DCX22

DATALOGGER FOR PRESSURE AND TEMPERATURE

PRESSURE

RIELS® INSTRUMENTS

Autonomous data collector 100% waterproof

Version DCX-22

Riels DCX-22 is an autonomous, battery powered instrument made of stainless steel designed to record water depth (pressure) and temperature over long periods.
Two versions are offered:

DCX-22:
The sensor, electronics and battery are housed in a sealed stainless steel tube, for submersible deployment.
For data read-out the DCX-22 must be recovered from the measurement point.
The O-ring sealed end cap is then removed to access the data port.
The DCX-22 works with an absolute pressure sensor. In shallow water depths where the influence of barometric pressure changes should be considered, it is recommended that a second data collector DCX-22 (Baro) is placed at the surface, to record the barometric pressure.
The PC then calculates the differential pressure resp. the water depth by subtracting the two measured values.

DCX-22 SG/VG:
The sensor is connected by waterproof cable to a surface mounted housing with the data read-out port.
This arrangement allows for easier data recovery from fixed installations.
The DCX-22 SG/VG does not have to be removed from the dip pipe for data read out.
The DCX-22 SG/VG is supplied with a 2'' diameter fixing plate to enable mounting at the top of the dip pipe.
The sensor can be sealed gauge SG, or vented gauge VG, the cable carries the vent tube for VG version sensors, vent port in the housing is protected by a breathable Gore-Tex® membrane.

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 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.
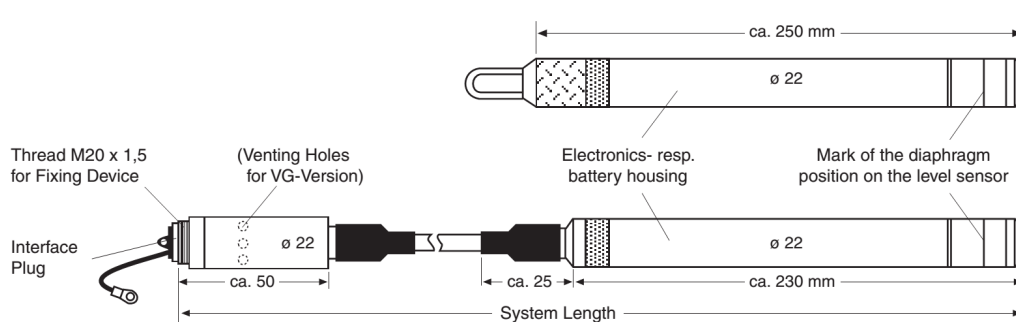
The modular design offers the user the two options for collecting the data.
Standard design requires the user to visit the location, connect via data-cable and download data.
The optional GSM-1 unit allows the transmission of data, and instructions (re-programming) to the data-collector from/to a remote location. The data can be sent to any mobile phone as a short message (SMS).

Version DCX-22 SG
DCX-22 VG

Thread M20 x 1,5 for Fixing Device

(Venting Holes for VG-Version)

Electronics- resp. battery housing

Mark of the diaphragm position on the level sensor

Interface Plug

ca. 250 mm

ø 22

ca. 50

ca. 25

ca. 230 mm

ø 22

ø 22

System Length

CE

Specifications

Pressure ranges	DCX-22 Baro	PAA	0,8...1,3 bar				
			10 mWC	20 mWC	50 mWC	100 mWC	
	DCX-22	PAA	0,8...2	0,8...3	0,8...6	0,8...11	bar absolute
	DCX-22 SG	PAA	0,8...2	0,8...3	0,8...6	0,8...11	bar absolute
	DCX-22 VG	PR	1	2	5	10	bar
Overpressuree	2 x Pressure range						

PAA: Absolute. Zero at vacuum.   PR: Vented Gauge. Zero at atmospheric pressure   (other ranges on request)

Specifications

Supply	Lithium-Battery 3,6 V (Type AA)
Battery Life*	10 years 1 measurement/hour
Output	RS 485 digital
Electrical Connection	Fischer DEE 103A054

