

Aqualabo water quality sensors are designed for portable or dedicated applications where water quality parameters are being monitored. Each sensor easily connects to data loggers, transmitters or controllers using Modbus RS-485 or SDI-12 communication protocols. Select from either one or multiple sensor parameters based on application – then select reporting options for either real-time readings or remote data telemetry access.

PHET & PHT SENSOR & CARTRIDGE

The Aqualabo PHET & PHT (pH & Temperature) digital sensor is a cornerstone of the DIGISENS range, offering laboratory-grade precision in a rugged, industrial-ready format. Simple and reliable, this updated model features a unique replaceable cartridge system, significantly reducing maintenance costs and downtime.

Key Features:

- **Plug-and-Play Intelligence:** This sensor is a “smart” device that stores calibration history internally. Switch between transmitters or controllers without the need for immediate re-calibration.
- **Cost-Effective Maintenance:** Simply swap the pre-calibrated pH/Temp cartridge. The sensor body remains, saving money and reducing electronic waste.
- **Advanced Digital Communication:** Utilizing Modbus RS-485 and SDI-12 protocols, the PHT ensures interference-free signal transmission over long distances—perfect for both portable use with the NEON Range and unattended installations.
- **Plastogel® Technology:** Our long-life reference electrode uses specialized gel technology to prevent clogging and increase sensor lifespan, even in high-fouling environments like wastewater.
- **Universal Compatibility:** Seamlessly integrates with data loggers, PLCs, and remote monitoring systems.

APPLICATIONS

- Surface water monitoring
- Groundwater Monitoring
- Urban wastewater treatment
- Industrial wastewater treatment
- Deodorization Channels
- Water quality control
- Fish Farming/aquaculture



Technical Specifications

Measurement Principle	Combined electrode (pH/Ref) with NTC Temperature sensor
pH Range	0.00 to 14.00 pH
pH Resolution/Accuracy	0.01 pH / ± 0.1 pH
Temperature Range	0.00°C to +50.00°C
Temperature Accuracy	± 0.5°C
Interface/Protocol	Modbus RS-485 (Standard) / SDI-12 (Optional)
Materials	PVC, Delrin, Special pH glass, Polyamide
Protection Rating	IP68 (Fully Submersible)
Max Pressure	5 Bars
Storage Capacity	Internal logging of calibration and history data

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Geotech Environmental Equipment, Inc.

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email: sales@geotechenv.com website: www.geotechenv.com

PHEHT & PHT DIGITAL PH, ORP (EH), & TEMPERATURE (Standard Monobloc)

This pH, ORP, and temp sensor has been designed to perform in environments that range from pure mountain water to lakes, rivers, and even seawater or waste water environments.

The sensor features Plastogel® Ponsel® technology that increases the life of the probe. Intended for handheld or in situ applications – this standard monobloc model provides quick measurement responses with minimal flow dependence and low power consumption. This version is designed to house the sensors inside the single, sealed, waterproof unit.



APPLICATIONS

- Urban Wastewater Treatment (inlet/outlet controls)
- Sanitation Network
- Industrial Effluent Treatment
- Surface Water Monitoring
- Fish Farming
- Drinking Water
- Pool, Spa, Water Venues

