



# SERIES 5

Water Quality  
Instruments



***Environmental***  
*Be Right. The Environment is Worth it.*



**HYDROLAB®**

## **SUPERIOR SENSOR TECHNOLOGY**

Hydrolab sondes are built with the industry's best sensor technology, to provide high quality data that you can trust.

## **UNSURPASSED RELIABILITY**

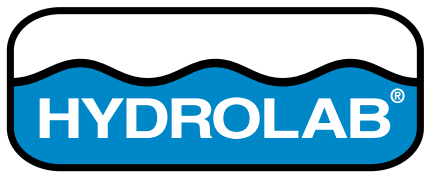
Hydrolab sondes are built to withstand the harshest environmental conditions so you can be confident that your data will be correct at every site, every time.

## **LONG-TERM VALUE**

Hydrolab sondes are built to last, easy to use, and simple to maintain—saving you time and money throughout your ownership of the instrument.



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# SERIES 5

Water Quality Instruments

## SONDES



### MS5

- Four built-in expansion ports configured to fit your specific needs
- Measures up to 10 parameters simultaneously
- Compact and lightweight 1.75" diameter housing fits into groundwater wells
- Used for attended or unattended monitoring

### DS5

- Seven built-in expansion ports configured to fit your specific needs
- Measures up to 15 parameters simultaneously
- Capable of measurements using any of Hydrolab's 15 sensors
- Used for attended or unattended monitoring

### DS5X

- Ideal for "X-tended" deployments in environments where fouling and sediment are abundant
- Central cleaning system wipes away fouling from adjacent sensors to reduce the maintenance frequency
- Seven built-in expansion ports configured to fit your specific needs
- Measures up to 15 parameters simultaneously

## COMMUNICATIONS



### SURVEYOR

- Complete set-up capability allows users to leave their laptops in their offices
- Designed specifically for use in severe field conditions, the Surveyor can take a beating on land or in the water and still deliver your data
- Displays data in real-time or can store up to 375,000 measurements
- Oversize screen with backlight allows data to be viewed in any conditions
- Available with optional GPS and Barometric Pressure capabilities



### HYDRAS 3 LT

- Real-time, multi-parameter time series graphing and vertical profiling
- Simple, point and click calibration of any parameter
- One-click download for field data collection
- User-programmable stability check on each sensor
- Included free with every Series 5 sonde

## Hach LDO®

- Longest lasting calibrations
- Features the best accuracy available for DO measurement
- No membranes so maintenance is simple
- Clark Cell also available



## Conductivity

- Open cell allows reliable measurements in any environmental condition—sediment falls to the bottom and bubbles rise to the top



## pH

- Reference electrode is easily refilled in seconds— independent of the pH sensor
- pH sensor does not need replacement when reference electrode is depleted; simply refill the reference



## Turbidity: Self-Cleaning

- User-programmable self-cleaning system can perform up to 10 cleaning cycles before each reading
- 3000 NTU range allows Turbidity tracking even during rain storms or other events that could cause abnormally high readings
- 4-Beam and Standard Turbidity also available



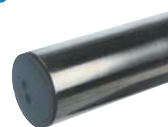
## Depth

- Optimized for depths down to 10m, 25m, 100m, or 200m



## Chlorophyll a

- Ultra-compact size designed by Turner Designs specifically for integration into Hydrolab sondes
- Provides the most accurate measurement of Chlorophyll a because of electronic filtration of ambient light, efficient optical coupling, and quality optical components.



## Blue-Green Algae

- Real-time measurement identifies potential algal blooms before they become problematic, allowing time for corrective action
- Ultra-compact size designed by Turner Designs specifically for integration into Hydrolab sondes
- Provides the most accurate measurement of phycocyanin or phycoerythrin because of electronic filtration of ambient light, efficient optical coupling and quality optical components



## Total Dissolved Gas

- Real-time measurement indicates water supersaturated with atmospheric gases, which can cause gas bubble gill disease in aquatic organisms



## Rhodamine WT

- Ultra-compact size designed by Turner Designs specifically for integration into Hydrolab sondes
- Provides the most accurate measurement of Rhodamine WT because of electronic filtration of ambient light, efficient optical coupling, and quality optical components



## PAR

- Provides a real-time measurement of sunlight intensity, which influences biota that rely on photosynthesis for nutrition



## Temperature

- Provides critical compensation for Dissolved Oxygen, Conductivity, pH, and nutrient sensors
- Included with every sonde



