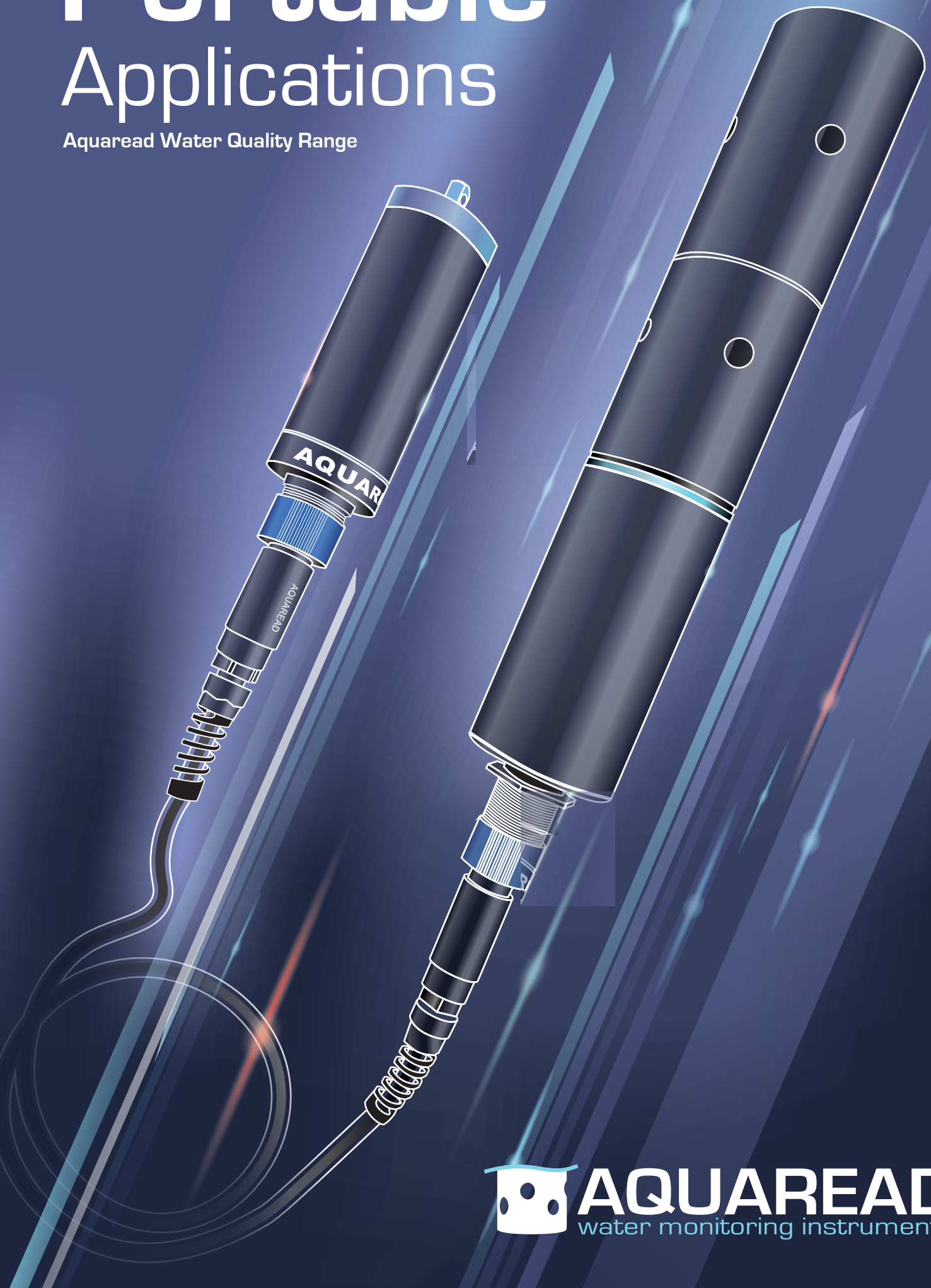
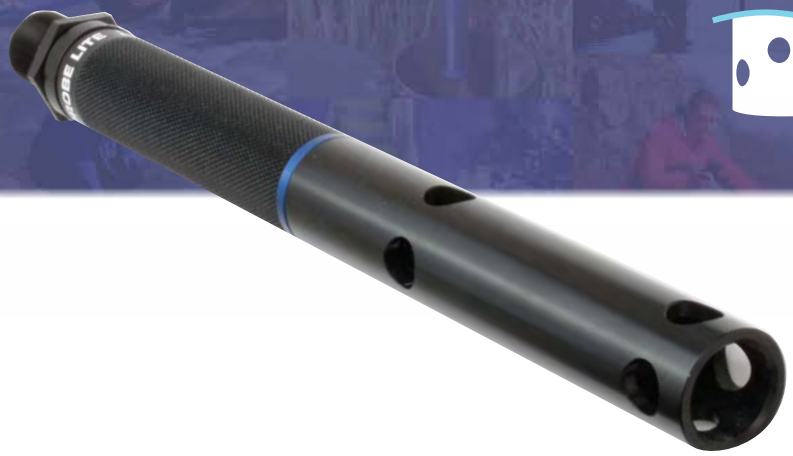
Portable
Applications

