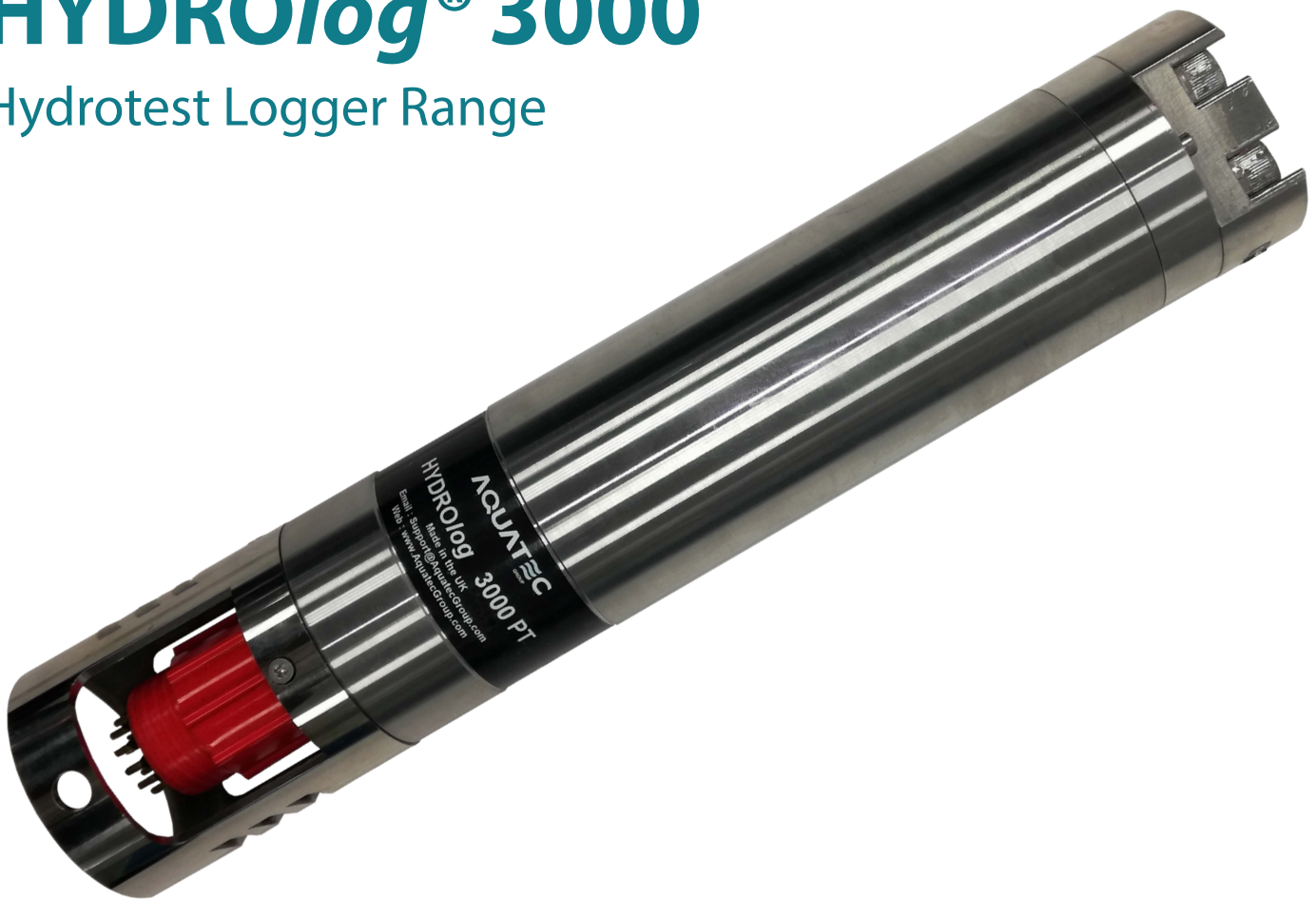# BUYER'S GUIDE

# HYDRO*log*® 3000

## Hydrotest Logger Range

Simply *advanced*

# HYDRO*log* 3000 - simply *advanced*

The HYDRO*log* 3000 instruments form the core of the new HYDRO 3000 range of hydrotest monitoring instrumentation. The loggers are compact, and all measure test pressure to 1000bar and ambient temperature, to depths of up to 4000m. The integral pressure sensor has ±0.05%FS accuracy and ±0.01%FS precision. A variety of models are available, including dual pressure and gauge pressure loggers, as well as loggers to monitor external flow sensors in addition to test pressure.

New features include enhanced memory and faster download, as well as the ability to download data while logging. With increasingly stringent lithium battery shipping regulations, the HYDRO*log* 3000 overcomes potential transit issues by using standard field-replaceable batteries available across the world. Users can choose the type of battery most suitable for each deployment, whether alkaline, lithium or rechargeable.

