Driesen + Kern

# High-Temperatur Data Loggers

## Temperature · Humidity · Conductibility · Shrinkage & Pressure

- Industrial furnace
- Pasteurization
- Sterilization
- Bedpan washers
- Washer disinfectors
- Ceramic and brick drying

# RDG Data Logger Series

## for Validation and Monitoring of Disinfection and Sterilization Processes

| Features |
|---|
| Robust, shock-proof housing |
| Continuous mode - when memory is full, oldest data will be overwritten first |
| Stop when full - when memory is full, the logger will stop logging |
| Battery life: up to 4 years under normal operating conditions:<br>4 years @ 1 minute<br>230 years @ 10 seconds<br>25 years @ 1 second |
| InfraLog Basic software already included, optional Light/Enhanced upgrades with comprehensive graphics function and calculation of A0 value |
| Intervals: 1 s ... 24 hrs<br>up to 32 Hz |
| High resolution: 0.01°C<br>Excellent accuracy: up to ±0.1°C |

**Possible Applications**
Made of either high-quality V4A stainless steel or temperature-resistant Peek thermoplastic polymer, our high-temperature data loggers can operate at temperatures of up to 150°C.
They are suitable for use in sterilization or drying processes, washer disinfectors (e. g. bedpan washers) and autoclaves.
Thanks to the housing, optimized electronic components and a special calibration these data loggers can be used for process monitoring in the food industry, pharmaceutics and medical engineering.

**Long Operating Times**
Both the logger's large memory, which holds up to 4 million readings, and its low power input make several years of continuous use possible. Thus also allowing for uninterrupted long-term surves.

**High Accuracy & Fast Response Times**
Due to the high measurement resolution of 1/100°C and an accuracy of up to 0.1°C these high-temperature loggers by Driesen + Kern are the ideal solution for demanding applications.
At freely selectable intervals between 32 Hz and 24 hours the data loggers provide uninterrupted monitoring of your processes.
Especially pressure measurements benefit from short sampling intervals allowing to show quick changes in pressure.
Models with thin external temperature probes also provide a detailled view of sudden changes in temperature.


InfraLog for Windows is compatible with tablets supported by Windows

**Zubehör und Optionen**

On request, we provide a DAkkS or ISO calibration certificate for every purchased logger.

For field use and safekeeping of your data loggers we offer hard shell carrying cases customized for the exact number of loggers you require.

# MikroLog RDG Data Loggers

## Stainless Steel Loggers

**MikroLog RDG Series**

MikroLog RDG Series data loggers record temperature, pressure and relative humidity. Their small diameter (starting at 16mm) makes them an ideal choice for quality surveillance in bottle cleaning, but they're also being successfully used in disinfection or drying processes. The housing is made of V4A stainless steel, making the logger very durable and shock-proof. Memory capacity is up to 4 million readings, and they offer calculation of the A0 value required by prEN 15883-1 "Washer-disinfectors - Part 1: General requirements, terms and definitions and tests" as well as the PU value.

**MikroLog RDG-T**

MikroLog RDG-T
Data logger for temperature,
3 models (XS, S, M),
see table on p. 5.

**Temperature & A0/PU Values**

| | |
|---|---|
| Resolution: | 0.01°C |
| Accuracy: | ± 0.3°C (optional: ± 0.1°C) |

**MikroLog RDG-PT**

MikroLog RDG-PT
Data logger for temperature and pressure,
3 models (XS, S, M),
see table on p. 5.

**Temperature & A0/PU values**

| | |
|---|---|
| Resolution: | 0.01°C |
| Accuracy: | ± 0.3°C (optional: ± 0.1°C) |
| **Pressure** | |
| Resolution: | 0.01% of full scale |
| Accuracy XS, S: | 0.25% of full scale |
| M: | 1% of of full scale |

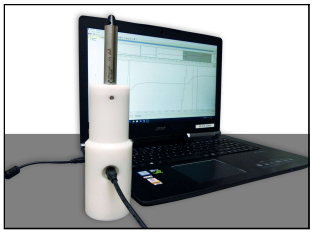
**MikroLog RDG-RFT**

MikroLog RDG-RFT
Data logger for temperature and humidity,
V4A stainless steel housing

**Temperature**

| | |
|---|---|
| Resolution: | 0.01°C |
| Accuracy: | ± 0.3°C (optional: ± 0.1°C) |
| **Relative Humidity** | |
| Resolution: | 0.04% RH |
| Accuracy: | see graphs 2, 3, 4 on p. 5. |

**Downloading Data from the MikroLog**



MikroLog data loggers are completely enclosed and don't require opening. Conveniently insert the unit into the stationary interface and download data via USB.

