

3-CHANNEL MULTI-FUNCTION DATA LOGGER

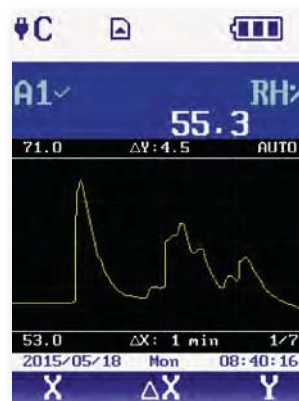


HIGHLIGHTS:

- Three independent sensor inputs with automatic probe recognition
- Graphic colour display
- Data logger with SD card
- Automatic creation of PDF logs
- Mobility with rechargeable batteries



Connections



HD 31

Universeller 3-Kanal Multifunktions Datenlogger mit grafischem Display

General:

Universal 3-channel multi-function data logger with graphic display

The HD 31 is a universal data logger with the capacity to connect up to 3 "SICRAM" probes. All relevant data (serial number, type, calibration data) is stored in the SICRAM plugs, so the probes can be connected in any arbitrary manner. The connected probe is recognised automatically by the HD 31. Additional variables can be derived from the measured values. For example, the dewpoint temperature, wet-bulb temperature, absolute humidity, etc. can be calculated from the temperature and humidity. There is a total of 36 different measured variables available.

Large-format colour display for presentation of three measurements in numerical form or a real-time graphic.

The data is stored in CSV format on an SD card (buffer storage for several months, even if multiple measured variables are logged each second). The HD 31 can be connected via the optional USB cable directly to a PC and is recognised as a mass storage device. The HD 31 also generates automatic PDF logs, which are also stored on the SD card.

Application:

The variety of measuring sensors and the derived measured variables enable a wide spectrum of applications, such as heating, ventilation and air conditioning or clean room applications. The following measuring variables can be detected:

- Temperature
- Relative humidity
- Pressure (absolute, relative or differential pressure)
- Air speed
- Lighting strength (Lux)
- Irradiance (W/m²)
- CO₂

Numerous variables can be calculated from the aforementioned measurements and stored. This includes, for example, the absolute humidity in g/m³ (from temperature and relative humidity) or with measurement in ventilation ducts of the volume flow (from the speed and the dimensions of the ventilation duct), etc

There are also SICRAM modules available for connection of external sensors with analogue output signals:

VP 473:

SICRAM plug module for signal recording of external measuring transducers with voltage output, measuring range ± 20 VDC, input impedance 1 M Ω

IP 472:

SICRAM plug module for signal recording of external measuring transducers, measuring range 0 ... 24 mA, input impedance 25 Ω

VP 472:

SICRAM plug module for connection of pyranometers and albedometers with non-amplified signal output (adjustable sensitivity from 5 ... 30 μ V per W/m²)

Our product data sheet available online at www.ghmgroup.de provides a complete overview

Specifications (basic unit HD31):

Power supply:	Rechargeable internal 3.7 V Lithium battery, capacity 2250 mA/h, JST 3-pole connector. (optional SWD05 power supply)
Battery autonomy:	18 hours of continuous operation with three Pt100 probes (The effective autonomy depends on the number and type of connected sensors)
Logging interval:	1, 5, 10, 15, 30 s; 1, 2, 5, 10, 15, 20, 30 min; 1 h
Storage capacity:	SD memory card with capacity up to 4 GB. The logging duration depends on the number of logged quantities and on the capacity of the SD card employed.
Inputs:	3 SICRAM connections (8-pin, DIN 45326) for connection of measuring sensors with intelligent SICRAM plugs (up to 36 measured variables)
Accuracy:	± 0.02 % of the measure (Based on HD31 basic device)
Clock stability:	1 min / month maximum drift
Display:	Color graphic LCD. Visible area 43 x 58 mm
USB Connection:	mini USB connector, USP Port (HID)



Hartgummi Schutzhülle (55 SHORE) mit Aufsteller und Magnet für den Einsatz in rauen Umgebungen

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RS232C connection:	1 serial RS232C output with RJ12 connector for connecting to a serial printer
Auto-Off:	Configurable after 2, 5, 10, 15, 20 or 30 min
Operating conditions:	-10 ... +60 °C, 0 ... 85 % RH without condensation (Instrument)
Storage temperature:	-25 ... +65 °C (Instrument)
Protection rating:	IP64
Housing:	ABS plastic, 55 SHORE hard rubber (sides and protective casing)
Dimensions:	165 x 88 x 35 mm (without protective casing)
Weight:	approx. 400 g (including battery and protective casing)
Scope of supply:	Batteries, SD card, DeltaLog 9 software, CP31, HD31.28 and case. Connection module, measuring sensors and mains adapter are optional and not included in the scope of supply.

