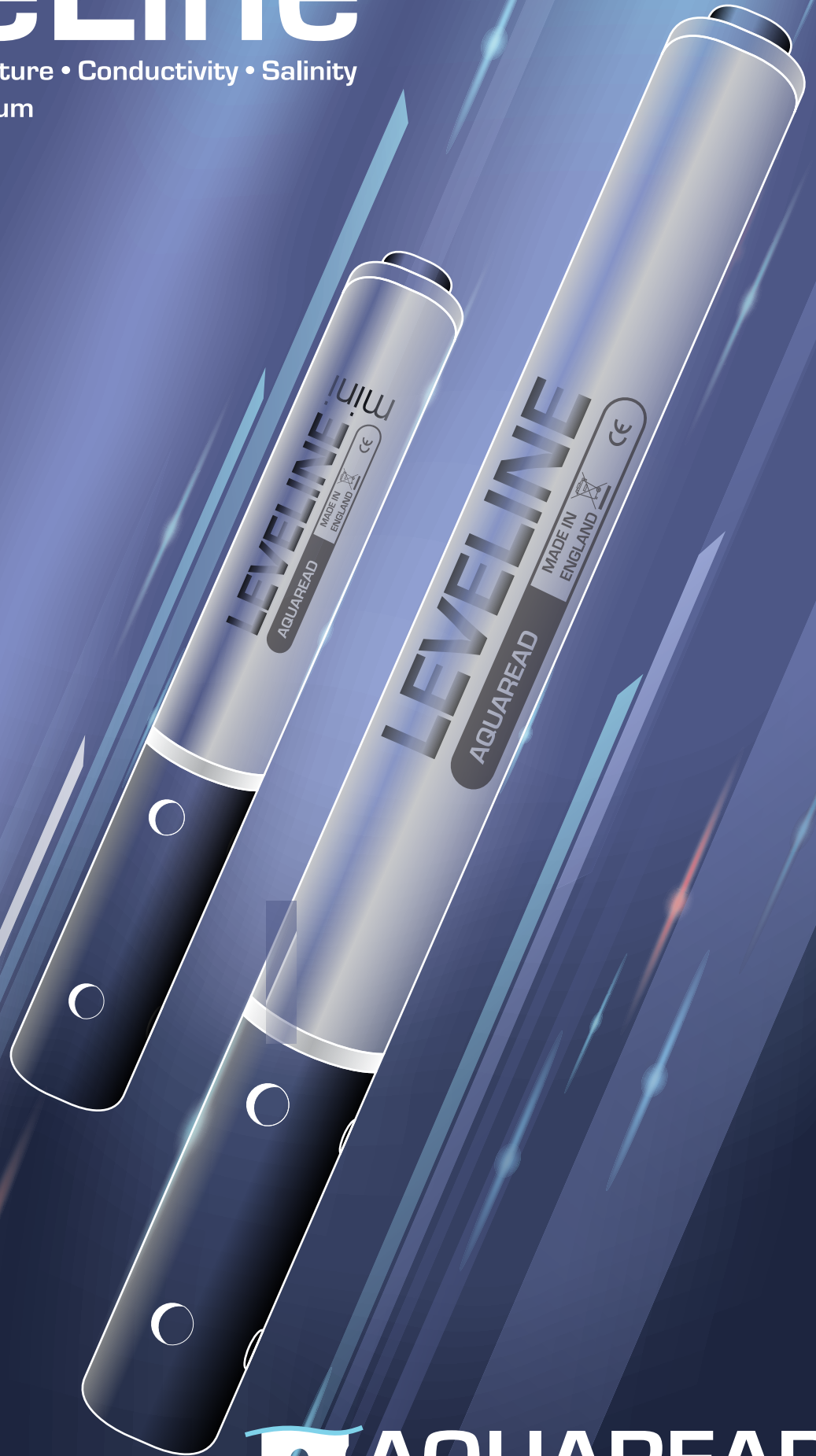


# Leveline

Water Level • Temperature • Conductivity • Salinity  
Full range now in titanium



**AQUAREAD**  
water monitoring instruments

Leveline® - Community Trade Mark Registration No. 011713823

Leveline-CTD® - Community Trade Mark Registration No. 0161873380

# LevelLine Range

10m

20m

50m

100m

**LEVELINE**  
Self contained water level and temperature logger with replaceable battery, down to 100m.

**LEVELINE MINI**  
Water level and temperature SDI-12 sensor, down to 100m.

**LEVELINE CTD**  
For water level conductivity, temperature and salinity, down to 100m.

**LEVELINE MINI CTD**  
For water level conductivity, temperature and salinity, down to 100m.

# LevelLine

Self contained water level and temperature logger with replaceable battery

The LevelLine is a self-contained data-logging device that records water level and temperature continuously during its deployment. It features a highly accurate pressure sensor and a temperature thermistor. Leveline comes with a confident 5 year warranty!

