Driesen + Kern GmbH

Datalogger Series **rugged**^{plus}

Humidity · Temperature · Condensation · Waterdetection
Strain gauge · Barometric Pressure · Light ·
Analogue Signals (Voltage · Current · Pulse)

Data Logger Series Made in Germany

rugged*plus* ... Made to be strong and tough.

Wind, water, solar radiation, rain, storm, heat - these are just some of the environmental conditions data loggers have to brave in operation.

To ensure long durability and accuracy in readings despite these conditions, the devices have to be especially robust and sturdy.
Driesen + Kern GmbH have met this challange and developed the data logger series **rugged*plus***.

One of the **rugged*plus*** Series' main features is its flexibility (freely programmable input channels and removable probes) which makes it suitable for a variety of industrial and research applications.

Driesen+Kern GmbH has manufactured data loggers required by sophisticated applications for over 20 years. For example, we developed devices that could be strapped to the back of penguins, others could detect the formation of cracks damaging monuments or store readings in tsunami warning buoys. The logger series **rugged**^{plus} is our standard line of robust and reliable data loggers."

(Oliver Driesen, Managing Director)

Contents

The Data Logger Family rugged^{plus}
Number 1 in Versatility & Flexibility

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Features

Multitude of integrated sensors and external probes available
Programmable inputs for temperature, voltage/current/pulse count/ humidity/strain gauge etc.
Robust, shock-proof and IP65/IP68 protected enclosure
Temperature range within -40°C...+150°C
High resolution and accuracy (20 bit A/D converter)
Flash memoery for up to 4 million readings (exhausted or defect battery does not cause data loss)
Battery life of 4 years, monitored battery level!
"Shaky Start"- Start the logger by giving it a shake!
Visible alarm when exceeding thresholds
Continuous mode - oldest readings will be overwritten when the memory is full
Stop-when-full mode - the logger stops logging when the memory is full
Online measurements on screen and on hard disk
ASCII-Stream-Mode - Create your own software / hardware with our rugged loggers
Standard software InfraLog -basic- included in delivery, or -light/enhanced- with comprehensive graphical functions

Just shake the logger
Easy and flexible handling

Shake, start up, record
"Shaky Start" is a feature of the **rugged**[plus] Series. Just shake the logger in a specified rhythm and it will start up at a predefined interval, rendering the on-site use of a notebook or tablet unnecessary.

Robust and water-proof
The enclosures are made of high quality, shock-proof POM-composed synthetic material. The devices are protected against splash water according to IP65 and are partially fit for operation under water (IP68).

Versatile & flexible
With the robust data logger series **rugged**[plus] you can freely configure the measured variables. A variety of internal sensors and input channels are at your disposal.
They can be used for analog signals (e. g. 0..20mA/ 0..10V/pulse etc.) as well as a multitude of external probes. (Standard sensor range on pages 11-12)

Integrated Sensors
(depending on model)

- Temperature
- Humidity
- Barometric pressure
- Light (Lux)

Standard external inputs/probes

- Thermocouples
- Voltage
- Current
- Pulse
- UltraLowVoltage
- strain gauges
- Humidity/Temperature
- Water detector
- Soil moisture
- Condensation
- Radiation (UV,PAR etc)

Software "InfraLog" is supported by Windows tablets

Changing the battery is very simple

Long operating time
The large memory capacity and low current consumption allow logging for up to 4 years.

Status visualisation by LED
- Indicates threshold exceedance
- Indicates low battery level
- Indicates recording mode (quickly determine the status)

Time synchronised readings
A real time clock (RTC) ensures a correct time-reference enabling you to synchronise several devices.

Quickly process large amounts of data
The logger's memory can hold up to 4 million readings which can be downloaded in a matter of seconds thanks to a transfer rate of 1Mbps through the USB interface.

Online measurement
The series of rugged dataloggers can be used for online metering while logging,.
Using this feature the readings will be displayed on your PC/Notebooks screen while being stored directly to your hard disk. And these readings can be accessed from customer specific software tools at any time!