**P-Log3020 RDG**

The **P-Log3020 RDG** pressure & temperature data logger has a slightly larger diameter of 25 mm, but it also covers the widest temperature range.
For short periods up to 50 minutes the data logger can withstand temperatures up to 150°C.
Open the housing to access the USB port and conveniently download your measurement data to a computer.

**Temperature**

| | |
|---|---|
| Resolution: | 0.01°C |
| Accuracy: | ± 0.3°C (optional: ± 0.1°C) |
| **Pressure** | |
| Measurement range: | 1 bar, 10 bar, 16 bar |
| Resolution: | 0.01% of full scale |
| Accuracy: | 0.2% of full scale |

**µS-Log3041-K**

The **µS-Log3041-K** is a data logger for conductivity and temperature in aqueous solutions. It was specifically developed to monitor cleaning efficiency in washer disinfectors. This model can withstand temperatures within the chamber of up to 110°C

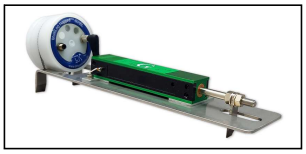
**Conductivity**

| | |
|---|---|
| Sensor: | conductometric two-electrode measuring cell (user-changeable) |
| Measuring range: | 0 … 100 mS/cm<br>0 ... 250 mS/cm optional |
| Resolution: | 0.2% of full scale |
| Accuracy: | 2% of full scale |

**Temperature**

| | |
|---|---|
| Sensor: | Pt1000 resistor |
| Measuring range: | 0...+110°C |
| Resolution: | 0.01°C |
| Accuracy: | ±0.3°C |

**DK390-DRY**



Data logger DK390-DRY records temperature, humidity and shrinkage, e. g. during ceramics or brick drying. This model can be fixed directly to the drying item.

| | |
|---|---|
| Measuring range: | 0...100% rF (0...90°C) |
| Movement: | 0...24 mm |
| Operating temperature: | max. 90°C |

# DK3xx RDG Data Logger Models

## Find the Right Logger for Every Task

**DK3xx Series**

Our RDG data loggers have been refined from the proven ruggedPlus logger series to be specifically used in high-temperature applications and they are a cost-effective alternative to the MikroLog models.
They housings are made from a high-quality, shock-proof and temperature stable Peek material. Their compact design allows operation in small or mobile sterilization equipment. All models provide the calculated A0 value according to prEN 15883-1 “Washer-disinfectors - Part 1: General requirements, terms and definitions and tests“ as well as the PU value.

**DK314/DK314-DM**

The DK314-DM is equipped with a solid temperature sensor and is especially suitable for pasteurization monitoring, e. g. inside of cans. The probe has a diameter of 3 mm and is robust against bending. It is designed to record rather slowly changing temperature levels. The sensor element is available with different lengths.

| | |
|---|---|
| Sensor length: | 5, 30, 50,100 mm / D=3 mm |
| Temperature range: | -20...+150°C |
| Resolution: | 0.01°C |
| Accuracy: | ± 0.3°C (optional: ± 0.1°C) |

**DK384-FP Pressure/Temperature Logger**

The DK384-FP is equipped with both a pressure sensor and a bendable temperature sensor. The pressure range of the DK384-FP is 0...4 bar, and temperature can be recorded in a range between -20 and +150°C.
The pressure port features a Luer lock connection fitting for pressure lines.

| | |
|---|---|
| Length of temp. probe: | 50, 100, 300 mm<br>D=1,5 mm |
| Temperature range: | -20...+150°C |
| Temperature resolution: | 0.01°C |
| Temperature accuracy: | ± 0.3 °C (optional: ± 0.1°C) |
| Pressure range: | 0...4 bar abs. pressure |
| Pressure resolution: | 0.01% of full scale |
| Pressure accuracy: | 0.2% of full scale |

**DK324/DK324-DM**

Combined temperature and humidity logger models DK324/DK324-DM can operate at up to 140°C and come with or without a sturdy external sensor element.

| | |
|---|---|
| Sensor length: | 63mm |
| Temperature range: | -20...+140°C |
| Resolution: | 0.01°C / 0.04% RH |
| Temperature accuracy: | ± 0.3 °C (optional: ± 0.1°C) |
| Humidity accuracy: | see graphs 2, 3, 4 on p. 5 |

**DK314-FP/DK317-FP**

The DK314-FP features a bendable temperature sensor while the DK317-FP has even two. Thanks to their extra fast response time these models are best suited for short cleaning processes with swift changes in temperature.

