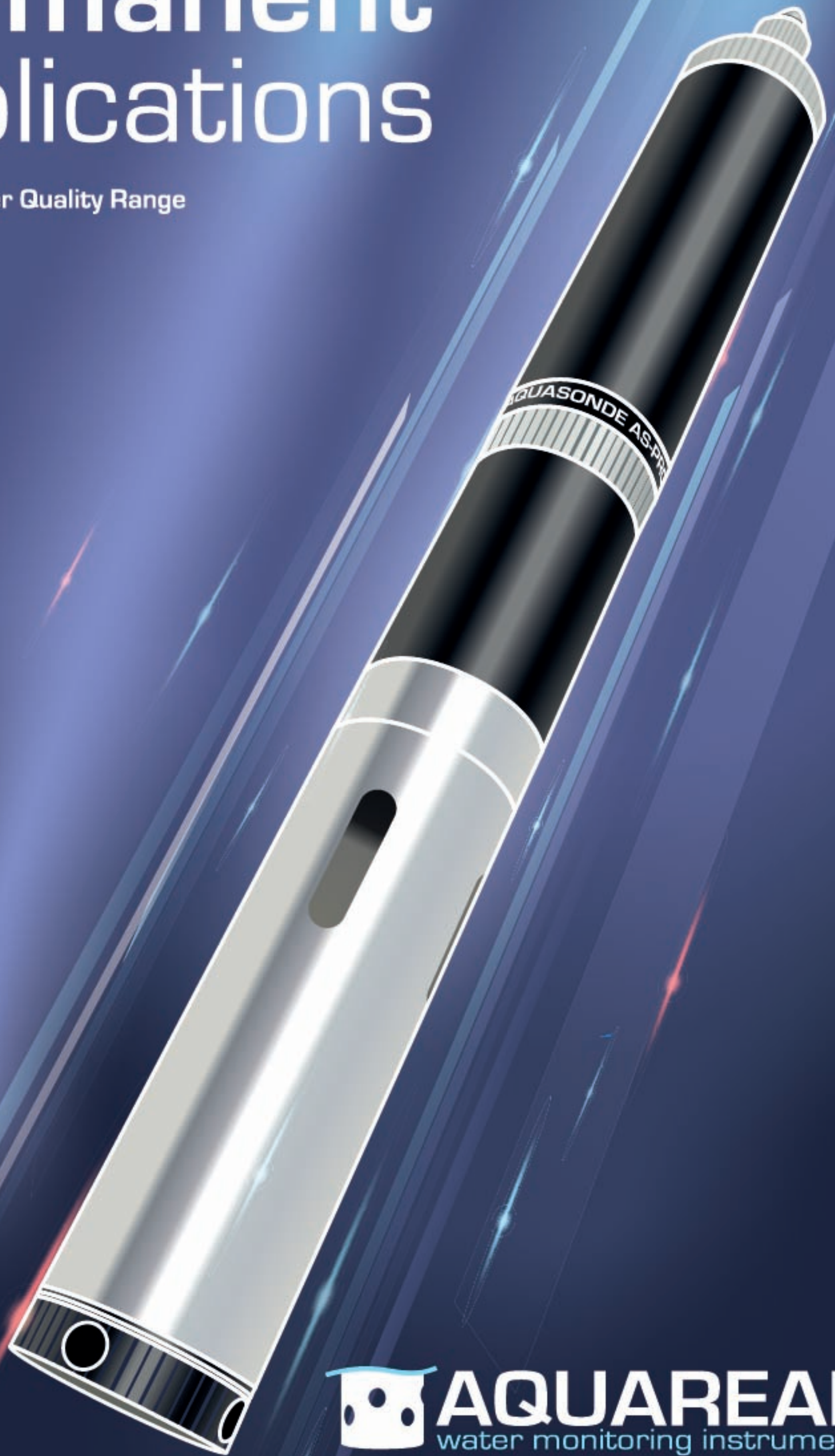


Permanent Applications

Aquaread Water Quality Range



 **AQUAREAD**
water monitoring instruments

Fixed Range

REMOTE MONITORING
WITH MANUAL DATA
COLLECTION



AS-5000



AS-PRO

AQUASONDE RANGE

REMOTE MONITORING
WITH ONLINE DATA



Via our mobile app



Via Inview by nke

3G 3G



AP-5000



AP-6000



AP-PRO

AQUAPROBE RANGE

AS-5000

pH • ORP • conductivity • TDS • SSG • resistivity • salinity
optical dissolved oxygen • temperature • depth

Non cleaned, fixed deployment, water quality sonde
with internal power and memory

AQUASONDE

The AquaSonde brings built in data logging capabilities to our range of reliable multiparameter water quality testing probes. These self powered sondes can be deployed for extended periods of data collection without the need for an external logger.