ASCII Stream functionality
If you would like to use a rugged logger as a sensor, directly connected to your application, you may set it up into ASCII-Stream Mode.
This feature allows you to collect data by Terminal commands (Windows/Linux), while not using any logging functions.
The USB driver simulates a virtual Comport that derives readings directly into your software/application or any other separate hardware.

This makes the logger lot more than "just" a datalogger- it serves as an interface to any hard/software as complex as it may be!

© Georesearch Volcanedo

Data logger DK 323 HumiBaroLog rugged^{plus} in the field - monitoring at a depth of 1300 m within the volcanic collapse caldera on Sumbawa (Lesser Sunda Islands, Indonesia)

„Georesearch Volcanedo Germany successfully deployed a HumiBaroLog **rugged**^{plus} in 2013 and 2014 during two first-time expeditions to the deepest caldera on earth which originated at the beginning of the Common Era. It reliably recorded meteorological data in the caldera even under extreme environmental conditions.

The rough terrain would have made the transportation of a larger weather station to the crater floor difficult which is why the small, compact data logger proved to be the right, powerful instrument for the task."

Georesearch Volcanedo Germany

1a Temperature Measurements

Option Temp: the logger comes with a high precision sensor type PT1000. The internal sensor is fitted on the surface of the enclosure for optimum thermal contact with the environmental medium.
Available for model: DK310, DK314

Option -DM: the sensor is built-in to a 100mm stainless steel pipe for easy insertion in ducts or food. We offer the radiation/rain shield TR351 for outdoor temperature measurements which provides protection against interferences from solar radiation.
Available for model: DK310-DM, DK314-DM

1b Humidity/Temp. Measurements

A special filter protects the integrated humidity/temperature sensor against dust and condensation.
The sensor is resistant to chemicals and features a high long-term stability of less than +/-1% RH/year.
A measurement accuracy of up to +/-2% RH and 0.3°C in a wide range of applications with sophisticated scientific and technological demands.

With Option -DM the sensor is placed in a 100mm stainles steel pipe. We offer the radiation/rain shield TR351 for meteorological surveys outdoors as it provides protection against interferences from solar radiation.

Available for models:
DK320/-DM, DK323/-DM, DK324-DM,
DK390/-DM, Dk391

2 Status LED

LED flashes at logging intervals.
It also indicates the exceedance of thresholds and low battery levels.

All Measurements
of the **rugged**^plus Family

with 100mm stainless steel pipe

with radiation shield

3 Option Baro - Barometric Pressure

The Baro sensor is for absolute pressure and was optimised in particular for the range of 0...1 100hPa.
It is suited for a variety of applications such as environmental or climate studies, meteorological research and also in clean rooms and laboratories.

Available for models: DK323, DK323-DM, Dk391

4 LUX - Illuminance measurements

The spectral sensitivity of the built-in LUX sensor was adjusted to meet the sensitivity of human visual perception so as to weight the brightness as if it were perceived through the human eye.
It can be used both for natural sunlight and artificial light sources.

In addition, we offer a selection of sensors with different spectral ranges for scientific research. The entire series of radiation sensors can be connected to the external input channels. A discrete data sheet is available for you online.

Available for models: DK361, DK362, DK391

5 Thermocouple Sensors

While the loggers already mentioned allow connection of thermocouple probes to particular ports, thermocouple sensors equipped with a mini ISA connector can be directly installed to these loggers.
You can use thermocouple types K, T, J, B, E, R, and S. When chosing this option all other internal sensors as well as options for external connection are ommitted.

