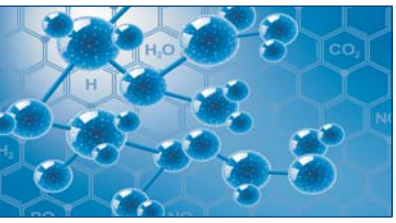
Driesen + Kern GmbH

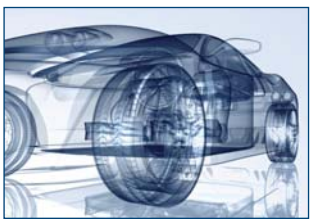
DataCollector*XP*

Multi-Channel Data Logger

Sciences



Research



Industries

Eco

HVAC

DataCollectorXP
Data Logger Series

Universal Inputs

The Driesen+Kern GmbH DataCollectorXP is a multi-channel data logger designed for long-term measurements in industrial environments. It combines flexible connectivity with high measurement resolution and accuracy making it the right solution for a wide range of applications.

Driesen+Kern offers a variety of probes such as PT100/PT1000 temperature probes, strain gauges, combined humidity and temperature sensors as well as transducers for pressure, force, radiation and air velocity for connection with the DataCollectorXP. In addition, it is possible to obtain standardised analog output signals 0-1V/5V/10V/4-20mA and pulse signals.

The low current consumption allows battery-powered long-term measurements for several years.

Connect up to 16 sensors and transducers

Applications

Research and Development

Process Optimization

Monitoring of Environmental Parameters

Quality Assurance

Features

2 available models:
DCXP8 with 8 inputs and
DCXP16 with 16 inputs

Freely programmable analog inputs for voltage, current or resistance as well as 1x trigger input

Inputs can be programmed for PT100/PT1000 sensors, thermocouples and thermistors as well as configured for combined digital humidity and temperature sensors by Driesen+Kern

Low current consumption allows battery-powered operation for several years, power supply via USB

24 bit measurement resolution

Sampling interval: 2 Hz - 8 Hz, 1 s - 24 h

Internal memory for 4 million readings
Up to 500 million readings w. optional SD memory card

Easy plug-in connection for sensors

Power output for external probes and sensors

Anlog signal conversion to linear units and readings on LCD
Comprehensive formula editor and functions available in InfraLog software

USB port (type-B micro)

Non-volatile flash memory
(keeps data safe in case of battery fail)

Specifications

General

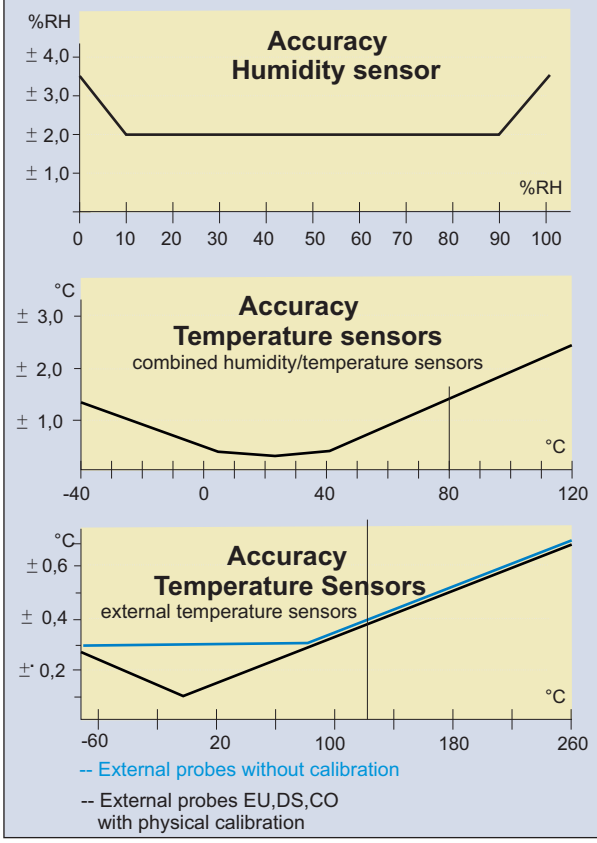
Operating environm.:	-20...+70°C
Power supply (internal):	4x AA- alkaline
Power supply(external):	power supply (included)
Battery life:	2 years @ 1 min 1/2 year @ 10 s 50 days @ 1 s
Recording interval:	1 s....24 hrs
FastMode:	2-32Hz (only analog input)
Memory capacity:	4 million readings (internal) 500 million readings (SD card)
Dimensions:	**24**5 x 194 x 63 mm
Enclosure material:	aluminium

Sensors and inputs

Inputs:	DCXP8 8x DCXP16 16x
Input configuration:	Voltage, Current, Pulse Temperature PT100/PT1000 Thermocouple Types K,T,J,B,E,N,R,S
Trigger input:	potential-free or 3..24VDC
Alarm output:	Relay 60V/1A

	Range	Resolution	Accuracy
PT100/PT1000 4-wire sensing	-70...+250°C	0.01 K	see diagram
Thermocouple Types K,T,J,B,E,N,R,S	-100...+1 300°C	0.05 K	class I/II
Relative humidity: (Digital probe)	0...100% rH	0.04% rH	see diagram

Combined digital humidity/temperature probes only use one channel of the DCXP.



Single-ended voltage signals

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

[3] Single-ended signals can be recorded at a maximum of 8 Hz.
Resolution increases by ten times compared to the values specified above.