Features

The AquaSondes are powered by internal lithium batteries to extend the duration of your deployments for as long as 180 days, model and logging rate dependent.

All AquaSondes feature an internal memory that is capable of storing up to 150,000 full data sets, that equates to over 3 years continuous data logging.

These logging devices can be deployed on their own for a discrete deployment or they can be deployed with a vented cable allowing for barometric compensation of measurements, specifically depth and % saturation of dissolved oxygen.

Each AquaSonde is supplied with a QuickDeploy Key, used to initiate the probe's logging regime and SondeLink PC software for complete logger set up, sensor calibration and data collection.

AS-5000 Mechanical Specification

	AQUASONDE-5000
Self Cleaning	No
Depth	Min 75mm. Max 100m*
Temperature	-5°C - +70°C
Dimensions	58 x 570mm
Weight (Inc Batt)	1.9kg
Batteries **	2x 3.6V Lithium D cells. Life greater than 10 months.
Memory capacity	150,000 full data sets

*100m submersion for profiling, max duration 12 hours, 30m submersion suitable for permanent deployment.
** Battery life estimated at 20°C with a logging rate of 15 minutes, may vary with electrode options.

AS-PRO

pH • ORP • conductivity • TDS • SSG • resistivity • salinity
optical dissolved oxygen • temperature • depth

Top of the range long term multiparameter water quality sonde
with self cleaning, smart sensors and titanium body



AS-PRO

The AS-PRO is our most advanced multiparameter water quality logging sonde.

It features a new to industry combination of titanium and carbon fibre, offering both exceptional corrosion resistance and high compressive strength. As a result it is now possible to measure at extreme depths of up to 1000ft (300m).

It uses smart sensor technology meaning calibration data is stored within the sensor. Avoid field calibrations by arriving on site with pre calibrated sensors to exchange.

Its new measurement chamber in combination with automated self cleaning and improved data handling, ensure the data captured is of long lasting accuracy.

The AS-PRO features built in bluetooth, selectable with the central Control Ring, allowing you to connect the sonde to the Bluelink app for logging set up, live data viewing and logged data download.

Included Smart Sensors with the AS-PRO

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

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. All sensors are made of titanium



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



4 smart sensors for the AS-PRO and the cleaning arm.

AS-PRO

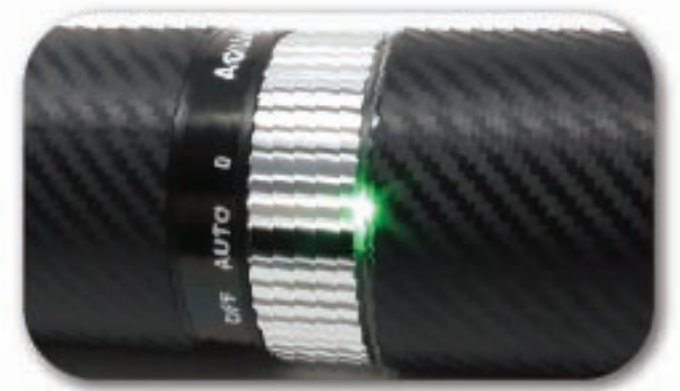
pH • ORP • conductivity • TDS • SSG • resistivity • salinity

optical dissolved oxygen • temperature • depth

Top of the range long term multiparameter water quality sonde with self cleaning, smart sensors and titanium body

Unique Control Ring on AS-PRO

The AS-PRO is fitted with a novel three-position switch ring mechanism allowing you to confidently switch the function of the sonde. Using the switch ring you can turn the unit off, set it to auto or activate Bluetooth mode, with an LED ring for visual conformation.



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.



Measurement chamber removed from probe sleeve

Its matt black design prevents reflection and the sealed environment is not subject to interference from stray light.