Available for models: DK315, DK316
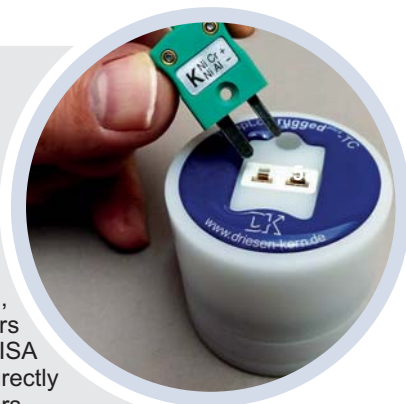
6 ## Additional Inputs

Besides the logger's integrated sensors you can connect up to two probes from our wide range of energy-efficient probes to the additional input channels (see pages 12-13 for further details). What is more, you can also feed in every kind of standard signal (e. g. 0..20mA, 0..10V, pulse/frequencies), PT100, PT1000 as well as thermocouple types K, T, J, B, E, N, R, S (does not apply to DK311/312). The 20-bit A/D converter provides extremely high resolution and precise measurements.

Cable types DKCU/DKCI and DKCP are required for standard signal input and are sold separately.

Available for model: **1 Channel DK311,**
2 Channel DK312, DK390, DK391

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Flexible Input Terminal - for all Sensors

The input terminal of the DK336/DK337 allows you to connect up to two external sensors or signals which are recorded with high resolution and accuracy.
It also provides the required supply voltage for external sensors.
The most important advantage of these input terminals is ist without the need for any special connection cables (DKCI...DKCP*) when measuring current/voltage/pulses.
*DKCP is not required for potential free pulses and pulses <3V.
For higher pulses (max. 24V) DKCP-0 is required.

Available models: DK336/DK337

Flexible Input Terminal - also for Strain Gauges

Just like the DK336 the DK337 is equipped with two input terminals but in addition it has two other essential features: This special edition can process even very small measurement signals such as from Wheatstone bridges, force or position sensors and strain gauges.
It supplies a high-precision constant current required for the sensor supply of strain gauges.

Available model: DK337

DK314-DM

DK324-DM

DK314/DK324

8 ## High Temperature Logger up to 140°C

These logger models were specifically designed for high temperature applications.
The temperature logger DK314 can operate at max. 150°C and the humidity/temperature logger DK324 may be used at up to 140°C.
Both models can be ordered with -DM option, probe -30, -50,-100mm.
Their special enclosure, optimised electronic components and a particular calibration make them suitable for process monitoring applications such as the food, medical and pharmaceutical sectors.
These logger will also calculate A0-Value according to EN 15883-1 for validation of washer desinfectors.

Available for models: Temperature DK314, DK314-DM
Humidity/Temperature DK324, DK324-DM

rugged^plus Series Specifications

Memory capacity:	4 million readings	**Included in delivery:**
Battery type LITH35	SL-550/S (high temp loggers)	Data logger, 1x lithiumbattery, Software InfraLog -*basic*-,
Battery type LITH12	SL-750/S (all others)	USB cable, manual, Certificate of Conformity

Battery life:	4 years @ 1 minute	**Optional accessories:**
(@different interval)	230 days @ 10 seconds	Software *InfraLog -light or -enhanced,*
	25 days @ 1 second	*calibration certificate*,
		Wall holder, carrying case, lead seal kit,
Interval:	configurable, see table page 10	DKCP/DKCU/DKCI,DKCK cables

All rugged*plus* Models at a Glance: Measured Variables and Connectable External Sensors							
Models	Internal Sensors				External Sensors		
rugged*plus*-Series	Temperature	Humidity	Barometric Pressure	Illuminance	PT100/PT1000/Thermistor/Thermocouple. Voltage/Current/Pulse, Digital RH/T Probes, Water Detector, Soil Moisture Sensor	ELV/Strain Gauge	Thermocouple with mini ISA
DK310	x						
DK310-DM	x						
DK311					x (1)		
DK312					x (1)		
DK314/DK314-DM	x						
DK315							x
DK316							x
DK320	x	x					
DK320-DM	x	x					
DK323	x	x	x				
DK323-DM	x	x	x				
DK324/DK324-DM	x	x					
DK336					x		
DK337					x	x	
DK361				x			
DK362	x	x		x			
DK390/DK390-DM	x	x			x (1,2)		
DK391	x	x	x	x	x (1,2)		

