Product Line of Water Loggers

Water Level · Dissolved Oxygen · pH · Conductivity · Temperature

Water …

is an irreplaceable natural material and source of all life on earth. It is a tasteless, odourless, transparent, clear andcolourless liquid consisting of two of the most widely spread elements in nature: Hydrogen (2 atoms, "H" for Hydrogenium) and Oxygen (1 atom, "O" for Oxygenium).

In addition to suspended particles with mineral and organic parts water contains miscellaneous gases (e.g. Oxygen) and solid matter (e.g. nutrient salts).

For instance, water is found as surface water, spring water and groundwater. It is used as drinking water, industrial water, water for fire-fighting and wastewater. Depending on its ingredients it is referred to as mineral water, salt Water or freshwater.

71% of the earth's surface is covered by water. Earth's entire approximate water volume adds up to round about 1.386.000.000 billion cubic metres (which matches almost half a million times the volume of the Lake Victoria). Only 0.6% thereof exists as groundwater.

Even though there seems to be so much water it is our most precious good because it is the source of all life. Hence it is of prime importance for us to carefully treat it, to protect it and to watch over it. Measuring devices and data loggers by Driesen+Kern GmbH have provided valuable measuring data and results since 1977 thus enabling the monitoring of water in regard to its quality and quantity.

"Water is the principle, or the element, of things. All things are water."
(Based on Thales of Miletus)

Contents

High-precision Data Logger for Temperature
T-Log3001

Highly Accurate Water Measurements

The miniaturised data logger T-Log3001 was specifically designed to measure temperature in waters.

In addition to its pressure resistance up to 100 metres water column it offers high accuracy and resolution as well as a large memory.

The logger housing is made of stainless steel V4.

If you have to undertake measurements in aggressive fluids the T-Log3001 can also be delivered with a plastic housing (for depths of up to 30 m).

Logging in waters often requires the detection of the very lowest changes in temperature. That's why the T-Log3001 has a resolution of 0.01°C which can be enhanced to 0.003°C on request.

Its memory capacity permits saving 4 million readings and thanks to the low power consumption the battery can last up to 4 years (at intervals > 60 seconds).

Comprehensive Measurement Profiles

Up to 2 million readings each of water level and temperature can be stored in the logger's large memory.

The readings will not be lost even if the battery fails during operation.

The interval in which the readings are taken can be user selected between 2,4,8,16,32,64 Hz and 24 hours.

Fast data transfer to your PC via USB interface.

The software InfraLog for Windows was developed especially for this purpose and can chart the readings (See page 18).

Features
High resolution and accuracy
Event-driven data logging mode
4 million readings with 16-bit resolution
Dimensions: d=24mm, l=215mm
Energy-saving technology for long-term operations
Fast ransfer rates via USB interface

Data Logger for Water Level and Temperature
P-Log3020 PA/PR

The models P-Log3020 PA (=absolute pressure) and P-Log3020 PR (=gauge pressure) are data loggers capable of measuring water level with an accuracy of a few millimeters and also water temperature. Highlights of these data loggers are their high resolution as well as large memory.

They offer a high long-term stability and provide reliable measurements over many years without a battery change thanks to an optimised energy consumption.

P-Log3020-PA-INT for absolute pressure.
The P-Log3020-BARO is available for barometric pressure measurements.

Design

A high value was set on the small dimensions (D=25 mm) of the P-Log3020 which qualifies it for the use in water management's widely used two inch pipes. Other applications include measuring in lakes, reservoirs and salt marshes.

Two models of the loggers are available: EXT and INT.

-INT model loggers have integrated sensors, memory and batteries and <u>do not</u> have any cable coming up to the surface. The device can simply be lowered into water, for instance hooked to a cord. After a series of measurements is completed, you can retrieve the logger and download its data.

The -EXT model comes with a capillary cable which allows for the data to be read out.

The P-Log3020 is also available with a built-in GPRS modem, which can be used to save the measured data via remote transmission to a web server. (See page 15 for the DK3000-GPRS Series).

P-Log3020-PR-EXT with gauge pressure sensor, integrated capillary cable and connector for suspension device.

Fast data transfer to your PC via USB interface.

Potential field of application: bodies of flowing water

Comprehensive Measurement Profiles

Up to 4 million readings each of water level and temperature can be stored in the logger's large memory.

The readings will not be lost even if the battery fails during operation. The interval in which the readings are taken can be user selected between 64 Hz and 24 hours.

Features

Features
Water level and wave logging
Event-driven data logging mode
4 million readings with 16-bit resolution
Small design for small one inch pipes
Server-based data transfer
Energy-saving technology for long-term operations
Fast transfer rates via USB interface
Optional ASCII stream output (RS232)

High-precision Logging Barometer
P-Log3020-Baro

The P-Log3020-Baro Logger is an excellent addition to the P-Log3020-PA as it can compensate the water level readings for the barometric pressure.

The P-Log3020-Baro Logger helps record the barometric pressure and temperature during long measuring periods.

The barometer features a piezoresistive pressure sensor that has been specifically optimised for the barometric pressure range and can distinguish itself with marginal hysteresis and high long-term stability.

InfraLog for Windows can offset the readings with data from the P-Log3020-PA thus compensating for the barometric pressure. You can easily access the calculated water level data.