Bluetooth Included

The AS-PRO has built in bluetooth, connect the AS-PRO to the Bluelink mobile app for full wireless control of the sonde. Use Bluelink to set logging and cleaning frequencies, view live data and download logged data from the sonde to your phone for sharing via email.

AS-PRO Mechanical Specification

Protection Class	IP68 (permanent immersion)
Immersion Depth	Max 1000ft (300m)
Operating Temperature	-5 °C - +70 °C
Dimensions (L x Dia)	630mm x 70mm
Weight	1.9kg
Power	2x Lithium D Cells

AS-Pro features an integrated barometric pressure sensor for automatic depth and Dissolved Oxygen saturation correction

DEPLOYMENT OPTIONS

Various options are available when utilising the Aquaprobe in long term deployment applications

Schematics of the various deployment options

Various Logging Options With Aquaprobe

Aquaprobe
& Aquatel



Telemetry

Connect an Aquaprobe directly to the Aquatel telemetry device to send water quality data to Inoview; a web platform you can access on the internet. Alternatively send data direct to your own FTP address.

Aquaprobe
& Blackbox



3rd Party Device

Use the blackbox to facilitate connection of an Aquaprobe to a third party data logger or PLC system using SDI-12 or Modbus RS485 protocols. External power is required to power this set up option.

Aquaprobe
& Aqualogger



Portable to Fixed

Use the Aqualogger to adapt your portable water quality probe into a medium term fixed deployment setup. The Aqualogger is configured via a PC then deployed. Once the deployment is complete you retrieve the Aqualogger and download the data via a PC application.

Aquaprobe
& Aquameter



Calibration

Use the Aquaprobe with the Aquameter in order to perform calibrations of your deployed probe's sensors and to conduct spot measurements at your deployment site.

Aquatel, Blackbox, Aqualogger and the Aquameter all feature built in pressure sensors, meaning air pressure compensation can be carried out automatically

AP-5000

pH • ORP • conductivity • TDS • SSG • resistivity • salinity
optical dissolved oxygen • temperature • depth

Use the AP-5000 with Aquatel for medium term fixed monitoring with no self cleaning



Ideal medium term deployment option in environments where self cleaning is not required or regular site visits are planned.

AP-5000

The AP-5000 comes pre-loaded with a selection of sensors:

pH • ORP • conductivity • TDS • SSG • Res • salinity • optical dissolved oxygen
temperature • depth. See back pages for Sensor Specifications.

There are an additional 4 ports allowing you to add more:



All 4 Aux ports can be fitted with either an optical sensor or an ISE from the list below

ISE Electrode Options:

Ammonium,
Ammonia,
Chloride,
Nitrate,
Fluoride,
Calcium.

Optical Electrode Options:

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



AP-5000 Mechanical Specification

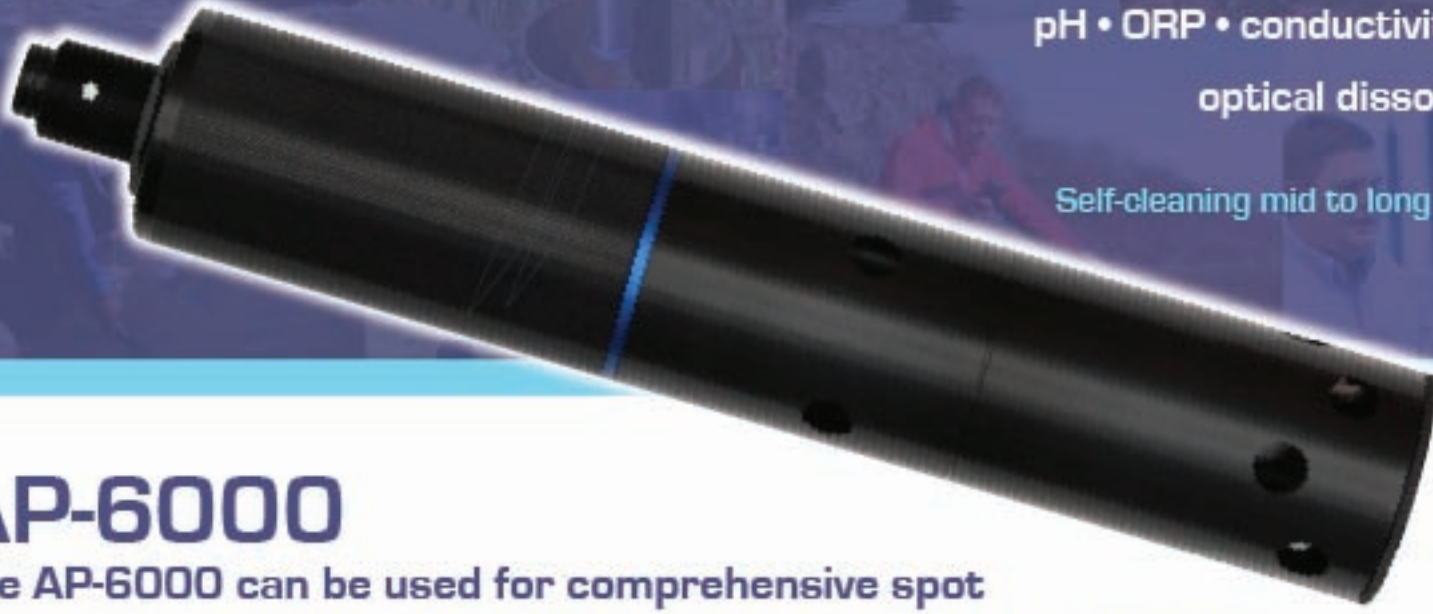
Protection Class	IP68 (permanent immersion)
Immersion Depth	Min 75mm. Max 100m*
Operating Temperature	-5°C - +70°C
Dimensions (L x Dia)	340mm x 58mm
Weight	950g