1 = connecting thermocouples with Mini-ISA-plug requires cable type DKC-TC-4
2 = connecting voltage/currrent/pulse signals requires cable types DKC-U-4/DKC-I-4/DKC-P-4

rugged*plus* Series Specifications						
rugged*plus*-Model	Hight (mm)	Protection Class	Measuring Range	Battery Type	Shaky-Start	Enclosure
DK310+	30	IP68	-40/+90°C	LITH-12	x	POM
DK310-DM+	130	IP68	-40/+90°C	LITH-12	x	POM
DK311+	33	IP65	-40/+90°C	LITH-12	x	POM
DK312+	33	IP65	-40/+90°C	LITH-12	x	POM
DK314+	35	IP68	-40/	LITH-35	x	Peek
DK314-DM+	60/80/130*	IP68	+150°C	LITH-35	x	Peek
DK315+	45	IP40	-40/+90°C	LITH-12	x	POM
DK316+	45	IP40	-40/+90°C	LITH-12	x	POM
DK320+	30	IP65	-40/+90°C	LITH-12	x	POM
DK320-DM+	130	IP65	-40/+90°C	LITH-12	x	POM
DK324+	30	IP65	-40/	LITH-35	x	Peek
DK324-DM+	76	IP65	+140°C	LITH-35	x	Peek
DK323+	33	IP65	-40/+90°C	LITH-12	x	POM
DK323-DM+	130	IP65	-40/+90°C	LITH-12	x	POM
DK336+	33	IP40	-40/+90°C	LITH-12	x	POM
DK337+	33	IP40	-40/+90°C	LITH-12	x	POM
DK361+	30	IP65	-40/+90°C	LITH-12	x	POM
DK362+	30	IP65	-40/+90°C	LITH-12	x	POM
DK390+/DK390-DM+	33	IP65	-40/+90°C	LITH-12	x	POM
DK391+	33	IP65	-40/+90°C	LITH-12	x	POM

* The models DK314-DM+ are available with a different sensor length (30,50,100mm).
   The order code is DK314-DM-30, DK314-DM-50, DK314-DM-100

Connecting sensors and signals

The dedicated models DK311/DK312/DK390/DK391/DK336/DK337 have input sockets to connect external sensors and signals.
We offer IP65-splash water resistant models and IP40 dust protetced versions:

Dust protected models (DK336/DK337)

If the logger is going to be used in normal environment such as indoor and industrial sites the models DK336/DK337 may be used. These flexible loggers have terminal block inputs which allow for connecting any type of signal (i.e. current, voltage, pulse, ELV or strain gauges (DK337 only)
All standard probes/transducers may be connected to these logger as well.
Simply select order code "-0" for bare wires (at probe cable end). The plug for connection is already included with the logger.
(i.e. CM-325-V2000-0 as a temperature probe type CM with a 2m PVC-lead, no plug)
More information about probes can be found on page 11/12.

Loggers for outdoor use, IP65 (models DK311/DK312/DK390/DK391)

If you intend to use the logger in an outdoor environment, you may choose any of the models DK311/DK312/DK390/DK391 without any further protection.
These loggers have connectors to suit our standard probes and signals.
Simply select order-code "-4" and the sensors will be fitted with the appropriate connector.
(i.e. RFT-325-V2000-4 as a combined humidity and temperature probe Type RFT with a 2m PVC cable lead and a plug for DK311/312/390/391)
More information about probes can be found on page 11/12.

