

Data Collector for Water Levels

100% Waterproof, Air Pressure Compensated

DCX-22AA

The data collector DCX-22AA measures and records ground water levels using KELLER's two sensor AA-technology (absolute-absolute). The submersible depth sensor measures the water level. Barometric pressure variations are measured and compensated with the built-in waterproof air pressure sensor which is mounted in the electronics housing at the top of the borehole. There are no ventilation tubes; this means the DCX-22AA data logger is very rugged and suitable for reliable applications in humid and wet environments. Even short periods of immersion and flooding will not cause a problem.

The electronics housing is mounted at the top of the borehole to give easy access for data downloading. The level sensor (diameter 22 mm) is connected via a sealed cable to the bottom of the electronics housing. Installation is quick and simple, using fixing devices in various sizes, suitable for cap lock units of different manufacturers and for well access points starting from 1" (caps starting at 2" include a hole to lower a dip meter). Thus enabling measuring stations to be set up at considerably lower costs compared to conventional systems.

The electronics employ the latest microprocessor technology, which give high accuracy and resolution for the pressure and temperature signals from both the depth sensor and the barometric sensor. The measured values are mathematically compensated for all linearity and temperature errors of the pressure sensors.

The use of a non-volatile memory ensures high data security.

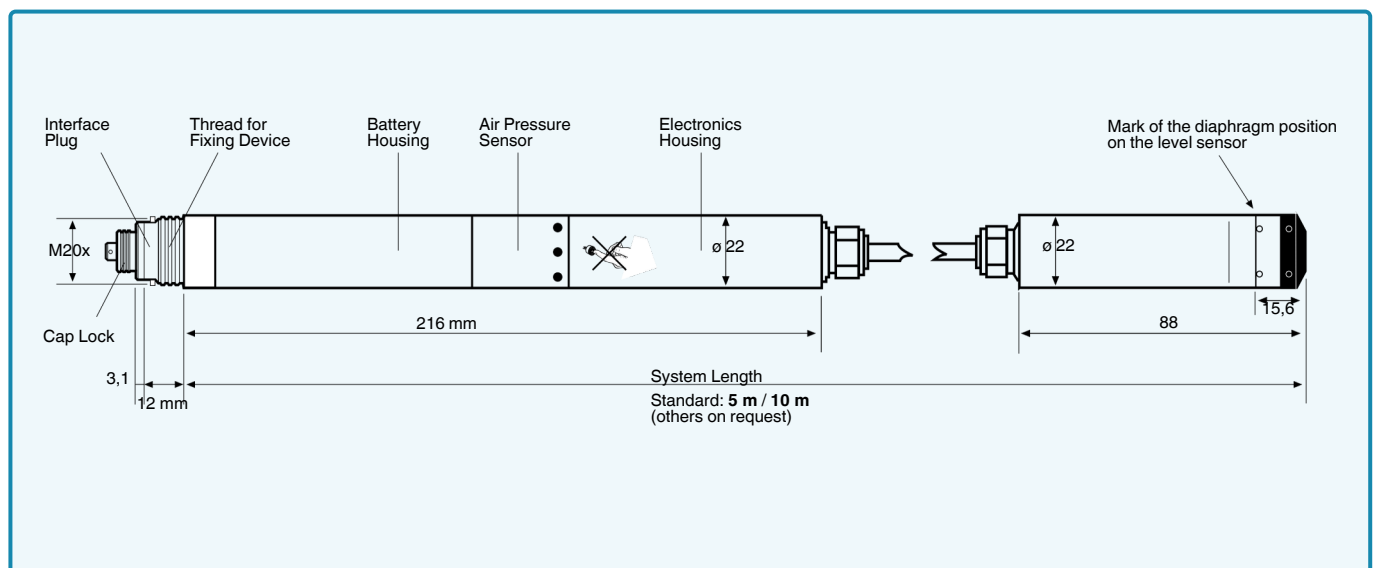
The modular design of the DCX-22AA offers the user the two options for collecting the data. Standard design requires the user to visit the location, connect via data-cable and download data. The optional ARC1 unit allows the transmission of data, and instructions (re-programming) to the data-collector from / to a remote location. The data can be sent to any mobile phone as a short message (SMS).

OPTIONS

ARC1 Data transmission module (see separate datasheet ARC1)



Integrated air pressure sensor with diaphragm protection



Specifications

Measuring-/ Pressure Ranges	800...1800 mbar abs. for ranges up to 5 mWC (System Length: 5 m) for
	800...2300 mbar abs. ranges up to 10 mWC (System Length: 10 m)

Supply	Lithium-Battery 3,6 V (Type AA)
Battery Life *	10 years @ 1 measurement/hour
Output	RS485 digital
Electrical Connection	Fischer DEE 103A054

Pressure Sensor Specifications

(for level sensor respectively air pressure sensor)

Linearity	typ. 0,02 %FS
Comp. Temperature Range	-10...40 °C (icing not permitted)
Error Band **	typ. 0,05 %FS *** max. 0,1 %FS
Resolution	max. 0,0025 %FS
Long Term Stability	typ. 0,5 mbar
Temperature Measurement	Accuracy typ. $\pm 0,5$ °C
Operating Temperature	-20...60 °C (icing not permitted)
Shortest Measuring Range	1x per second
Memory	114'000 measuring values @ storage interval ≤ 15 s, otherwise 56'000 measuring values (always with attributed time)

Material

Material	Stainless steel 316L (DIN 1.4435) O-Ring: Viton®
Weight: Housing / Probe	≈ 335 g / ≈ 200 g (without cable)
Tolerance System Length	± 2 cm
Options	Other material: e.g. Hastelloy or titanium

* exterior influences could reduce battery life

** Linearity + Temperature Error

*** optional max. 0,05 %FS

Software



PressureSuite Desktop

With the «PressureSuite Desktop» Windows software, data recorded using KELLER instruments with a recording function can be read and visualised. This data can be exported in CSV, JSON, Excel or Word format, as an image, or in other formats for further processing or documentation. The data loggers are easy to configure, thanks to the intuitive software interface. And, the various recording functions provide an optimum level of adaptability to suit the measuring task at hand. Additionally, installation site information and other parameters necessary for water level calculations can be saved directly in the measuring device.

PressureSuite Desktop has a free licence and is compatible with all products in the PressureSuite.

Configuration options

- Pressure and temperature channels, selectable
- Adjustable measurement interval (1s ... 99 Tage)
- Averaging with selectable number of measurements

Recording modes

- Continuous interval measurement
- Event-controlled recording
 - Recording starts when value is exceeded
 - Recording starts when value is undercut
 - Recording starts when value changes
- Combination of continuous and event-controlled
- Recording is possible
- Adjustment of pressure zero point
- Start measurements immediately or at a set time
- Water level calculation
- Data storage: linear or ring-type memory