## Discover LevelLine

Explore the LevelLine's key features:

### Set up Options

Use PC or GPS LevelLine Meter  
Planned start date / duration  
Logging rate  
Event trigger levels & rate  
GPS deployment coordinates

### Corrosion Resistant

Rugged titanium body  
for corrosion resistance

### Market Leading Internals

500,000 data set logging memory  
10 recordings per second  
Fastest logging rate

### Tough

Delrin Nose Cone



### High Accuracy

Highly accurate pressure and  
temperature sensors  
Various depth ratings available  
up to 100m

### Comms

USB cable

SDI-12 / Modbus direct output  
QuickDeploy Key to start logger  
GPS LevelLine Meter connection

### Telemetry available



Discreet telemetry system  
available for concealed deployments

### Years of Battery Life

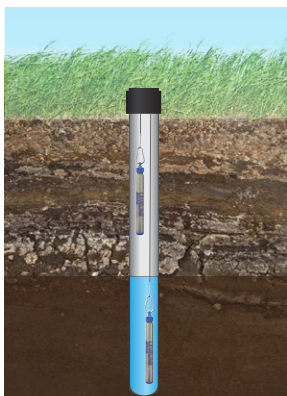
Internal lithium battery for up to 10 years operation  
Battery is replaceable when expired  
Not enough? Then use external 6-24v power supply from  
batteries or solar panel

Capture the water level data as quickly as 10 times per second and store up to 500,000 data records on the instrument's built-in memory. All this technology is neatly sealed within a small, corrosion resistant, titanium housing (22 x 186mm) that can be deployed to measure either absolute pressure (ABS, non vented) or gauge pressure (GAUGE, vented) to depths of up to 100m.

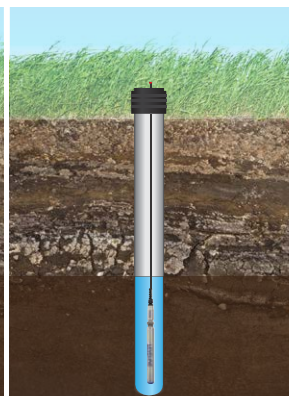
See back pages for Sensor Specifications

## LevelLine Deployment Examples

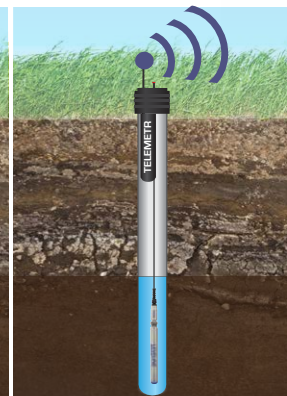
### ABSOLUTE



### GAUGE



### TELEMETRY



### REALTIME



# LevelLine-Mini

Water level and temperature SDI-12 sensor

## LevelLine-Mini

This mini water level and temperature sensor is also 22mm diameter and is made from the same corrosion resistant titanium as the larger LevelLine.

It outputs directly in SDI-12 or Modbus (RS-485) meaning you can connect it to any SDI-12 ready logging device as well as our Aquatel telemetry system. It has no internal power or memory, it's simply a sensor that will send data to your chosen logging device.

The LevelLine-Mini is available as either gauge or absolute versions.

## LevelLine-Mini Features:

- Corrosion resistant titanium body
- Features a Delrin nose cone
- Uses the same Piezoresistive pressure sensor found in the LevelLine for highest accuracy
- Impressive accuracy of 0.05% FS
- Various cable lengths available to suit every deployment
- SDI-12 / Modbus output as standard
- Sensors come with a 2 year warranty



## QuickDeploy Key

### LevelLine & LevelLine-Mini

## Mechanical Specification

	LevelLine (Gauge & Abs)	LevelLine-Mini
Dimensions (L x Dia)	186 x 22mm	87 x 22mm
Material	Titanium	Titanium
Memory and battery	Yes	No
Output options	SDI-12, Modbus, Proprietary	SDI-12, Modbus, Proprietary

# LevelLine-CTD

Water level and temperature logger that incorporates a 4 ring conductivity sensor

One of the questions raised when monitoring water level is, “what is causing the changes that I am recording?” Monitoring the conductivity can give an indication of the source of the water causing the water level to change. This is particularly useful in salt water intrusion studies in coastal regions.



