

# GROUNDWATER IS OUR BUSINESS



# Baro-Diver

## Multi-Deployable

The Baro-Diver ensures that you accurately capture changes in atmospheric pressure. Conveniently priced and easy to adjust, one Baro-Diver covers a radius of up to 15 km, depending on the topography.

The Baro-Diver can also be used for measuring shallow water levels up to approximately 0.9 meter.

The Baro-Diver has an internal memory capable of storing 24,000 measurements per parameter. For each measurement, the Baro-Diver simultaneously registers barometric pressure, air temperature, date and time.

## Technical Specification

Length	90 mm
Diameter	22 mm
Weight	55 grams
Memory	24,000 measurements
Wetted parts	
housing	stainless steel 316L
o-rings	Viton ®
pressure sensor	piezoresistive ceramic
cap / nose cone	Nylon PA6 30% glass fiber
Battery life	10 years (dependant on usage)
Sample interval	½ second to 99 hours
Sample methods	fixed

## Temperature

Range	-20 to 80 °C
Calibrated	-10 to 50 °C
Accuracy*	0.1 °C
Resolution	0.01 °C

## Pressure

<b>Part number</b>	<b>DI 500</b>
Range	1.5 mH <sub>2</sub> O
Accuracy*	± 0.5 cmH <sub>2</sub> O
Resolution	0.2 cmH <sub>2</sub> O

\*typical accuracy



- **Atmospheric pressure**
- **Wetlands monitoring**
- **Flood management**

# Mini-Diver

## Cost-Effective

The Mini-Diver is based on an ingenious and proven concept and is acknowledged as the most reliable instrument for the autonomous measuring and recording of groundwater level and temperature.

Its internal memory of 24,000 measurements per parameter provides sufficient capacity to perform nearly one measurement every ten minutes for six months.

For each measurement, the Diver registers the date and time, groundwater level, and temperature.

## Technical Specification

Length	90 mm
Diameter	22 mm
Weight	55 grams
Memory	24,000 measurements
Wetted parts	
housing	stainless steel 316L
o-rings	Viton ®
pressure sensor	piezoresistive ceramic
cap / nose cone	Nylon PA6 30% glass fiber
Battery life	10 years (dependant on usage)
Sample interval	½ second to 99 hours
Sample methods	fixed

## Temperature

Range	-20 to 80 °C
Calibrated	0 to 50 °C
Accuracy*	0.1 °C
Resolution	0.01 °C

## Pressure

Part number	DI 501	DI 502	DI 505	DI 510
Range	10	20	50	100 mH <sub>2</sub> O
Accuracy*	±0.5	± 1.0	± 2.5	± 5.0 cmH <sub>2</sub> O
Resolution	0.2	0.4	1.0	2.0 cmH <sub>2</sub> O

\*typical accuracy





- Long-term groundwater monitoring
- Watershed and recharge area monitoring
- Storm water discharge

# Micro-Diver

## Compact Size

Measuring only 88 mm in length and 18 mm in diameter, the Micro-Diver is the smallest Diver capable of accurately recording groundwater levels and temperature.

The Micro-Diver is specifically designed for monitoring wells or drive-points too small to accommodate larger dataloggers.

In addition to its compact size, the Micro-Diver's memory capacity can store up to 48,000 measurements per parameter - almost one measurement every ten minutes for an entire year.

## Technical Specification

Length	88 mm
Diameter	18 mm
Weight	45 grams
Memory	48,000 measurements
Wetted parts	
housing	stainless steel 316L
o-rings	Viton ®
pressure sensor	piezoresistive ceramic
cap / nose cone	Nylon PA6 30% glass fiber
Battery life	10 years (dependant on usage)
Sample interval	½ second to 99 hours
Sample methods	fixed, event dependent, averaging, and pumping test

## Temperature

Range	-20 to 80 °C
Calibrated	0 to 50 °C
Accuracy*	0.1 °C
Resolution	0.01 °C

## Pressure

Part number	DI 601	DI 602	DI 605	DI 610
Range	10	20	50	100 mH <sub>2</sub> O
Accuracy*	±1.0	±2.0	±5.0	±10.0 cmH <sub>2</sub> O
Resolution	0.2	0.4	1.0	2.0 cmH <sub>2</sub> O

\*typical accuracy



- **Engineering and construction**
- **Shallow water monitoring**
- **Aquifer characterization**

# Cera-Diver

## Corrosion Proof

Monitoring groundwater under potentially corrosive conditions, such as brackish water and seawater, requires a robust and durable datalogger.