## Ion-Selective Electrodes

- Available for monitoring Ammonia/ Ammonium, Nitrate, or Chloride



## ORP

- Uses a simple platinum band that donates or accepts electrons to monitor chemical reactions, quantify ion activity, or determine the oxidizing or reducing properties of a solution



# SPECIFICATIONS

## Sondes

Size	Weight	Computer Interface	Operating Temperature
<i>DataSonde:</i> Outer diameter – 3.5"/8.9 cm Length – 23"/58.4 cm	<i>DataSonde:</i> 7.4 lbs/3.35 kg (typical)	RS-232, SDI-12, RS-485	-5 to 50°C
<i>MiniSonde:</i> Outer diameter – 1.75"/4.4 cm Length – 29.5"/74.9 cm (with battery pack)	<i>MiniSonde:</i> 2.9 lbs/1.3 kg (typical with battery pack)	<b>Memory</b> 120,000 measurements	<b>Maximum Depth</b> 225 m
		<b>Battery Supply</b> <i>DataSonde:</i> 8 C batteries <i>MiniSonde:</i> 8 AA batteries	

## Sensors

	Range	Accuracy	Resolution
<b>Hach LDO™</b>	0 to 20 mg/L	± 0.1 mg/L @ < 8mg/L ± 0.2 mg/L @ > 8mg/L	0.01 mg/L
<b>Polarographic DO</b>	0 to 50 mg/L	± 0.2 mg/L @ < 20mg/L ± 0.6 mg/L @ > 20 mg/L	0.01 mg/L
<b>Conductivity</b>	0 to 100 mS/cm	± 0.5% of reading ± 0.001 mS/cm	4 digits
<b>pH</b>	0 to 14 pH units	± 0.2 units	0.01 units
<b>Turbidity, Self-Cleaning</b>	0-3000 NTU	<i>Compared to Stab/Cal</i> 1% up to 100 NTU 3% from 100-400 NTU 5% from 400-3000 NTU	0.1 NTU from 0-400 NTU; 1 NTU for >400 NTU
<b>Turbidity, 4-Beam</b>	0-1000 NTU	5% of reading; or ± 1 NTU	0.1 NTU from 0-100 NTU; 1 NTU for >100 NTU
<b>Depth</b>	0 to 10m (Vented Level) 0 to 25m 0 to 100m 0 to 200m	± 0.003 meters ± 0.05 meters ± 0.05 meters ± 0.1 meters	0.001 meters 0.01 meters 0.01 meters 0.1 meters
<b>Chlorophyll a</b>	<i>Dynamic Range</i> Low sensitivity: 0.03-500µg/L Med. sensitivity: 0.03-50µg/L High sensitivity: 0.03-5µg/L	± 3% for signal level equivalents of 1 ppb rhodamine WT dye or higher using a rhodamine sensor	0.01 µg/L
<b>Blue-Green Algae</b>	<i>Dynamic Range</i> Low sensitivity: 100-2,000,000 cells/mL Med. sensitivity: 100-200,000 cells/mL High sensitivity: 100-20,000 cells/mL	± 3% for signal level equivalents of 1 ppb rhodamine WT dye or higher using a rhodamine sensor	20 cells/mL
<b>Ion Selective Electrodes</b>			
<i>Ammonia</i> Max Depth: 15 meters	0 to 100 mg/L-N	Greater of ± 5% of reading, or ± 2 mg/L-N	0.01 mg/L-N
<i>Nitrate</i> Max Depth: 15 meters	0 to 100 mg/L-N	Greater of ± 5% of reading, or ± 2 mg/L-N	0.01 mg/L-N
<i>Chloride</i> Max Depth: 15 meters	0.5 to 18000 mg/L	Greater of ± 5% of reading, or ± 2 mg/L	4 digits
<b>TDG (Total Dissolved Gas)</b>	400 to 1300 mmHg	± 0.1% of span	1.0 mmHg
<b>ORP</b>	-999 to 999 mV	± 20 mV	1 mV
<b>Rhodamine WT</b>	<i>Dynamic Range</i> Low sensitivity: 0.04-1000 ppb Med. sensitivity: 0.04-100 ppb High sensitivity: 0.04-10 ppb	± 3% for signal level equivalents of 1 ppb rhodamine WT dye or higher using a rhodamine sensor	0.01 ppb
<b>PAR</b>	0 to 10,000 µmol s <sup>-1</sup> m <sup>-2</sup>	± 5% of reading, or ± 1 µmol s <sup>-1</sup> m <sup>-2</sup>	1 µmol s <sup>-1</sup> m <sup>-2</sup>
<b>Temperature</b>	-5 to 50°C	± 0.10°C	0.01°C



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