If you intend to connect electrical signals or third party sensors to our loggers, choose from the following options:

DK311/DK312/DK390/DK390-DM/DK391

DKC-S-V-2000-4	Voltage signals 0-1V, pulse signals <3V, or third party temperature sensors, 2m lead, Tmax 80°C
DKC-U-V-2000-4	Voltage signals 0-10V, 2m lead, Tmax 80°C
DKC-I- V-2000-4	Current signals 0..20mA, 2m lead, Tmax 80°C
DKC-P-V-2000-4	Pulse signals between 3 to 24 VDC, 2m lead, Tmax 80°C
DKC-TC-4	Adaptor for any type of thermocouples with Mini-ISA-connector, 0,15m cable, (connector f. DK311/312/390/391, Tmax 80°C)

DK336/DK337

DKCP-V-2000-0	Pulse signals >5V, 2m lead, Tmax 80°C
DKC-TC-0	Adaptor for any type of thermocouples with Mini-ISA-connector, 0,15m cable, (bare wires for DK336/337, Tmax 80°C)

Current/Voltage/Pulse Measurements

The models DK311/DK312/336/DK337/DK390/DK391 can accept standard signals as follows:

Single-ended Voltage Signals DK311/312/336/337/390/391

Range (mV):	0-10	0-20	0-50	0-100	0-1V	0-2,5	0-5V	0-10V	0-50V[4]
Resolution (µV)[3]:	0.58	0.58	0.76	1.54	15.4	38.9	76.9	154	750
Input impedance (MOhm):	2.5	2.5	2.5	2.5	2.5	0.1	0.1	0.1	0.1
Accuracy:	0.1% of selected measuring range								

Current DK311/312/336/337/390/391

Range (mA)	0 - 24mA
Resolution (µA)	0.36 µA
Input impedance	10 Ohm
Accuracy	0.1% of selected measurement range

[3] Single-ended signals can be logged at a maximum of 32 Hz, in which case resolution increases by 10 times the specified values.

[4] The range of 0-50V is only available for models DK336/DK337

Pulse (potential-free) DK311/312/336/337/390/391)

Range	0...65 000 pulses per interval	0...100 Hertz
Resolution	1 pulse / 1 Hz	1 pulse / 1 Hz
Accuracy	1 pulse / 1 Hz	1 pulse / 1 Hz

Pulse (Voltage Pulses, max 24V) DK311/312/336/337/390/391

Range	0...65 000 pulses per interval	0...1 300 Hertz
Resolution	1 pulse / 1 Hz	1 pulse / 1 Hz
Accuracy	1 pulse / 1 Hz	1 pulse / 1 Hz

Pulse:
Potential-free signals or signals with a low voltage of <0.5 VDC and a high voltage between 2 and 3 VDC can be applied with the standard cable DKCS (not included in delivery). Measuring higher pulse levels of up to 24V (max.) requires cable type DKCP.

Strain gauge and UltraLow voltages (high impedance)

The model DK337 can also be used to measure strain gauges. The loggers offers a very stable supply for whatstone bridges (600-700 Ohm) In addition, the model DK337 can additonally be configured to measure bipolar voltage with a resolution of up to 150nV. The range can be scaled according to your demands.

High Impedance Mode (DK337 only)

Range (mV):	+/- 5	+/-10	+/-20	+/- 50	+/-100	+/-1000
Resolution (µV)[2]:	0.15	0.3	0.6	0.8	1.5	15
Input impedance	1 GOhm					
Accuracy:	0.1% of selected measuring range					

Strain Gauge Measurements (Full-Bridge 60...700Ohm), DK337 only

Range (mV):	+/- 5	+/-10	+/-20	+/- 50	+/-100
Resolution (µV)[1]:	0.15	0.3	0.6	0.8	1.5
Input impedance MOhm	2.5	2.5	2.5	2.5	2.5

[1] Strain gauge measurements can be conducted in fast mode at up to 32 Hz, in which case resolution decreases by 10 times the specified values.

[2] Maximum sample rate is 1Hz. This range is mostly used for measuring electrochemical balancing processes .

Sensor Specifications

Humidity Sensors

Humidity (internal/external)	Range	Resolution	Accuracy
	0..100%RH	0,04%RH	ref. Graph A

Calculated values:
In addition to relative humidity you may also get calculated values such as absolute humidity, dewpoint, wet bulb temperature, aW-Value, mixing-ratio, norm humidity, enthalpy, TH70/80-value.