Fast data transfer to your PC via USB interface.

Great addition to P-Log3021-MMS & P-Logg3020 PA
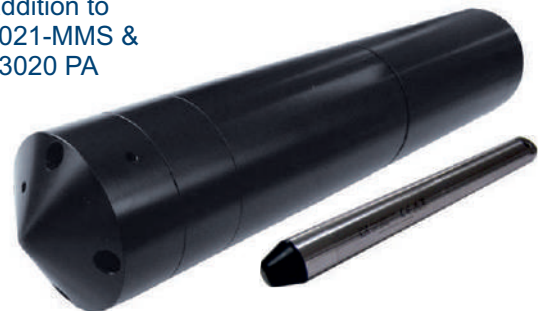
Freely Programmable Sampling Rate

The sampling rate can be user-selected. Intervals of 64 Hz and up to 24 hours can be configured.

Up to 4 million readings can be stored in the non-volatile memory of the P-Log3020-Baro. The internal battery supports the system for 4 years at an interval of 10 minutes.

As with all DK loggers the battery can be changed by the user themselves.

Features

Records barometric pressure and temperature
Piezoresistive pressure sensor with low hysteresis and high long-term stability
High-precision temperature compensation
Measurement range 0...1 300hPa and -30...+80°C
Up to 4 readings with 16-bit resolution
Fast transfer rates via USB interface

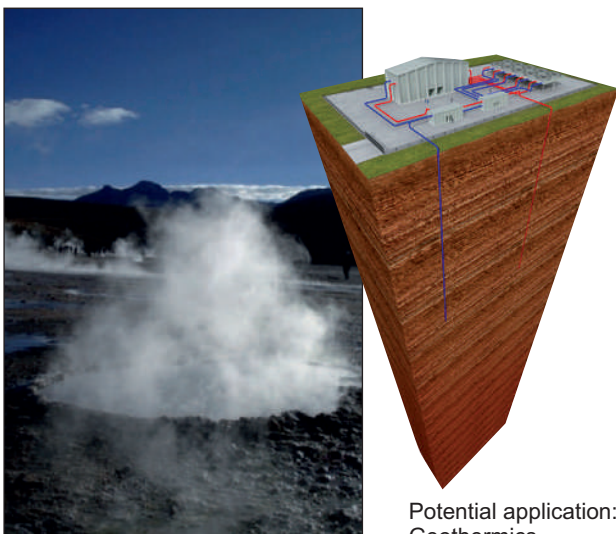# MikroLog2 Data Logger
for Water Level and Temperature

"Powerful miniature probe

for professional water level

measurements"

Miniaturised Design

The MikroLog2 is a miniaturised data logger for water level and temperature measurements. There are two models available - one combines water level and temperature and the other measures temperature only.

Suitable fields of applications are wells, one inch pipes, drill holes (e. g. geothermal drilling) as well as open waters.

High-precsition and Exceptionally Fast

The MikroLog2 is available with various measurement ranges between 1 and 50 bar which offers the appropriate range, including the ideal resolution and accuracy, for every measurement.

The MikroLog2 makes a continuous monitoring possible. Its logging interval can be configured between 1 second and 24 hours, and in fast mode even intervals of 2 Hz...32 Hz can be set.

Potential application: Geothermics

Features

Features
Miniaturisid data logger with a diameter of only d=16mm!
Safe data transmission without opening the logger
LongLife battery is user-changeable
Fast transfer rates via USB interface
Convenient Software for MS-Windows
Resolution 0.1 mbar and 1 mK
Memory capacity for up to 4 million readings
Robust stainless steel housing

The outstanding benefits of the MikroLog2 are its small diameter of only 16 mm and length of 110 mm, its long battery life, the large memory capacity and its excellent accuracy.

Data Logger P-Log3021-MMC with Memory Card for Water Level and Temperature

The P-Log3021-MMC was specifically developed for applications demanding an increased memory capacity and high sampling rates. The measurement of the water level is carried out based on a piezoresistive pressure sensor and the measurement of the temperature is achieved by a high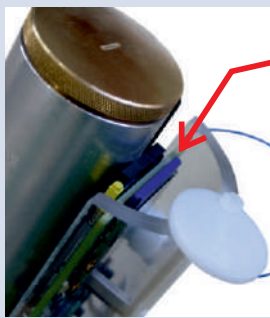-precision measuring resistor. Its exceptionally high resolution and accuracy allow for water level and wave movements to be measured accurately to the very last millimetre.
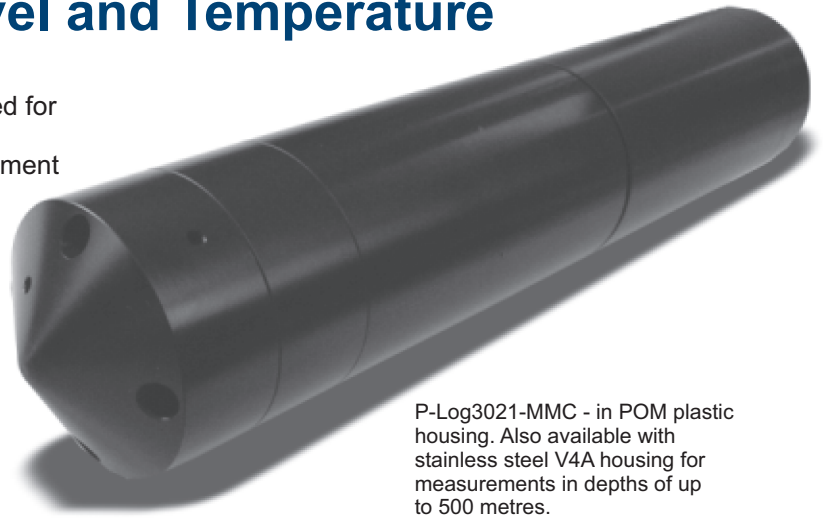
P-Log3021-MMC - in POM plastic housing. Also available with stainless steel V4A housing for measurements in depths of up to 500 metres.