Aquaread Water Quality Range



AQUAREAD
water monitoring instruments

AQUAREAD
water monitoring instruments



AP-LITE
Single Parameter

The AP-LITE is a simple probe with a single optical socket. This socket is able to house any of our optical electrodes, including turbidity and chlorophyll. A temperature sensor is also included on the probe. The AP-LITE package includes our rugged 3m cable, our GPS Aquameter, a range of accessories and a rugged carry case.

Build

All Aquaprobes are made with the same marine grade aluminium, finished in black with hard anodising for excellent corrosion and biofouling resistance. The use of metal, as opposed to plastic, gives our products their characteristic weight and high quality look and feel.

These sensors are designed and manufactured by Aquaread, to provide the best possible accuracy and performance, while remaining cost effective. The optical sensors can be easily removed by hand, making them easy to change when been used in the field. The AP-LITE offers sensor for the measurement of:

AP-LITE Key Features:

- IP67 handheld display
- Backlit display with ergonomic keypad
- 1110-point data memory
- GPS recording and site tag information
- Data export via USB to AquaLink utility
- User replaceable AA batteries
- Easy to follow calibration procedures

Optical Electrode Options:

Turbidity,
Chlorophyll,
Blue Green Algae,
Rhodamine,
Fluorescein,
Refined Oil,
CDOM / FDOM.

AP-LITE Package

As a package our AP-LITE comes supplied with everything you will need to start taking measurement. This includes our GPS Aquameter portable meter, offered with its rugged IP67 design, visual display and large on-board data logger for taking sport recordings, or data logging purposes. On-board GPS also allows you to record where measurement have been recorded and the water quality data.

Sensors

Our AP-LITE digital water quality sensor utilises the latest technology and allows you to connect any of our Aquaprobe optical water quality sensors.

AP-LITE Mechanical Specification

Protection Class	IP68 (permanent immersion)
Immersion Depth	Min 75mm. Max 100m**
Operating Temperature	-5°C - +70°C
Dimensions (L x Dia)	250mm x 24mm
Weight	400g

**100m submersion for period of 12 hours, 30m submersion suitable for permanent deployment.

Screw in sensors make it easy to install the various sensors available

The AP-LITE is commonly used with our sapphire lensed turbidity sensor, chlorophyll sensor or blue-green algae sensors. Whilst the package includes an Aquameter the AP-LITE can also be used with one of our AquaLoggers for unmanned turbidity, chlorophyll or blue-green algae monitoring.

Envirotecnics Tel: +34 872 080 542 envirotecnics@envirotecnics.com www.envirotecnics.com

AQUAREAD
water monitoring instruments

AquaPlus Portable Dissolved Oxygen meter

The AquaPlus handheld dissolved oxygen meter is a simple to use, accurate device which incorporates a combined optical dissolved oxygen, electrical conductivity and temperature sensor. Supplied with our Aquaplus meter the portable water quality meter can be used to collect manual readings via the devices display or record readings to the Aquaplus handheld's large internal memory.

Why Optical?

Traditionally, DO measurement in portable field equipment has been done using membrane covered detectors known as Clark Cells. This type of cell suffers from problems including membrane fouling, calibration instability and worst of all, oxygen consumption. During measurement, a Clark Cell will consume oxygen making it necessary to have a constant flow of water over the cell.

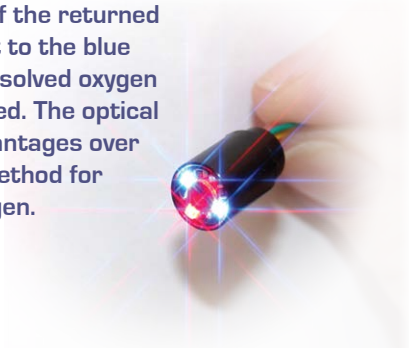
Optical technology eliminates all these problems allowing high precision, membrane-free, long-term stability along with infrequent calibration and immunity to fouling by sulphides and other gases.