Technical Specifications

pH Measurements	
Measurement Principle	Combined electrode (pH/Ref): special glass, Ag/AgCl ref. Gelled electrolyte (KCl)
pH Range	0.00 to 14.00 pH
pH Resolution/Accuracy	0.01 pH / ± 0.1 pH
ORP Measurements	
Measurement Principle	Combined electrode (ORP/reference):Platinum tip, Ag/AgCl AgAgCl. Gelled reference (KCl)
Range	-1000 to +1000 mV
Resolution	0.1 mV
Accuracy	±2 mV
Temperature Measurements	
Technology	NTC
Range	0.00°C to +50.00°C (32°F to 122°F)
Resolution	0.01°
Accuracy	±0.5°
Response Time	<5s
Storage Temperature	0°C to +60°C
Protection	IP68
Interface	Modbus RS-485/SKI-12
Power Supply	5 to 12 volts
Power Consumption	Standby: 25µA Average RS-485 (1 measure/second): 3.9 mA Average SDI-12 (1 measure/second): 6.8 mA Current Pulse: 500 mA
Sensor	
Dimensions	Diameter: 27/21 mm (1.06"/.83"); Length: 207 mm (8.15")
Weight	Diameter: 27/21 mm (1.06"/.83"); Length: 207 mm (8.15")
Material	PVC, DELRIN, special pH glass, platinum, polyamide
Pressure	5 bars (72 psi)
Cable	Coaxial armored, Polyurethane, bare wire of Fisher Connector
Protection	IP68

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EHAN DIGITAL ORP & TEMPERATURE

The EHAN ORP and Temperature sensor features an interchangeable cartridge with Plastogel® electrolyte reference solutions. This sensor communicates directly without interposition of capillary or pours – eliminating the risk of the reference point clogging or reference solution defusing.



Technical Specifications

ORP Measurements	
Measurement Principle	Combination electrode (ORP/reference): Platinum Ring Reference Ag/AgCl. Gelled electrolyte (KCl)
Measurement Range	-1000.0 to +1000.0 mV
Resolution	±0.1 mV
Accuracy	±10 mV
Response Time	90s
Temperature Measurements	
Technology	NTC
Range	0.00°C to +50.00°C (32°F to 122°F)
Resolution	0.01°
Storage Temperature	0°C to +60°C
Protection	IP68
Interface	Modbus RS-485/SKI-12
Power Supply	5 to 12 volts
Power Consumption	Standby: 25µA Average RS-485 (1 measure/second): 20 mA Current Pulse: 500 mA Heating: 100 mS
Sensor	
Dimensions	Upper Part: 27 mm (1.06") diameter; Length 103 mm (4.05") Cartridge Length:
Weight	350 g (0.7 lbs.) (cable + sensor)
Materials in Contact w/ Environment	PVC, POM-C, platinum, Polyurethane
Pressure	5 bars (72 psi)

APPLICATIONS

Treatment of urban waste water (entrance, aeration tank, exit), industrial sewage treatment (optimization process of nitrifying/denitrifying), deodorization channels. Also pool, spa, and water venues for chlorine correlations/concentrations.

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C4E DIGITAL CONDUCTIVITY, SALINITY, & TEMPERATURE

The conductivity sensor uses digital technology for optimized measurements. Using 4 mounting electrodes, voltage between the two primary graphite electrodes are compared against a secondary pair of platinum electrodes for fouling compensation.

The Digital C4E sensor stores calibration and data history within the sensor – allowing for simple plug-and-play sensor replacement without recalibration.



APPLICATIONS

- Urban Wastewater Treatment
- Industrial Effluent Treatment
- Surface Water Monitoring
- Sea Water
- Drinking Water

Technical Specifications

Measurements	
Measurement Principle	Conductivity sensor with 4 electrodes (2 graphite, 2 platinum)
Conductivity Measurement Ranges	<ul style="list-style-type: none"> • 0-200.0 μS/cm • 0-2000 μS/cm • 0.00-20.00 mS/cm • 0.0-200.0 mS/cm • AUTOMATIC RANGE
Resolution	0.01 to 1 according the range
Accuracy	\pm 1% of the full range
Salinity Measurement Range	5-60 g/Kg
TDS-KCl Measurement Range	5-60 g/Kg
RangeResponse Time	<5s
Working Temperature	0°C to +50°C (32°F to +122°F)
Storage Temperature	-10°C to +60°C (14°F to +140°F)
Temperature Compensation	NTC
Interface	Modbus RS-485 and SDI-12
Power Supply	5 to 12 volts
Power Consumption	Standby: 25 μ A Average RS-485 (1 measure/second): 6.3 mA Average SDI-12 (1 measure/second) 9.2 mA Current Pulse: 500 mA
Sensor	
Dimensions	Diameter: 27 mm (1.06"); Length: 177 mm (7.96")
Weight	300 g (sensor + 3 meter cable)
Materials	PVC, DELRIN, Stainless Steel
Pressure	5 bars (72 psi)
Connection	9 armored connectors, polyurethane jacket, bare wires or waterproof Fischer connector
Protection	IP68

