



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

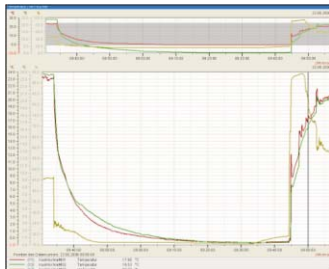
For communicating with the DK8040 logger you just need an interface and the software. The interface is connected to the USB-port of your PC or Notebook.

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

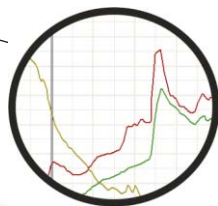
InfraLog for Windows is able to read out measured data from the logger within few seconds. In InfraLog for Windows -light- and -advanced- readings can additionally be displayed and analysed in well-arranged charts, and exported to Excel or the like.



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

| Time | Temp | Humidity | Moisture |
|----------|------|----------|----------|
| 12:00:00 | 15.2 | 65 | 12 |
| 12:05:00 | 15.5 | 66 | 12 |
| 12:10:00 | 15.8 | 67 | 12 |
| 12:15:00 | 16.1 | 68 | 12 |
| 12:20:00 | 16.4 | 69 | 12 |
| 12:25:00 | 16.7 | 70 | 12 |
| 12:30:00 | 17.0 | 71 | 12 |
| 12:35:00 | 17.3 | 72 | 12 |
| 12:40:00 | 17.6 | 73 | 12 |
| 12:45:00 | 17.9 | 74 | 12 |
| 12:50:00 | 18.2 | 75 | 12 |
| 12:55:00 | 18.5 | 76 | 12 |
| 13:00:00 | 18.8 | 77 | 12 |
| 13:05:00 | 19.1 | 78 | 12 |
| 13:10:00 | 19.4 | 79 | 12 |
| 13:15:00 | 19.7 | 80 | 12 |
| 13:20:00 | 20.0 | 81 | 12 |
| 13:25:00 | 20.3 | 82 | 12 |
| 13:30:00 | 20.6 | 83 | 12 |
| 13:35:00 | 20.9 | 84 | 12 |
| 13:40:00 | 21.2 | 85 | 12 |
| 13:45:00 | 21.5 | 86 | 12 |
| 13:50:00 | 21.8 | 87 | 12 |
| 13:55:00 | 22.1 | 88 | 12 |
| 14:00:00 | 22.4 | 89 | 12 |
| 14:05:00 | 22.7 | 90 | 12 |
| 14:10:00 | 23.0 | 91 | 12 |
| 14:15:00 | 23.3 | 92 | 12 |
| 14:20:00 | 23.6 | 93 | 12 |
| 14:25:00 | 23.9 | 94 | 12 |
| 14:30:00 | 24.2 | 95 | 12 |
| 14:35:00 | 24.5 | 96 | 12 |
| 14:40:00 | 24.8 | 97 | 12 |
| 14:45:00 | 25.1 | 98 | 12 |
| 14:50:00 | 25.4 | 99 | 12 |
| 14:55:00 | 25.7 | 100 | 12 |

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 |
|--------------------------------|--------------|------------|
| Temperature (internal): | -40...+90°C | 0,01 K |
| Temperature (external): | -70...+250°C | 0,01 K |

External temperaturesensors can be Pt1000 or Pt100.

| | | |
|---|-----------|---------|
| Humidity: (internal/external) | 0..100%rF | 0,01%rF |
|---|-----------|---------|

| | | |
|--|--|------------|
| Pulse count: Pluses (potential-free) | 0...65000 Pulses/ per interval 0...100 pulses/sec. | 1Hz/ 1Puls |
|--|--|------------|

| | | |
|------------------------|-----------------------------------|------------|
| Voltage pulses: | 0...65000 Pulses/ per interval | |
| /Frequency: | 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

| | |
|-------------------------|---|
| Memory capacity: | SD memory card for up to 500 Mio readings |
| Dimensions: | D=80mm, H=377mm |
| Supply: | Battery pack |
| Housing: | Impact resistant, weather-proof, UV resistant plastics |
| Optional: | 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.)



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