The humidity sensor can be used in a range of 0...100%RH. It shall not be excessively wetted and not be used in an environment of extremely high humidity and high temperature at the same time.
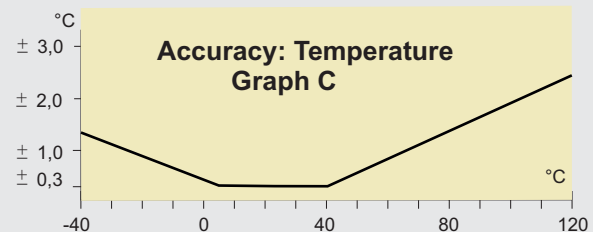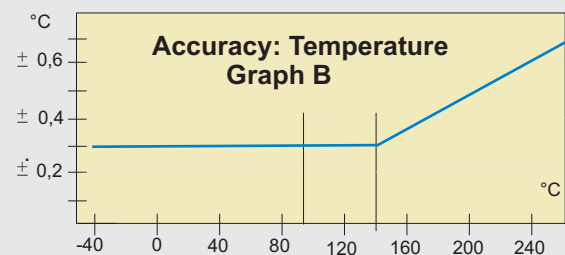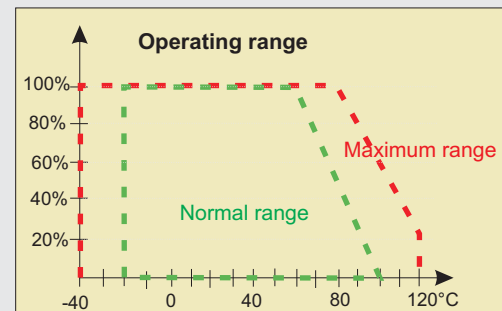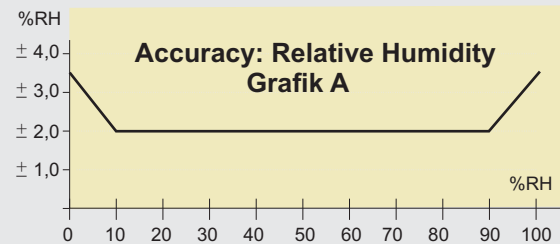The graph shows the limits for such an environment.
If used ouside the normal conditions the humidity reading may temporarily offset by about up to 3%. After return to normal conditions it will slowly return to calibration state by itself.
Use outside the maximum conditions is not recommended.

Temperature	Range**	Resolution	Accuracy
DK310, DK310-DM	-40...+90°C	0,01 K	ref.Graph B
DK314, DK314-DM	-40...+140°C	0,01 K	ref.Graph B
DK324, DK324-DM	-40...+140°C	0,01 K	ref.Graph B
PT100,PT1000*	-100...+250°C	0,01 K	ref.Graph B
Thermistor	-40...+120°C	0,01 K	ref.Graph B
Thermocouple			
TypeK	-200...+1400°C	0,05 K	
TypeJ	-210...+1200°C	0,05 K	
TypeT	-200... +400°C	0,05 K	
TypeB	-250...+1820°C	0,05 K	acc. TC-Class I/II
TypeE	-200...+1000°C	0,05 K	
TypeN	-200...+1300°C	0,05 K	
TypeR	-50...+1750°C	0,05 K	
TypeS	-50...+1770°C	0,05 K	
Temperature in combined humidity-/temperature Sensors	-40...+120°C	0,01 K	ref.Graph C

* Alle standard- temperatureprobes use a precise PT1000-sensor
** You may save readings also in K (Kelvin) or F (Fahrenheit).
The models DK314 and DK324 willl also calculate A0-Value for cleaning and desinfection applications.

