



exoTM Sondes

BEST-IN-CLASS PLATFORM FOR THE HIGHEST-QUALITY DATA



It's your world. **Protect it.**

YSI's **EXO Sonde Platform** is the pinnacle of multiparameter water quality monitoring instrumentation. EXO offers endless customization with a range of sonde models, interchangeable smart sensors, industry-leading anti-fouling, and multiple integration and communication options.

Selection guide

	EXO1	EXO1 ^s	EXO1 ^s with depth	EXO2	EXO2 ^s	EXO3	EXO3 ^s
Sensor Ports	4	4	4	7 (6 Sensors + 1 Central Wiper)	7 (6 Sensors + 1 Central Wiper)	5 (4 Sensors + 1 Central Wiper)	5 (4 Sensors + 1 Central Wiper)
Battery Power	2 D-cell batteries	External power required	External power required	4 D-cell batteries	External power required	2 D-cell batteries	External power required
Battery Life	90 days*	–	–	90 days*	–	60 days*	–
External Power	9 - 16 V	9 - 16 V	9 - 16 V	9 - 16 V	9 - 16 V	9 - 16 V	9 - 16 V
Central Wiper	–	–	–	✓	✓	✓	✓
Auxiliary Port	–	–	–	✓	✓	–	–
Diameter	4.70 cm (1.85 in)	4.70 cm (1.85 in)	4.70 cm (1.85 in)	7.62 cm (3.00 in)	7.62 cm (3.00 in)	7.62 cm (3.00 in)	7.62 cm (3.00 in)
Length with guard	64.53 cm (25.40 in)	44.77 cm (17.63 in)	46.41 cm (18.27 in)	70.52 cm (27.76 in)	42.87 cm (16.88 in)	58.61 cm (23.07 in)	42.87 cm (16.88 in)
Weight without sensor payload	1.42 kg (3.13 lbs)	0.48 kg (1.06 lbs)	0.56 kg (1.24 lbs)	3.60 kg (7.94 lbs)	1.06 kg (2.34 lbs)	2.00 kg (4.41 lbs)	1.06 kg (2.34 lbs)

*Based on a full sensor payload and a 15-minute logging interval; actual battery life will depend on the number of sensors and measurement frequency.

EXO Sonde Specifications*

Memory	>1,000,000 logged readings, 512 MB total memory
Software	Kor Software for Windows; Kor Mobile for Android
Communications	
Computer Interface	YSIP via USB Signal Output Adapter (SOA) and Bluetooth
Output Options	All: RS-232 & SDI-12 via DCP-SOA Modbus & RS-485 via Modbus-SOA EXO3 & EXO3 ^s : SDI-12 Native Output
Temperature	
Operating	-5 to 50 °C (23 to 122 °F)
Storage	-20 to 80 °C (-4 to 176 °F)
Depth Rating	0 to 250 m (0 to 820 ft)
Sampling Rate	Up to 4 Hz (0.25 seconds)
Sensor Options	Conductivity/Temperature, Depth, Dissolved Oxygen, fDOM, ISE Ammonium, ISE Chloride, ISE Nitrate, pH, pH/ORP, Rhodamine, Total Algae (PC or PE), Turbidity, UV Nitrate
Warranty	3 years

*Specifications indicate typical performance and are subject to change.



Low power consumption, unmatched sensor payload, and an industry-leading warranty make EXO the ultimate choice for long-term water quality monitoring.

Monitoring made mobile

Stay connected with EXO GO and the EXO Handheld.



EXO GO

Use Bluetooth to connect your EXO to any Android or Windows device.

EXO Handheld

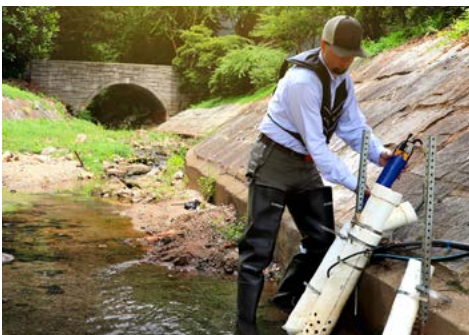
A rugged, dedicated interface for EXO Sondes.