* 100m submersion for period of 12 hours, 30m submersion suitable for permanent deployment, depth measurement displayed up to 60m on Aquameter.

AP-6000

pH • ORP • conductivity • TDS • SSG • resistivity • salinity
optical dissolved oxygen • temperature • depth

Self-cleaning mid to long term multiparameter water quality probe



AP-6000

The AP-6000 can be used for comprehensive spot monitoring as part of a package or it can be used in permanent deployments thanks to its new, much smaller self cleaning mechanism. It features a diameter of only 55mm (the same size as the AP-5000) making it our smallest self cleaning Aquaprobe to date.

Build

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

Sensors

The AP-6000 comes with the following sensors included:

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

Customise

The AP-6000 comes with four empty Aux sockets pre-fitted with blanking plugs. 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-6000 fitted with 2 ISE sensors and 2 optical sensors

Smaller Self Cleaning



AP-6000 with additional sensors removed exposing central cleaning shaft

The AP-6000's removable self cleaning system fits into the probe body via a central socket.

The small shaft houses a small but powerful motor that allows the two brushes to rotate and clean all fitted sensors, as seen above.

The main advantages of the AP-6000 are its versatility and its price point. The Aquaprobe is small enough to be used portably as part of a package, but it can also be used with an Aqualogger or with telemetry if you require a more permanent monitoring solution.

Cleaning Control

The wiper cleaning frequency can be configured when used with a Blackbox or an Aqualogger giving you control over your cleaning cycle rate



AP-6000

pH • ORP • conductivity • TDS • SSG • resistivity • salinity
optical dissolved oxygen • temperature • depth

Self-cleaning mid to long term multiparameter water quality probe

AP-6000 Flowcell

The flowcell for the AP-6000 uses an adaptor that must first be fitted to the probe under the probe sleeve. A flow rate of 30 Litres/hour is ideal, Recommended operating pressure is 500mB.

This eliminates air contact with pumped samples from groundwater boreholes allowing truly representative measurements to be obtained.



AP-6000 & Telemetry

The AP-6000 is the most cost effective self cleaned Aquaprobe for use with Aquatel. Connect the AP-6000 to Aquatel and it will auto detect the probe type and the fitted additional sensors once they have been assigned with either an Aquameter or Bluelink.

The Aquatel can be set up to run the cleaning cycle to your desired frequency. For example the AP-6000 can run the cleaning cycle every 10 measurements. The more frequently the cleaning is run the bigger the drain on the battery so its important to find the right balance to keep the sensors clean and to prolong battery life.

Every deployment is different, fresh clear running water will require less frequent cleaning than nutrient rich water where biofouling can inhibit the sensors.