The Aquaread AquaPlus is the only Optical DO system that measures salinity directly. This allows for automatic salinity compensation giving you the highest accuracy in any type of water.

Tech behind the AquaPlus

The Aquaread AquaPlus works on the principle of Dynamic Luminescence Quenching. A gas-permeable material known as a luminophore is excited with short bursts of blue light, which causes molecules in the luminophore to emit red photons.

By measuring the delay of the returned red photons with respect to the blue excitation, the level of dissolved oxygen present can be determined. The optical method has various advantages over the historical galvanic method for measuring dissolved oxygen.



Advantages

The most important being that as no oxygen is consumed across a membrane, the sensor does not require a flow of liquid passing over it to achieve a stable reading. Other advantages include:

- Very low maintenance
- Caps last over two years
- No Electrolyte to replace
- Hold Calibration for longer

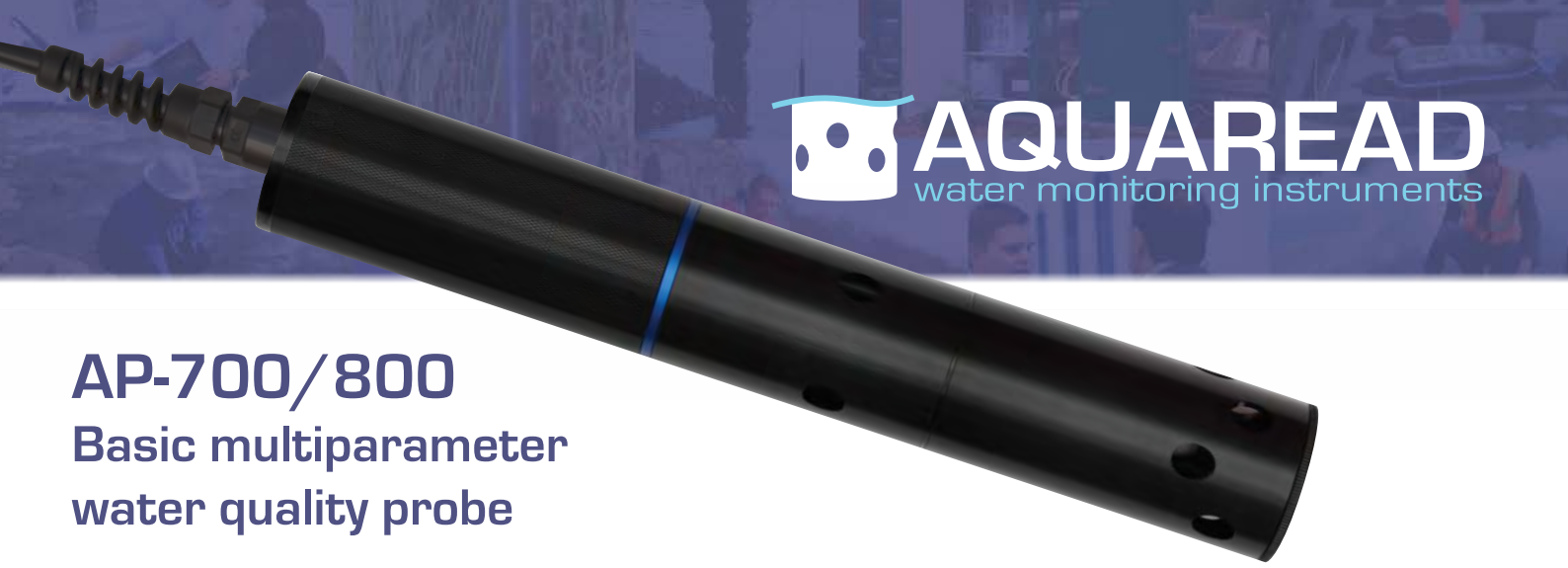
Auto salinity compensation

When measuring % saturation the salinity of the water has an influence on the dissolved oxygen % saturation measurement. The AquaPlus has a built in conductivity sensor meaning that the salinity is calculated, this value is then used for auto compensation giving the most accurate measurements with no extra user input.

