

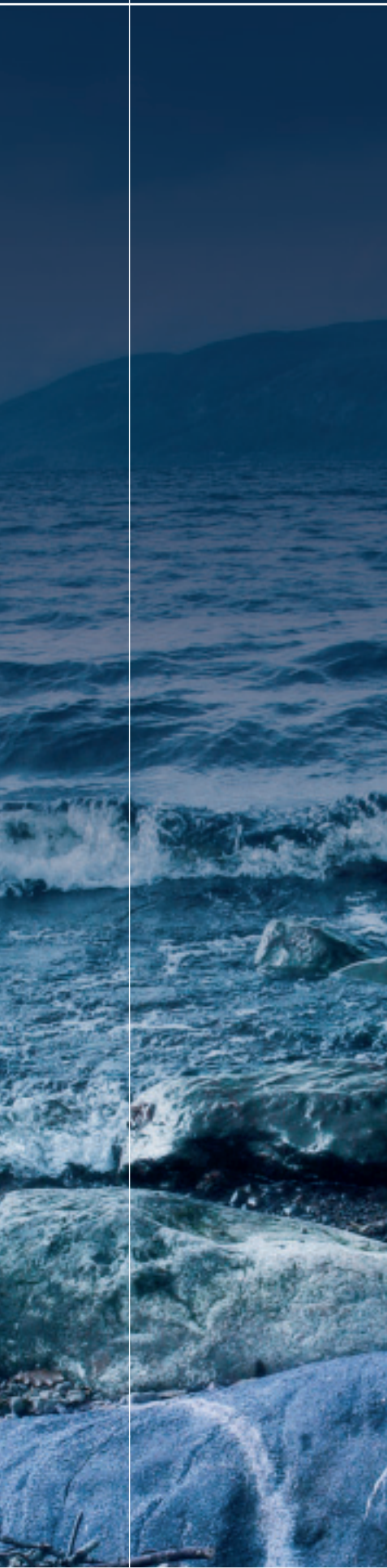


# Diver

*for groundwater level measurements*



All it takes for  
environmental research



*We cannot live without water. It is a worn-out phrase but that does not make it less true. Not only will it be hard for human beings to stay alive, but most crop and animals will not keep up long either.*

*Millions of people have no access to clean drinking-water, but besides a shortage of water, a surplus of water will cause problems as well, like for example the serious floods in eastern Europe in 2005. To thoroughly make use of all possibilities that water offers, water will have to be managed. That concerns both a dry area in Africa as well as a relatively wet country, such as the Netherlands.*

*To interfere in the water-balance of a certain area, full knowledge is necessary. A small change can have immense consequences. Reliable and frequent measuring of the groundwater situation is the foundation. Diver is the ideal instrument for this purpose!*

## Diver groundwater data loggers

The Diver is the smallest instrument in the world for automatic measurement and registration of groundwater levels and ground water temperatures; the CTD-Diver also measures conductivity.

The Diver fits in the palm of your hand and is remarkably light. With its length of only 90 mm (183 mm for the CTD-Diver) and a diameter of 22 mm (18 mm for the MicroDiver), the Diver can be used in virtually any monitoring well.

## Sound and reliable

The pressure sensor, temperature sensor, the conductivity sensor, as well as the data logger and battery are contained within a hermetically sealed stainless steel or ceramic housing. This ensures that the Diver is less sensitive to moisture or external electrical influences (Faraday cage). The Diver can be installed in the monitoring well simply suspended from a steel wire.

Once installed, no part of the monitoring system is left protruding above ground level, greatly reducing the risk of vandalism.

The Diver can now automatically measure the groundwater level and temperature and register these data in the internal memory. The built-in battery has a life of approximately 8-10 years.

## Programming

Programming the Diver, either in the field or in the office, is a matter of just a few seconds. Simply enter the location, (future) starting time, sample rate and select either a fixed measuring frequency, a fixed set-up or an event-related frequency.

The Diver is available in various designs:

The **MiniDiver®**: stainless steel housing and ceramic pressure sensor, diameter 22 mm, length 90 mm, available in various measuring ranges, memory capacity 24,000 measurements.

The **MicroDiver®**: stainless steel housing and ceramic pressure sensor, diameter 18 mm, length 90 mm, available in various measuring ranges, memory capacity 48,000 measurements.

The **CeraDiver®**: ceramic housing and ceramic pressure sensor, diameter 22 mm, length 90 mm, available in various measuring ranges, memory capacity 48,000 measurements.

