



Driesen + Kern GmbH

# Flexible datalogger

for environmental applications

DK 8040





DK8010 e.g. with 10 probes for surface temperature



DK8015 with 5 channels for soil moisture and temperature

## Flexible datalogger

The data logger type Dk8040 is a robust and flexible datalogger with up to 10 channels. Each channel can be configured separately for soil moisture, temperature, humidity, temperature as well as various analogue signals including 0-1V/5V/10V/20mA and Pulse count.

The logger is protected by a robust, IP65 splash water resistant housing enabling applications under tough conditions such as rain or snow.

### Flexibility and accuracy

Every probe is connected by a 3m cable by default which can be extended to a length of 100m if necessary. Thus areas of a 200m diameter can be covered with only one data logger.

### Flexible data logging

The loggers are battery powered and save the measured values on a memory card. The memory cards have a memory capacity of up to 500 Mio readings ensuring data logging for many months without interruption. The interval for storing the measured values can be user-selected between 1 second and 24 hours. In addition, it is possible to start a new series of



Measured data on memory card

measurements at the push of a button, which is helpful when changing the site.



### Applications

- Water balance studies
- Seepage water studies
- Surface monitoring, e.g. aggradation, dumping grounds for hazmat
- Surface and waste water management
- Irrigation control

## Highlights

- Weather-proof data logger up to 10 channels
- Sensors for temperature, soil moisture, humidity and rainfall as well standard analogue inputs
- Low current consumption for maintenance-free battery operation
- Remote access including download and SMS with optionally integrated (GSM) radio modem
- Memory card for comfortable download and large amounts of data
- Cable length up to 100m for each probe

### Comfortable handling

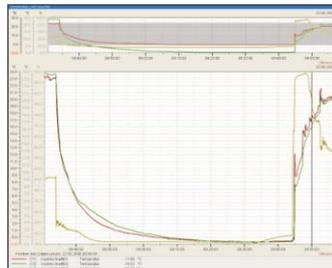
For communicating with the DK8040 logger you just need an interface and the software. The interface is connected to the USB-port of your PC or Notebook.

The InfraLog for Windows software helps you to comfortably make the necessary pre-adjustments : Set the time for the interval, the starting time of the logger, and a description to later identify the readings.



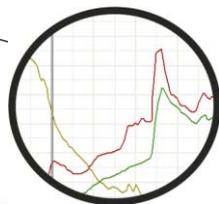
### Quick data processing

InfraLog for Windows is able to read out measured data from the logger within few seconds. In InfraLog for Windows -light- and -ladvanced- readings can additionally be displayed and analysed in well-arranged charts, and exported to Excel or the like.



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

Readings at the cursor



Zooming function

### Repertory of sensors

#### Temperature sensors



**EU-P6-V3 Surface probe**  
Pt1000 probe with metallic surface for good conduction of heat. Suited for measuring the surface or object temperature.



**TS-S-V3 Micro probe**  
Special probe for coverage of the temperature in particularly small objects. D=0,8mm!



**CT-P6-V3 Standard probe**  
In stainless steel tube (D=6mm, L=50mm), water-tight, for solid, liquid, and gaseous media



**HS-P6-V3 Puncturing probe**  
Robust probe with insertion needle (D=6mm, L=300mm) for use in soil, bulk solids, foods

#### Soil moisture sensor



**Decagon ECH2O Soil moisture probe**  
Capacitive sensor for identifying the volumetric moisture. Temperature compensated, halogen dependency reduced by protective shell.

#### Humidity/temperature sensor



**DKRF400 Humidity/temperature probe with TR351 sensor protection**  
Miniaturised probe with high accuracy +/-1,8%RH / 0,3K  
Sensor protection against solar radiation/wind/rain.  
(datasheet seperately available)



**RFTO** - Special sensor for measuring humidity and temperature near surfaces or boundary layers.  
Range: -20...+80°C. D=30mm x H=10mm



**RFTW** - Special sensor for measuring humidity and temperature near surfaces and confined spaces  
Range: -20..+80°C, L=45mm, B=20mm

#### Bedewing sensor



**SHS Bedewing sensor**  
This sensor is specifically suited for monitoring condensation on surfaces. For this the point of change when high humidity forms water on a surface is measured

#### Raingauge



**ARG100 Rainfall sensor/tipping bucket**  
Accuracy/resolution 0,2mm  
Aerodynamic rain gauge made of UV resistant plastics  
Integrated water level  
(datasheet seperately available)

#### Radiation sensor



**SKS1110 Global radiation sensor**

**SKP210 - PAR special sensor**



## Integrated communication modem

Optionally a GPRS/GSM modem can be integrated in the Dk8040 data logger.