AquaPlus Mechanical Specification

Protection Class	IP68 (permanent immersion)
Immersion Depth	Min 75mm. Max 100m**
Operating Temperature	-5˚C - +70˚C
Dimensions (L x Dia)	250mm x 24mm
Weight	400g
Range	0 – 500.0% / 0 – 50.00mg/L
Resolution	0.1% / 0.01mg/L
Accuracy	± 0 – 60.00 m (60m max displayed depth, max probe immersion 100m)

**100m submersion for period of 12 hours, 30m submersion suitable for permanent deployment.



AQUAREAD
water monitoring instruments

AP-700/800

Basic multiparameter water quality probe

The AP-700 and AP-800 packages represent the essentials in basic water quality monitoring. Offered as complete packages you are provided with everything you need to get testing water. Packages include an Aquaprobe, a GPS Aquameter, a 3 meter cable, accessories and some RapidCal calibration solution all housed in a neat carry case for easy storage and transport.

Build

All Aquaprobes are made with the same marine grade aluminium, finished in black with hard anodising for excellent corrosion and biofouling resistance. The use of metal, as opposed to plastic, gives our products their characteristic weight and high quality look and feel. The AP-700 and AP-800 probes come with a pre-fitted 3m cable.

AP-700 with sleeve removed

Sensors

The AP-700 comes with all of the common water quality testing sensors pre fitted to the probe:

pH • ORP • Conductivity • TDS • SSG • Resistivity • Salinity • Dissolved Oxygen • Temperature

The AP-800 comes with an optical sensor port pre-fitted with a Turbidity sensor:

pH • ORP • Conductivity • TDS • SSG • Resistivity • Salinity • Dissolved Oxygen • Turbidity • Temperature

Exchange the Turbidity sensor?

As the turbidity sensor is mounted in one of our sensor ports you can exchange this sensor for any of our other optical sensors, at any time.

Galvanic DO

Both the AP-700 and AP-800 feature our ruggedised galvanic DO sensor. This solid zinc electrode tip can easily be cleaned and is designed to last for many years.

Packages available

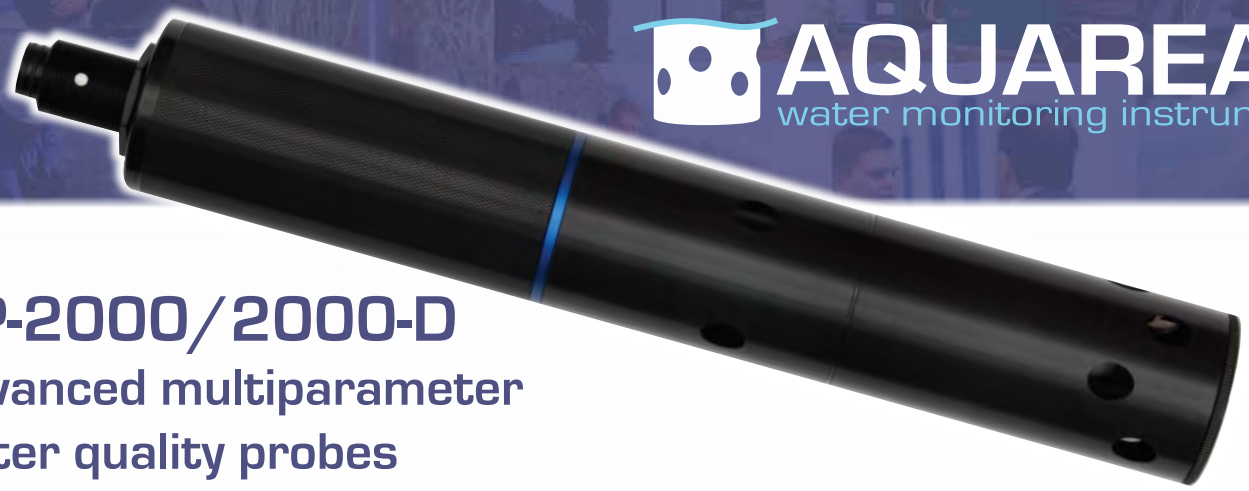
Upgrades available at time of order

Both the AP-700 and AP-800 can have the DO sensor upgraded to our optical dissolved oxygen sensor. Both probes can also have a depth sensor fitted at time of order.

The AP-700 and AP-800 probes are available as complete packages. Included in the package is our GPS Aquameter, a bottle of Rapidcal, pH storage solution, batteries and other accessories.

