

# CTD-Diver DATA SHEET

*Conductivity, Water Level, and Temperature Measurement  
for Corrosive Conditions, with Internal Data Logger*



## Description

Frequent monitoring of soil and groundwater quality is traditionally a labor-intensive job. This is also the case if saltwater intrusion or contamination at remediation sites needs to be monitored.

The new CTD-Diver by Schlumberger Water Services now sets the standard for reliability and longevity in groundwater quality monitoring. The CTD-Diver is a fully stand-alone sensor with built-in data logger and battery. The compact ceramic casing and sensor and unparalleled conductivity measuring range (0-120 mS/cm) make the CTD-Diver suitable for use at every measuring site.

The CTD-Diver is impervious to the most aggressive substances found in water environments. Its ceramic casing resists when even the strongest metals yield.

CTD-Diver is a highly reliable, compact probe for the simultaneous measuring of groundwater level, temperature, and conductivity. These parameters are measured at time intervals pre-determined by the user. The measured values are stored in the probe's non-volatile internal memory and can be read out at any given time.

In addition to internal data storage, the CTD-Diver can be connected to an external data logger, such as the Stevens DataLog<sub>c</sub> 3000, or data telemetry systems with the Diver-DCX SDI-12 output adapter, allowing the Diver to be used for real-time data monitoring applications.

Manual data download in the field from a Diver's internal storage can be done by utilizing the optional USB Interface Cable and connecting the diver directly to a desktop or laptop PC.

## Features

- Long-term and frequent measurements
- Temperature corrected measurement
- Three sensors in one sealed, corrosion-resistant ceramic housing
- Non-volatile memory
- Compact size
- Ceramic body resists corrosion
- Built-in data logger for storing up to 5 million measurements
- Optional SDI-12 adapter for connection to data logger or radio/modem
- Battery powered for long-term, unattended operation
- Maintenance free
- 3 year warranty

## Applications

- Pumping and slug tests
- Watershed, drainage basin and recharge areas
- Stream gauging, lake levels and reservoirs
- Harbour and tidal fluctuation monitoring
- Wetlands and stormwater run-off monitoring
- Long term water level monitoring
- All intensive monitoring of groundwater levels
- Groundwater monitoring projects
- Groundwater monitoring network automation

# Technical Specifications

## Power Requirements

Battery powered with the capacity to perform:

- 2 million measurements;
- 2,000 readout cycles;
- 2,000 programming cycles.

The maximum lifespan for the Diver battery is 10 years of "typical" use, excluding extreme temperature situations or excessively fast measurements that may prematurely drain the battery.

## Sample Interval

1 second to 99 hours

## Output Options

- SDI-12 output when connected to Diver-DCX converter box.
- Manual data download using USB interface cable connected to computer.

## Conductivity Measurement

Range: 10  $\mu\text{S/cm}$  to 120  $\text{mS/cm}$

Accuracy:  $\pm 1.0\%$  of reading

Resolution:  $\pm 0.1\%$  of reading

## Operating Temperature, Compensated

32 °F to 122 °F (0 °C to 50 °C)

## Temperature Accuracy

$\pm 0.18$  °F

## Temperature Resolution

0.018 °F

## Wetted Parts Materials

Housing: ceramic ( $\text{ZrO}_2$ )

Conductivity sensor: platinum electrodes on ceramic ( $\text{Al}_2\text{O}_3$ ) carrier

O-rings: Viton ®

Pressure Sensor: ceramic ( $\text{Al}_2\text{O}_3$ )

Cap / nose cone: Nylon PA6 30% glass fiber

## Physical Size (Length x Diameter)

5.31 in x  $\varnothing$ 0.86 in

(135 mm x  $\varnothing$ 22 mm)

incl. suspension eye

## Weight

3.5 oz (100 grams)

Depth Range	Typical Accuracy	Long-Term Stability	Resolution
33 ft (10 m)	$\pm 0.05\%$ FS	$\pm 0.2\%$ FS	0.07 in (0.2 cm)
164 ft (50 m)	$\pm 0.05\%$ FS	$\pm 0.2\%$ FS	0.39 in (1 cm)
328 ft (100 m)	$\pm 0.05\%$ FS	$\pm 0.2\%$ FS	0.78 in (2 cm)

## Diver Accessory Items

All Schlumberger Divers are sold as self-contained units, as every diver is equipped with internal memory and battery power and can be deployed as-is. Stevens Water offers a full line of cables and data download accessories to facilitate the easy transfer of data to data loggers, telemetry communication systems, or field computers.

**Optional Cables:** Diver Data Cables allow any Diver unit to be deployed down a well, bore hole, or any other location, while giving the end-user the ability to configure or download data from the Diver without removing it.

**SDI-12 Diver-DCX Output Adapter:** Connects to any Diver, giving the sensor the ability to output readings in standard SDI-12 format, for communication with a data logger or telemetry device.

**USB Interface Cable:** Connects to the end of the Diver Data Cable, allowing for data download via connection to any computer with a USB Port, using Diver Office software.

**Diver Mate:** This small handheld storage device connects to any Diver or Diver Data Cable, and automatically downloads stored readings to onboard memory for later analysis.

**Diver USB Reading Unit:** A small USB-powered cradle that allows the connection a Diver (without cable) to a PC for data download or configuration.

# CTD-Diver DATA SHEET

## Ordering Information

### Corporate Headquarters

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Since 1911, Stevens Water Monitoring Systems, Inc. has provided complete water monitoring solutions including:

- Water Level Sensors
- Water Quality Sensors
- Soil Moisture Sensors
- Chart Recorders
- Staff Gages
- Telemetry Systems
- Data Collection Platforms

Part #	Description
51144-271	Schlumberger CTD-Diver, 33 ft (10 m) range
51144-272	Schlumberger CTD-Diver, 164 ft (50 m) range
51144-273	Schlumberger CTD-Diver, 328 ft (100 m) range
51144-337	SDI-12 Diver-DCX Output Adapter
51144-327	USB Interface Cable, for manual data download from Diver
51144-420	Diver Mate hand-held data download and storage drive
51144-330	Diver USB Reading Unit, for Diver units without cable

Part #	Optional Cables
51152-6001	Diver Data Cable - 3.28 ft (1 m)
51152-6005	Diver Data Cable - 16.4 ft (5 m)
51152-6010	Diver Data Cable - 32.8 ft (10 m)
51152-6015	Diver Data Cable - 49.21 ft (15 m)
51152-6020	Diver Data Cable - 65.61 ft (20 m)
51152-6030	Diver Data Cable - 98.42 ft (30 m)
51152-6040	Diver Data Cable - 131.23 ft (40 m)
51152-6050	Diver Data Cable - 164.04 ft (50 m)
51152-6060	Diver Data Cable - 196.85 ft (60 m)
51152-6080	Diver Data Cable - 262.46 ft (80 m)
51152-6100	Diver Data Cable - 328.08 ft (100 m)



**SDI-12 Diver DCX Adapter**  
attached to Stevens DL3000 logger



**USB Interface Cable**  
attached to Diver Data Cable  
from laptop computer



**Diver USB Reading Unit**  
shown attached to laptop



**Diver Mate**  
hand-held data download and storage drive