MultiMediaCard and Alarm Modes

The readings are saved on a memory card providing capacity for up to 1 billion readings with date and time. The shortest interval of 32 Hz allows a period of operation of up to 180 days. Longer intervals permit considerably longer operating times.

The logging interval can be configured between 32 Hz and 24 hours.

In the event-driven mode the logger can operate self-sustainingly even longer. In this mode the logger begins a new measurement series when it detects an exceedance of a programmed threshold.

When changing locations the logger can be stopped and started at the push of a button.

The P-Log3021-MMC can be ordered with an integrated GPRS modem, which can be used to save the measured data via remote transmission to a web server.

High-precision Barometer

The P-Log3021-MMC measures absolute pressure, so in order to compensate for barometric pressure changes the P-Log3020-Baro should be set up in the vicinity.
Please refer to page 5 for further information.

Secure Data

The readings on the memory card are kept safe even if the battery is completely depleted during operation.

Maximum Resolution

By means of a precise converter the logger can achieve a resolution of 1.5 mm and an absolute accuracy of 20 mm - even at a range of 40 m water column.

Suitable for Every Field of Application

The logger is integrated into a robust housing made of impact resistant and shock proof POM material which also includes the battery and the sensors.
Alternatively, the device is available in stainless steel V4A. This makes a compact design which does not require a cable coming up to the surface.
The logger can simply be lowered into water, for instance hooked to a cord. After a series of measurements is completed, you can retrieve the logger and download its data.

Features
Water level and wave measurements
High resolution of 1.5 mm and accuracy of 20 mm at 40 m water column
Capacity for up to 1 billion readings
Fast transfer rates via USB interface
Server-based data transfer
Robust housing

Data Logger for pH and Temperature
pH-Log3030

Absolutely Waterproof

The pH-Log3030 is a self-sustaining data logger for unsupervised measurements and logging of pH and temperature. Once the logger has been set up with a PC, it can be completely submerged into water or installed into a sewer tunnel.

Large Memory Capacity

Up to 2 000 000 readings each for pH and temperature fit into the large memory of the logger. And those readings are safe even if the battery should be completely depleted during operation. You can configure the logging interval between 1 seconds and 24 hours. A USB port is provided for the download process. The pH-Log3030 is also available with an integrated GPRS modem, which can be used to save the measured data via remote transmission to a web server (See p. 15 for the DK3000-GPRS Series).
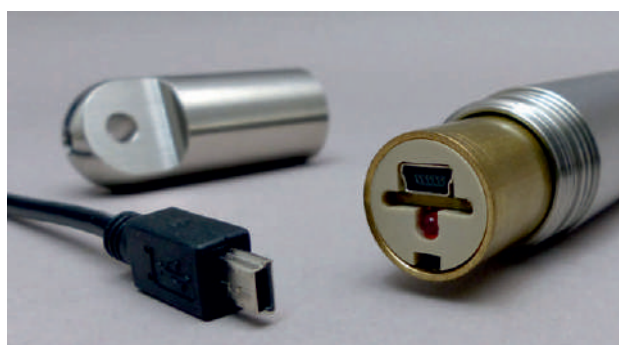

Exchangeable Electrode

Calibrating and Changing the Electrode

The elextrochemical pH-electrode provides precise results in an ample measuring range. In order to sustain that accuracy even during long measuring periods the software allows calibration by the user. In addition, the electrode can be exchanged by the user when it is depleted.

Calibration

A calibration stand for safe calibration is also available for the pH electrode.

Calibration stand:
Order No. KALPH1

A number of reference solutions are available:

pH of 4,   500 ml bottle   Order No. K-pH4
pH of 7,   500 ml bottle   Order No. K-pH7
pH of 10, 500 ml bottle   Order No. K-pH10

Quick and Easy Access to Your Data

Readings can be downloaded to a PC via USB interface.
Driesen + Kern Software InfraLog automatically detects the logger. (Refer to p. 18 for further details.)

