An award-winning, patented, multi-parameter, real-time sensor platform to accurately and reliably measure BOD, COD, TOC and Coliforms (total, e.coli or faecal) in permanent and temporary applications.

The Proteus is the world’s first scientifically proven real-time sensor for measuring BOD that can measure a wide range of water quality, environmental and industrial applications. A multiprobe that measures your choice of parameter, all in one package, that can deliver data in the toughest field conditions. The Proteus has been designed for its ease of use, reliable data and economical operation.

Applications
- BOD/COD/TOC Loading to Wastewater Treatment Works
- Combined Sewage Overflow event monitoring
- Point Source Pollution monitoring
- Total Coliform Monitoring (e.coli, total or faecal)
- Efficiencies of Wastewater Treatment Works
- Diffuse Pollution Monitoring
- Groundwater Water Quality Monitoring
- Survey tool combined with Bluetooth®

Parameters include:
- BOD, COD, TOC, DOC
- Dissolved Oxygen
- Pressure
- Chloride
- pH
- Temperature
- Optical Brighteners
- Nitrate
- ORP / REDOX
- Coliforms (faecal, e.coli, total)
- Tryptophan
- Refined Oils
- Ammonium
- EC / Salinity / TDS
- Turbidity
- Crude Oils CDOM
Self cleaning: As it is essential that optical sensors have a cleaning mechanism, the Proteus is also supplied with an integral wiper which cleans all of the Proteus’ sensors before every measurement cycle.

Process control: Let the Proteus monitor multiple process parameters 24/7.

Simple to use & intuitive software

Scalable: The patented and award-winning Proteus breaks the boundaries of water quality meters. The Proteus offers a unique platform to add additional sensors such as pH, REDOX, electrical conductivity, dissolved oxygen, turbidity and many others.

Robust: Exceptional build quality with stainless steel and Delrin outer casing.

Ultra-low maintenance: The system is fully serviceable in the field and requires almost no maintenance. Logs data unattended minimizing manpower requirements and safety issues.

Multiple power options: Power can be provided by an optional internal lithium battery pack for unattended logging, or an external power source (battery, mains or solar). External ON/OFF switch for logging without need for PC connection.

Easy integration: The Proteus can be effortlessly integrated with telemetry/SCADA systems and other datalogging devices with external RS232/Modbus/SDI12 or simply by using its internal datalogger. The integrated datalogger can log 1,000,000 readings and it can be used with Tablets/Mobile Phones.

Coliforms: The Proteus is the first instrument globally that has the potential to measure bacteria/coliforms in drinking water in real time.

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Ammonia is normally found in very low concentrations in natural waters. It is a result of microbiological activity breaking down nitrogen-containing material. Elevated levels of ammonia can be very harmful to aquatic life and fish in particular.

Biochemical oxygen demand (BOD) is a measure of the amount of oxygen used by micro-organisms (e.g. aerobic bacteria) in the oxidation of organic matter. High levels of BOD (due to excess organic matter) indicate greater consumption of oxygen by micro-organisms, meaning less is available to fish and other aquatic life.

Chemical oxygen demand (COD) measures the amount of oxygen required to chemically oxidize the organic material and inorganic nutrients, such as Ammonia or Nitrate, present in water. It is widely used as an indicator of organic pollution and many industrial and wastewater effluents have strict permits associated with COD concentration.

Coliform counts (total, faecal & ecoli) refer to the presence of faecal coliform bacteria. These bacteria are found in large quantities in the intestines/faeces of animals and people. E.coli is a major sub-group of the faecal coliform group and represents the best indicator for faecal pollution monitoring.

Colour has historically been used as an indicator for dissolved organic matter (DOM). CDOM (chromophoric dissolved organic matter) sensors can accurately measure DOM. It is therefore possible to use CDOM to indicate colour and DOM with a local site calibration.

Conductivity is a measure of the ability of water to pass an electric current; it is affected by the presence of dissolved solids such as chloride, nitrate and phosphate. Conductivity can be a very useful indicator that a discharge of some sort has entered a stream, or some other change has occurred.

Dissolved Oxygen is essential for the survival of aquatic life and is incorporated into surface waters by direct absorption from the atmosphere, more so in turbulent streams. It is then consumed by organisms and decaying organic matter. An excess of decaying organic matter leads to a shortage of oxygen, which can prove fatal for fish.

Dissolved organic carbon (DOC) is operationally defined as the amount of organic carbon based compounds that can pass through a 0.45 µm filter. CDOM (chromophoric dissolved organic matter) sensors can accurately measure DOC.

Nitrate (NO₃) is a naturally occurring by-product of the breakdown of organic waste. In low concentrations it stimulates the growth of aquatic plants. At higher concentrations it can be directly harmful and can also lead to excess algae growth and eutrophication. The primary source of excess nitrate is surface runoff from agricultural land.

pH is related to the concentration of hydrogen ions in a solution and is a measure of acidity or alkalinity. In natural ecosystems it can vary from around 4.5, for acid peaty upland waters, to over 10.0 where there is intense photosynthetic activity.

Redox (ORP) or Oxidation Reduction Potential is a measure of the oxidising or reducing potential of a water body. Many important biochemical processes are oxidation or reduction reactions (e.g. ammonia>nitrite>nitrate). The ORP level in a river or treatment plant will govern (along with DO and pH levels) which reactions are prevalent.

Temperature is the physical temperature of the watercourse. Largely dictated by climate, but also of interest around thermal discharges. Temperature extremes can be harmful to aquatic organisms, and also have an effect on other parameters, e.g. pH and dissolved oxygen.

Total Organic Carbon (TOC) measures the amount of organic carbon in water. It is widely used as an indicator of organic pollution and many industrial and wastewater effluents have strict permits associated with COD concentration.

TSS (Total Suspended Solids) can be derived by using a turbidity (NTU) sensor to measure backscatter caused by suspended sediment in the water. As suspended sediment can be in the form of clay, silt, organic or inorganic matter there is no single relationship between turbidity and TSS. However, the relationship is typically near perfect (R²>0.95) and can easily be derived by undertaking regression analysis between the two parameters and entering that factor into the Proteus software.

Turbidity is a measure of the clarity of water. Silts and soils that are suspended within rivers and lakes cause high levels of turbidity, especially during storm and run-off events.