1	activating the ORP calibration flag (0x0001: start one point calibration 0x0002: Start 2-point calibration)
40059	0x003A	Float	R/W	2	temperature calibration parameters
40061	0x003C	Unsigned int	R/W	1	activate the temperature calibration flag (0x0001: Start temperature calibration)
40065	0x0040	Float	R/W	2	temperature signal value

- Alarm code information

Alarm code is 16 Bit, each Bit represents a type of alarm, when the corresponding Bit is 0, it means that there is no such alarm, when the corresponding Bit is 1, it means that this type of alarm occurs.

Bit Bit	Alarm description	Alarm type
Bit0	Temperature out of range	Warning alarms
Bit1	ORP data out of range	Warning alarms
Bit8	Temperature sensor malfunction	Fault Alarm

- Baud rate

Bit Bit	baud rate
0x0000	4800 bps
0x0001	9600 bps
0x0002	19200 bps
0x0003	38400 bps
0x0004	57600 bps
0x0005	115200 bps

Modbus Calibration Operation

ORP one-point calibration

Step 1:Place the sensor into ORP standard solution 1.

Step 2:Obtain the signal value of the electrode (40008 Float).

40008	0x0007	float	R	2	ORP signal value (mV)

Step 3: Write the acquired signal value of the electrode to the calibration value register (40050 Float).

40050	0x0031	Float	R/W	2	the first point signal value

Step 4: Write the ORP value of ORP standard solution 1 to the calibration value register (40052 Float).

40052	0x0033	Float	R/W	2	The first point calibration value

Step 5: Start a little calibration and rewrite the 40058 register to 0x0001.

40058	0x0039	Unsigned int	R/W	1	Write 0x0001,start one point calibration

ORP 2-point calibration

Step 1:Place the sensor into ORP standard solution 1.

Step 2:Obtain the signal value of the electrode (40008 Float).

40008	0x0007	float	R	2	ORP signal value (mV)

Step 3: Write the acquired signal value of the electrode to the calibration value register (40050 Float).

40050	0x0031	Float	R/W	2	the first point signal value

Step 4: Write the ORP value of ORP standard solution 1 to the calibration value register (40052 Float).

40052	0x0033	Float	R/W	2	The first point calibration value

Step 5:Place the sensor into ORP standard solution 2.

Step 6:Obtain the signal value of the electrode (40008 Float).

40008	0x0007	float	R	2	ORP signal value (mV)

Step 7: Write the acquired signal value of the electrode to the calibration value register (40054 Float).

40054	0x0035	Float	R/W	2	second point signal value

Step 8: Write the ORP value of ORP standard solution 2 to the calibration value register (40056 Float).

40056	0x0037	Float	R/W	2	second point calibration value

Step 9: Start 2-point calibration, rewrite 40058 register to 0x0002.

40058	0x0039	Unsigned int	R/W	1	Write to 0x0002 to initiate 2-point calibration

Temperature one-point calibration

Step 1:Write the exact temperature of the current solution to the temperature calibration parameter register (40059 Float).

40059	0x003A	Float	R/W	2	temperature calibration parameters

Step 2: Start temperature calibration, rewrite 40061 register to 0x0001.

40061	0x003C	Unsigned int	R/W	1	Write to 0x0001 to initiate temperature calibration