Features

Features
Electrode can be calibrated and exchanged by the user
High quality electrode
Measurement range pH 1 ... 14
Event-driven mode: exceedance of thresholds triggers logging
Server-based data transfer
Simultaneously records temperature for ideal compensation
Large memory for up to 4 million readings
Fast data transfer via USB interface

Data Logger for Conductivity and Temperature
µS-Log3040

Wide Variety of Applications

The µS-Log3040 can measure conductivity and temperature in aqueous solutions at the same time.
Before starting a measurement the data logger needs to be set up with a PC or Notebook, and can then simply be submerged in a river, lake, groundwater pipe or in a sewer tunnel. The housing is made of stainless steel V4A and comes without exposed connectors or sockets and does not need a cable coming up to the surface which makes it inconspicuous.
The µS-Log3040 features automatic range selection which ensures that the ideal resolution is always provided so you don't "miss" unexpectedly high or low readings when abrupt rises of conductivity readings occur.
The µS-Log3040 is also available with an integrated GPRS modem, which can be used to save the measured data via remote transmission to a web server (See page 15 for the DK3000-GPRS Series).

Large Memory for Significant Measurement Profiles

Up to 4 million readings can be saved to the large memory of the logger. And those readings are safe even if the battery should be completely depleted during operation. You can configure the logging interval between 1 second and 24 hours.

The µS-Log3040-INT can operate in rivers, lakes and sewer tunnels or be used in the transportation of fish.

Calibrating and Changing the Electrode

The used electrode provides accurate measurement data in a wide range. It is extremely long-term stable and requires only little maintenance.
The software allows calibration by the user. In addition, the electrode can be exchanged by the user in case it was damaged.

Fast data transfer to your PC via USB interface.

- Automatic range selection

  - △ 0 ... 0.4 mS/cm
  - △ 0.4... 1.0 mS/cm
  - △ 1.0... 2.0 mS/cm
  - △ 2.0... 3.8 mS/cm
  - △ 3.8... 7.9 mS/cm
  - △ 7.9... 100 mS/cm

- High accuracy
- Small dimensions
- Large memory

Features
Automatic range selection
Operating time of up to 4 years thanks to low power consumption and maintenance
Electrode can be calibrated and exchanged by the user
Server-based data transfer
Large memory for up to 4 million readings
Event-driven mode: exceedance of thresholds triggers logging
Fast data transfer via USB

Data Logger for Dissolved Oxygen
O$_2$-Log3055

Oxygen Saturation in Waters

Huge amounts of nutrients (mainly phosphates and nitrates) find their way into the waters by sewage water (amongst others detergent residue, faeces etc.) and seepage of fertilizers in agriculturally used areas and thus accelerating the growth of water plants.

If rivers or lakes become overburdened by nutrients such as phosphore or nitrogen compounds a process called Eutrophication sets in.

The more plants die back the more oxygen is consumed in the process of decomposition.
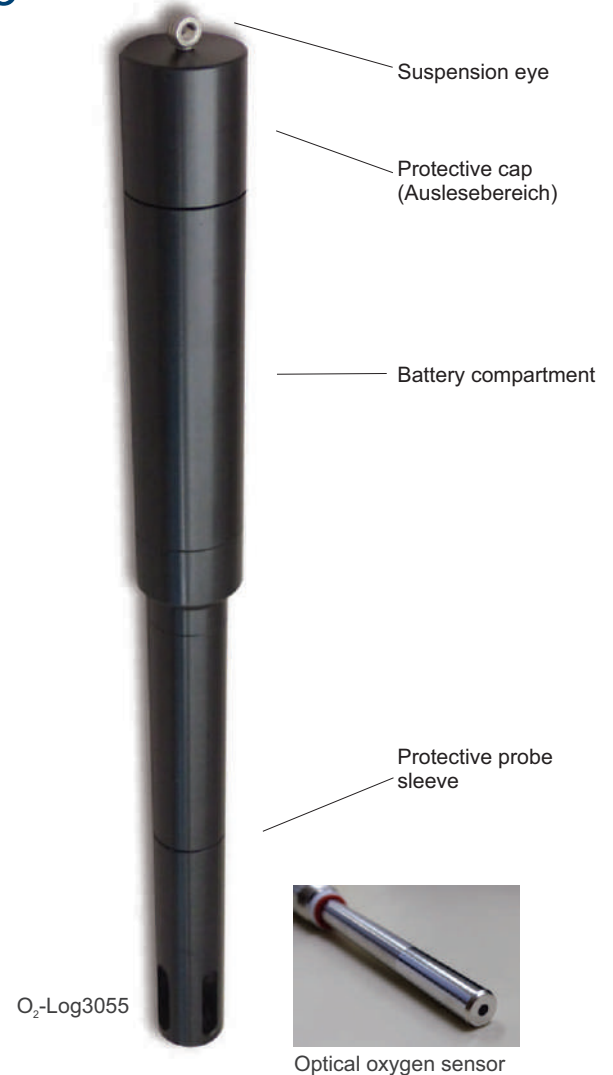
Consequently, toxic substances such as hydrogen sulphide or methane form followed by the water becoming a dead zone accompanied by fish die-off and malodour.

Thus it is very important to measure and monitor the dissolved oxygen content in endangered waters.

The O$_2$-Log3055 measures both dissolved oxygen and temperature and saves the readings to its internal memory.
It utilizes an optical-based oxygen sensor which yields reliable results in a wide measurement range. A fundamental advantage of the optical measurement method is the substantially improved long-term stability.

Before starting a measurement the data logger needs to be set up with a notebook or tablet and can then be installed in a river or lake. The software InfraLog for Windows lets you configure parameters such as a predefined start time and the logging interval (1 minute ... 24 hours). Both the run description as well as the file name which includes date and time make managing your readings convenient.