## KEY FEATURES

### High accuracy and precision pressure (all models)
- ±0.05%FS accuracy, ±0.01%FS precision
- A variety of sensor options available – 300bar, 600bar, 1000bar

### The simple way to monitor flow (flow models)
- Standard instrument monitors one external flow sensor – TTL or sine wave
- Live sensor view via AQUA*talk* when connected
- Multiple flow sensors and pressures can be monitored with the HYDRO*log* 3000F*c* custom range, which utilises Aquatec's innovative smart sensor interface.
- Example custom configuration: 8 flow sensors (measuring flow and concentration) and 3 external pressures

### Flexible deployment
- All instruments log data internally and have real time reporting capability as standard
- Choose your sampling regime with continuous and burst sampling options
- Rated to 4000m, covering typical subsea operations

### Durable and robust
- Manufactured from 316 Stainless Steel, the logger is designed for the rigours of operational use.
- All loggers are fitted with sacrificial anodes to reduce the risk of corrosion on long deployments.
- Connectors and anodes are shielded from knocks and are housed within the 60mm diameter instrument.

### Designed with operational efficiency in mind
- Deployment wizard to allow quick and easy logger set up
- Test data outputs as an industry standard csv file and report
- Easily transportable with alkaline and NiMH battery options
- Faster download via the new optical modem or serial cable

### Hassle-free maintenance
- User-changeable standard AA size batteries available across the world – purchase locally or order direct from Aquatec
- Service and support plans available at time of purchase or at any time during ownership

### Aquatec services
- Custom instruments and accessories – design services for new instruments, customisation and system integration

# Deploying the HYDRO*log* 3000

Deploying your HYDRO*log* 3000 is simple with the new-look and expanded AQUA*talk* software.  There are 4 methods of setting up the instrument, depending on the complexity of your deployment:

## Basic ✔

For straight-forward sampling regimes, the basic mode allows you to set the following variables:

- Date and time
- When to start logging - instant start or at a set date and time
- Continuous sampling
- Sampling frequency

## Advanced ⚙

A wider set of regime variables are available with the advanced mode. In addition to those features above, you can also set the following:

- Triggered logging - use an external trigger to start logging
- NMEA output for real time data
- Burst sampling
- Variable sample rates - sample different channels at different multiples of a base sample rate
- Sample averaging - average the samples and only store the averaged value
- Intermittent logging - select the hours, dates and months you would like to log (e.g. only log data in March and May)

## Re-deploy ⟳

With the click of a button, redeploy the logger using the last stored regime set up.

## Pre-defined 🗋

The pre-defined mode allows to you load a previously saved regime and apply to the next deployment. This mode is ideal for repeat deployments and quick set up in the field.

# Accessing your data - HYDRO*log* 3000

The HYDRO*log* is a flexible instrument with both logging and real time capability. As well as the option to log and access data later, data access subsea is possible through modems and displays.

## Log and access later

The HYDROlog 3000 has internal batteries and memory to allow autonomous deployment and later data download via USB. The logger has an internal memory of 64MB, with upgrades available on request.

## View in real time with a cabled connection

View your data in real time with a cabled connection using the AQUA*talk* software supplied with the instrument.
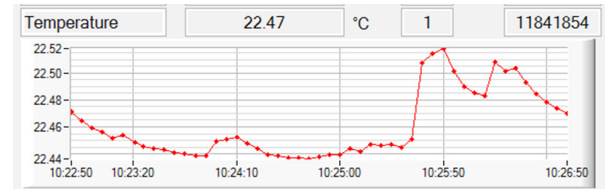
## Access your data subsea

Visualise and transmit your data subsea with Aquatec's modem solutions and display.

### View your data with the AQUA*disp*

- Low power LCD screen
- Displays both figures and graphs
- Displays all active channels including pressure and temperature
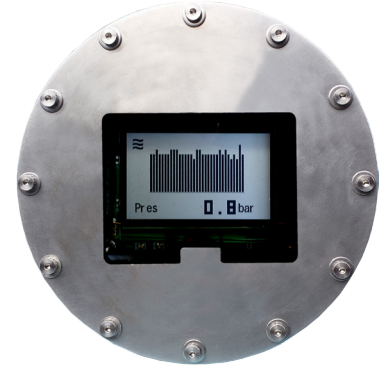
### Download your data with the AQUA*modem* Op2

- Short range interrogation, commanding and data download
- Provides a seamless link between the logger and a PC
- Designed for use with ROVs or by divers
- Range of 1m
- Download while logging and real time view