Accuracy: Relative Humidity Grafik A

Operating range

Accuracy: Temperature Graph B

Accuracy: Temperature Graph C

Barometric Pressure	Range	Resolution	Accuracy
DK323/DK391	600...1300hPa	0.1 hPa	+/-1,5 hPa

Visible light	Range	Resolution	Accuracy
DK361/362/391	0...40000 Lux	1 Lux	+/- 20%

Specifications - Sample rate / Interval

The interval in which the readings are taken is user-configurable. The following table shows the maximum sample rate as a function of the selected sensor. The configurable rate has to comply with the sensor which has the lowest sample rate.

Sensor	max. Sample rate	Sensor	max. Sample rate
PT1000, Pt100	32 Hz	Voltage (DVM)	32 Hz
Thermistor	32 Hz	Voltage (HighImp)	4 Hz
Thermocouple	4 Hz	Pulse	1 Hz
HumidityTemp.	4 Hz	Frequency	1 Hz
Condensation	32 Hz	Status	32 Hz
Waterdetector	1 Hz	Light	1 Hz
Soil moisture	1 Hz	CO2	1 Min
Resistance	32 Hz	Pressure, baro	4 Hz
Strain gauge	32 Hz	Pressure, analogue	32 Hz
Current	32 Hz	Differential pressure	8 Hz

Connectable Probes and Accessories
for **rugged**_plus_ _Data Logger Series_ DK3xx_plus_

Temperature Probes

DS Standard Probe
d=4mm, l=100mm

CM Standard Probe
d=4mm, l=50mm

EU Surface Probe
l=20mm, w=10mm

EUM Surface Probe
w. magnet l=25mm, b=14mm

CO Air Probe
d=4mm, l=17mm
mit extrem schneller Ansprechzeit

MT Sheathed Thermocouple
d=3mm, l=200mm
high temperature up to 1 200°C
(see separate data sheet for more
thermocouple probes)

Humidity/Temperature Probes

RFT - Probe for measuring humidity
and temperature.
Operates at -20... +80°C and up to
-40/+120°C with PTFE-cable (G)
type G. Dimensions: D=8x35mm

RFTXS - Miniaturised probe for
humidity in walls (flush mounting,
screed, tiles) Probe dimensions
d=4,6mm, l=200mm, max . +80°C

RFTO - Special probe for
humidity/temp measurements in
walls and boundary layers
Operating conditions: -20...+80°C.
D=30mm x H=10mm

DKRF370 - Humidity/temperature
probe for compressed air up to 100
bar, G3/8" thread,
Operating conditions: -20...+80°C.
Dimensions: 100mm x 13mm

SHS - Special probe for
condensation detection.
Condensation sensor signals 1
when condensation causes
wetting. Operation at 0...50°C
Dimensions: 43mm x 10mm

DKRF300 - Probe for measuring
humidity and temperature.
Operates at -20... +80°C
Dimensions: d=8x101mm
Suitable for DK325, DK390

RFTXXS - Special probe with extra
small dimensions (D=4mm,
L=20mm), Cable length: 2m,
Operating conditions:-40...+80°C -
40.+120°C with PTFE-cable (G)

RFTW - Special probe for
measurements in boundary layers
such as walls or intermediate
spaces,
Dimensions: l=45mm, w=20mm

TR351 Radiation/Rain Shield
suitable for probes RFT-325 and
DKRF300-325. Minimizes the
impact of sunlight and rain.
(d=77mm/h=108mm)

SHSW - Special probe for
detection of moistening and water
ingress. Probe sends signal 1
when detecting water and 0 when
the monitored area is dry.
Dimensions: 60mm x10mm

Connection Cables

Driesen+Kern GmbH offers a range of standard probes to connect to the rugged+ dataloggers.
When choosing a probe, please specify type of cable (-v or -G) , cable length (-2000 or -5000) as well as the type of
connector (-0 no connector for DK336/DK337 or -4 rugged+ connector for all other models)
Standard probes are fitted with Type V PVC cables and can be used under conditions from -20...+80°C. Special
Teflon® (Type G) cables allow operation within the range of -75...+250°C. Operating conditions of probes RFT-325
and RFTXXS-325 with the Teflon® cable are -40°C...+120°C. Order identifier paradigm: **DS-325-V-2000-0** stands for
standard probe with 2m PVC cable and no connector; **DS-325-G-2000-4** is the standard probe with 2m Teflon® cable
and a rugged plus mini connector. See separate data sheet for more probes.