If desired the devices can be read out via a GSM/GPRS contact. Thanks to a specific power save function, very long operation times can be achieved even when the modem is operating.

## Specifications

	Range	Resolution
<b>Temperature</b> (internal):	-40...+90°C	0,01 K
<b>Temperature</b> (external):	-70...+250°C	0,01 K

External temperaturesensors can be Pt1000 or Pt100.

<b>Humidity:</b> (internal/external)	0..100%rF	0,01%rF
<b>Pulse count:</b> Pluses (potential-free)	0...65000 Pulses/ per interval 0...100 pulses/sec.	1Hz/ 1Puls

<b>Voltage pulses:</b>	0...65000 Pulses/ per interval	
<b>/Frequency:</b>	0...1300 Hz	1Hz/ 1Puls

**Signalconnection:** Potential-free signals or Pulses with a Low-signal <0,5VDC and a High-signal between 2 and 3VDC can be connected with the standard cable DKC-S (included) For higher signals up to 24V please use conection cable DKC-P (not included).

### Voltage/Current

Range (mV):	0-10	0-20	0-50	0-100	0-1V	0-5V	0-10V
Resolution (µV):	0,58	0,58	0,76	1,54	15,4	76,9	154
Input impedance (MOhm):	2,5	2,5	2,5	2,5	0,1	0,1	0,1

Current	Range	Resolution
	0...24mA	0,36µA

**Accuracy:** 0,1% of range

**Signalconnection:** Voltage signals below 1VDC can be connected using the DKC-S cable (included) For higher volatge signals please use DKC-U connection cable (not included). Current measurements demand for the DKC-I connection cable (not included).

### Temperature: EU, CT, HS probes

Sensor element:	Pt1000 high precision measuring resistor
Measuring range:	-20...+80°C
Accuracy:	+/- 0,2°C (+/-0,1K on request)
Resolution:	0,001°K

### Temperature: TS probe

Sensore lement:	U high precision thermistor
Measuring range:	-50...+80°C
Accuracy:	+/- 0,2°C (+/-0,1K on request)
Resolution:	0,005°K

### Humidity/temperature probe DKRF400-01-2000

Sensor element:	capacitive CMOSENS sensor
Cable length:	2 m
Measuring range:	0...100% RH non-condensing -20...80°C
Accuracy:	+/- 1,8% (10...90%RH), +/- 0,3°C
Resolution:	0,01 %RH, 0,05K

### Radiation protection Tr351

Dimensions: D=75mm x 115mm

### Rain sensor ARG100

Sensor:	Tipping bucket
Accuracy:	+/- 0,2mm rain
Resolution:	0,2mm

Probe dimensions:	See previous page
Cable:	PVC/PTFE according to application
Cable length:	3m by default, other lengths available

### General logger information

<b>Memory capacity:</b>	SD memory card for up to 500 Mio readings
<b>Dimensions:</b>	D=80mm, H=377mm
<b>Supply:</b>	Battery pack
<b>Housing:</b>	Impact resistant, weather-proof, UV resistant plastics
<b>Optional:</b>	Integrated GSM/GPRS modem for data download and alarm function via SMS.

If the GSM modem is chosen the logger is equipped with a high performance battery pack in order to ensure operation for a couple of weeks.

The device will be set to make the modem ready for reception only during specified time frames. (For example every day from 8 to 9 o'clock.)



Driesen+Kern GmbH  
 Am Hasselt 25  
 D- 24576 Bad Bramstedt  
 Germany  
 Tel.: +494192 8170-0  
 Fax: +494192 8170-99  
 email: info@driesen-kern.de  
 homepage: www.driesen-kern.de