* Exterior influences could reduce battery life

Pressure Sensor Specifications

Linearity	standard 0,02 %FS
Comp. Temperature Range	-10…40 °C
Error Band **	standard 0,05 %FS *** max. 0,1 %FS
Resolution	max. 0,0025 %FS
Long Term Stability	standard 0,5 mbar
Temperature Compensation	-10…40 °C (others on request)
Temperature Measurement	Accuracy typ. ±0,5 °C
Shortest Measuring Range	1x for second
Memory	57'000 measuring values @ storage interval ≤15 s, otherwise 28'000 measuring values (always with attributed time)
Material	Stainless steel 316L (DIN 1.4435) O-Ring: Viton®
Weight: Probe	≈ 355 g (without cable)
Tolerance System Length	± 2 cm
Options	Other pressure connections

** Linearity + Temperature Error *** Optional max 0,05 %FS

Logger 4.x

The Logger 4.x-Software is delivered along with the interface cable K103A (RS232) or K104A (USB).
The software is compatible with Windows (≥Windows 95) and allows to configure and read out our RIELS data loggers (DCX and Leo Record).

The measuring values may be graphically displayed, exported, air pressure compensated or converted into other units.
The Online-function shows the actual values of the instrument. The Logger includes the Reader and Writer.

Writer
The Writer enables the configuration and start of the Logger.

General functions:
- Online display of measuring channels
- Record status indication
- Editing of installation data
- Ring buffer or normal
- Readjustment of the zero

Recording parameter:
- Pressure- and temperature channels selectable

Start methods:
- Time start
- When exceeding or dropping below a certain pressure (or temperature)
- Measuring interval for starting conditions selectable

Recording methods:
- Interval (1s…99 days) and event-controlled recording
- Recording at pressure change
- Turn on or turn off at pressure threshold
- Averaging over selectable number of measurements
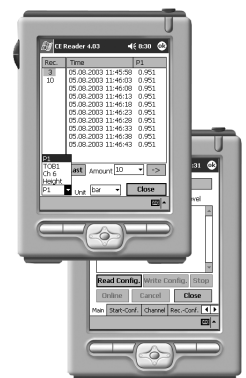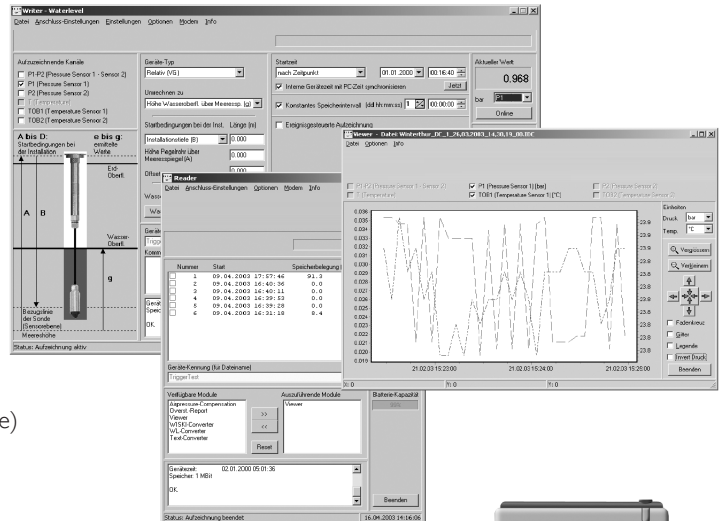- Combination of fixed interval and event recording possible

Reader
The Reader allows the data to be read out into a file. The measured data, which can be converted (exported) into various format, also contains the following information: Serial number, measuring range, sensor name, installation data, read-out data, units, measuring values with date and clock time, read-out date…

General functions:
- Reading of the recordings' directory with starting time and storage size in %
- Read-out of the individual recordings
- Graphical display of the dat
- Record status indication
- Conversion of the data into a text file for Excel import
- Miscellaneous calculations possible

Special calculations or an export of the data into customer specific databases are possible (only on request).

Logger 4.x also includes
the WindowsCE software
for PDA's.