Envirotecnics Tel: +34 872 080 542 envirotecnics@envirotecnics.com www.envirotecnics.com

AQUAREAD
water monitoring instruments



AP-2000/2000-D

Advanced multiparameter water quality probes

The AP-2000 and AP-2000-D packages provide advanced, portable water quality monitoring. Offered as complete packages you are provided with everything you need to get testing water. Packages include an Aquaprobe, a GPS Aquameter, a 3 meter cable, accessories and some RapidCal calibration solution all housed in a neat carry case for easy storage and transport.

Build

All Aquaprobes are made with the same marine grade aluminium, finished in black with hard anodising for excellent corrosion and biofouling resistance. The use of metal, as opposed to plastic, gives our products their characteristic weight and high quality look and feel.

Sensors

The AP-2000 comes with all of the common water quality testing sensors pre fitted to the probe:

pH • ORP • Conductivity • TDS • SSG • Resistivity • Salinity • Dissolved Oxygen • Temperature

The AP-2000-D adds a depth sensor to the probe.

Probes come with 2 empty sockets

Both the AP-2000 and the AP-2000-D come with two empty Aux sockets pre-fitted with removable blanking plugs. These sockets allow you to customise your probe by adding in additional sensors.

AP-2000 with sockets exposed.

AP-2000 Package

Package comes complete with Aquaprobe, GPS Aquameter, 3m cable, rugged case and accessories. Various cable lengths are available; 10, 20 and 30m as standard.

All cables 20m and over come on a winding reel making them much easier to operate, especially when profiling.

Socket Customisation Options

Aux port 1 can be fitted with either an optical sensor or an ion selective sensor (ISE).

Aux port 2 can be fitted with only an ISE sensor.

There are many different sensors to choose from to customise your probe:

ISE Electrode Options:
Ammonium / Ammonia,
Chloride,
Nitrate,
Fluoride,
Calcium.

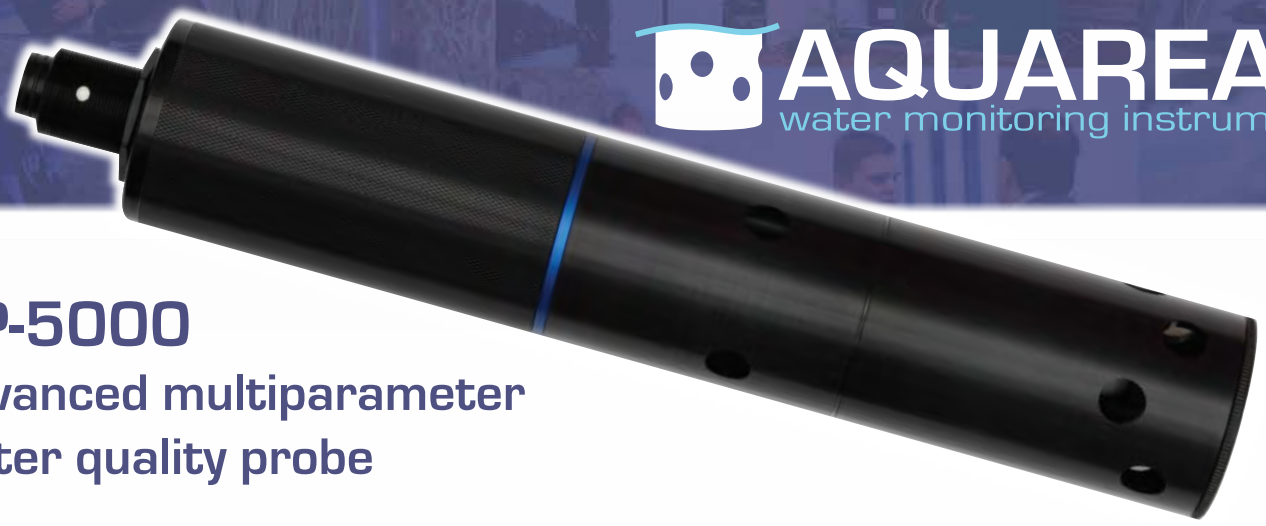
Optical Electrode Options:
Turbidity,
Chlorophyll,
Blue Green Algae,
Rhodamine,
Fluorescein,
Refined Oil,
CDOM / FDOM.

Optical Dissolved Oxygen (DO) Sensor

The AP-2000 has a factory installed and fully calibrated optical DO sensor. The sensor requires much less maintenance than the galvanic version, gives more stable readings and requires cap changes only once every 2-3 years.