### Transmit real time readings with the AQUA*modem* 500

- Modem allows transmission of real time readings to an acoustic receiver unit
- Standard range of up to 250m at depths of up to 200m
- Available as a modem system
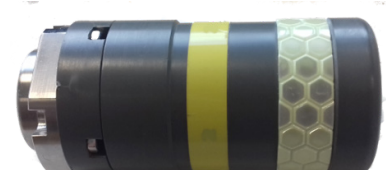
# Selecting your instrument

## Instruments

### Pressure loggers

**HYDRO*log* 3000PT**
Test pressure and ambient temperature
logger
300, 600 or 1000 bar pressure

**HYDRO*log* 3000PPT**
Dual test pressure and ambient
temperature logger
300, 600 or 1000 bar pressure

**HYDRO*log* 3000PgT**
Test pressure, ambient pressure and
ambient temperature logger
300, 600 or 1000 bar pressure

### Flow loggers

**HYDRO*log* 3000F**
Monitors external flow sensor, test
pressure and ambient temperature
logger
300, 600 or 1000 bar pressure

**HYDRO*log* 3000Fc**
Monitors multiple external flow sensors,
test pressure and ambient temperature
logger
300, 600 or 1000 bar pressure

### Deck loggers

**HYDRO*log* 3100PT**
Test pressure and ambient temperature
logger in deck case
300, 600 or 1000 bar pressure

**HYDRO*log* 3100F**
Monitors external flow sensor, test
pressure and ambient temperature logger
in deck case
300, 600 or 1000 bar pressure

All HYDRO*log* 3000 instruments are supplied in a transit case with software, cables, manual, warranty certificate and calibration certificates.

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## Accessories and upgrades

### Memory upgrade

The standard loggers have a memory of 64MB. Memory upgrades are available on request.
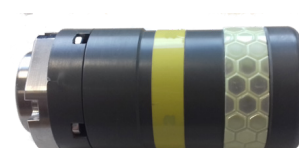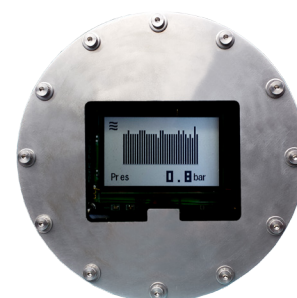
### Toughbook PC

Add a Toughbook PC with pre-loaded software to set up, deploy and download data from your logger.

### Subsea communication

Aquatec's modems and display allow real time transfer and visualisation of data subsea:

- View your data with the AQUA*disp*
- 
- Download your data with the AQUA*modem* Op2

- Transmit real time readings with the AQUA*modem* 500

# HYDRO*log* 3000PT specification

## Sensor Specification

|  | Pressure | Temperature |
|---|---|---|
| **Sensor type** | Piezo-resistive bridge | Thermistor |
| **Ranges** | Absolute: 301, 601, 1001bar | -2 to 35°C standard<br>Other ranges on request |
| **Accuracy** | ±0.05% FS over temperature range* | ±0.1°C |
| **Precision** | ±0.01% FS over temperature range | ±0.1°C |
| **Resolution** | 0.002% FS | 0.001°C |

* Including non-linearity, hysteresis, zero offset and end value deviation (corresponds to measured error per IEC 61298-2).

## Logger Specification

| | |
|---|---|
| **Parameters** | Test pressure, ambient temperature, battery voltage |
| **Data storage capacity** | 64MB in non-volatile FLASH (standard)<br>128MB (Upgrade option 1) - 384MB (Upgrade option 2) |
| **Logging lifetime** | Depends on logging parameters - up to 1 year |
| **Data retention** | >20 years |
| **Sampling** | Burst or continuous |
| **Acquisition rate** | Up to 8Hz depending on sensors |
| **Burst averaging** | Flexible averaging of multiple samples within burst |
| **Communication** | USB and either RS232 or RS422 |
| **External interfaces** | AQUA*disp* subsea display, AQUA*modem* Op2 optical modem |
| **Battery** | 4 x AA cells - selected from alkaline, lithium or NiMH |
| **Software** | AQUA*talk* for Windows for configuration and download |
| **Attachment** | 1/4" NPT, BSP or Autoclave (depending on test pressure) |
| **Maximum depth** | 4000m |
| **Material** | 316 Stainless Steel, with sacrificial anode |
| **Weight** | <5kg in air |
| **Dimensions** | Diameter - 60mm, Length - 335mm |

## Models

| | |
|---|---|
| **HYDRO*log* 3000PT** | Test pressure and ambient temperature |
| **HYDRO*log* 3000P*g*T** | Test pressure, ambient pressure and ambient temperature (external probe) |
| **HYDRO*log* 3000PPT** | 2 test pressures and ambient temperature |
| **HYDRO*log* 3100PT** | Surface housing - test pressure and ambient temperature |

# HYDRO*log* 3000F specification

## Sensor Specification

| Flow sensor type | 5V TTL or Sine wave types |
|---|---|

| Sensor type | Piezo-resistive bridge | Thermistor |
|---|---|---|
| Ranges | Absolute: 301, 601, 1001bar | -2 to 35°C standard<br>Other ranges on request |
| Accuracy | ±0.05% FS over temperature range* | ±0.1°C |
| Precision | ±0.01% FS over temperature range | ±0.1°C |
| Resolution | 0.002% FS | 0.001°C |

\* Including non-linearity, hysteresis, zero offset and end value deviation (corresponds to measured error per IEC 61298-2).