They are available with different sensor element lengths.

| | |
|---|---|
| Sensor length: | 50, 100, 300 / D=1.5 mm |
| Temperature range: | -20...+150°C |
| Resolution: | 0.01°C |
| Accuracy: | ± 0.3 °C (optional: ± 0.1°C) |

**DK318/319 Thermocouple Logger**

These loggers have one (DK318) or two (DK319) ports for connection with external thermocouple sensors which can measure at temperatures up to 1800°C. The logger itself can operate up until 150°C without additional insulation.
Refer to our separate data sheet for our comprehensive probe range.

| | |
|---|---|
| Thermocouple types: | B, E, J, K, T, N, R, S |
| Measurement range: | see table on p. 5 |
| Operating temperature: | -20...+150°C |
| IP40 protection | not protected against water |
| Accuracy[1]: | ± 0.6°C (+10 ...+ 90°C)<br>± 0.9°C (-20...+110°C)<br>± 1.5°C (-50...+150°C) |
| Resolution: | 0.05°C |

# Specifications

| Data Logger Model | Diameter Length / Height (w/o External Sensors) | Measurement Range T / RH | Measurement Range Pressure (+ Conductibility for µS-Log3041-K) | Lithium Battery Type | Intervals |
|---|---|---|---|---|---|
| MikroLog RDG-T-XS-MB | D=16mm/L=145mm | -20 ... +70°C | - | LITH 34 | 32 Hz |
| MikroLog RDG-T-S-MB | D=16mm/L=186mm | -20 ... +60°C | - | LITH 32A | 32 Hz |
| MikroLog RDG-T-M-MB | D=17mm/L=152mm | -20 ... +140°C | - | LITH 22 | 32 Hz |
| MikroLog RDG-PT-XS-MB | D=16mm/L=135mm | -20 ... +70°C | 10 / 20 / 35 / 50 bar (abs) [5] | LITH 34 | 32 Hz |
| MikroLog RDG-PT-S-MB | D=16mm/L=176mm | -20 ... +60°C | 10 / 20 / 35 / 50 bar (abs) [5] | LITH 32A | 32 Hz |
| MikroLog RDG-PT-M-MB | D=17mm/L=142mm | -20 ... +100°C | 10 / 20 / 35 / 50 bar (abs) [5] | LITH 22 | 32 Hz |
| MikroLog RDG-RFT-M-MB | D=17mm/L=156mm | -20 ... +125°C/140°C [4]<br>0 ... 100% rF | - | LITH 22 | 4 Hz |
| P-Log3020 RDG-PA-INT-MB | D=25mm/L=152mm | -20 ... +150°C [3] | 1 / 2 / 3 / 4 bar (abs) [5]/16bar | LITH 35 | 32 Hz |
| µS-Log3041-K | D=25mm/L=300mm | 0 ... +110°C | 0 ... 100 µS/cm | LITH 35 | 8 Hz |
| DK390-DRY | L=210mm/B=50mm/H =70mm | 0 ... +90°C<br>0 ... 100% rF | | LITH 35 | 1 Hz |
| DK324 | D=50mm/H=35mm | -20 ... +140°C [4]<br>0 ... 100% rF | - | LITH 35 | 4 Hz |
| DK324-DM | D=50mm/H=36mm | -20 ... +140°C [4]<br>0 ... 100% rF | - | LITH 35 | 4 Hz |
| DK314-DM-L-Cal | D=50mm/H=45mm [2] | -20 ... +150°C [6] | - | LITH 35 | 32 Hz |
| DK314-FP-L-Cal | D=50mm/H=45mm [2] | -20 ... +150°C [6] | - | LITH 35 | 32 Hz |
| DK317-FP-L-Cal | D=50mm/H=45mm [2] | -20 ... +150°C [6] | - | LITH 35 | 32 Hz |
| DK384-FP-L-Cal | D=50mm/H=70mm [2] | -20 ... +150°C [6] | 0...4 bar abs | LITH 35 | 32 Hz |
| DK318 | D=50mm/H=45mm | Table A [6,7] | - | LITH 35 | 1 Hz |
| DK319 | D=50mm/H=45mm [2] | Table A [6,7] | - | LITH 35 | 1 Hz |

The loggers can be calibrated for a measuring range up to -40°C at a reduced measuring accuracy.