The **CTD-Diver** has a ceramic housing, ceramic pressure sensor and platinum/ceramic conductivity sensor (measuring range 0 - 80 mS/cm), diameter 22 mm, length 183 mm, available in various measuring ranges, memory capacity 16,000 measurements.





The **CTD-Diver** is a compact instrument that allows you to measure the ground water level, ground water temperature and conductivity of the ground water all in one. Where monitoring ground water, especially where it concerns decontamination of polluted soil, the monitoring of rubbish dumps and the detection of salination, once used to be a labour-intensive and troublesome job, the arrival of the CTD-Diver has changed all that.



The **Baro-Diver** has the function to register barometric pressure. Compensation for these atmospheric pressure variations is subsequently carried out simply and easily with the use of the Logger Data Manager (LDM) software program.

### Reading Diver data

There are different options to install Divers in the field or to read out Diver data in the field or the office environment:

If the Diver is installed in the borehole with use of a standard stainless steel or Vectran cable, the Diver has to be removed from the borehole to read out the data. The Diver is connected to the computer using a special reading unit.

Next to the standard stainless steel cable used to install a Diver in a borehole, the Diver Data Cable is the other option. With this cable the Diver can be connected to the top of the borehole. This allows reading out the Divers' memory changes without removing the Diver from the well. Diver Data Cables are available in standard lengths for attachment to any Diver type, even up to 200 length. To connect a laptop PC or the Pocket PC to the wellhead, a 1.5 m interface cable is quickly attached. This allows downloading and / or programming in the field.

The Pocket PC software is designed to reduce field time and the software is developed for use on a pocket PC and to download logged data or view readings from any Diver model. The system can then be transported back to the office for data transfer to a PC.

The small device makes data collection easier than ever and avoids the need to take an expensive computer, hand-held PC or laptop into the field. The system can be used for Divers installed with a Diver Data Cable (DDC) but also with Divers suspended by a stainless steel cable. For this last option, the Diver has to be removed from the borehole and placed into the reading unit.

All members of the Diver family have a warranty of 3 years and can be used as an e+ sensor in the e-SENSE system.



# Technical specifications

## MiniDiver®

<b>Measuring frequency*</b>	: 0.5 sec until 99 hour
<b>Memory capacity</b>	: 24,000 measurements (non-volatile)
<b>Material housing</b>	: Anti-corrosive steel 316L
<b>Material pressure sensor</b>	: Ceramic (Al <sub>2</sub> O <sub>3</sub> )
<b>Temperature range</b>	: -20 °C until 80 °C
• <b>accuracy</b>	: ± 0.1 °C
• <b>resolution</b>	: 0.01 °C
• <b>compensated range</b>	: 0 °C tot 40 °C
<b>Power supply service life</b>	: 8-10 year (dependent of use)
<b>Dimensions</b>	: Ø 22 mm x 90 mm
<b>Weight</b>	: 70 grams

Type	11.11.01.02	11.11.01.04	11.11.01.06	11.11.01.08
Measuring range	10mH <sub>2</sub> O	20mH <sub>2</sub> O	50mH <sub>2</sub> O	100mH <sub>2</sub> O
• accuracy**	± 0.05% FS***	± 0.05% FS	± 0.05% FS	± 0.05% FS
• resolution	0.2 cmH <sub>2</sub> O	0.4 cmH <sub>2</sub> O	1 cmH <sub>2</sub> O	2 cmH <sub>2</sub> O

Type	11.11.55.01
Measuring range	1,5 m H <sub>2</sub> O
• accuracy**	± 0.3% FS
• resolution	0.1 cmH <sub>2</sub> O

\*\*\*) Within temperature compensated range

\*\*\*) Full Scale

## MicroDiver®

<b>Measuring frequency*</b>	: 0.5 sec tot 99 hour
<b>Memory capacity</b>	: 48,000 measurements (non-volatile)
<b>Material housing</b>	: Anti-corrosive steel 316L
<b>Material pressure sensor</b>	: Ceramic (Al <sub>2</sub> O <sub>3</sub> )
<b>Temperature reach</b>	: -20 °C until 80 °C
• <b>accuracy</b>	: ± 0.1 °C
• <b>resolution</b>	: 0.01 °C
• <b>compensated range</b>	: 0 °C until 40 °C
<b>Power supply service life</b>	: 8-10 year (dependent of use)
<b>Dimensions</b>	: Ø 18 mm x 90 mm
<b>Weight</b>	: 60 grams

Type	11.11.02.02	11.11.02.04	11.11.02.06	11.11.02.08
Measuring range	10 mH <sub>2</sub> O	20 mH <sub>2</sub> O	50 mH <sub>2</sub> O	100 mH <sub>2</sub> O
• accuracy**	± 0.05% FS***	± 0.05% FS	± 0.05% FS	± 0.05% FS
• resolution	0.2 cmH <sub>2</sub> O	0.4 cmH <sub>2</sub> O	1 cmH <sub>2</sub> O	2 cmH <sub>2</sub> O

Type	11.11.55.01
Measuring range	1.5 m H <sub>2</sub> O
• accuracy **	± 0.3% FS
• resolution	0.1 cmH <sub>2</sub> O

\*) Various measuring methods available (steady, variety dependent, averages and pump tests)

\*\*\*) Within temperature compensated range

\*\*\*) Full Scale

MiniDiver®



MicroDiver®





CeraDiver®

## Technical specifications

### CeraDiver®

<b>Measuring frequency *</b>	: 0.5 sec until 99 hour
<b>Memory capacity</b>	: 48,000 measurements (non-volatile)
<b>Material housing</b>	: ceramic (ZrO <sub>2</sub> )
<b>Material pressure sensor</b>	: ceramic (Al <sub>2</sub> O <sub>3</sub> )
<b>Temperature reach</b>	: -20 °C until 80 °C
• <b>accuracy</b>	: ± 0.1 °C
• <b>resolution</b>	: 0.01 °C
• <b>compensated range</b>	: 0 °C tot 40 °C
<b>Power supply service life</b>	: 8-10 year (dependent of use)
<b>Dimensions</b>	: Ø 22 mm x 90 mm
<b>Weight</b>	: 55 grams

Type	11.11.03.02	11.11.03.04	11.11.03.06	11.11.03.08
Measuring range	10 mH <sub>2</sub> O	20 mH <sub>2</sub> O	50 mH <sub>2</sub> O	100 mH <sub>2</sub> O
• accuracy**	± 0.05% FS***	± 0.05% FS	± 0.05% FS	± 0.05% FS
• resolution	0.2 cmH <sub>2</sub> O	0.4 cmH <sub>2</sub> O	1 cmH <sub>2</sub> O	2 cmH <sub>2</sub> O
<b>Type</b>	<b>11.11.55.01</b>			
Measuring range	1.5 m H <sub>2</sub> O			
• accuracy**	± 0,3% FS			
• resolution	0.1 cmH <sub>2</sub> O			

\*) Various measuring methods available (steady, variety dependent, averages and pump tests)

\*\*\*) Within temperature compensated range

\*\*\*) Full Scale

# Technical specifications

## CTD-Diver®

- Measuring frequency \*** : 0.5 sec. until 99 hour  
**Memory capacity** : 16,000 measurements (non-volatile)  
**Material housing** : Ceramic (ZrO<sub>2</sub>)  
**Material pressure sensor** : Ceramic (Al<sub>2</sub>O<sub>3</sub>)  
**Temperature** : -20 °C tot 80 °C
- **accuracy** : ± 0.1°C
  - **resolution** : 0.01 °C
  - **compensated range** : 0 °C tot 40 °C
- Conductivity**
- **reach** : 0 until 80 mS/cm
  - **accuracy** : ± 1% of the measured data
  - **resolutie** : 0.1% of the measured data
- Power supply service life** : 8-10 year (dependent of use)  
**Dimensions** : Ø 22 mm x 183 mm  
**Weight** : 150 grams

Type	11.11.58.01	11.11.58.02	11.11.58.03
Measuring range	10 mH <sub>2</sub> O	30 mH <sub>2</sub> O	100 mH <sub>2</sub> O
• accuracy**	± 0.1% FS***	± 0.1% FS	± 0.1% FS
• resolution	0.2 cmH <sub>2</sub> O	0.6 cmH <sub>2</sub> O	2 cmH <sub>2</sub> O

\*) Various measuring methods available (steady, variety dependent, averages and pump tests)

\*\*\*) Within temperature compensated range

\*\*\*) Full Scale

CTD-Diver®



# Reply form

## Personal details:

Company name : .....

Contact person : Mr./Ms. ....

Address : .....

City : .....

Country : .....

Telephone : .....

Fax : .....

E-mail : .....

## Please send me information on:

- e-SENSE
- 11.11.38 to 11.11.44 Diver Data Cable
- 11.11.01.02 to 11.11.01.08 MiniDiver
- 11.11.02.02 to 11.11.02.08 MicroDiver
- 11.11.03.02 to 11.11.03.08 CeraDiver
- 11.11.58.01 to 11.11.58.03 CTD-Diver
  
- Please send me the complete Eijkelkamp catalogue in English / German / Dutch

Signature: .....

Date: .....