Time-related analyses can show correlations and indicate potential water endangering conditions enabling you to initiate appropriate countermeasures.

Suspension eye

Protective cap (Auslesebereich)

Battery compartment

Protective probe sleeve

O$_2$-Log3055

Optical oxygen sensor

The O$_2$-Log3055 can be ordered with an integrated GPRS modem, which can be used to save the measured data via remote transmission to a web server. (See page 15 for the DK3000-GPRS Series).

Features

Features
Highly accurate readings and long-term measurements through optical measuring method
Low power consumption
Corrosion resistance ensured by POM housing and stainless steel sensor probe
PTFE membrane
Long battery life
Commercially available batteries, user-changeable
Large memory for up to 4 million readings

CTD Data Logger
CTD-Log3100

Data logger for 3 measures variables

The CTD-Log3100 is a multiparameter data logger for 3 measured variables. In addition to water level and temperature it can also measure conductivity.

Two variations of the device are available. A model with an absolute pressure sensor (model -A) and another model with a gauge pressure sensor (model -B).
Model CTD-Log3100-A is especially well suited for operation in salt marshes as it can be inconspicuously placed on-site and it delivers reliable measured values during flooding.

P-Log3020-PA

In order to obtain accurate water level readings a P-Log3020PA barometer is operating simultaneously, whose barometric preassure measurements can be used in InfraLog for Windows to compensate for atmospheric influences.

CTD=

Conductivity Temperature Depth

The CTD-Log3100-R is optimized for measuring in water wells thanks to its cable coming up to the ground surface as downloading data does not require removing the logger. The battery is housed in a suspension device at the hole of the well which makes changing the batter very easy.

Also, the LongLife Lithium battery makes operation periods of up to 4 years possible.

Automatic range selection

△ 0   ...   400µS/cm*
△ 0.4...   1.0 mS/cm
△ 1.0...   2.0 mS/cm
△ 2.0...   3.8 mS/cm
△ 3.8...   7.9 mS/cm
△ 7.9...   100 mS/cm

Features

3 measured values (CTD) at once
Low power consumption enables maintenance-free long-term operation
Capacity for up to 1 millard readings
On-site calibration for pressure and depth
Small diameter for 2 inch wells and up
Battery life of up to 4 years

Specifications

Data Logger T-Log3001

Temperature

Measuring range:	-20...+60°C (logger range)
Accuracy:	+/- 0.2°C (+/-0.1°C on request)
Resolution:	0.01°C (0.003°C on request)

Mechanics

Dimensions:	d= 25mm
	l= 220mm
Weight:	480g with batteries
Housing:	V4A
Battery:	LiTh-12
	(user-changeable)
Memory capacity:	4 million readings
Interval:	1 second... 24 hours
Fastmode:	2, 4, 8,16, 32, 64 Hz
Resolution achieved in fastmode is about 0.1%-0.2% FS	
Battery life:	4 years @ 1 minute
	2 years @ 10 seconds
	70 days @ 1 second

Data Logger P-Log3020 PA/PR

Temperature

Measuring range:	-20...+60°C (logger range)
Accuracy:	+/- 0.2°C (+/-0.1°C on request)
Resolution:	0.01°C

Pressure/water level

Sensor:	Piezo pressure sensor
Measuring range:	0...10 mH2O , 0...20 mH2O
	0...30 mH2O

(Measuring ranges of up to 500m available on request)

Density correction:	available for other media
Resolution:	better than 0.01% FS
Accuracy (20°C):	+/- 0.05% of FS
Long-term stability:	< 0.1% of offset/year
	< 0.1% of voltage/year
Overpressure:	3x full scale range

Mechanics:

Dimensions:	d= 25mm
	l= 215mm
Weight:	480g with batteries
Housing:	V4A
Battery:	LiTh-12
	(user-changeable)
Memory capacity:	2 M readings/measured variable
Interval:	1 second... 24 hours
Fastmode:	2, 4, 8, 16, 32 Hz (Pressure
	measurements also at 64 Hz)
Resolution achieved in fastmode is about 0.1%...0.2% FS	
Battery life:	4 years @ 1 minute
	2 years @ 10 seconds
	70 days @ 1 second

Data Logger P-Log3020-Baro

Temperature

Measuring range:	-20...+60°C (logger range)
Accuracy:	+/- 0.2°C (+/-0.1°C on request)
Resolution:	0.01°C

Barometric Pressure

Sensor:	Piezo-resistive pressure sensor
Measuring range:	0...1 300 hPa
Resolution:	10 Pa
Accuracy (20°C):	+/- 0.6 hPa
Long-term stability:	< 0.1 % of offset/year
	< 0.1 % of voltage/year

Mechanics

Dimensions:	d= 25mm
	l= 215mm
Gewicht:	480g with batteries
Housing:	V4A
Battery:	LiTh-12
	(user-changeable)
Memory capacity:	2 million readings each for
	pressure and temperature
Interval:	1 second... 24 hours
Fastmode:	2, 4, 8, 16, 32 Hz
Battery life:	4 Jahre @ 1 minute
(user-changeable)	2 Jahre @ 10 seconds
	70 Tage @ 1 second

Reliable Readings through Calibration

If desired, a certificate of calibration can be included in the delivery of all Driesen + Kern data loggers. Our in-house calibration laboratory has equipment for the calibration of absolute pressure, pH, conductivity, dissolved oxygen as well as a high-precision temperature calibration oil bath. These excellent testing instruments ensure long-term and heat-resisting measurement data.

