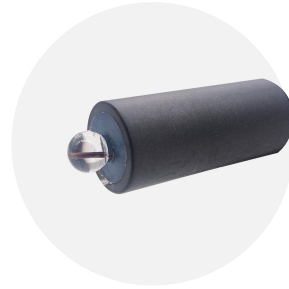
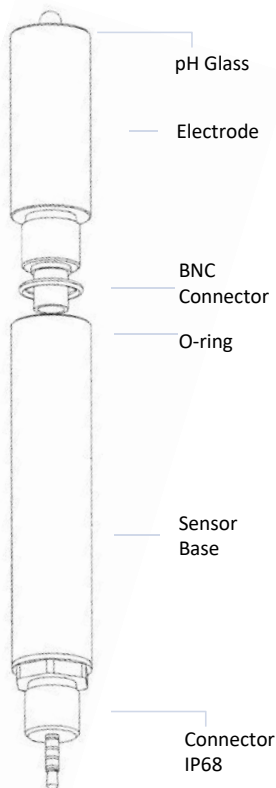


# Digital pH Sensor



## Digital pH Sensor



BroadSensor online pH Sensors with Integrated Digital Electronics for Plug and Play Capability with BroadSensor multi-parameter sonde and IP68 connector to any PLC. pH sensors have a unique design that incorporates a user-replaceable sensor tip (module) and a reusable sensor base that houses the processing electronics. This allows users to reduce the costs and easy to maintain.

### Key Advantages:

- Glass electrode pH sensor, a potassium chloride (KCl) solution.
- Using capillary fiber materials as junction materials.
- NTC10K inside, easy to use.
- User-replaceable pH electrode, reusable sensor base.
- RS485 output, Modbus protocol.
- IP68 connector.

## Technical Specifications

Measurement Method	pH Glass/Ag/AgCl Ref
Range	pH 0-14
Resolution	0.01pH
Accuracy	±0.1 (Calibration temperature within ± 10°C, pH 4-10), others ±0.2
Operating temperature	5~45°C
Storage Temperature	-10~50°C
Min. Detection Limit	NA
Warranty	1 year(sensor base), 3 months (pH electrode)
Depth	IP68
Power	DC 5V ± 5%
Output	RS485 Modbus protocol
Materials	PVC, TA
Dimensions	Length 143mm(connector and glass bulb not included) , diameter 16mm
Flow rate	< 3 m/s
Response time	45s T90
Field life*	Sensor base 2 years or greater, electrode 8 months or greater
Recommended Calibration maintain Frequency *	4 weeks

Note: \*Field life and calibration frequency dependent on site conditions.

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

Address	Length	Type	Access	Description
0x0009	4	Char	R	SN number. e.g. V7003021
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)
0x0048	2	Float	R	Temperature, °C
0x004A	2	Float	R	pH reading
0x004C	2	Float	R	pH or ORP mV reading, mV
0x0060	2	Float	R/W	pH user calibration slope, K, default K=1.0
0x0062	2	Float	R/W	pH user calibration offset, B, default B=0

## Note:

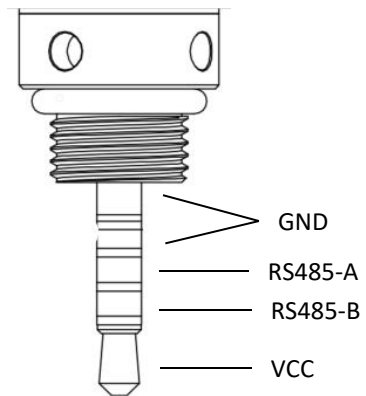
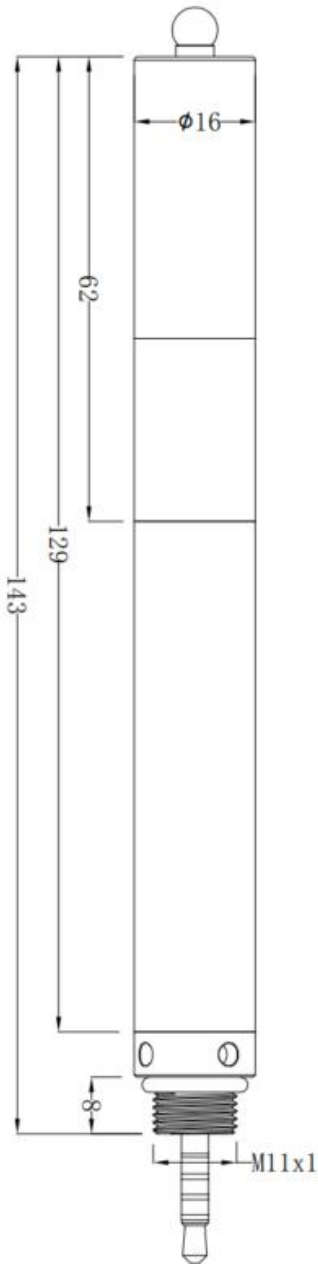
1, Do not access the register which is not in this document.

2, Normal flow:

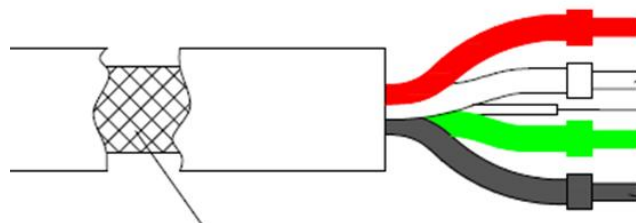
Power on->delay 50mS->read SN(optional)->delay 2S or longer->read sensor data(DO NOT use one frame to get data if they are in discontinuous address)-> delay 2s or longer-> read sensor data.

3, Read and write user calibration data must be in ONE frame.

e.g. Read frame: 01 03 00 60 00 04 44 17 , write/set frame: 01 10 00 60 00 04 08 9A 99 99 3F CD CC 4C BF 34 CF, set K=1.2 B=-0.8.



Note:  
1, Unit: mm



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

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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