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CTZN INDUCTIVE CONDUCTIVITY, SALINITY, & TEMPERATURE

The smart CTZN conductivity sensor uses an inductive dual ring-type coil. The CTZN stores calibration and history data within the sensor – allowing for simple plug-and-play sensor replacement without recalibration.



Technical Specifications

Technical Specifications	
Measurements	
Measurement Principle	Inductive conductivity sensor regulated in temperature
Conductivity Measurement Ranges	0.0-100.0 mS/cm
Resolution	0.1
Salinity Measurement Range	5-60 g/Kg
Working Temperature	0°C to +50°C (32°F to +122°F)
Storage Temperature	-10°C to +60°C (14°F to +140°F)
Temperature Compensation	NTC
Accuracy	±0.5°C
Response Time	90% of the value in less than 30 seconds
Interface	Modbus RS-485 and SDI-12
Power Supply	5 to 28 volts, max 30 V
Power Consumption	Automatic Standby <50 µA, Heating time 100 mS Average Modbus RS-485 1 measure/s: Vin 5V Vin 12 V Vin 24 V 1 measure/s: 31 mA 15.5 mA 11.5 mA Max current pulse 700 mA during 2 mS, 350 mA during 150 mS
Sensor	
Dimensions	Maximum Diameter: 62.4 mm (2.45"), Length: 196 mm (7.71")
Weight	700 g (1.5 lbs.)
Materials	EPDM, PVC, stainless steel
Pressure	5 bars (72 psi)
Connection	9 armored connectors, polyurethane jacket, bare wires or waterproof Fischer connector
Protection	IP68

APPLICATIONS

- Urban Wastewater Treatment
- Industrial Effluent Treatment
- Surface Water Monitoring
- Sea Water



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OPTOD OPTICAL DISSOLVED OXYGEN

The OPTOD is a luminescent optical dissolved oxygen sensor that can be used with the ODEON handheld display or integrated into an external data logger controller. Available in 316 Stainless Steel or Titanium materials.



APPLICATIONS

- Urban Wastewater Treatment
- Industrial Effluent Treatment
- Surface Water Monitoring
- Drinking Water

Technical Specifications

DO Measurements	
Measurement Principle	Optical measure by luminescence
Measurement Ranges	0.00 to 20.00 mg/L 0.00 to 20.00 ppm 0-200%
Resolution	0.01
Accuracy	±0.1mg/L ±0.1 ppm ±1%
Response Time	90% of the value in less than 60 seconds.
Frequency of Recommended Measure	>5s
Water Move	No necessary move
Working Temperature	0°C to +50°C (32°F to +122°F)
Storage Temperature	-10°C to +60°C (14°F to +140°F)
Temperature Compensation	NTC
Interface	Modbus RS-485 and SDI-12
Power Supply	5 to 12 volts
Power Consumption	Standby 25 µA Average RS-485 (1 measure/second): 4.4 mA Average SDI-12 (1 measure/second): 7.3 mA Current pulse: 100 mA
Sensor	
Dimensions	Diameter: 25 mm (0.98"); Length: 146 mm (5.75")
Weight	Stainless steel version 450 g (1.0 lbs.) (sensor + 3 m cable) Titanium version 300 g (0.6 lbs.) (sensor + 3 m cable)
Materials	Stainless steel 316L, New: body in Titanium
Pressure	5 bars (72 psi)
Connection	9 armored connectors, polyurethane jacket, bare wires or waterproof Fischer connector
Protection	IP68
Accessories	Hydroclean: Anti-fouling system for numerical sensor OPTOD

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OPTOD PLASTIC OPTICAL DISSOLVED OXYGEN

The OPTOD is a luminescent optical dissolved oxygen sensor that can be used with the ODEON handheld display or integrated into an external data logger controller. This newer design is created to offer a lower cost solution that has been reinforced for more durability in the field.