LevelLine-CTD with nose cone fitted

## LevelLine-CTD

The LevelLine-CTD incorporates our tried and tested 4 ring conductivity sensor under the extended nose cone. It includes many of the great features of the original LevelLine such as the titanium body, huge 500,000 data point memory and an internal lithium battery. The built-in conductivity sensor allows the device to calculate salinity automatically.



The LevelLine-CTD is available in both absolute and gauge versions depending on your requirements. In addition to the conductivity measurement, the device also calculates the water's salinity in real time.

The conductivity sensor on the device requires occasional calibration, this can be performed within the LevelLink software or by using the GPS LevelLine Meter. Choose your own single point concentration for calibration, its quick and simple. Leveline-CTD comes with an impressive 5 year warranty!

# LeveLine-Mini-CTD

Water level, temperature, conductivity and salinity SDI-12 sensor

## LeveLine-Mini-CTD



The LeveLine-Mini-CTD adds conductivity and salinity measurements to the small SDI-12 ready sensor. Like the standard LeveLine-Mini, the CTD version is housed in a titanium body making it suitable for deployment in both fresh and salt waters. It also features the same titanium connector as the larger LeveLine loggers. The connector allows the unit to be connected to your PC or to the GPS LeveLine Meter to calibrate the conductivity sensor.

The LeveLine-Mini-CTD is available in both absolute and gauge versions. If your chosen datalogger / telemetry device includes a built-in air pressure sensor, we recommend the absolute version as the logging device can utilise the air pressure reading for compensation. If an air pressure sensor is unavailable then the gauge version is best suited for telemetric logging.

Gauge sensors require vented cables and desiccant cartridges to remove any moisture from the vent to prevent blocking and inaccurate compensation.

## LeveLine-CTD & LeveLine-Mini-CTD

### Mechanical Specification

	LeveLine-CTD	LeveLine-Mini-CTD
Dimensions (L x Dia)	260 x 22 mm	146 x 22mm
Material	Titanium	Titanium
Memory and battery	Yes	No
Output options	SDI-12, Modbus, Proprietary	SDI-12, Modbus, Proprietary

# Data & Communications

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 Inview web platform where users can see the location of their device and visualise data.

## Inview web platform features

Inview can display data from a Leveline-Mini or a Leveline-Mini-CTD. 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.



# LevelLine-EWS

Early flood warning system for the whole community, utilising simple SMS messaging

## Flood Alert System

The LevelLine-EWS system is an automated alert system that will notify you of rising water levels any time of the day or night via SMS, giving you vital time to safeguard any assets that may be at risk from flooding.

## LevelLine-EWS

This cost effective and extremely simple system requires no regular maintenance and no annual subscriptions. The water level sensor measures changes in water level and temperature and the telemetry device will send SMS alerts to up to 50 phone mobile numbers when pre-set alert levels are reached.

You can also send the device an SMS message requesting the current level or configuration settings and receive a reply straight away, meaning you can check the level at any time of the day or night for added peace of mind.



AquaTel telemetry device

## EWS Features

- Low cost of ownership.
- System consists of the AquaTel telemetry unit and the small LevelLine-Mini, suspended on a 10m rugged cable.
- Water level measurements are logged at regular intervals.
- Real time alerts can be sent to a number of contacts stored in the AquaTel's phone book.
- Fully set up the device using simple SMS commands.
- Can provide the whole community with the phone number for the AquaTel so anyone can text the device to get instant level readings.





# LevelLine Accessories

Accessories designed to make your monitoring project simpler

## GPS LevelLine Meter

Embed the LevelLine's GPS Coordinates using the GPS LevelLine Meter

The hand-held GPS LevelLine Meter takes the features of the QuickDeploy key and builds on them:

- Embed the GPS coordinates in the LevelLine's memory as it is deployed, so that it appears as part of the dataset upon retrieval
- Download data from multiple LevelLine loggers
- Full on-site logger set up, data retrieval / storage
- Make deployment changes in the field
- View live level data; ideal for pumping situations
- Measure barometric air pressure and add a salinity value for auto compensation
- View live level, conductivity, salinity and temperature when used with a LevelLine-CTD
- Calibrate the conductivity using a custom calibration value when used with a LevelLine-CTD



See exactly where the LevelLine logger came from, in Google Earth with the completely unique GPS embedding feature

