

# QL40 Ocean Multiparameter water quality probe

The QL40 OCEAN sub combines the multi-parameter sensor unit manufactured by IDRONAUT Srl and the Quick Link electronic interface. This water quality probe is specifically designed for groundwater and borehole investigations. It uses reliable, accurate and drift free high quality sensors and records a continuous profile of the borehole fluid properties.

As a standard configuration, the QL40 OCEAN is equipped with six sensors measuring different parameters including for example pressure, temperature, fluid conductivity, pH, dissolved oxygen and reduction-oxidation potential (Redox). The probe can be customized upon request with up to seven sensors from a list of additional ION selective sensors (Nitrate, Ammonia, Chloride,...).

In operation the user can define the conductivity range for fresh or sea water environment and configure the tool processor for computing fundamental properties as:

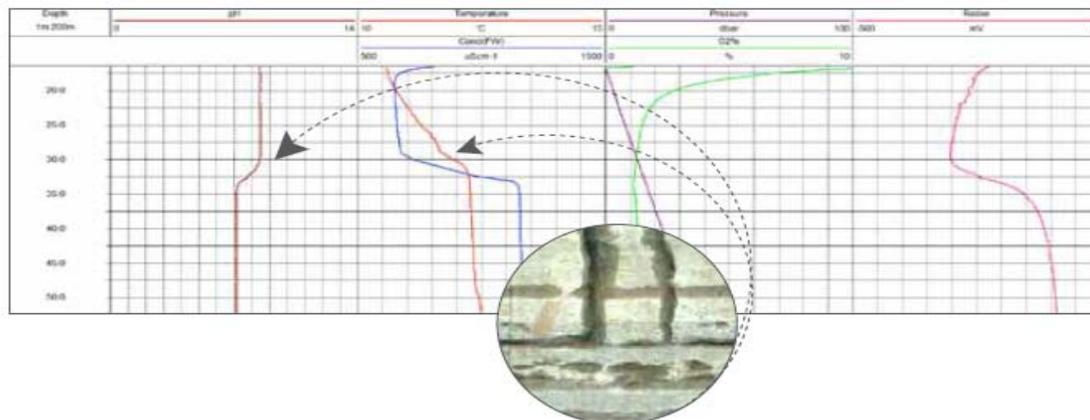
- Conductivity corrected at 20°C and at 25°C.
- Fluid density
- Salinity
- Speed of sound
- O<sub>2</sub> saturation in ppm

The QL40-OCEAN is supplied as a bottom sub. It can be combined with other logging tools of the QL (Quick Link) product line or can be operated as a standalone tool. It is compatible with the Matrix acquisition system.



## Application

- Sea water and fresh water properties
- Salt water intrusion
- Groundwater flows in open/cased hole
- Location of water intervals of different quality
- Location of aquifers
- Water-well monitoring
- Geothermal gradient logging



# QL40 Ocean Multiparameter water quality probe

## Principle of measurement

The QL40 OCEAN probe combines the multi - parameter sensor unit manufactured by Idronaut and the Quick Link electronic interface that enables the probe to be run with the Matrix surface system.

The system converts raw data sent by the sensors into a calibrated data with their corresponding units using either factory calibration coefficients stored in the tool memory or those defined by the user.

## Operating conditions

- Open or cased borehole
- Water filled borehole
- Centralizer recommended
- Always run downwards as the first log in order to minimize the fluid disturbance.
- Compatible with the Matrix system.
- Can be combined with other QL subs

## Technical Specifications

- Diameter : 43mm.
- Length : 1.41 m
- Measurement point: 0.15m (from bottom)
- Weight : 5.45 kg
- Maximum Temperature: 50°C.
- Maximum Pressure: 150bar

## Measurements sensors

The standard probe can be equipped with sensors to measure the following parameters:

Sensor	Parameter	Range	Accuracy	Resolution	Time cst	
Sensor	Pressure	0..1000 dbar <sup>(1)</sup>	0.05 %F.S.	0.0015% F.S.	50 ms	
	Temperature	1...+50°C	0.005 °C	0.001 °C	50 ms	
	Conductivity	Salt water	0..70 mS/cm	0.007 mS/cm	1.1 mS/cm	50 ms <sup>(1)</sup>
		Fresh water	0.. 7000 µS/cm	5 µS/cm	0.1 µS/cm	50 ms
	Oxygen		0..50 ppm	1.1 ppm	1.1 ppm	3s <sup>(1)</sup>
			0..500 %sat.	1.2 1 %sat.	1.2 0.1 %sat.	3s <sup>(2)</sup>
	pH	0.. 14 pH	0.01 pH	0.001 pH	3s	
	Redox	+/- 1000mV	1 mV	0.1 mV	3s	

<sup>(1)</sup> At 1m/sec flow rate

<sup>(2)</sup> From nitrogen to air

<sup>(3)</sup> Other standard pressure transducers available: 100, 200, 500, 2000 dbar

Optional sensors or ION selective sensors are available upon request

Specifications subject to change without notice