APPLICATIONS

- Sea Water Monitoring
- Closed Containment, Off-shore Fish Farming
- Aquaculture Industry



Standard Version

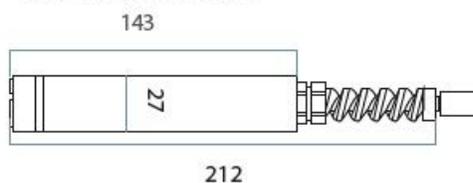


Longer Protected Version

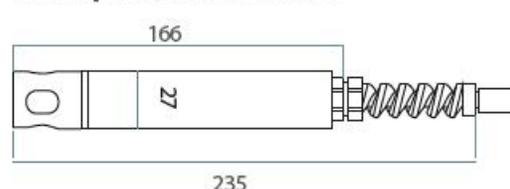
Technical Specifications

DO Measurements	
Measurement Principle	Optical measure by luminescence
Measurement Ranges	0.00 to 20.00 mg/L 0.00 to 20.00 ppm 0-200%
Resolution	0.01
Accuracy <i>*Must fully submerge sensor for maximum accuracy</i>	±0.1mg/L ±0.1 ppm ±1%
Response Time	0-> 100 % ; T90< 40s 100 -> 0% ; T90< 65 s
Frequency of Recommended Measure	>5s
Water Flow	No necessary move
Temperature	-10°C to +60°C (14°F to +140°F)
Temperature Compensation	NTC
Interface	Modbus RS-485 and SDI-12
Power Supply	5 to 12 volts
Power Consumption	Standby 25 µA Average RS-485 (1 measure/second): 3.2 mA Average SDI-12 (1 measure/second): 6 mA Current pulse: 85 mA
Sensor	
Dimensions	Standard: Diameter 27mm; Length: 143mm More Protective Strainer: Diameter 27mm Length 166mm
Weight	300g (sensor and cable 3m)
Materials	Black POM C, PVC
Pressure	5 bars (72 psi)
Connection	9 armored connectors, polyurethane jacket, bare wires or waterproof Fischer connector
Protection	IP68

Standard strainer



More protective strainer



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NTU DIGITAL TURBIDITY

This turbidity sensor uses the principle of IR nephelometry technology recognized by ISO method 7027. The sensor is calibrated with standard formazine solution and offers a lowcost, low maintenance, and accurate solution for measuring field and process control NTU concentrations.



Technical Specifications

Measurements	
Measurement Principle	Diffusion IR at 90°
Measurement Ranges	5-50 NTU; 5-200 NTU; 5-1000 NTU; 5-4000 NTU; AUTOMATIC RANGE 0 to 4500 mg/L Calibration: Range 0-500 mg/L according to NF EN 872 Range >500 mg/L according to NF T 90 105 2
Resolution	0.01 to 1 NTU – mg/L
Accuracy	<5% of the reading
Working Temperature	0°C to +50°C (32°F to +122°F)
Stocking Temperature	-10°C to +60°C (14°F to +140°F)
Temperature Compensation	NTC
Interface	Modbus RS-485 and SDI-12
Maximum Refreshing Time	<1 second
Power Supply	5 to 12 volts
Power Consumption	Standby: 40 µA/Average RS-485 (1 measure/sec- ond): 820 µA/Average SDI-12 (1 measure/second): 4.2 mA/Current pulse: 500 mA
Sensor	
Dimensions	Diameter: 27 mm (1.06"); Length: 170 mm (6.69")
Weight	300g (sensor and cable 3m)
Materials	PVC, DELRIN, Quartz, PMMA, Polyamide
Pressure	5 bars (72 psi)
Connection	9 armored connectors, polyurethane jacket, bare wires or waterproof Fischer connector
Protection	IP68