High impedance mode (voltage signals)

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 measurement range					

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

Current

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

Pulse (potential-free)

Range	0...65 000 pulses / Interval	0...100 Hz
Resolution	1 pulse / 1 Hz	1 pulse / 1 Hz
Accuracy	1 pulse / 1 Hz	1 pulse / 1 Hz

Pulse (voltage pulse, max. 24V)

Range	0...65 000 pulses / Interval	0...1 300 Hz
Resolution	1 pulse / 1 Hz	1 pulse / 1 Hz
Accuracy	1 pulse / 1 Hz	1 pulse / 1 Hz

Strain gauges (wheatstone) (for bridges with 60...700 ohm)

Range (mV)	+/- 5	+/-10	+/-20	+/- 50	+/-100
Resolution (µV)[1]	0.15	0.3	0.6	0.8	1.5
Input impedance	2.5 Mohm				
Accuracy	0.1% of selected range				

[1] At a sampling rate of 8 HZ the resolution is ten times compared to the specified values.

Connecting analog signals

Voltage/Current:
Voltage signals of up to 25V can be connected directly to the inputs. We offer the DK-CUG-XP cable for connection of higher voltages or electrically isolated measurements. A shunt allows current signals of up to 20 mA, beyond that we recommend the DKC-IG-XP.

Pulse:
Potential-free signals with a low level <0.5 VDC and a high level between 2 and 3 VDC can be connected directly. Higher pulse levels up to a maximum of 24V need to be applied through the DKC-P-XP cable.

Suitable Probes and Accessories

for the DCXP Data Logger

Driesen+Kern GmbH manufactures a range of reasonably priced standard temperature probes suitable for the “Rugged” Data Loggers. See the separate product data sheet for our wide choice of available probes.

Temperature sensors for the DCXP Data Logger

DS Standard probe
D=4mm, L=100mm

CM Standard probe
D=4mm, L=50mm

CO Air probe
D=4mm, L=17mm
extra fast response time

EU Surface probe
L=20mm, W=10mm

EUM Surface probe with magnet L=25mm, W=14mm

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

Humidity/Temperature Sensors for the DCXP Data Logger

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

DKRF300 - Probe for measuring humidity and temperature. Op. conditions: -20... +80°C Dimensions: D=8x101mm, suitable for DK325 and DK390

RFTXS - Miniaturized probe for humidity in walls (flush mounting, screed, tiles) Sensor dimensions (D=4,6mm, L=200mm), max. +80°C

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

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

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

DKRF370 - Humidity/temperature probe for compressed air up to 100 bar, G3/8” thread, L=100mm, D=13mm, Operating conditions:

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

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

SHSW - Special probe for detection of wetting and water ingress. Probe sends signal 1 when detecting water and 0 when the monitored area is dry. Dimension: 60 x 10mm

Connecting Cables for Temperature/Humidity Probes

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** stands for standard probe with 2m PVC cable; **DS-325-G-2000** is the standard probe with 2m Teflon® cable.

Suitable Probes and Accessories

for the DCXP Data Logger

Driesen+Kern GmbH offers a range of sensors that can be connected to the DCXP Data Logger Series. 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 don't 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
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

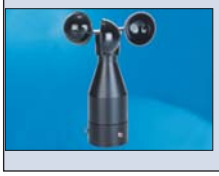
EC5 Soil Moisture Sensor
Special probe for measurements of soil moisture
Dimensions: 43 x 10mm

MA60-Micro/Mini/Makro Air Velocity Sensors
Measuring 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

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

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

Accessories for DataCollectorXP Data Logger

The logger comes in a cushioned carrying case. Also included are the mains power supply, the USB data cable, terminal plugs for the input channels and the InfraLog for Windows Basic Software (on USB flash drive).


KALIBRIERZERTIFIKAT
CALIBRATION CERTIFICATE

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

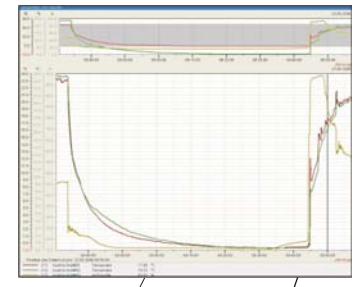
Software *InfraLog* for Windows V5

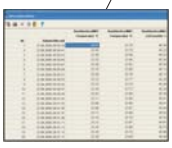
for DataCollectorXP - Data Logger

The Software InfraLog provides EASY, SECURE & CONVENIENT control for all Driesen+Kern products. After establishing a connection between your logger and PC, InfraLog automatically detectes the device. InfraLog offers a multitude of features for the DCXP Data Logger Series. Included in delivery is InfraLog for Windows Basic.

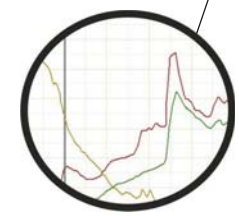
INFRALOG FEATURES	BASIC	LIGHT	ENHANCED *(Professional)*
Automatic device detection	x	x	x
Conversion from base units of measurement into customizable physical values	x	x	x
Load/save device settings	x	x	x
Upgrade device firmware via USB	x	x	x
Save readings to your PC's hard drive or network storage	x	x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

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





Meter-reading at the cursor



Zooming function

CE

TÜV NORD DIN EN ISO 9001

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