Multiparameter Water Quality Instrument Selection Guide

HYDROLAB® HL7*

Designed for long-term continuous monitoring, reliability, and usability

- Proven sensor technology with up to nine sensor options
- External or battery powered with typical battery life of > 90 days
- Antifouling sensor cleaning brush significantly extends field use and decreases bio fouling
- Powerful software for making better decisions, minimizing error, and increasing data quality
- Designed to withstand the heavy everyday use of demanding field deployments

* Coming Soon

HYDROLAB® HL4

Lightweight, portable and flexible, perfectly suited for spot monitoring and short term studies

- Up to six sensor options, including temperature
- Compact size easy to carry and fit inside 2" wells / pipes
- Easy to use instrument management and control software
- Durable design provides long term usage for a variety of applications

Sea-Bird HydroCAT-EP

Suited for extended deployments in remote, biologically rich environments

- Robust with excellent anti-fouling capability - EPA-approved anti-foulant device and pumped internal flow path for maximum bio-fouling protection
- High initial accuracy and low drift rate
- Cost effective, no in-field calibrations required, common deployment duration of three plus months, reducing field costs

OTT PLS-C

SDI-12 sensor for measuring water level, conductivity, and temperature

- Precise ceramic pressure cell featuring long-term stability – withstands mechanical impacts and aggressive media
- Accurate water level data with compensations for temperature, changes in atmospheric pressure, local gravitational acceleration, and water density
- Four graphite electrode conductivity cell – remains unaffected by polarization effects and immune to contamination
- SDI-12 Sensor with simple integration into almost any datalogger

OTT ecoLog 800

For measuring, collecting, and transmitting water level, conductivity and temperature

- Receive data, status messages, and low power warnings in the office via SMS, FTP, HTTP, and e-mail
- Complete in-well solution all components are inserted into the well, eliminating the possibility of instrument vandalism
- Battery life up to 10 years with lithium batteries, all batteries are field-replaceable without additional tools
- 3G Version available GSM/GPRS; UMTS/HSPA+

Specifications

		HYDROLAB® HL7	HYDROLAB® HL4	Sea-Bird HydroCAT-EP	OTT PLS-C	OTT ecoLog 800
Spot Checking	Streams / Rivers	O	X	–	–	–
	Groundwater	O	X	–	–	–
Profiling	Lakes / Reserviors	X	X	–	–	–
Buoy	Estuaries	X	O	X	O	–
	Lakes / Reserviors	X	O	X	O	–
Long-term Continuous Monitoring	Source Water Monitoring	O	O	–	X	X
	Streams / Rivers (Freshwater)	X	X	X	X	X
	Coastal Estuaries	X	O	X	O	O
	Groundwater	O	X	O	X	X
	Lakes / Reserviors	X	O	X	X	X
	Biologically Rich Environment	O	O	X	O	O
	Deployment life with internal battery 75 days	X	X	X	–	X
	Deployment life with internal battery ≥ 90 days	X	–	X	X	X
Remote Data Acqusition Telemetry	Total Solution - All-in One					Includes battery and cell modem (GSM/GPRS)
	Pair with Sutron Xlink	Telemetry options Iridium Satellite or Mobile (GPRS, HSPA, or CDMA)				
	Pair with Sutron SatLink	GOES / EUMETSAT satelitte, w/ optional cell or Iridium modems				
	Pair with OTT netDL	IP communication over mobile or LAN networks				
	Pair Adcon RTU	Options include LOS, mobile (GPRS)				