Certificate of Calibration

Specifications

MikroLog2 - Data Logger

Pressure

Measuring range: (in mH2O)	10m, 50m, 100m, 200m, 350m, 500m
Resolution:	< 1mm (meas. range <50m) < 10mm (meas. range >50m)

Accuracy

Measuring range > 50m:	+/- 0.1% FS
Measuring range < 50m:	+/- 0.3% FS

Temperature

Measuring range:	-20...+70°C
Resolution:	up to 0.001°C
Accuracy:	± 0.2 °C (optional: ± 0.1°C)
Interval:	1 second...24 hours selectable 2/4/8/16/32 Hz
Housing:	V4A stainless steel, waterproof up to 50bar
Battery:	Lithium battery (user-changeable)
Included in delivery:	Data logger, 1 battery, Certificate of Calibration, Manual
Optionally available:	Interface and Software *InfraLog for Windows*

Model:
Two variations of the MikroLog2 are available. The -s and -xs models differ in length, memory capacity and battery type (xs=LITH34, s=LITH32) and battery life.

MikroLog2 - Logger for Water Level and Temperature

Model	Memory capacity	Dim. [mm]	Battery life[1]	Temperature range
XS	100 000 readings	d= 16 l= 140	1 year	-20..+70°C
S	4 million readings	d= 16 l= 186	4 years	-40..+80°C

1= at an interval of 10 minutes

Order Code
MikroLog2 -G -BF -MBP

-G = Measured var.   T = Temperature only
                              PT = Temperature and
                                       pressure/water level

-BF = Model   XS = Extra small
                         S   = Small

MBP= Water level   0 = w/o measurement
range   10 = 10m
                          50 = 50m
                      100 = 100m
                      200 = 200m
                      350 = 350m
                      500 = 500m

Data Logger P-Log3021-MMC

Temperature

Measuring range:	-20...+60°C (logger range)
Accuracy:	+/- 0.2°C (+/-0.1°C on request)
Resolution:	0.01°C

Pressure

Sensor:	Piezo-resistive pressure sensor
Measuring range:	0...40mH2O (0...400 kPa)
Density correction:	Available for other media
Resolution:	1.5mm (15Pa)
Accuracy:	+/-15mm (+/-150Pa)

Tilt Sensor	Accuracy: 1°
Humidity Sensor	Accuracy: +/- 5% RH

Mechanics:

Dimensions:	d= 90mm, l= 382 mm
Weight:	4 800g
Housing:	POM (optional V4A)
Battery:	4x alkaline batteries (type D) (user-changeable)
Memory:	1GB MMC
Memory capacity:	1 millard readings
Interval:	1... 24 hours selectable
Fastmode:	2/4/8/16/32 Hz
Battery life:	4 years @ 1 minute 2 years @ 10 seconds 70 days @ 1 second

Specifications

Data Logger pH-Log3030

Temperature
Measuring range:	0...+80°C (logger range)
Accuracy:	+/- 0.2°C (+/-0.1°C on request)
Resolution:	0.01°C

pH
Sensor:	Strong glass electrode (user-changeable)
Measuring rangeh:	1...14 pH
Resolution:	0.01 pH
Accuracy:	± 0.02 pH
Operating depth:	max. 100m

Mechanics
Dimensions:	d= 25mm l= 366 mm
Weight	Approx. 700g with batteries
Housing:	V4A
Battery:	LiTh-12 (user-changeable)
Memory capacity:	2 M readings/measured variable
Interval:	1 second...24 hours selectable
Fastmode:	2/4/8/16/32 Hz
Battery life:	4 years @ 1 minute
(user-changeable)	2 years @ 10 seconds
	70 days @ 1 second

Data Logger µS-Log3040

Temperature
Measuring range:	0...+80°C (logger range)
Accuracy:	+/- 0.2°C (+/-0.1°C on request)
Resolution:	0.01°C

Conductivity
Sensor:	Conductometric two-electrode measuring cell (user-changeable)
Measuring range:	0 … 100 mS/cm Automatic range selection
Resolution:	0.2% FS
Accuracy:	2% FS
Temperature compensation:	Disabled by default, (selectable on your order)
Operating depth:	max. 100m

Mechanics
Dimensions:	d= 25mm l= 301 mm
Weight	Approx. 700g with batteries
Housing:	V4A
Battery:	LiTh-12 (user-changeable)
Memory capacity:	2 million readings each for conductivity and temperature
Interval:	1 seconds.... 24 hours selectable
Fastmode:	2/4/8/16/32 Hz
Battery life:	4 years @ 1 minute
	2 years @ 10 seconds
	70 days @ 1 second

Optional Long Version
Measuring range:	10 ... 2000µS (with 4-electrode probe/ resolution: 0.03 µS)
Dimensions:	d= 25mm l= 363mm

(All other specifications remain unaffected.)