AP-2000 Package

AQUAREAD
water monitoring instruments



AP-5000

Advanced multiparameter water quality probe

The AP-5000 packages is our largest multiparameter portable water quality monitoring package. The AP-5000 allows you to add an increased number of sensors compared to the smaller AP-2000. Packages include an Aquaprobe, a GPS Aquameter, a 3 meter cable, accessories and some RapidCal calibration solution all housed in a neat carry case for easy storage and transport.

Build

All Aquaprobes are made with the same marine grade aluminium, finished in black with hard anodising for excellent corrosion and biofouling resistance. The use of metal, as opposed to plastic, gives our products their characteristic weight and high quality look and feel.

Sensors

The AP-5000 comes with all of the common water quality testing sensors pre fitted to the probe:

pH • ORP • Conductivity • TDS • SSG • Resistivity • Salinity • Dissolved Oxygen • Depth • Temperature

Probes come with 4 empty sockets

The AP-5000 comes with four empty Aux sockets pre-fitted with removable blanking plugs. These sockets allow you to customise your probe by adding in additional sensors. Each socket can house either an Ion Selective Sensor (ISE) or any of our optical sensors

AP-5000 with two sockets exposed and two fitted with blanking plugs.

Socket Customisation Options

Aux port 1 -4 can be fitted with any ISE or optical sensor.

There are many different sensors to choose from to customise your probe:

ISE Electrode Options:
Ammonium / Ammonia,
Chloride,
Nitrate,
Fluoride,
Calcium.

Optical Electrode Options:
Turbidity,
Chlorophyll,
Blue Green Algae,
Rhodamine,
Fluorescein,
Refined Oil,
CDOM / FDOM.

Optical Dissolved Oxygen (DO) Sensor

The AP-5000 has a factory installed and fully calibrated optical DO sensor. The sensor requires much less maintenance than the galvanic version, gives more stable readings and requires cap changes only once every 2-3 years.

Optical DO sensor
LED's flash during measurement.

AQUAREAD
water monitoring instruments

AP-PRO

Our most advanced self cleaning water quality probe

Every Aspect of Design Levelled Up

The PRO range builds on the success of the Aquaprobe series, elevating every aspect of the construction, design, features and specifications.

They bring with them new-to-industry materials allowing measurement at far greater depths, a unique measurement chamber for improved sensor stability in the most demanding applications and smart sensors that hold their calibration data, allowing for simple sensor exchange in the field.

Constructed Using Titanium and Carbon Fibre

The AP PRO is built using combination of titanium and carbon fibre, offering both exceptional corrosion resistance and high compressive strength. As a result both are capable of measuring at extreme depths of up to 1000ft (300m).

Full range of Smart Sensors

The range sees the introduction of smart sensors, sensors that hold calibration data allowing exchange without the need to recalibrate.

Sensors can be carefully calibrated in the lab and taken to the deployment site for simple exchange removing the need to calibrate in the field.

Four Auxiliary ports allow extra smart sensors to be installed diversifying monitoring options.

Unique Measurement Chamber

The protective end cap, found on all Aquaprobes, has been extended along the inside of the sleeve. When screwed onto the sleeve it creates a more stable measurement chamber for all installed sensors.

Its matt black design prevents reflection and the multiple holes in the cap allow good water flow through the system.

Measurement chamber removed from probe sleeve

AQUAREAD
water monitoring instruments

GPS Aquameter

The GPS Aquameter is a hand held device with a display for live data viewing and data recording. As one of our flagship products it is included in every Aquaprobe package. It is designed to be very simple to use and to make your job easier in the field.

All currently measured data can be recorded by pressing the M+ button, as you record your dataset the Aquameter uses its built in GPS receiver to record the precise location that the measurements were taken from, with data being viewable in Google Earth.

Build

Left: AquaLink screen shot.
Right: Google Earth screen shot with GeoTags

Process data in AquaLink

- Simple data download via button
- Tick and un-tick datasets to customise your outputs
- Output a text report for all highlighted data
- Output data as a CSV file that you can open in Excel
- Output data as a .KML file for use in Google Earth

GPS Aquameter Mechanical Specification

Dimensions (L x H x D)	90mm x 180mm x 39mm
Weight	425g
Display	80 character backlit LCD
Data Memory	10,000 full sets inc GLP data
GPS Receiver	12 channel with int antenna
GPS Accuracy	+/- 10m in all 3 dimensions
Atmospheric Pressure	150mb – 1150mb Accuracy +/- 1mb
Interface	USB (cable provided)
Power Supply	5 x AA cells. Alkaline or Ni-MH rechargeable
Battery Life	Alkaline > 20 hours Ni-MH > 40 hours
Operating Temperature	-20°C to +70 C
Protection Class	IP67

BLUELINK

AQUAREAD
water monitoring instruments

BlueLink

Bluetooth adapter bringing your water quality data to your mobile

BlueLink is a small Bluetooth adapter that can be fitted to the end of your water monitoring probe's cable to allow you to connect your probe to our mobile app. Use the app to calibrate your probe, view and record live readings and to help to simplify low flow sampling.