GPS	Accuracy: 2.5 m CEP (dependent on site conditions)	Accuracy: 2.5 m CEP (dependent on site conditions)
Barometer	Range: 375 to 825 mmHg Accuracy: ± 1.5 mmHg Resolution: 0.1 mmHg	Range: 375 to 825 mmHg Accuracy: ± 1.5 mmHg Resolution: 0.1 mmHg
Battery	Operating Time: >15 hours Charging Time: 9 hours	Operating Time: >15 hours Charging Time: 9 hours
USB Connectivity	✓	✓
Bluetooth Connectivity	✓	–
IP-67 Rating	✓	✓
Display	–	✓
Onboard Memory	–	✓
Operating Temperature	-5 to 50 °C (23-122 °F)	-5 to 50 °C (23-122 °F)
Storage Temperature	0 to 45 °C (32-113 °F)	0 to 45 °C (32-113 °F)
Dimensions	17.4 x 5.2 x 3.5 cm (6.9 x 2.0 x 1.4 in)	21.6 x 8.3 x 5.6 cm (8.5 x 3.3 x 2.2 in)
Weight	240 g (0.53 lbs)	567 g (1.25 lbs)
Warranty	1 year	3 year handheld 1 year battery



Where will you go with EXO?

Protecting the world means monitoring in remote locations and collecting high-quality data even when you can't be there. **EXO Sondes** allow for 24/7/365 monitoring for the most comprehensive data.



⬆ Continuous monitoring

⬆ Discrete sampling

⬆ Systems integration

EXO Sensor Specifications

Sensor	Range	Resolution ¹	Accuracy ²
Conductivity (Non-Wiped)	0 to 200,000 $\mu\text{S}/\text{cm}$	0.1 to 10 $\mu\text{S}/\text{cm}$	0 to 100,000: $\pm 0.5\%$ of reading or 1 $\mu\text{S}/\text{cm}$, whichever is greater 100,000 to 200,000: $\pm 1.0\%$ of reading
Temperature	-5 to 50 $^{\circ}\text{C}$	0.001 $^{\circ}\text{C}$	-5 to 35: ± 0.01 $^{\circ}\text{C}$ 35 to 50: ± 0.05 $^{\circ}\text{C}$
Conductivity (Wiped)	0 to 100,000 $\mu\text{S}/\text{cm}$	0.1 to 10 $\mu\text{S}/\text{cm}$	$\pm 1.0\%$ of reading or 2 $\mu\text{S}/\text{cm}$, whichever is greater
Temperature	-5 to 50 $^{\circ}\text{C}$	0.001 $^{\circ}\text{C}$	± 0.2 $^{\circ}\text{C}$
Depth or Vented Level	0 to 10, 100 or 250 m	0.001 m	$\pm 0.04\%$ Full Scale
	0 to 10 m	0.001 m	$\pm 0.03\%$ Full Scale
Dissolved Oxygen	0 to 500% air saturation	0.1% air saturation	0 to 200: $\pm 1\%$ of reading or 1% saturation, whichever is greater 200 to 500: $\pm 5\%$ of reading
	0 to 50 mg/L	0.01 mg/L	0 to 20: ± 0.1 mg/L or 1% of reading, whichever is greater 20 to 50: $\pm 5\%$ of reading
fDOM	0 to 300 ppb QSU	0.01 ppb QSU	Linearity: $r^2 \geq 0.999$ for 0 to 300 for serial dilution of 300 ppb Quinine Sulfate Solution Minimum Detection Limit: 0.1 ppb Quinine Sulfate Equivalents
ISE Ammonium	0 to 200 mg/L-N (NH_4^+)	0.01 mg/L	$\pm 10\%$ of reading or ± 2 mg/L-N, whichever is greater
ISE Chloride	0 to 1000 mg/L-Cl (Cl^-)	0.01 mg/L	$\pm 15\%$ of reading or ± 5 mg/L-Cl, whichever is greater
ISE Nitrate	0 to 200 mg/L-N (NO_3^-)	0.01 mg/L	$\pm 10\%$ of reading or ± 2 mg/L-N, whichever is greater
pH	0 to 14 pH units	0.01 pH units	± 0.1 within ± 10 $^{\circ}\text{C}$ of calibration temperature ± 0.2 for entire temperature range
ORP	-999 to 999 mV	0.1 mV	± 20 mV in Redox standard solution
Rhodamine	0 to 100 RFU	0.01 RFU	Linearity: $r^2 > 0.999$ or Rhodamine WT across full range $\pm 5\%$ or 0.1 $\mu\text{g}/\text{L}$, whichever is greater
	0 to 1,000 $\mu\text{g}/\text{L}$	0.01 $\mu\text{g}/\text{L}$	
TAL-Chlorophyll	0 to 100 RFU or 0 to 400 $\mu\text{g}/\text{L}$ chl	0.01 RFU or 0.01 $\mu\text{g}/\text{L}$ of pigment	Linearity: $r^2 \geq 0.999$ for Rhodamine WT across full range
TAL-Phycocyanin	0 to 100 RFU or 0 to 100 $\mu\text{g}/\text{L}$ PC		
TAL-Phycoerythrin	0 to 100 RFU or 0 to 280 $\mu\text{g}/\text{L}$ PE		
Turbidity	0 to 4000 FNU, NTU	0 to 999: 0.01 FNU	0 to 999: 0.3 FNU or $\pm 2\%$ of reading, whichever is greater
		1000 to 4000: 0.1 FNU	1000 to 4000: $\pm 5\%$ of reading
UV Nitrate (NitraLED)	0 to 30 mg/L-N (NO_3^-)	0.01 mg/L-N	0 to 10: ± 0.1 mg/L-N or 5% of reading, whichever is greater (within 2 $^{\circ}\text{C}$) ± 0.4 mg/L-N or 5% of reading, whichever is greater (full range) 10 to 30: $\pm 7\%$ of reading