## 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
- Fully customise your Leveline logging settings prior to deployment
- Bluelink features a built in pressure sensor for barometric data compensations
- Upload logged data from your Leveline to your apple or Android device



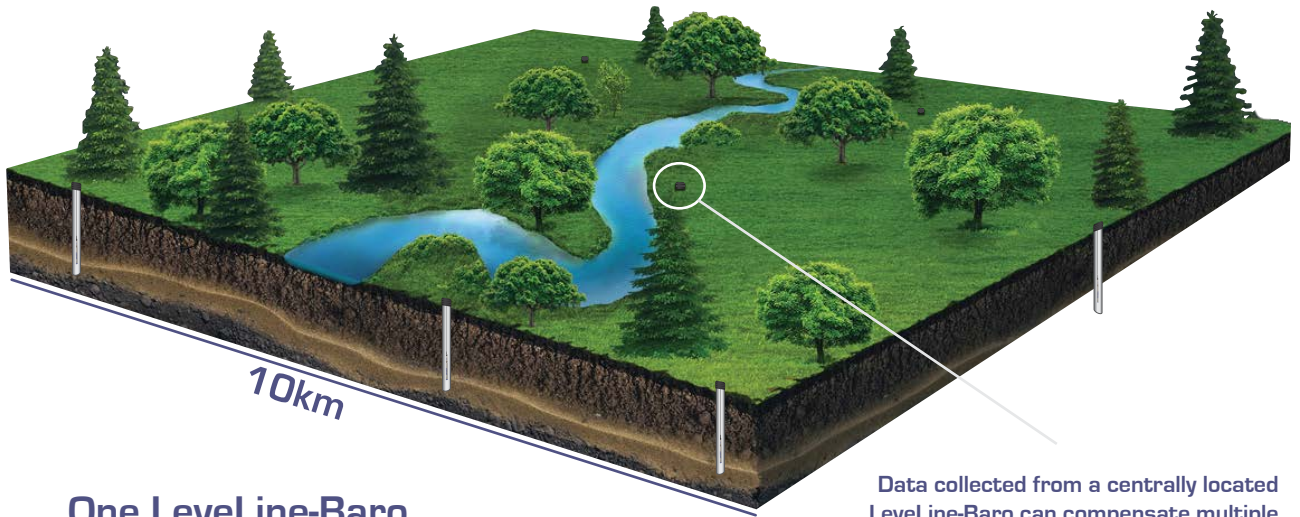
# LevelLine Accessories

Accessories designed to make your monitoring project simpler



## LevelLine-Baro

The LevelLine-Baro is used to capture changes in barometric air pressure that can be used to compensate measurements collected from multiple absolute LevelLine loggers to give highly accurate level data.



One LevelLine-Baro required for a 10km radius

Data collected from a centrally located LevelLine-Baro can compensate multiple absolute LevelLine loggers

## LevelLine Baro

### Mechanical Specification

	LevelLine Baro
Dimensions (L x Dia)	186 x 22mm
Material	Titanium
Memory and battery	Yes
Output options	SDI-12, Modbus, Proprietary

# LevelLine Accessories

Accessories designed to make your monitoring project simpler

## QuickDeploy Key

Simply plug the QuickDeploy key into the logger's connector as the unit is deployed to:



- Zero the depth sensor to measure absolute depth from the start  
*No need for any data correction during the analysis stages after the deployment saving you time and simplifying the analysis process*
- Initiate your pre-programmed logging scheme at the exact instant of deployment and check the battery and memory levels are ok  
*Use the LED indicator as a final sanity check for both battery and memory it could save you from a costly failed deployment*
- Use one deployment key for your whole range of Levelines

## LevelLink PC Software Features

- Set up the logging regime including location ID, logging frequency, start date and duration
- Import and display data from a LevelLine, LevelLine-CTD or GPS LevelLine Meter
- Import and display data from a LevelLine-Baro
- Various compensation options including baro and salinity
- Calibrate the conductivity sensor on the LevelLine-CTD
- Export data as Google Earth file where GPS data is available
- Export data as a spreadsheet for manipulation
- Store and save data sets to your PC



Use the Leveline-PC-KIT usb cable to connect your Leveline to a PC for data download and logger set up

