Autonomous Data Collector DCX-16 (SG/VG)

Smallest diameter – ø 16 mm

The DCX-16 is an autonomous, battery-powered data collector in a stainless steel housing with a very small diameter of only 16 mm. The housing and the pressure sensor element are completely welded in, so sealing rings are eliminated at this point. In applications where a small probe diameter is an advantage, the logger can record the water level (pressure) and the tempe-rature over long periods.

As well as the battery compartment with its double seal, the small-diameter (16 mm) submersible sensor includes electronic circuitry featuring the latest microprocessor technology. It records the pressure and temperature of the medium with high measurement accuracy and resolu-tion, and it uses a mathematical model to correct any linearity or temperature errors made by the pressure sensor. High data reliability is guaranteed thanks to the use of a nonvolatile data memory.

The various configuration options allow the data logger to be adapted to the measuring point so that only specified events will be detected and stored. Event-controlled recording and log-interval recording can be set independently of one another. In addition, installation data and comments on the measuring point can be stored in the logger. Installation is fast and simple with fixing disks of various sizes which can be fitted as options: these match locking units (caps) from different manufacturers for levels of 1" or more (2" or more with light plummet aperture), so measuring points can be implemented at a fraction of the previous cost. Three versions of the data collector are available:

Version DCX-16

DCX-16

The sensor, electronics and battery are accommodated in one housing. To extract data, the data collector must be removed from the measuring point, and the watertight screw cap that allows access to the read-out plug/interface must be unscrewed. The DCX-16 operates with an absolute pressure sensor. In shallow water, when the influence of air pressure fluctuations has to be taken into account, a second logger (barometric logger, obtainable separately) positioned on the surface of the water must be used to record the air pressure progression. The com-puter software then calculates the differential pressure or the water level by subtracting the two measured data.

DCX-16SG/VG

Instead of a watertight screwed closure, these versions have a cable output. The interface plug is fixed on the sounding tube above the surface of the water with the help of a screw-on fixing disk. This means that there is no need to remove the DCX-16SG/VG from the sounding tube in order to read the data.

In the VG version (reference pressure measurement), the reference pressure-compensating capillary is routed in the same cable into the read-out plug housing; this also contains the reference aperture (protected by a Gore-Tex® diaphragm) which produces the pressure equalization.
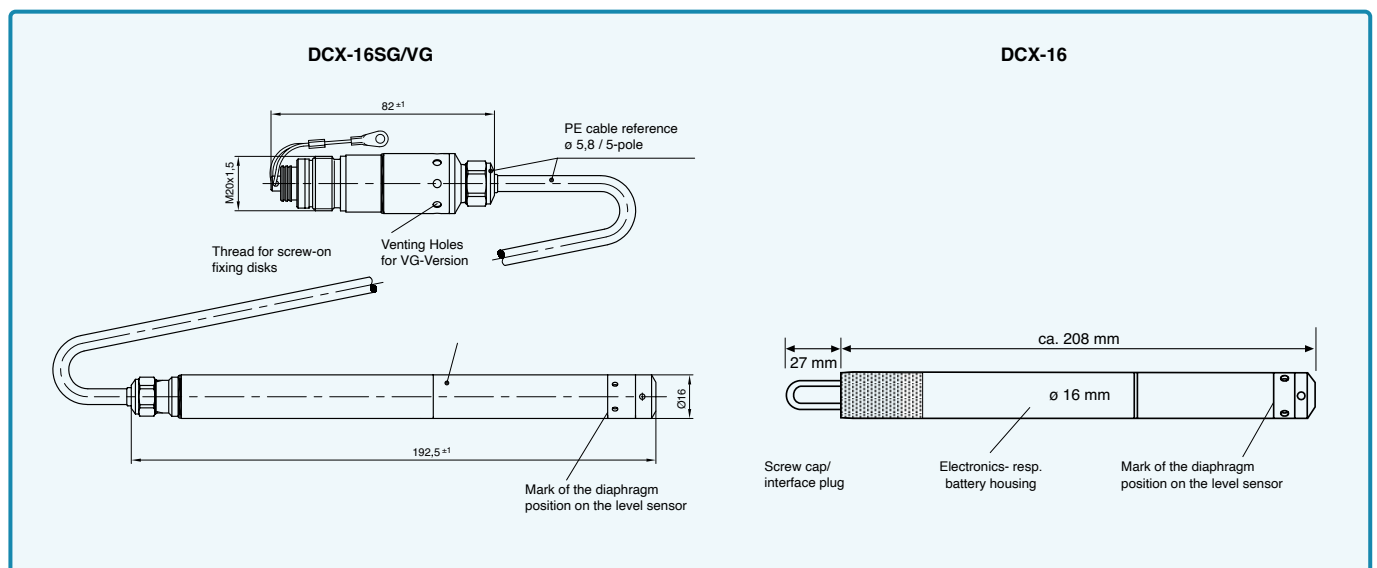
Version DCX-16VG

DCX-16SG/VG	DCX-16

- 82 ±1
- M20x1,5
- PE cable reference ø 5,8 / 5-pole
- Thread for screw-on fixing disks
- Venting Holes for VG-Version
- Ø16
- 192,5 ±1
- Mark of the diaphragm position on the level sensor
- ca. 208 mm
- 27 mm
- ø 16 mm
- Screw cap/ interface plug
- Electronics- resp. battery housing
- Mark of the diaphragm position on the level sensor

Specifications

Pressure Ranges

		10 mWC	20 mWC	50 mWC	100 mWC
DCX-16	PAA, bar abs.	0,8…2	0,8…3	0,8…6	0,8…11
DCX-16SG	PAA, bar abs.	0,8…2	0,8…3	0,8…6	0,8…11
DCX-16VG	PR, bar rel.	1	2	5	10
Overpressure		2 x Pressure Range			
System length*		10 m	20 m	50 m	100 m

PAA: Absolute. Zero at vacuum   PR: Vented Gauge. Zero at atmospheric pressure (other ranges on request)
*The system length can be selected (optional); for lengths of 100 m or more, use an anchor clamp. Tolerance for system length: ≤ 10 m: ± 2 cm; > 10 m: ± 1% of system length

Supply	Lithium battery 3,6 V (Type AAA)
Battery Life *	4 years @ 1 measurement/hour
Output	RS485 digital
Electrical Connection	Fischer DEE 103A054

Pressure Sensor Specifications

Comp. Temperature Range	-10…40 °C (icing not permitted)
Accuracy	typ. 0,05 %FS
Error Band *** (-10…40 °C)	0,1 %FS
Resolution	max. 0,0025 %FS
Long Term Stability	typ. 1 mbar
Temperature measurement	Accuracy ± 1 °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 attribut-ed time)

Material

Material	Stainless steel AISI 316L O-Ring: Viton®
Cable	PE cable
Probe Weight	≈ 150 g (without cable)
Options	Other pressure connections, larger data memory, different accuracy, other material: e.g. Hastelloy or Titanium

* exterior influences could reduce battery life

** Linearity + Temperature Error

*** Includes Linearity + Repeatability + Hysteresis

Software

PressureSuite Desktop

With the «PressureSuite Desktop» Windows software, data recorded using KEL-LER 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

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