¹ Range dependent.

² Specifications indicate typical performance and are subject to change.

➤ Extend deployments
and reduce site visits with
superior anti-fouling.



Calculated parameters

The following parameters are calculated from one or more sensors listed above.

- Absolute Pressure
- Local DO %CB
- Resistivity
- Total Algae cells/mL
- Vertical Position
- Ammonia
- Local DO %RTB
- Salinity
- Total Dissolved Solids
- Water Density
- Gauge Pressure
- nLF Conductivity
- Specific Conductivity
- Total Suspended Solids

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Who's
Minding
the Planet?



YSI.com/EXO

Sensor Specifications*

Sensor	Range	Accuracy*	Response	Resolution
Ammonium ¹¹ (ammonia with pH sensor)	0 to 200 mg/L ¹	±10% of reading or 2 mg/L-N, w.i.g.	-	0.01 mg/L
Barometer	375 to 825 mmHg	±1.5 mmHg from 0 to 50°C	-	0.1 mmHg
Blue-green Algae Phycocyanin (PC) (part of Total Algae sensor)	0 to 100 RFU; 0 to 100 µg/L PC	Linearity: R ² > 0.999 for serial dilution of Rhodamine WT solution from 0 to 100 µg/mL PC equivalents	T63<2 sec	0.01 RFU; 0.01 µg/L PC
Blue-green Algae Phycoerythrin (PE) (part of Total Algae sensor)	0 to 100 RFU; 0 to 280 µg/L PE	Linearity: R ² > 0.999 for serial dilution of Rhodamine WT solution from 0 to 280 µg/mL PE equivalents	T63<2 sec	0.01 RFU; 0.01 µg/L PE
Chloride ¹¹	0 to 18000 mg/L-Cl ²	±15% of reading or 5 mg/L-Cl, w.i.g.	-	0.01 mg/L
Chlorophyll (part of Total Algae sensor)	0 to 400 µg/L Chl; 0 to 100 RFU	Linearity: R ² > 0.999 for serial dilution of Rhodamine WT solution from 0 to 400 µg/L Chl equivalents	T63<2 sec	0.01 µg/L Chl; 0.01 RFU
Conductivity ³	0 to 200 mS/cm	0 to 100: ±0.5% of reading or 0.001 mS/cm, w.i.g.; 100 to 200: ±1% of reading	T63<2 sec	0.0001 to 0.01 mS/cm (range dependent)
Depth ⁴ (non-vented)	0 to 10 m (0 to 33 ft)	±0.04% FS (±0.004 m or ±0.013 ft)	T63<2 sec	0.001 m (0.001 ft) (auto-ranging)
	0 to 100 m (0 to 328 ft)	±0.04% FS (±0.04 m or ±0.13 ft)		
	0 to 250 m (0 to 820 ft)	±0.04% FS (±0.10 m or ±0.33 ft)		
Vented Level	0 to 10 m (0 to 33 ft)	±0.03% FS (±0.003 m or ±0.010 ft)		
Dissolved Oxygen Optical	0 to 500% air saturation	0 to 200%: ±1% of reading or 1% saturation, w.i.g.; 200 to 500%: ±5% of reading ⁵	T63<5 sec ⁶	0.1% air saturation
	0 to 50 mg/L	0 to 20 mg/L: ±0.1 mg/L or 1% of reading, w.i.g.; 20 to 50 mg/L: ±5% of reading ⁵		0.01 mg/L
fDOM	0 to 300 ppb Quinine Sulfate equivalents (QSE)	Linearity: R ² > 0.999 for serial dilution of 300 ppb QS solution Detection Limit: 0.07 ppb QSE	T63<2 sec	0.01 ppb QSE
Nitrate ¹¹	0 to 200 mg/L-N ¹	±10% of reading or 2 mg/L-N, w.i.g.	-	0.01 mg/L