# Leveline Applications

Some examples of Leveline applications



**FLOOD MONITORING**

Give way to oncoming vehicles

Flood

**SEA WATER LEVEL**

**MINING**

**GROUND WATER LEVEL**

# Specifications

		LEVELINE (Abs & Gauge)	LEVELINE - BARO	LEVELINE- MINI	
General	Temperature ranges (non freezing)	Operational: -20-80° C (-4-176° F) Storage: -40-80° C (-40-176° F) Compensated: -20-80° C (-4-176° F)	Operational: -20-80° C (-4-176° F) Storage: -40-80° C (-40-176° F) Compensated: -20-80° C (-4-176° F)	Operational: -20-80° C (-4-176° F) Storage: -40-80° C (-40-176° F) Compensated: -20-80° C (-4-176° F)	
	Diameter	22mm (0.866 in)	22mm (0.866 in)	22mm (0.866 in)	
	Length	186mm (7.32 in)	186mm (7.32 in)	87mm (3.43 in)	
	Weight	150g (5.3oz)	160g (5.6oz)	120g (4.2oz)	
	Materials	Titanium body, Delrin nose cone	Titanium body, Delrin nose cone	Titanium body, Delrin nose cone	
	Output options	Modbus/RS485, SDI-12, Aquaread proprietary	Modbus/RS485, SDI-12, Aquaread proprietary	Modbus/RS485, SDI-12, Aquaread proprietary	
	Battery type & life	3.6V lithium; up to 10 years (see note 1)	3.6V lithium; up to 10 years (see note 1)	N/A	
	External power	6 - 24 VDC	6 - 24 VDC	6 - 24 VDC	
Memory	Size	8.0 MB	2.0 MB	N/A	
	Data Records	500,000	150,000	N/A	
	Log types	Linear, Event & User-Selectable Schedule with Future Start, Future Stop, Deploy Start and Real Time View	Linear, Event & User-Selectable Schedule with Future Start, Future Stop, Deploy Start and Real Time View	N/A	
	Fastest logging rate & Modbus rate	10 per second	1 per minute (logging) 5 per second (Modbus)	10 per second (Modbus Rate)	
	Fastest SDI-12 output rate	1 per second	1 per second	1 per second	
	Real-time clock	Accurate to 1 second/24-hr period (± 6 minutes/year)	Accurate to 1 second/24-hr period (± 6 minutes/year)	N/A	
Pressure Sensor	Type / Material	Piezoresistive; ceramic		Piezoresistive; ceramic	
	Range (Absolute)	10.0m (32.8 ft) 50.0m (164 ft), 20.0m (65.6 ft) 100m (326 ft)	0 to 16.7 psi; 0 to 1.15 bar		10.0m (32.8 ft) 50.0m (164 ft), 20.0m (65.6 ft) 100m (326 ft)
	Range (Gauge)	10.0m (32.8 ft) 50.0m (164 ft), 20.0m (65.6 ft) 100m (326 ft)	N/A		10.0m (32.8 ft) 50.0m (164 ft), 20.0m (65.6 ft) 100m (326 ft)
	Maximum pressure	Max 2x range, Burst 2.5x range		Max 2x range, Burst 2.5x range	Max 2x range, Burst 2.5x range
	Accuracy (FS) ( see note 2)	±0.05% FS		±0.1% FS	±0.05% FS
	Resolution	0.002% FS or 1mm whichever is greater		0.1mb	0.002% FS or 1mm whichever is greater
	Units of measure	Pressure: mbar (psi, kPa, bar, mmHg, inHg, cmH2O, inH2O, Level: in, ft, mm, cm and m available in LeveLink)		Pressure: mbar (psi, kPa, bar, mmHg, inHg, cmH2O and inH2O available in LeveLink)	Pressure: mbar (psi, kPa, bar, mmHg, inHg, cmH2O, inH2O, Level: in, ft, mm, cm and m available in LeveLink)
Temperature Sensor	Accuracy Resolution	±0.1° C 0.01° C	±0.1° C 0.01° C	±0.1° C 0.01° C	
	Output Units	Celsius (fahrenheit available in LeveLink)	Celsius (fahrenheit available in LeveLink)	Celsius (fahrenheit available in LeveLink)	

Notes: 1) Dependent on logging rate. 2) Across factory-calibrated pressure and temperature ranges.