Symbols: - not suitable   o suitable   x highly suitable

| Instrument Parameters	HYDROLAB® HL7	HYDROLAB® HL4	Sea-Bird HydroCAT-EP	OTT PLS-C	OTT ecoLog 800
Temperature	X	X	X	X	X
Conductivity	X	X	X	X	X
pH	X	X	X		
ORP	X	X			
Dissolved Oxygen	X- Hach LDO	X- Hach LDO	X		
Turbidity	X	X	X		
Depth	X	X	X	X	X
Chlorophyll a	X	X	X		
Blue-green algae	X	X			
Rhodamine	X	X			
Ammonium (Ion Selective Electrode) *	X	X			
Nitrate (Ion Selective Electrode) *	X	X			
Chloride (Ion Selective Electrode) *	X	X			
Total Dissolved Gas *	X	X			
Sensor Ports	- 9 sensor ports - 2 fixed sensor ports for temperature and optional depth sensor only - 7 ports for integrating other sensor options - Parameters available depends on sensor installed - Maximum of 5 ports available for optical dissolved oxygen and 4 another optical sensors	- 6 sensor ports - 2 fixed sensor ports for temperature and optional depth sensor only - 4 ports for integrating other sensor options - Parameters available depends on sensor installed - Maximum of 2 ports available for optical dissolved oxygen and another optical sensor	- Fixed sensors Conductivity, temperature, pH Optional sensors Optical Dissolved oxygen, depth, Chlorophyll/ Turbidity	- Fixed sensors: Conductivity, Depth, and Temperature	- Fixed sensors: Conductivity, Depth, and Temperature
Battery Life/ Power Consumption	90 days typical battery life with 15min intervals using 4 optical sensors	75 days typical battery life	90 days typical battery life	Powered Externally Power Consumption Active <32 mA Sleep <30 µAV	Hourly measurement, one transmission/day - Lithium battery (26 Ah): >10 years

* Coming Soon

| Monitoring Examples	Parameter(s) monitored
Tracing surface water to groundwater	Conductivity and Temperature
Industrial / non-point source discharge	Conductivity
Eutrophication	Turbidity and Dissolved Oxygen
Acid rain	pH
River bank erosion	Turbidity
Harmful algal blooms	Chl a, Blue Green algae
Reservoir profile monitoring	Temperature, Dissolved Oxygen, and pH
Baseline monitoring	Temperature, Dissolved Oxygen, pH, and Conductivity
Salt Water Intrusion Monitoring	Conductivity (salinity), Temperature, Depth
Hydraulic Fracturing Monitoring	Conductivity (salinity), Temperature, Depth
Aquifer Storage and Recovery	Conductivity (salinity), Temperature, Depth
Water Pollution Detection	Conductivity (salinity), Temperature, Depth

Featured Applications

Lake and Reservoir Profiling

Real-time monitoring of common lake and reservoir water quality parameters including pH, dissolved oxygen, temperature, conductivity, and turbidity for short and long term monitoring and trend identification. This includes attended and continuous unattended monitoring.
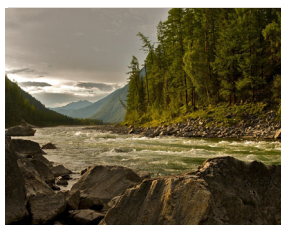
River and Stream Monitoring

Real-time monitoring of common rivers and streams water quality parameters including pH, dissolved oxygen, temperature, conductivity, and turbidity for short and long term monitoring and trend identification. This includes attended and continuous unattended monitoring.
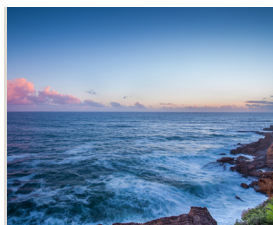
Coastal Monitoring

Measurement of water quality in coastal regions and estuaries is critical in the characterization of hypoxic 'dead zones' as a result of nutrient loading and algal blooms in the water bodies. Sediment loading analysis through turbidity measurement is also important for coastal trend identification and modeling.

Groundwater Monitoring Studies

Measuring groundwater level or depth-to-water is critically important for identifying long term trends, including declining water levels, saltwater intrusion, seasonal variations, aquifer recharge, artificial aquifer storage and recovery, and level status for drinking water.

Remote Data Aquisition

Remote monitoring of the water supply infrastructure in order to recognize problems in the pipeline system to prevent and resolve issues of water supply shortage, and minimize costs caused by damage to the water supply system.

Established Technology in Water Quality Monitoring

The globally operating OTT Hydromet GmbH can look back on a more than 140 year history and has its headquarters in Kempten, Germany. In Europe, it is the leading provider of complete hydrometric systems for performing hydrological and meteorological measurements. Its subsidiaries and agencies in more than 90 countries supply efficient solutions in hydrometrics, meteorology, and environmental technology. With the recent additions of Sutron Corporation (2015) and G. Lufft GmbH (2016), the OTT Hydromet Group offers the broadest portfolio of hydrologic and meteorological solutions. With its trend-setting measurement and communication technology in the fields of water quality, water quantity, meteorology, data management and telemetry, the company contributes sustainably to protecting the environment.