Accessories and spare parts:

CP23	Art. no. 700050 USB connection cable, USB 2.0, Mini USB socket type B
SWD05	Stabilised mains adapter, 100 ... 240 VAC, 5 VDC, output type A USB plug
HD31.28	Protective casing, durable SHORE 55 rubber, stand and magnet

SELECTION OF SENSORS: THE FOLLOWING IS ONLY AN SAMPLING OF THE AVAILABLE MEASURING SENSORS. FOR A COMPLETE OVERVIEW OF THE AVAILABLE MEASURING SENSORS FOR THE VARIOUS PARAMETERS, VISIT WWW.GHM-GROUP.DE

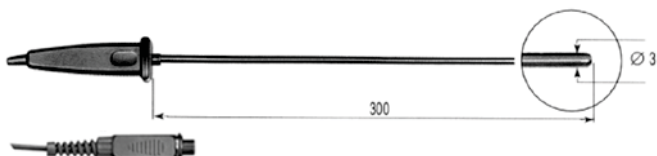
TEMPERATURE SENSORS:

Temperature sensors with thermocouples and Pt100/1000 are available. They are available either as a complete sensor with SICRAM plug or as a SICRAM module for connection of external sensors (including thermocouples of the type K, J, T, E, N, R, S, B).



Example:
TP 472 I (Pt100, immersion sensor)

Immersion probe, -196 ... +500 °C, ±0.25 °C (-196 ... +300 °C), Ø 3 mm, sensor length 300 mm, cable length 2 m

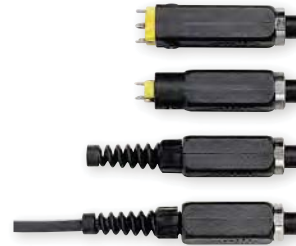


Example:
TP 744 I (type K, air sensor)

Air sensor, up to 400 °C, Ø 4 mm, sensor length 180 mm, cable length 2 m



SICRAM modules TP 471, TP 471 Do, TP 471 D and TP 471 D1 for connection of external sensors

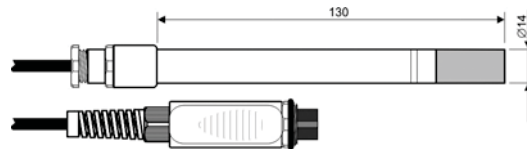


COMBINED HUMIDITY AND TEMPERATURE SENSORS

There are currently nine different sensors available with SICRAM plugs. Temperature measuring range, up to 180 °C depending on the version, humidity measuring range 0 ... 100 % RH

Example:
TP 478 ACR (Pt100, capacitive)

Measuring range: -40 ... +150 °C, 0 ... 100 % RH, sensor length 130 mm, cable length 5 m



PRESSURE SENSORS (ABSOLUTE, RELATIVE AND DIFFERENTIAL PRESSURE)

PP 471:
SICRAM module for connection of pressure sensors from the TP 704 / TP 705 series (absolute, relative and differential pressure, measuring range from 10 mbar to 500 bar depending on the probe)

PP 472:
SICRAM probe for measurement of barometric pressure (600 ... 1100 mbar, ±0.3 mbar, operating range -10 ... +60 °C.

PP 473 S1 ... S8:
SICRAM probes (differential pressure, measuring range from 10 mbar ... 2000 bar depending on the probe)

HANDHELD INSTRUMENTS

SOFTWARE

ACCESSORIES

ALARM / PROTECTION, LEVEL

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AIR SPEED SENSORS:

After various measuring processes (heat wire or impeller anemometer and pitot probes).

Heat wire probes:

Direction-dependent (measuring range 0.1 ... 40 m/s) or omnidirectional for measurement of thermal comfort (0.1 ... 5 m/s)



Impeller probes:

Measuring range 0.6 ... 25 m/s (Ø 100 mm) or 0.4 ... 20 m/s (Ø 60 mm)



Pitot dynamic pressure probes:

Measuring ranges, 2 ... 40 m/s to 2 ... 130 m/s, depending on probe version (T1 to T4) and SICRAM differential pressure module (AP 473 S1...S4)



... