

GROUNDWATER IS OUR BUSINESS



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 | 3.54 inch |
| Diameter | 0.87 inch |
| Weight | 1.9 ounce |
| 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 | -4 to 176 | °F |
| Calibrated | 32 to 122 | °F |
| Accuracy* | ±0.18 | °F |
| Resolution | 0.018 | °F |

Pressure

| Part number | DI 501 | DI 502 | DI 505 | DI 510 | |
|-------------|--------|--------|--------|--------|--------------------|
| Range | 33 | 66 | 164 | 328 | ftH ₂ O |
| Accuracy* | ± 0.2 | ± 0.4 | ± 1.0 | ± 2.0 | inH ₂ O |
| Resolution | 0.08 | 0.16 | 0.40 | 0.79 | inH ₂ O |

*typical accuracy



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

Micro-Diver

Compact Size

Measuring only 3.46" in length and 0.71" 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 | 3.46 inch |
| Diameter | 0.71 inch |
| Weight | 1.6 ounce |
| 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 | -4 to 176 | °F |
| Calibrated | 32 to 122 | °F |
| Accuracy* | ±0.18 | °F |
| Resolution | 0.018 | °F |

Pressure

| Part number | DI 601 | DI 602 | DI 605 | DI 610 | |
|-------------|--------|--------|--------|--------|--------------------|
| Range | 33 | 66 | 164 | 328 | ftH ₂ O |
| Accuracy* | ± 0.4 | ± 0.8 | ± 2.0 | ± 4.0 | inH ₂ O |
| Resolution | 0.08 | 0.16 | 0.40 | 0.79 | inH ₂ 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 | 3.54 inch |
| Diameter | 0.87 inch |
| Weight | 1.8 ounce |
| Memory | 48,000 measurements |
| Wetted parts | |
| housing | ceramic (ZrO ₂) |
| 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 | -4 to 176 | °F |
| Calibrated | 32 to 122 | °F |
| Accuracy* | ± 0.18 | °F |
| Resolution | 0.018 | °F |

Pressure

| Part number | DI 701 | DI 702 | DI 705 | DI 710 | |
|-------------|-----------|-----------|-----------|-----------|--------------------|
| Range | 33 | 66 | 164 | 328 | ftH ₂ O |
| Accuracy* | ± 0.2 | ± 0.4 | ± 1.0 | ± 2.0 | inH ₂ O |
| Resolution | 0.08 | 0.16 | 0.40 | 0.79 | inH ₂ O |

*typical accuracy



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

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 3 feet.

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 | 3.54 inch |
| Diameter | 0.87 inch |
| Weight | 1.9 ounce |
| 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 | -4 to 176 | °F |
| Calibrated | 14 to 122 | °F |
| Accuracy* | ± 0.18 | °F |
| Resolution | 0.018 | °F |

Pressure

| | | |
|--------------------|---------------|--------------------|
| Part number | DI 500 | |
| Range | 4.9 | ftH ₂ O |
| Accuracy* | ± 0.2 | inH ₂ O |
| Resolution | 0.08 | inH ₂ O |

*typical accuracy



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

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 77 °F. Additionally, pressure and temperature are measured and recorded.

Technical Specification

| | |
|-----------------|---|
| Length | 5.3 inch |
| Diameter | 0.87 inch |
| Weight | 3.4 ounce |
| Memory | 48,000 measurements |
| Wetted parts | |
| housing | ceramic (ZrO ₂) |
| 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 | -4 to 176 | °F |
| Calibrated | 32 to 122 | °F |
| Accuracy* | ± 0.18 | °F |
| Resolution | 0.018 | °F |

Conductivity

| | | |
|------------|----------|------------|
| Range 1 | 0 to 120 | mS/cm |
| Range 2 | 0 to 30 | mS/cm |
| Accuracy* | ± 1% | of reading |
| Resolution | 0.1% | of reading |

Pressure

| Part number | DI 271 | DI 272 | DI 273 | |
|-------------|--------|--------|--------|--------------------|
| Range | 33 | 164 | 328 | ftH ₂ O |
| Accuracy* | ± 0.2 | ± 1.0 | ± 2.0 | inH ₂ O |
| Resolution | 0.08 | 0.40 | 0.79 | inH ₂ 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

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 1,000 feet below to 16,000 feet above sea level without the need to reprogram the datalogger. All Divers operate from -4 to 176 °F.

Accurate Measurements

Divers monitor groundwater pressure with a typical accuracy of $\pm 0.05\%$ full scale range from 32 to 122 °F. The CTD-Diver is equipped with a four-electrode sensor for recording conductivity with an accuracy of $\pm 1\%$ of reading.