AP-6000 Mechanical Specification

Protection Class	IP68 (permanent immersion)
Immersion Depth	Min 75mm. Max 100m*
Operating Temperature	-5 °C - +70 °C
Dimensions (L x Dia)	340mm x 58mm
Weight	950g

* 100m submersion for period of 12 hours, 30m submersion suitable for permanent deployment, depth measurement displayed up to 60m on Aquameter.

AP-PRO

Smart Sensors • pH • ORP • conductivity • TDS • SSG • resistivity
• salinity • optical dissolved oxygen • temperature • 300m depth

Our most advanced self cleaning water monitoring probe

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

Every Aspect of Design Levelled Up

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

AP-PRO

Smart Sensors • pH • ORP • conductivity • TDS • SSG • resistivity
• salinity • optical dissolved oxygen • temperature • 300m depth

Our most advanced self cleaning water monitoring probe



Measurement Chamber as a Calibration Vessel

The measurement chamber can also be used for sensor calibration using the calibration cup that push-fits to the base of the probe. This surrounds and seals the holes and allows the probe to stand upright.

Utilising the measurement chamber in this way reduces the volume of calibration solution required, reducing maintenance costs and improves the quality of the calibration.

Calibration cup seals measurement chamber and allows probe to stand during calibration.

The Perfect Choice for Telemetry

Whilst the AP-PRO is the most advanced portable water quality monitoring probe in the range, it is also a best choice for deployment with the AquaTel telemetry device.

The smart sensors within the AP-PRO allow you to reduce the duration of your site visits if you exchange sensors in the field instead of calibrating them, meaning you can complete more site visits per day.

The measurement chamber, advanced data handling software, automatic self cleaning and smart sensors make the AP-PRO the best choice for remote unmanned data collection.

AquaTel telemetry device



AP-PRO Mechanical Specification

Protection Class	IP68 (permanent immersion)
Immersion Depth	Max 1000ft (300m)
Operating Temperature	-5 °C - +70 °C
Dimensions (L x Dia)	410mm x 70mm
Weight	950g
Power	Aquameter/Blackbox

Telemetry & Bluetooth

Wireless communication options helping to bring your data to you

Aquatel Telemetry

Aquatel is a carbon fibre telemetry device with a long battery life and modem communications. It features a GPS receiver and a barometric pressure sensor for location and compensation.

You can set up the Aquatel remotely using sms commands and request instant readings.

When used with Leveline will provide years of power before battery replacement is required.

Data captured by Aquatel can either be sent to your own FTP site or it can be sent to the Inoview web platform where users can see the location of their device and visualise data.

Inoview Web Platform Features

Inoview can display data from any of our probes or sondes connected to Aquatel. It will allow you to visualise historic data easily in graphical form and pinpoint the location of the equipment on a map.

Easily navigate the user-friendly platform's customisable interface. It offers secure access and data storage, the ability to export customized reports and provides alarm monitoring at a glance via the dashboard.

Bluelink - Bluetooth Module



View live readings on your mobile device and perform sensor calibrations.

BlueLink adaptor will allow you to view probe data on your Apple or Android device from any of our probes connected to a Bluelink.

Use the mobile app to connect directly to the AS-PRO for logging set up, cleaning frequency and data retrieval / sharing

