Libor Daneš

DATA LOGGER DN4110

A technologically modern device, intended mainly for quick installations in field conditions, wherever accurate and reliable measurement of levels, temperatures and flow rates directly in boreholes and water sources is required.

It is a technologically advanced device that is intended, thanks to its small size and ease installation especially for installation directly into boreholes, but it can be deployed in other applications concerned with the measurement of physical quantities.

Small size

Diameter 50 mm, length 290mm, easy installation with lifting eye bolt

GSM/GPRS

Data transmission via GSM / GPRS, data on the web, SMS warning and query messages

Increased environmental protection

Operating temperature: -40 to +60 °C; protection rating: IP67

Sensors and probes

Can be connected via RS-485 or analogue and digital inputs

Low power consumption

5 years of operation with GSM / GPRS data transmission without the need to replace the power cell

Local data querying

Bluetooth wireless low power version 4.0 for communication with Android OS and PC, USB PC communication (after disassembly of top cover)

Using and typical application

- measurement of level and temperature directly in the borehole and water sources
- for special scientific and research purposes (e.g. forest and plant sectors),
- for rain gauge stations

Basic features

Inputs and outputs

- 2x digital impulse (counter) or binary input
- 1x digital output (also usable as sensor power supply)
- 1x USB port for communication with a PC (Mini USB connector)
- 1x RS-485 connects to intelligent sensors communicating using the HART protocol

Bluetooth

With wireless Bluetooth low energy version 4.0 it is possible to configure the datalogger, download daily data and logs using the program DN4000. Communication is protected by several levels of passwords, each providing different rights for access to values and configuration changes.

USB port for PC

For direct communication with a PC, the datalogger is equipped with a USB connector protected by a waterproof cap. Communication is protected by several levels of passwords, each of them providing a different set of permissions for accessing values and making configuration changes.

Mechanical construction

Dattalogger is placed in a cylindrical metal case of diameter 50 mm. Service tasks such a inserting a SIM card, replacing the battery or connecting a measuring sensor can also be done easily in the field. Below the plastic cover at the top part is a GSM antenna connector and mini USB connector. In the bottom part are the screw terminals for connecting of probe wires. Inside the bottom part of the datalogger is placed a cartrige with silicagel bag that prevents the penetration of atmospheric moisture into the capillary of level probes. This cartridge can be easily replaced without having to disassemble the datalogger. The length of the datalogger is 290 mm, which allows an easy mounting by snap hook on the top part of the case.

Sensors and Probes

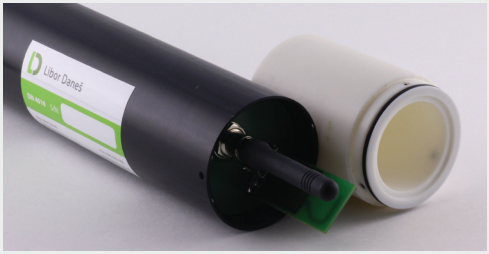
A great advantage is the ability to connect intelligent sensors that communicate via RS-485 using the HART protocol and have more advanced features than simple analogue probes. It is very easy to work with a connected probe after automatic loading; it is even possible to connect several of these intelligent probes and devices to the RS-485 loop at the same time. Analogue and digital inputs are provided for connection to all commonly used sensors.

Low consumption

The device is powered by the Li-SOCI2 primary cell, which can be easily changed in the field and is also used in the GSM network for more than 5 years.

Additional parameters

- GSM/GPRS data transmission - Measurements are sent to the server at preset intervals.
- Own data servers - All data is stored on our own secure servers, where it is available to you.
- On-line access - data can be monitored in real time using a web application, in a graphical or tabular form.
- SMS - Text messages can be used to check the status of the measured variables. By setting the alarm messages (up to 4 priorities) warnings can be sent to up to 16 telephone numbers when set values are exceeded (or not reached). If you dislike the preset message format, you can create your own.
- SIM card and tariff - standard or prepaid SIM cards can be used, checking amount of credit via SMS, bluetooth, USB, or on the server.



Measurement channels

Each channel can be named as needed; data can be recorded at varying intervals (1 second to 24 hours); measurement (analogue value, counter, binary status, equipment hours) and/or logging modes. You can create virtual channels for every measured channel (i.e. channels whose values are obtained by calculation) and set alarms to indicate up to four limit states.

Examples: difference between two channels, flow calculation, averages, maxima, minima, moving average, moving sum, gradient alarm (up to four degrees), hysteresis, concentration of measurement period in case of excess, output switching or measurement of another channel in case of alarm, alarm SMS messages to up to 16 GSM numbers (creation of user-defined alarm messages).