Build

Bluelink is made from aluminium and carbon fibre and houses a rechargeable battery. The unit also features a barometric pressure sensor for live compensations of the dissolved oxygen and depth measurements.

Battery Life

The Bluelink module can only be powered with a cable connected to it, preventing the device from draining if left switched on when the cable and probe are disconnected.

Bluelink has approximately 30hrs battery life and a 6 hour recharge duration.

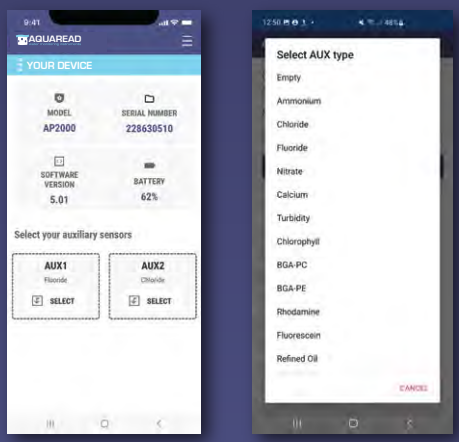
Connectivity

Open up the Bluelink app on your device after switching on the Bluelink unit. The app will start in the 'add new device' screen and auto detect the Bluelink unit, click on it to pair. Previously paired probes will appear here to make it quicker to connect.

Recharge

The internal battery within Bluelink is rechargeable. It is supplied with a USB charging cable meaning it can be charged from your PC, USB wall plug or a portable battery with USB sockets.

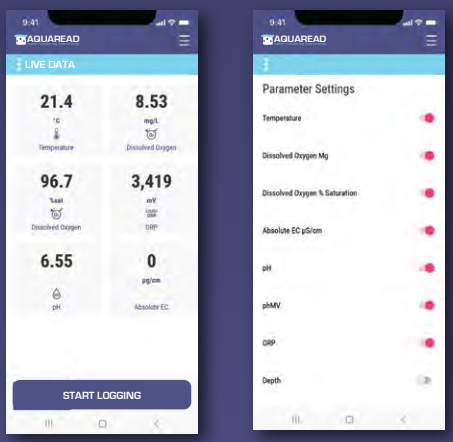
Your Device



Within the Your Device screen information about the Aquaprobe is displayed. Including serial number, software version and the remaining battery level of the Bluelink device.

Within this section the available AUX sensor sockets are displayed for you to customise from al list of possible sensors.

Live Data



Displayed on the Live Data screen are all of the currently measured readings coming from your connected Aquaprobe.

By pressing the options button you can quickly toggle on or off parameters that you are less interested in, allowing you to customise the display to your needs.

Aquaprobe Specifications

AQUAREAD
water monitoring instruments

Standard Parameters	Dissolved Oxygen	Range	0 – 500.0% / 0 – 50.00 mg/L
		Resolution	0.1% / 0.01mg/L
		Accuracy	0 - 200%: ± 1% of reading. 200% - 500%: ± 10%
	Depth AP-2000/ AP-5000	Range	± 0 – 60.00 m (60m max displayed depth, max probe immersion 100m)
		Resolution	1cm
		Accuracy	± 0.5% FS
	Depth AP-7000	Range	± 0 – 99.99 m
		Resolution	1cm
		Accuracy	± 0.2% FS
	Conductivity (EC)	Range	0 – 200 mS/cm (0 - 200,000 µS/cm)
		Resolution	3 Auto-range scales: 0 – 9999 µS/cm, 10.00 – 99.99 mS/cm, 100.0 – 200.0mS/cm
		Accuracy	± 1% of reading
	TDS*	Range	0 – 100,000 mg/L (ppm)
		Resolution	2 Auto-range scales: 0 – 9999mg/L, 10.00 – 100.00g/L
		Accuracy	± 1% of reading
	Resistivity*	Range	5 Ω • cm – 1 MΩ • cm
		Resolution	2 Auto-range scales: 5 – 9999 Ω • cm, 10.0 – 1000.0 KΩ • cm
		Accuracy	± 1% of reading
	Salinity*	Range	0 – 70 PSU / 0 – 70.00 ppt (g/Kg)
		Resolution	0.01 PSU / 0.01 ppt
		Accuracy	± 1% of reading
	Seawater Specific Gravity*	Range	0 – 50 σt
		Resolution	0.1 σt
		Accuracy	± 1.0 σt
	pH	Range	0 – 14 pH / ± 625mV
		Resolution	0.01 pH / ± 0.1mV
		Accuracy	± 0.1 pH / ± 5mV
	ORP	Range	± 2000mV
		Resolution	0.1mV
		Accuracy	± 5mV
	Temperature (non freezing)	Range	-5°C – +50°C (23°F – 122°F)
		Resolution	0.01°C / 0.1°F
		Accuracy	± 0.1 °C