Data Logger O₂-Log3055

Dissolved Oxygen
Sensor:	Optical DO sensor
Masuring range:	0 ... 30mg/l dissolved oxygen (0...100% saturation)
Resolution:	0.05%
Accuracy:	±1% of reading + 8ppb
Life expectancy:	DO electrode approx. 12 months (user-changeable)

Mechanics
Dimensions:	See figure below
Weight:	approx. 1400g with batteries
Weight:	POM (V4A optional)
Battery:	2xLITH37, Li battery (size D) (user-changeable)
Battery life:	3 months @ 15 minutesl 1 year @ 1 hour
Memory capacity:	2 million readings each for DO and temperature
Interval:	1 minute... 24 hours freely selectable
Operating conditions:	0.2...6bar absolute pressure 0...60°C
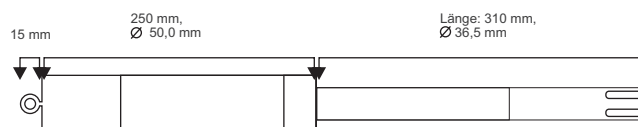
Data Logger CTD-Log3100

CTD-Log3100 contains the same sensors as µS-Log3040 and P-Log3020. Specifications regarding measurement range, resolution and accuracy are consistent with those of the corresponding devices. The conductivity electrode is user-changeable

Mechanics:
Dimensions:	d = 36mm l= 380mm
Weight:	Approx. 800g with batteries
Housing:	POM, V4A optional
Battery:	LiTh-12
Memory capacity:	4 million readings in total
Interval:	1 second... 24 hours selectable
Fastmode:	2/4/8 Hz
Battery life:	4 years @ 1 minute
(user-changeable)	2 years @ 10 seconds
	50 days @ 1 second

Modern Data Logger Series DK3000-D-GPRS
with GPRS Data Transmission

Data transmission to your web server over GPRS

Alarm notifications on your mobile phone or via e-mail

DK3000-D-GPRS-Logger with attachment & cable

... with connectable probes (see next page)

Long-term Measurements in Remote Locations

The Data Logger Series DK-3000-GPRS is perfectly suitable for long-term measurements of several parameters.
It provides a digital interface to which our DK70XX Series probes can be connected. A single probe always measures two parameters from temperature, water level, pH, conductivity or dissolved oxygen.

The readings are taken at a user-selectable interval and can later be uploaded to a web server, e. g. all the data of a single day at once.
Of course the data transmission can be set to shorter (up to 60 seconds) or longer intervals.

The server hosting the uploaded data usually uses FTP and can additionally provide a password protected login.If you don't want to set up your own FTP server, you can rent online storage on a Driesen+Kern server.

The logger housing contains the GRPS modem as well as the long life battery which ensures low maintenance operation for serveral years.I

Features
Built-in GPRS modem for data transmission to a web server
Event-driven logging mode
Password protected access to your measurement data over the internet
1 billion readings with 16-bit resolution
LongLife battery for maintenance free operation (2 years @ data transfer once a day)

SD Memory Card and Event-driven Mode

The readings are saved to an SD memory card providing capacity for up to 1 billion readings with date and time.
The logging interval can be configured between 2,4,8,16, 32 Hz and 24 hours.

Above all the logger features an event-driven mode. In this mode the logger begins a new measurement series when it detects an exceedance of a predefined threshold or a specified rate of rise. In this way it takes and logs only those measurements that are of interest to you.

Probes for the DK3000-D-GPRS Logger

DK3000-D-
GPRS Logger

Water Level and Temperature

The data logger DK3000-D-GPRS can be equipped with several different probes. This way it can be used flexibly in a various applications while still being able to reduce your budget.

The submersible water level probe DKP3020 is connected to the data logger with a capillary cable thus logging measurements is unaffected by barometric pressure changes. Also measures water temperature.

Typical fields of application are the measurement of groundwater, leachate monitoring as well as the water level measurment in all kinds of flowing or standing water bodies.

DKPH7030
DKUS7040
DKO7050

DKP7020

Probes for the
DK3000-D-GPRS Logger

DKCTD7310

Water Quality (pH/Cond./DO)

Probes for pH(DKPH7030), conductivity (DKUS7040) or DO (DKO7050) are available for comprehensive water quality measurements. Each of them also measures temperature.
Not only are they suitable for the use in groundwater measuring stations, but also in flowing or standing water bodies, sewage treatment plants and for applications related to seawater and brackwater.
The probes can be calibrated and all built-in sensors are user-changeable.

Conductivity/Temperature/Depth (CTD)

The combined submersible probe DKCTD7310 (CTD= Conductivity/Temperature/Depth) can measure conductivity, temperature and depth.
Its connection cable with a length of 100m enables you to establish measuring points even at water depths of 60m.
The sensors can be calibrated and exchanged by the user.