Bluelink features a built in pressure sensor for barometric data compensations



Bluelink mobile app



Telemetry & Bluetooth

Wireless communication options helping to bring your data to you

inoview
by nke



DATA MONITORING DASHBOARD

Real-time visualization



User-friendly platform

Alarm monitoring



Customizable interface

Secure access and data storage



Export customized reports

Fixed Applications

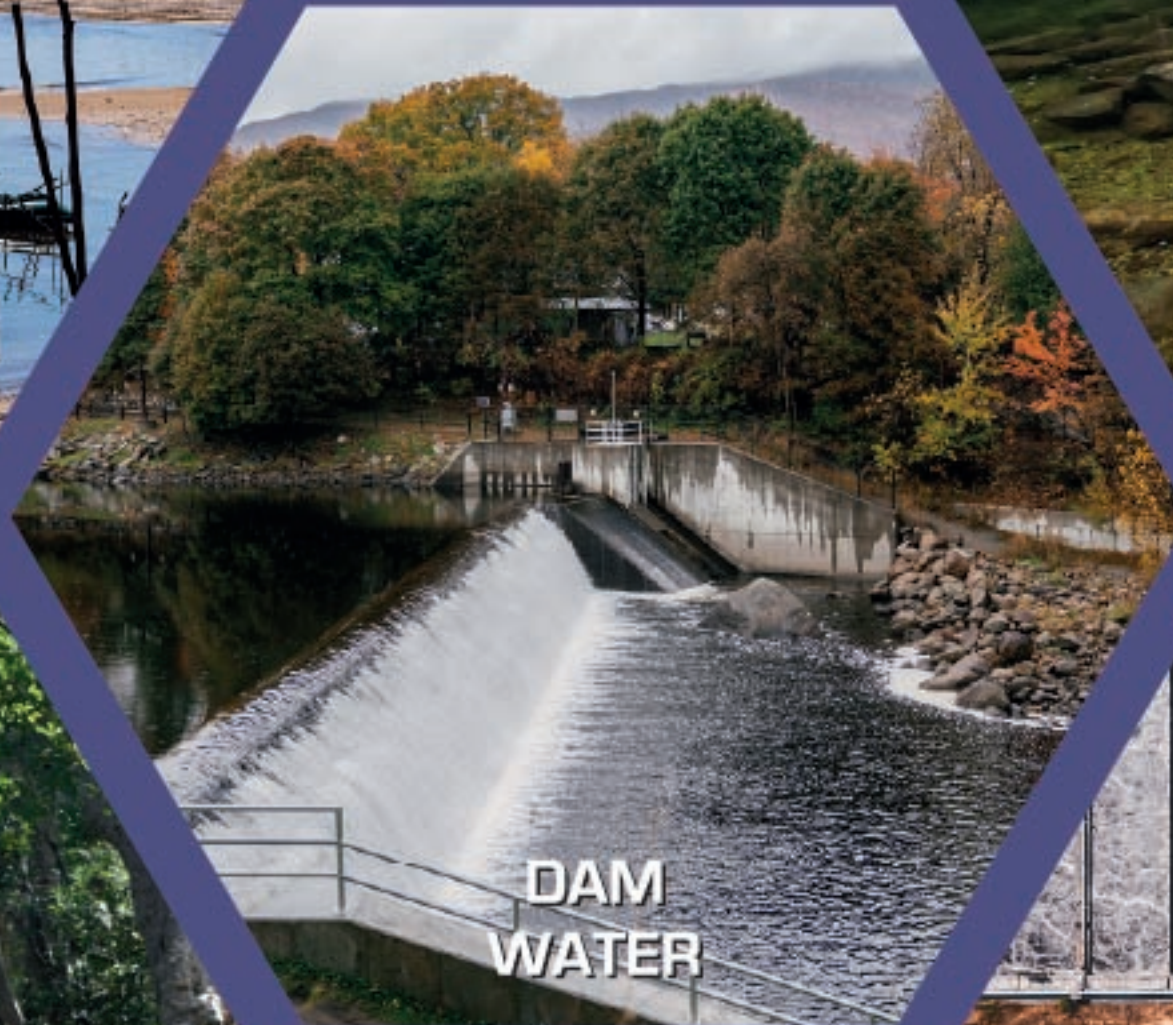
Some examples of fixed applications ideal for the Aquaprobe range



MINING



**SURFACE
WATER**



**DAM
WATER**



**WATER
WASTE**



AQUACULTURE



RIVER



CONSTRUCTION

Specifications

Standard Parameters

Dissolved Oxygen	Range	0 – 500.0% / 0 – 50.00 mg/L
	Resolution	0.1% / 0.01 mg/L
	Accuracy	0 - 200%: ± 1% of reading, 200% - 500%: ± 10%
Depth	Range	0 – 300.00 m
	Resolution	1 cm
	Accuracy	± 0.04% 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 – 200.0 mS/cm
	Accuracy	± 1% of reading
TDS*	Range	0 – 100,000 mg/L (ppm)
	Resolution	2 Auto-range scales: 0 – 9999 mg/L, 10.00 – 100.00 g/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 st
	Resolution	0.1 st
	Accuracy	± 1.0 st
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	± 0.5°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 – 3000 NTU
	Resolution	2 Auto-range scales: 0.0 - 99.9 NTU, 100 - 3000 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) (Naphthalene)
	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.

AQUAREAD

water monitoring instruments

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