* Readings calculated from EC and temperature electrode values

ISE	Ammonium	Range	0 – 9,000mg/L (ppm)
		Resolution	2 Auto-range scales: 0.00 - 99.99 mg/L, 100.0 – 8,999.9 mg/L
		Accuracy	± 10% of reading or 2ppm (whichever is greater)
	Ammonia†	Range	0 – 9,000mg/L (ppm)
		Resolution	2 Auto-range scales: 0.00 - 99.99 mg/L, 100.0 – 8,999.9 mg/L
		Accuracy	± 10% of reading or 2ppm (whichever is greater)
	Chloride	Range	0 – 20,000mg/L (ppm)
		Resolution	2 Auto-range scales: 0.00 - 99.99 mg/L, 100.0 – 19,999.9 mg/L
		Accuracy	± 10% of reading or 2ppm (whichever is greater)
	Fluoride	Range	0 – 1,000mg/L (ppm)
		Resolution	2 Auto-range scales: 0.00 - 99.99 mg/L, 100.0 – 999.9 mg/L
		Accuracy	± 10% of reading or 2ppm (whichever is greater)
	Nitrate	Range	0 – 30,000mg/L (ppm)
		Resolution	2 Auto-range scales: 0.00 - 99.99 mg/L, 100.0 – 29,999.9 mg/L
		Accuracy	± 10% of reading or 2ppm (whichever is greater)
	Calcium	Range	0 – 2,000mg/L (ppm)
		Resolution	2 Auto-range scales: 0.00 - 99.99 mg/L, 100.0 – 1,999.9 mg/L
		Accuracy	± 10% of reading or 2ppm (whichever is greater)

† Ammonium electrode required. Readings calculated from ammonium, pH and temperature values.

Optical	Turbidity	Range	0 – 4000 NTU
		Resolution	2 Auto-range scales: 0.0 - 99.9 NTU, 100 - 4000 NTU
		Accuracy	± 5% of auto-ranged scale
	Chlorophyll	Range	0 – 500.0 µg/L (ppb)
		Resolution	2 Auto-range scales: 0.00 - 99.99 µg/L, 100.0 - 500.0 µg/L
		Repeatability	± 5% of reading
	Phycocyanin (freshwater BGA)	Range	0 – 300,000 cells/mL
		Resolution	1 cell/mL
		Repeatability	± 10% of reading
	Phycerythrin (marine BGA)	Range	200,000 cells/mL
		Resolution	1 cell/mL
		Repeatability	± 10% of reading
	Rhodamine WT Dye	Range	0 – 500 µg/L (ppb)
		Resolution	2 Auto-range scales: 0.00 - 99.99 µg/L, 100.0 - 500.0 µg/L
		Accuracy	± 5% of reading
	Fluorescein Dye	Range	0 – 500 µg/L (ppb)
		Resolution	2 Auto-range scales: 0.00 - 99.99 µg/L, 100.0 - 500.0 µg/L
		Accuracy	± 5% of reading
	Refined Oil	Range	0 – 10,000 µg/L (ppb) (Napthalene)
		Resolution	0.1 µg/L
		Repeatability	± 10% of reading
	CDOM / FDOM	Range	0 – 20,000 µg/L (ppb) (Quinine Sulphate)
		Resolution	2 Auto-range scales: 0.0 – 9,999.9 µg/L, 10,000 – 20,000 µg/L
		Repeatability	± 10% of reading

The accuracy figures quoted throughout this document represent the equipment's capability at the calibration points at 25°C. These figures do not take into account errors introduced by variations in the accuracy of calibration solutions and errors beyond the control of the manufacturer that may be introduced by environmental conditions in the field. Accuracy in the field is also dependent upon full calibration and minimal time between calibration and use.