APPLICATIONS

- Urban Wastewater Treatment (inlet/outlet controls)
- Sanitation Network
- Industrial Effluent Treatment
- Surface Water Monitoring
- Drinking Water

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MES5/VB5 SUSPENDED SOLID, SLUDGE BLANKET, AND TURBIDITY

The MES5/VB5 sensor uses infra-red light and 5mm optical path to accurately measure suspended solid concentrations, sludge blanket interface, and turbidity in FAU. field and process control NTU concentrations.



APPLICATIONS

- Urban Influent Wastewater Treatment
- Treatment of Industrial effluents
- Sludge monitoring and treatment
- Dredging

Technical Specifications

Measurements	
Measurement Principle	Optical IR (870 nm) based on IR absorption
Measurement Ranges	Suspended Solids: 0-50 g/L (MES5 Model) Turbidity: 0-4000 FAU Sludge Blanket: 0-100% (VB5 Model)
Resolution	Suspended Solids: 0.01 g/L (MES5 Model) Turbidity: 0.01 à 1 FAU Sludge Blanket: 0.01 à 0.1% (VB5 Model)
Accuracy	Suspended Solids: <10 % (MES5 Model) Turbidity: ±5% (range 200-4000 FAU) Sludge Blanket: ±2% (VB5 Model)
Response Time	<35 seconds
Temperature Measurements	
Working Temperature	-5.00°C to +60.00°C (23°F to 140°F)
Stocking Temperature	-10°C to +60°C (14°F to +140°F)
Temperature Compensation	NTC
Interface	Modbus RS-485 and SDI-12
Maximum Refreshing Time	<1 second
Power Supply	5 to 28 volts
Power Consumption	• Standby: 25 µA (5 V) • Average RS485 (1 measure/second): 4.5 mA (5V) • Average SDI12 (1 measure/second): 4.5 mA (5V) • Current Pulse: 100 mA during 30 mS • Heating Times: 100 ms
Sensor	
Weight	750 g (1.6 lbs.) (sensor)
Materials	DELFIN, nickel-plated brass, EPDM
Pressure	5 bars (72 psi)
Connection	9 armored connectors, polyurethane jacket, bare wires or waterproof Fischer connector
Protection	IP68

STACSENSE PROBE UV OPTICAL TECHNOLOGY

The StacSense Probe uses UV absorption at 254 nm to measure dissolved organic compounds in water. This absorbance is correlated with the concentration of Total Organic Carbon (TOC), Chemical Oxygen Demand (COD), and Biochemical Oxygen Demand (BOD) to provide high-performance measurements without absorption. A reference measurement at 530 nm is used to compensate for the presence of particles in the sample that also absorb UV light to establish turbidity parameters.

Key Features:

- Compatible with Modbus RS-485 or SDI-12 communications
- Internal memory for storing calibration history and water quality data
- Robust 316 Stainless Steel Body

APPLICATIONS

- Influent and effluent wastewater treatment
- Surface water
- Fish farming or aquaculture (freshwater)
- Drinking water