1 = in thermal equilibrium plus accuracy of connected thermocouple probe

2 = plus sensor length

3 = max. 50 mins @ 150°C, max. 120 mins @ 134°C, continuous use @ 120°C

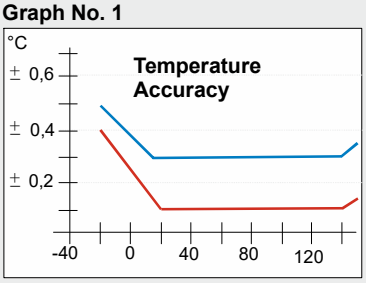
4 = non-condensing + please observe operational conditions as shown in graph no. 3

5 = Please specify absolute pressure range when placing your order

6 = max. 50 mins @ 150°C/2bar, max 120 mins @ 134°C/2bar, continuous use @ 120°C/2bar

7 = Logger operating range -20..+150°C

**Graph No. 1**



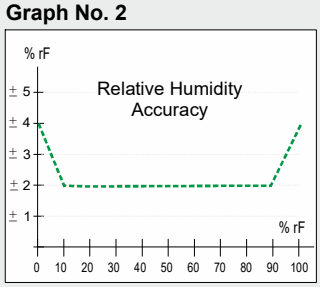

-- Temperature sensor (standard calibration)

-- Temperature sensor (enhanced accuracy)

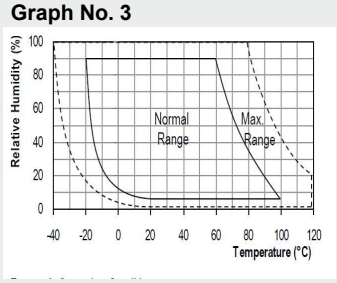
**Table A**

| DK318/319 Range in C° | |
|---|---|
| TypeK | -200 ... +1400°C |
| TypeJ | -210 ... +1200°C |
| TypeT | -200 ... + 400°C |
| TypeB | -250 ... +1820°C |
| TypeE | -200 ... +1000°C |
| TypeN | -200 ... +1300°C |
| TypeR | -50 ... +1750°C |
| TypeS | -5 ... +1770°C |

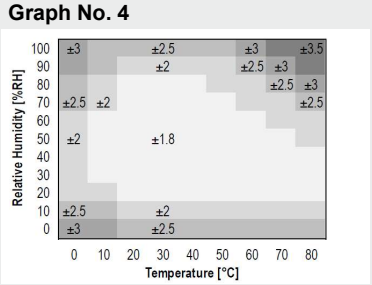
**Graph No. 2**




**Graph No. 3**




**Graph No. 4**



# Order Code

**MikroLogRDG** -G -BF -MBP

| | | |
|---|---|---|
| -G = Parameter | T = Temperature only<br>PT = Temperature and pressure<br>RFT = Temperature and humidity | **Included:**<br>Certificate of calibration, 1 battery (see p. 5), Software InfraLog Basic, |
| -BF = Model | XS = extra small (not for RFT)<br>S = small (not for RFT)<br>M = medium | **Optional:**<br>Software InfraLog Light or Enhanced<br>Interface: INT-S Stationary interface for MikroLog RDG-S and -XS (16mm)<br>INT-M Stationary interface for MikroLog RDG-M (17mm)<br>carrying case |
| MBP= Abs. pressure measurement range | 00 = without pressure<br>100 = 10 bar<br>200 = 20 bar<br>350 = 35 bar<br>500 = 50 bar | |

**P-Log3020-RDG-PA-INT** -MBP

| | | |
|---|---|---|
| MBP= Abs. pressure measurement range | 100 = 1 bar<br>400 = 4 bar<br>1600 = 16 bar<br>2000 = 20 bar | **Included:**<br>Certificate of calibration, 1 battery (see p. 5), software InfraLog Basic, USB cable<br>**Optional:**<br>Software InfraLog Light or Enhanced, carrying case |