## Logger Specification

| Parameters | Pressure, temperature, battery voltage, flow rate, flowed total volume, concentration (on custom version) |
|---|---|
| Data storage capacity | 64MB in non-volatile FLASH (standard)<br>Up to 2GB (upgrade) |
| Logging lifetime | Depends on logging parameters - up to 1 year |
| Data retention | >20 years |
| Sampling | Burst or continuous |
| Acquisition rate | Up to 8Hz depending on sensors |
| Burst averaging | Flexible averaging of multiple samples within burst |
| Communication | USB and either RS232 or RS422 |
| External interfaces | AQUA*disp* subsea display, AQUA*modem* Op2 optical modem |
| Battery | 4 x AA cells - selected from alkaline, lithium or NiMH |
| Software | AQUA*talk* for Windows for configuration and download |
| Attachment | 1/4" NPT, BSP or Autoclave (depending on test pressure) |
| Maximum depth | 4000m |
| Material | 316 Stainless Steel, with sacrificial anode |
| Weight | <5kg in air |
| Dimensions | Diameter - 60mm, Length - 335mm |

## Models

| HYDRO*log* 3000F | External flow sensor, test pressure and ambient temperature |
|---|---|
| HYDRO*log* 3000F*c* | Multiple flow channels, test pressure, ambient pressure and ambient temperature |
| HYDRO*log* 3100F | Surface housing - external flow sensor, test pressure and ambient temperature |

# Aquatec services for HYDRO*log* 3000

## Systems integration

Aquatec's system integration services can help you if you are looking for real time data with subsea communication, integration of additional parameters or instruments, or custom frames and manifolds for ease of deployment.
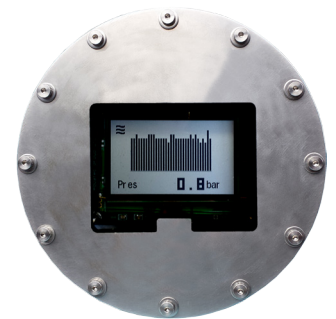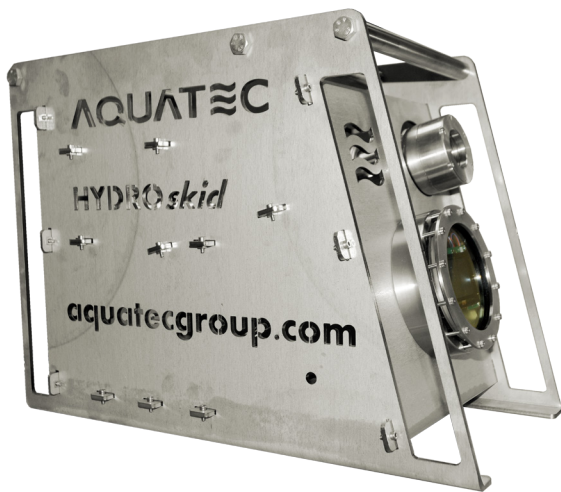
## Service and calibration

Aquatec recommend recalibrating your instruments to ensure they continue to deliver reliable and accurate results.

Multi-instrument and multi-year plans available on request.

## Custom instruments and accessories

Aquatec has been developing and manufacturing subsea instrumentation since 1990, and has a well-established and diverse range of products. Building upon this knowledge and product base, Aquatec offers an instrument design service for those requiring project / application specific instruments and accessories or new instrumentation that is not available as an 'off-the-shelf' product.

Instrumentation design
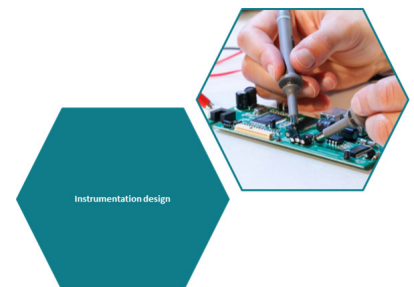
# AQUATEC
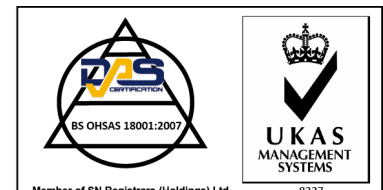## GROUP

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## Simply *advanced*