4-electrode Conductivity (cell outside)

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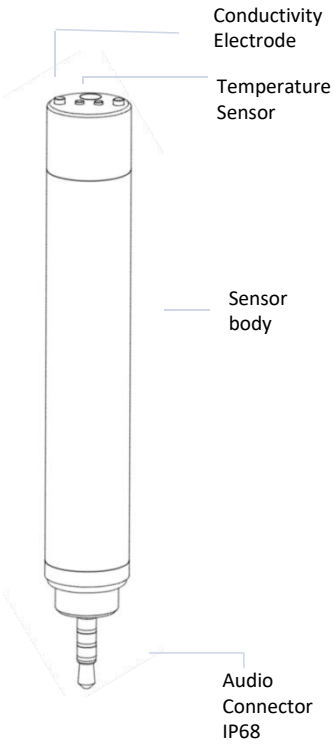
Digital 4-electrode Conductivity



Broadsensor conductivity sensor measures conductivity by AC voltage applied to 316 or C22 electrodes. The sensor requires little maintenance or special attention for storage and can measure high conductivity water long-term.

Key Advantages:

- Exposed 4-electrode with 316 or C22 conductivity cell, calibration parameters are stored in the sensor.
- mV class AC drive, better polarization resistance, smaller drift.
- RS485 output, Modbus protocol.
- Titanium shell, suitable for a variety of complex applications
- IP68 connector.
- Exposed structure, easy to clean.
- Output water temperature, conductivity and salinity, TDS simultaneously.

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Technical Specifications

Measurement Method	4-electrodes AC drive
Range	1uS/cm~100mS/cm
Resolution	1uS/cm
Accuracy	±3% reading or ±0.2mS/cm w.i.g**
Operating temperature	5~45℃
Storage Temperature	-10~50℃
Min. Detection Limit	0.3uS/cm
Warranty	1 year
Depth	IP68
Power	DC5V 5%
Output	RS485， Modbus RTU
Materials	Titanium, 316 or C22, PEEK
Dimensions	Length 143mm(connector not included), diameter 16mm
Flow rate	< 3 m/s
Response time	10s T90
Field life*	2 years or greater
Recommended Calibration maintain Frequency *	3 months

Note:
*Field life and calibration frequency dependent on site conditions.
**w.i.g which is greater.

Default: Baud rate: 9600 8N1, 32-bit IEEE 754 floating-point value(little-endian)
Modbus address is 0x01

Regester Table

Address	Length	Type	Access	Description
0x0009	4	Char	R	SN number
0x000E	1	UShort	R/W	MODBUS address, default 0x01
0x0012	1	UShort	R/W	Baud rate 0-1200, 1-4800, 2-9600(default), 3-19200, 4-38400, 5-115200
0x0605	1	UShort	R/W	Float data format 0-DCBA, 1-BADC, 2-CDAB, 3-ABCD（Default, little-endian)
0x0036	2	Float	R	Temperature, ℃
0x0038	2	Float	R	Conductivity, mS/cm
0x003A	2	Float	R	Salinity, ppt(calculated from conductivity)
0x003C	2	Float	R	TDS data, g/L, 1mS/cm=0.6g/L default
0x0040	2	Float	R/W	TDS user calibration slope, K, default K=1.0
0x0042	2	Float	R/W	TDS user calibration offset, B, default B=0
0x0060	2	Float	R/W	Conductivity user calibration slope, K, default K=1.0
0x0062	2	Float	R/W	Conductivity user calibration offset, B, default B=0

Note:

1. Do not access the register which is not in this document. Or the sensor would not work.
2. Do not read or write continuously the discontinuous registers in the table above.
3. After the MODBUS address and baud rate are successfully modified, the system sends a response using the original parameters. The modified parameters take effect only after the modified parameters.
4. Floating-point numbers occupy 2 registers (4 bytes), please pay attention to the number of registers when reading and writing. Reading and writing from the middle of a floating point number is not allowed.
5. The baud rate and floating-point number sections revert to default values when undefined values are written sequentially.