**µS-Log3041-K**-MB

| | | |
|---|---|---|
| -MB = measurement range | STD = 0-100mS<br>250 = 0-250S/CM | **Included:**<br>Certificate of calibration, data logger, 1 battery (see p. 5), software InfraLog Basic, USB cable,<br>**Optional:**<br>Software InfraLog Light or Enhanced, carrying case, spare electrode uSLOG3041061 |

**DK390-DRY**

| | |
|---|---|
| **Included:** | Data logger, 1 battery (see p. 5), InfraLog Basic, USB cable |
| **Optional:** | Certificate of calibration; Software InfraLog Light or Enhanced |

**DK314-DM**-L-CAL with solid temperature sensor

| | |
|---|---|
| -L = Sensor length | 05 = 5mm<br>30 = 30mm<br>50 = 50mm<br>100 = 100mm |
| -CAL = Calibration | 0 = Standard accuracy (±0.3°C), certificate of calibration optionally available<br>EA = Enhanced accuracy (±0.1°C), certificate of calibration included in delivery |

**DK314-FP**-L-CAL (1x Temperature) and **DK317-FP**-L-CAL (2x Temperature) with bendable sensors

| | |
|---|---|
| -L = Sensor length | 50 = 50mm<br>100 = 100mm<br>300 = 300mm |
| -CAL = Calibration | 0 = Standard accuracy (±0.3°C), certificate of calibration optionally available<br>EA = Enhanced accuracy (±0.1°C), certificate of calibration included in delivery |
| **Included:** | Data logger, 1 battery type LITH35, software InfraLog Basic, USB cable |
| **Optional:** | Certificate of calibration (as per order code), software InfraLog Light or Enhanced |

**DK384-FP**-L-CAL for absolute pressure (4 bar) and temperature (with bendable temperature sensor)

| | |
|---|---|
| -L = Sensor length | 50 = 50mm<br>100 = 100mm<br>300 = 300mm |
| -CAL = Calibration | 0 = Standard accuracy (T: ±0.3°C, P: ±0.2% of FS), calibration certificate optionally available<br>EA = Enhanced accuracy (T: ±0.1°C, P: ±0.2% of FS), calibration certificate included in delivery |
| **Included:** | Data logger, 1 battery type LITH35, Software InfraLog Basic, USB cable |
| **Optional:** | Certificate of calibration (as per order code), Software InfraLog Light or Enhanced |

| | |
|---|---|
| **DK318** | Data logger with one port for thermocpuples, TC probe sold separately, cal. certificate optional |
| **DK319** | Data logger with two ports for thermocouples, TC probe sold separately, cal. certificate optional |
| **Included:** | Data logger, 1 battery type LITH35, Software InfraLog Basic, USB cable |
| Optional: | Certificate of calibration (as per order code), Software InfraLog Light or Enhanced |

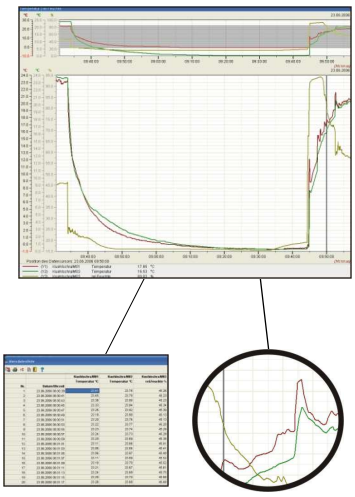
# Software *InfraLog* V5 for Windows

## for RDG Logger Series


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 offers a multitude of features for Driesen + Kern data logger series.
InfraLog is available in three versions: Basic (included in delivery), Light and Enhanced (both optionally available) each with a different number of features, inluding password protection and language options. It may be installed on all modern Windows-versions using a PC, notebook or windows-based tablet.

| 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 (setting, start, stop, dowmload 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 & 11 | . | . | . |
| 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) | | . | . |
| A0 value charts showing thermal disinfection efficiency | | . | . |
| MKT(mean kinetic temperature) charts | | . | . |
| y/x charts (values over values) | | | . |
| Generate daily, weekly, monthly and annual reports | | | . |
| Specify beginning and end of analized period | | | . |
| Input of analysis interval | | | . |

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



Meter-reading at the cursor

Zooming function

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