ORP	-999 to 999 mV	±20 mV in Redox standard solutions	T63<5 sec ⁷	0.1 mV
pH	0 to 14 units	±0.1 pH units within ±10°C of calibration temp; ±0.2 pH units for entire temp range ⁸	T63<3 sec ⁹	0.01 units
Salinity (Calculated from Conductivity and Temperature)	0 to 70 ppt	±1.0% of reading or 0.1 ppt, w.i.g.	T63<2 sec	0.01 ppt
Specific Conductance (Calculated from Cond. and Temp.)	0 to 200 mS/cm	±0.5% of reading or .001 mS/cm, w.i.g.	-	0.001, 0.01, 0.1 mS/cm (auto-scaling)
Temperature	-5 to 50°C	-5 to 35°C: ±0.01°C ¹⁰ 35 to 50°C: ±0.05°C ¹⁰	T63<1 sec	0.001 °C
Total Dissolved Solids (TDS) (Calculated from Conductivity and Temperature)	0 to 100,000 mg/L Cal constant range 0.30 to 1.00 (0.64 default)	Not Specified	-	variable
Total Suspended Solids (TSS) (Calculated from Turbidity and user reference samples)	0 to 1500 mg/L	Not Specified	T63<2 sec	variable
Turbidity ¹¹	0 to 4000 FNU	0 to 999 FNU: 0.3 FNU or ±2% of reading, w.i.g.; 1000 to 4000 FNU: ±5% of reading ¹²	T63<2 sec	0 to 999 FNU: 0.01 FNU; 1000 to 4000 FNU: 0.1 FNU

All sensors have a depth rating to 250 m (820 ft), except shallow and medium depth sensors and ISEs. EXO sensors are not backward compatible with 6-Series sondes.

* Specifications indicate typical performance and are subject to change. Please check EXOwater.com for up-to-date information.

Accuracy specification is attained immediately following calibration under controlled and stable environmental conditions. Performance in the natural environment may vary from quoted specification.

¹ 0-30°C ² 0-40°C w.i.g. = whichever is greater

³ Outputs of specific conductance (conductivity corrected to 25°C) and total dissolved solids are also provided. The values are automatically calculated from conductivity according to algorithms found in *Standard Methods for the Examination of Water and Wastewater* (Ed. 1989).

⁴ Accuracy specifications apply to conductivity levels of 0 to 100,000 µS/cm.

⁵ Relative to calibration gases

⁶ When transferred from air-saturated water to stirred deaerated water

⁷ When transferred from water-saturated air to Zobell solution

⁸ Within the environmental pH range of pH 4 to pH 10

⁹ On transfer from water-saturated air to rapidly stirred air-saturated water at a specific conductance of 800 µS/cm at 20°C; T63<5 seconds on transfer from water-saturated air to slowly-stirred air-saturated water.

¹⁰ Temperature accuracy traceable to NIST standards

¹¹ Calibration: 1-, 2-, or 3-point, user-selectable

¹² Specification is defined in AMCO-AEPA Standards