The ceramic-shelled Cera-Diver is designed specifically for such environments. This highly reliable and compact Diver measures groundwater levels with a typical accuracy of  $\pm 0.05\%$  full scale.

The Cera-Diver is equipped with a memory for 48,000 measurements per parameter.

## Technical Specification

Length	90 mm
Diameter	22 mm
Weight	50 grams
Memory	48,000 measurements
Wetted parts	
housing	ceramic (ZrO <sub>2</sub> )
o-rings	Viton ®
pressure sensor	piezoresistive ceramic
cap / nose cone	Nylon PA6 30% glass fiber
Battery life	10 years (dependant on usage)
Sample interval	½ second to 99 hours
Sample methods	fixed, event dependent, averaging, and pumping test

## Temperature

Range	-20 to 80 °C
Calibrated	0 to 50 °C
Accuracy*	0.1 °C
Resolution	0.01 °C

## Pressure

Part number	DI 701	DI 702	DI 705	DI 710
Range	10	20	50	100 mH <sub>2</sub> O
Accuracy*	$\pm 0.5$	$\pm 1.0$	$\pm 2.5$	$\pm 5.0$ cmH <sub>2</sub> O
Resolution	0.2	0.4	1.0	2.0 cmH <sub>2</sub> O

\*typical accuracy





- **Estuary monitoring**
- **Heap leach**
- **Underground plume monitoring**

# CTD-Diver

## 3 Parameters in 1 Housing

Where there is a need to monitor groundwater levels and saltwater intrusion, injected wastewater, or contamination from chemical discharges and landfill sites, the CTD-Diver with its rugged, corrosion proof ceramic housing, is the instrument of choice.

The CTD-Diver is equipped with a four-electrode conductivity sensor that measures electrical conductivity from 0 to 120 mS/cm. There are two options for measuring conductivity: true or specific conductivity at 25 °C. Additionally, pressure and temperature are measured and recorded.

## Technical Specification

Length	135 mm
Diameter	22 mm
Weight	95 grams
Memory	48,000 measurements
Wetted parts	
housing	ceramic (ZrO <sub>2</sub> )
conductivity sensor housing	ceramic (ZrO <sub>2</sub> )
conductivity sensor	platinum electrodes on ceramic (Al <sub>2</sub> O <sub>3</sub> ) carrier
o-rings	Viton®
pressure sensor	piezoresistive ceramic
cap / nose cone	Nylon PA6 30% glass fiber
Battery life	10 years (dependant on usage)
Sample interval	1 second to 99 hours
Sample methods	fixed, event dependent, averaging, and pumping test

## Temperature

Range	-20 to 80	°C
Calibrated	0 to 50	°C
Accuracy*	± 0.1	°C
Resolution	0.01	°C

## Pressure

Part number	DI 271	DI 272	DI 273	
Range	10	50	100	mH <sub>2</sub> O
Accuracy*	± 0.5	± 2.5	± 5.0	cmH <sub>2</sub> O
Resolution	0.2	1.0	2.0	cmH <sub>2</sub> O

\*typical accuracy



- **Mine tailings**
- **Pollution monitoring**
- **Water quality monitoring**

# SMART MONITORING TECHNOLOGY

- **Urban water management**
- **Water resources management**
- **Mining**
- **Surface water**
- **Remediation**

## **Van Essen Instruments**

offers a complete portfolio with regards to technology as well as advice in the field of groundwater monitoring networks. Reliable and accurate sensors are being combined with the latest developments in the field of wireless communication and data visualization. Van Essen Instruments not only offers high-quality groundwater data but also solutions to manage a groundwater monitoring network more effective and efficient.

[www.vanessen.com](http://www.vanessen.com)

## **Diver-Suite**

Diver-Suite from Van Essen Instruments provides a robust line of Diver dataloggers for groundwater and environmental professionals. The Diver dataloggers accurately measure and record fluctuations in groundwater levels, temperature and conductivity.

## **Suitable for Any Environment**

From the technologically advanced Micro-Diver to the corrosion resistant CTD-Diver, Diver dataloggers are hermetically sealed to external influences. Electrical and/or environmental effects cannot affect the measurement results. With an extended battery life up to 10 years, this translates to long-term uninterrupted service.

Divers can be used from 300 meters below to 5,000 meters above sea level without the need to reprogram the datalogger. All Divers operate from -20 to 80 °C.

## **Accurate Measurements**

Divers monitor groundwater pressure with a typical accuracy of  $\pm 0.05\%$  full scale range from 0 to 50 °C. The CTD-Diver is equipped with a four-electrode sensor for recording conductivity with an accuracy of  $\pm 1\%$  of reading.