# Specifications

		LevelLine-CTD	LevelLine-Mini-CTD
GENERAL	Temperature ranges	Operational: -20-80° C (-4-176° F) Storage: -40-80° C (-40-176° F) Compensated: -20-80° C (-4-176° F)	Operational: -20-80° C (-4-176° F) Storage: -40-80° C (-40-176° F) Compensated: -20-80° C (-4-176° F)
	Diameter	22mm	22mm
	Length	260mm	146mm
	Weight	250g	210g
	Materials	Titanium body, Delrin nose cone	Titanium body, Delrin nose cone
	Output options	Modbus/RS485, SDI-12, Aquaread proprietary	Modbus/RS485, SDI-12, Aquaread proprietary
	Battery type & life	3.6V lithium; up to 10 years (see note 1)	N/A
	External power	6 - 24 VDC	6 - 24 VDC
MEMORY	Size	8.0 MB	N/A
	Data records	500,000	N/A
	Log types	Linear, Event & User-Selectable Schedule with Future Start, Future Stop, Deploy Start and Real Time View	N/A
	Fastest logging rate & Modbus rate	1 per second	1 per second
	Fastest SDI-12 output rate	1 per second	1 per second
	Real-time clock	Accurate to 1 second/24-hr period (± 6 minutes/year)	N/A
SENSOR	Type / Material	Piezoresistive; ceramic	Piezoresistive; ceramic
	Range (Gauge & Absolute)	10.0M (32.8 ft) 50.0M (164 ft), 20.0M (65.6 ft), 100M (326 ft)	10.0M (32.8 ft) 50.0M (164 ft), 20.0M (65.6 ft), 100M (326 ft)
	Maximum pressure	Max 2x range, Burst 2.5x range	Max 2x range, Burst 2.5x range
	Accuracy (FS) (note 2)	±0.05% FS	±0.05% FS
	Resolution	0.002% FS or 1mm whichever is greater	0.002% FS or 1mm whichever is greater
	Units of measure	Pressure: mbar (psi, kPa, bar, mbar, mmHg, inHg, cmH2O, inH2O, Level: in, ft, mm, cm and m available in LevelLink	Pressure: mbar (psi, kPa, bar, mbar, mmHg, inHg, cmH2O, inH2O, Level: in, ft, mm, cm and m available in LevelLink
Electrical Conductivity	Range	0 - 200mS/cm (0 - 200,000µS/cm)	0 - 200mS/cm (0 - 200,000µS/cm)
	Resolution	1µS	1µS
	Accuracy	± 1% reading or ±1µS whichever is greater (see note 5)	± 1% reading or ±1µS whichever is greater (see note 5)
Salinity (note 4)	Range	0 - 70 PSU / 0 - 70 ppt (g/Kg)	0 - 70 PSU / 0 - 70 ppt (g/Kg)
	Resolution	0.01PSU / 0.01 ppt	0.01PSU / 0.01 ppt
	Accuracy	±1% reading or ± 0.1 unit if greater	±1% reading or ± 0.1 unit if greater
Temperature sensor	Accuracy & resolution	±0.1° C; 0.01° C	±0.1° C; 0.01° C
	Units of measure	Celsius (fahrenheit available in LevelLink)	Celsius (fahrenheit available in LevelLink)
Warranty	Standard	5 years on LevelLine and LevelLine-CTD	2 years on all LevelLine-Mini versions
	Extended	Options Available	Options Available

Notes: 1) Dependent on logging rate. 2) Across factory-calibrated pressure and temperature ranges.

4) Readings calculated from EC and temperature values. 5) At the calibration point at 25°C. Upon request Levelines can be calibrated for 0-5m range.

# A little space for your notes

Jot down the products you are interested in and give us a call to discuss your requirements on +44 (0) 1843 600 030

Notes...

# AQUAREAD

water monitoring instruments

nke  
GROUP



UK  
Aquaread Limited  
Bridge House  
Northdown Industrial Park  
Broadstairs, Kent  
CT10 3JP, UK

Tel : +441843600030  
Email : [info@aquaread.com](mailto:info@aquaread.com)  
web : [www.aquaread.com](http://www.aquaread.com)

France  
nke Instrumentation  
6 rue Gutenberg  
56700  
Hennebont  
France

Tel : +33 (0) 2 97 36 10 12  
Email : [info.instrumentation@nke.com](mailto:info.instrumentation@nke.com)  
Web : [www.nke-instrumentation.com](http://www.nke-instrumentation.com)



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Leveline® - Community Trade Mark Registration No. 011713823  
Aquaprobe® - UK Trade Mark Registration No. 00003000628  
Aquameter® - UK Trade Mark Registration No. 00003000627  
LoggerLink® - UK Trade Mark Registration No. 3081814  
Leveline® - Community Trade Mark Registration No. 011713823  
Leveline-CTD® - Community Trade Mark Registration No. 0161873380