Connectable Probes and Accessories
for **rugged**^{plus} *Data Logger Series* DK3xx^{plus}

Driesen+Kern GmbH offers a range of sensors that can be connected to the Data Logger Series **rugged**^{plus}..
Below is a selection of our products. Of course, you can also equip the device with another product if you do not find a
suitable model among the listed sensors. Please do not hesitate to contact us for advice on how to choose the right
sensor.

Current Clamps, Linear Position Sensors, Force Sensors, Weather Sensors

Current Clamp MN-89
Range: 0.5..240A
Max. conductor d=20mm

Transducer
Model Uw : Umax= 650V (AC)
(no aux. voltage required)
Model UgT : Umax=600V (DC)
Model IgT : Imax = 5A (DC)

LP-50F Linear Position Sensor
Detects displacements
or changes in length
Total length: l=129mm
Electrical stroke max. 50mm

K25 Load Cell
For tension and compression force
measurements
Range: 0.02..50 KN
Accuracy: 0.1%/0.2%

SKYE Light Sensors
We offer a variety of sensors,
e. g. Pyranometers for total
sunlight, UV and PAR sensors

EC10-HS - Soil Moisture Sensor
For measurement of volumetric
water content in soil.

Dimensions: 145 x 33 x 7mm

**MA60 Micro/Mini/Makro
Air Velocity Sensors**
Range 0.2..40m/s
MA6-Mikro: d=11x15mm
MA6-Mini: d=22x28mm
MA6-Makro: d=85x80mm

Pressure Probe PSense650
Various models as waterlevel or
screw-in probes with ranges from
1 bar up to 100 bar
Resolution: 0.1mm

ARG100 Rain Gauge
Well-priced tipping bucket rain
gauge
Collector surface: 506.7cm²
Sensitivity: 0.2mm

Young 52202/52203 Rain Gauge
Heatable tipping bucket rain gauge,
recommended by the WMO
Collector surface: 200cm²
Resolution: 0.1mm

WG3400 Air Velocity Transducer
Reasonably priced
Range: 0.5-35m/s
Accuracy: 0.5m/s i. e. 5%
(no aux. supply needed)

WR3124 Weather Vane
Well-priced Potentiometer
Resolution: 0.5°
(requires no additional
power supply)

Accessories for rugged^{plus} Data Loggers

Wall Holder
Easy installation
Lead seals can be attached

Carrying Case for up to 4 data
loggers with cables and sensors

Lead Seal Kit
Includes 50 pieces of wire and 50
numbered disposable seals.
Pressed together manually.

A Certificate of Calibration can be
provided with every logger upon
request!

Software *InfraLog* for Windows V5
for the **rugged**^plus Series

InfraLog V5

Basic-Version
Light-Version
Enhanced-Version

for WindowsXP/
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.

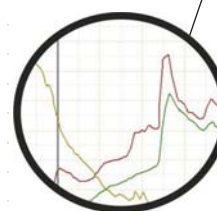InfraLog V5 offers a multitude of features for the data logger series **rugged**^plus.

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 (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 XP, 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			•

Well-arranged charts with overview and up to three Y-axes
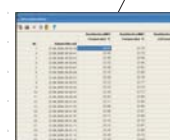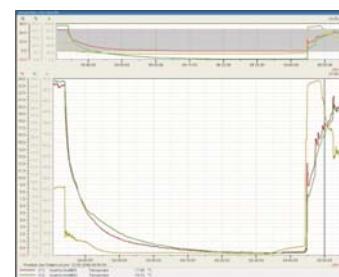
Meter-reading at the cursor

Zooming function