Technical Specifications	
Measurement Principle	UV 254 nm absorption
Compensation	Turbidity at 530 nm
Wave Lengths	Internal temperature
Type of Detector	254 nm (turbidity correction at 530 nm)
Light Sources	Silicon Photodiode
Optical Paths	LED UV 254 ±5 nm and 530 ±5 nm
Measurement Frequency	2 and 50 mm
Ingress Protection Rating	IP68
Max. Immersion Depth	50 meters (164")
Max. Pressure	5 bars (72 psi)
Working Temperature	0-40°C (32°F to 104°F)
Stocking Temperature	-10°C to +50°C (14°F to +122°F)
pH Range	pH2 to pH12
Weight	1600-1800 g (3.5-3.9 lbs.) depending on the optical path (cable not included)
Materials	Body: Stainless steel 316 (1.4401) Optical windows: Quartz (Corning 7980) Cable: Bare wire with polyurethane sheath Seals: Fluoroelastomer (FPM/FKM)
Connection	9 shielded conductors in 3, 7 and 15 m. Other lengths on request.
Signal Interface Modbus1 RTU (RS-485)/ SDI12,2,3 (TTL)	1 Sensor mute in Modbus for up to 2s between the measurement request and the possibility to read the measurements or status 2 Using SDI12, measurement result frame after up to 2s instead of the 850ms standard delay 1.2 The sensor responds in Modbus/SDI12 including when on Standby 3 The use and connection of SDI12 bus may increase the standby power consumption* up to 40uA depending the level of the line (high or low). The consumption is not increased if the SDI12 line is disconnected or released to 0V (Modbus RTU only).
Sensor Power Supply 5.4V1.2 at 26V3 DC	1 Absolute minimum 5.2V with 1 m of cable 2 Minimum voltage subject to cable length-related losses 3 28.0V absolute maximum

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Technical Specifications

Technical Specifications							
Measurements							
Typical Consumption at 5.4V	Automatic standby less than 10 μ A (54 μ W) Maximum peak current: 600 mA (2 ms) Maximum current during the measurement: 100 mA (540 mW) Average current during the measurement: 70 mA (378 mW) Average current (1 measurement/2s): 35 mA (189 mW) Energy for 1 measurement (1.5 s): 158 μ Wh						
Typical Consumption at 12V	Automatic standby less than 10 μ A (120 μ W) Maximum peak current: 400 mA (1.5 ms) Maximum current during the measurement: 70 mA (840 mW) Average current during the measurement: 60 mA (720 mW) Average current (1 measurement/2s): 30 mA (360 mW) Energy for 1 measurement (1.5 s): 300 μ Wh						
Typical Consumption at 24V	Automatic standby less than 10 μ A (240 μ W) Maximum peak current: 300 mA (1 ms) Maximum current during the measurement: 65 mA (1560 mW) Average current during the measurement: 50 mA (1200 mW) Average current (1 measurement/2s): 25 mA (600 mW) Energy for 1 measurement (1.5 s): 500 μ Wh						
EMC Compliance	NF EN 61326-1: 2013-05 RS-485 Modbus RTU & SDI12 1 The sensor is qualified for standard use with a dedicated cable including power supply and communication lines specific to the sensor network. 2 When connected to a DC power supply network separated from the RS485 communication lines; additional shielding must be used on the system to protect the sensors from shock waves from an impact.						
Warranty	2 years						
Sensors							
Op. T	Parameters	Measurement Range *	Units	Detection Limit	Quantification Limit	Accuracy **	Application
2 mm (0.07")	SEC ₂₅₄	0-750	Abs/m	1.7	5.0	1 or \pm 3%	Wastewater
	CODeq	0-1300	mg/L	3.0	3.0	2 or \pm 3%	
	BODeq	0-350	mg/L	1.0	3.0	1 or \pm 3%	
	TOCeq	0-500	mg/L	1.5	4.0	1 or \pm 3%	
	Turbidity eq	0-500	FAU	1.5	5.0	5 or \pm 5%	
50 mm (1.96")	SEC ₂₅₄	0-30	Abs/m	0.20	0.3	0.1 or \pm 3%	Drinking Water
	CODeq	0-50	mg/L	0.15	0.6	0.2 or \pm 3%	
	BODeq	0-15	mg/L	0.10	0.2	0.1 or \pm 3%	
	TOCeq	0-20	mg/L	0.10	0.2	0.1 or \pm 3%	
	Turbidity eq	0-40	FAU	0.40	1.2	1.0 or \pm 7%	

Performance levels obtained under laboratory conditions (controlled temperature and stirring, aqueous solutions of KHP)

*Optical path 2 and 50mm, Linearity: >0.99 on the given range.

**Highest value

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