DK3000-D-GPRS & Probes - Specifications

Battery:	4x alkaline batteries (type D) (user-changeable)	Battery life:	2 years @ 1 minute interval and data upload once a day
Memory capacity:	1 millard readings		
Interval:	selectable between 1 sec... 24 hrs	Dimensions	
		Logger unit:	d= 90, l=377mm POM, V4A stainless steel optional

Temperature (all probes)

Sensor element:	High-precision shunt
Measuring range:	-20...+80°C
Accuracy:	+/- 0.2°C (+/-0.1°C on request)
Resolution:	0.001°C

Pressure/Water Level (DKP7020)

Sensor:	Piezo pressure sensor
Measuring range:	0...10 mH2O , 0...20 mH2O 0...50 mH2O
Resolution:	Better than 0.01% FS
Accuracy (20°C):	+/- 0.05% FS
Long-term stability:	< 0.1% of offset/year < 0.1% of voltage/year
Overpressure:	3x full scale range
Probe dimensions:	d=25mm, l= 210mm, V4A

pH/Temperature Probe DKPH7030

Sensor:	Strong glass electrode
Meeasuring range:	1...14 pH
Resolution:	0.01pH
Accuracy:	± 0.02 pH
Dimensions:	d=25mm, l= 305mm, V4A
Electrode:	User-changeable

Conductivity Probe DKUS7040

Sensor:	Conductometric two-electrode measuring cell
Measuring range:	0 … 100mS/cm with automatic range selection Ranges as with µS-Log3040
Resolution:	0.2% FS
Accuracy:	2% FS
Dimensions:	d=25mm, l= 305mm, V4A
Electrode:	User-changeable

Optical DO Probe DK7050 Dissolved Oxygen

Sensor:	Optical DO sensor
Measuring range:	0 ... 30mg/l dissolved oxygen (0..100% saturation)
Resolution:	0.05%
Accuracy:	±1% of reading + 8ppb
Temperature compensation:	Disabled by default, (selectable on your order)
Life expectancy:	DO electrode approx. 12 months (user-changeable)

Mechanics

|	
Dimensions:	d= 50mm l= 575mm
Weight:	approx. 1 400 with batteries
Housing:	POM (V4A optional)
Operating conditions:	0.2...6bar absolute pressure 0...60°C
Electrode:	User-changeable

CTD Probe DKCTD7310

Measured variables:	Conductivity, temperature, pressure
Ranges/Resolution & Accuracy:	see above
Dimensions:	d=36mm, l= 380mm, POM
Probe cable:	Vented capillary cable
Electrode:	User-changeable

Software *InfraLog* für Windows V5
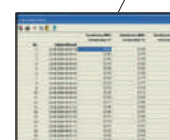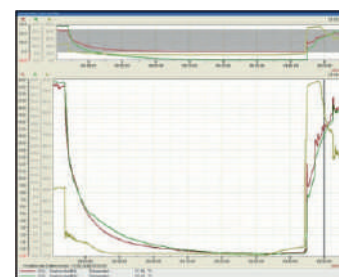## for all Water Data Loggers by D+K
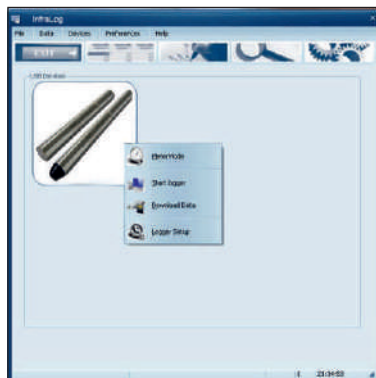
InfraLog V5

Basic-Version
Light-Version
Enhanced-Version
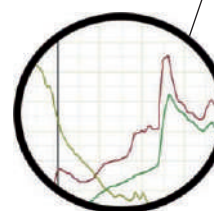
for Windows
Win7/Win8/Win10

The software InfraLog provides EASY, SECURE & CONVENIENT control for all Driesen+Kern products.
After establishing a connection between your logger and PC, InfraLog automatically detects the device.
InfraLog V5.0 offers a multitude of features for our selection of water related products.
InfraLog is available in three versions: Basic (included in delivery), Light and Enhanced (both optionally available) each with a different number of features.

Well arranged charts
with overview and up
to three Y-axes

INFRALOG FEATURES	BASIC	LIGHT	ENHANCED (Professional)
Automatic device detection	•	•	•
Conversion from base units of measurement into customizable physical values	•	•	•
Load/save device settings	•	•	•
Upgrade device firmware via USB	•	•	•
Save readings to your PC's hard drive or network storage	•	•	•
Customize InfraLog's appearance	•	•	•
Symbols and Icons indicate logger status (logging/alarm/battery)	•	•	•
Total control (settings, start, stop, download etc.)	•	•	•
Measurement input configuration	•	•	•
Download data without stopping the logger	•	•	•
Online readings	•	•	•
Export to Excel (fast conversion)	•	•	•
Calculate absolute humidity, dewpoint etc.	•	•	•
Supports USB 2.0 for download rates of 1 Mbit (100 000 readings in 20 s)	•	•	•
Menu languages (German, English, Spanish, French)	•	•	•
Compatible with Windows 7, 8 & 10	•	•	•
Formula compiler calculates any measured variable		•	•
y/t charts (readings over time)		•	•
Three scalable axes		•	•
Zooming function		•	•
Meter readings at the cursor		•	•
Display as spreadsheets		•	•
Combine a series of measurement in one chart		•	•
Definition of thresholds		•	•
Statistics (min, max and average values)		•	•
y/x charts (values over values)			•
Generate daily, weekly, monthly and annual reports			•
Specify beginning and end of analized period			•
Input of analysis interval			•
Print settings			•

Meter-reading
at the cursor

Zooming function

CE