Normal flow: Power on->read SN(optional)->delay 2S or longer->read sensor data(Parameter values' frame interval for multiple discontinuous register addresses is >500mS)-> delay 2s or longer-> read sensor data.

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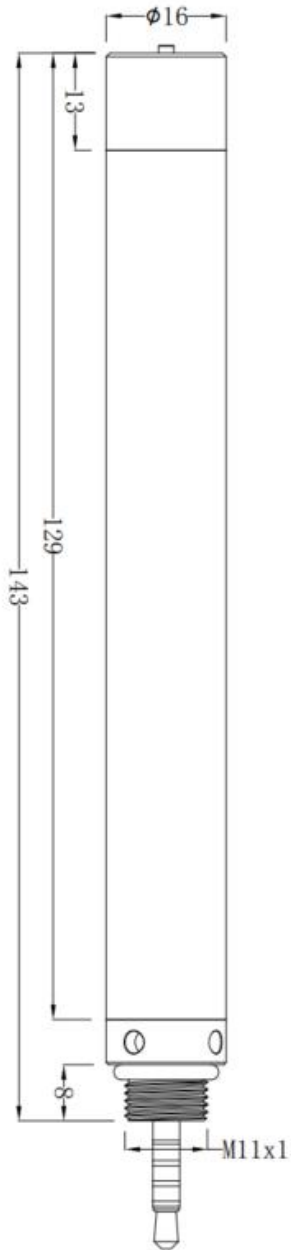

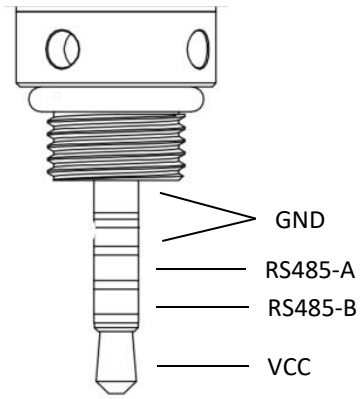

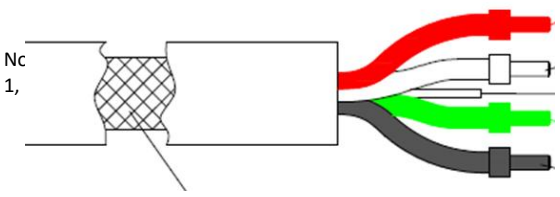

Red--VCC
White--RS485-B
Bare—Shielding
Green--RS485-A
Black--GND

Maintenance and ordering information

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Sensor	Clean frequency*	Check inside humidity	Replace O-ring	Calibration frequency	Replace consumable part
Optical DO	1-4 days	6 months	12-24 months	6 months	24-36 months**
Conductivity	4-8 weeks	6 months	12-24 months	6 months	No consumable part
Turbidity	0.5-3 days	6 months	12-24 months	3 months	No consumable part
Chlorophyll a	0.5-3 days	6 months	12-24 months	3 months	No consumable part
BGA	0.5-3 days	6 months	12-24 months	3 months	No consumable part
NH4-N	0.5-3 days	6 months	12-24 months	2-3 weeks	3-6 months
pH	0.5-3 days	6 months	12-24 months	4-8 weeks	6-12 months
UV254 COD	0.5-3 days	4-8 weeks	12-24 months	3 months	No consumable part
Oil in water	0.5-3 days	4-8 weeks	12-24 months	3 months	No consumable part
CDOM/fDOM	0.5-3 days	4-8 weeks	12-24 months	3 months	No consumable part

Note:
1, * is without wiper system
2, **is sensor cap
3,The O-ring between sensor and wiper is suggested to replace every 6-18 months. About the specifications of the O-ring, please contact our staff.

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PN: 630315 4-electrode Conductivity Sensor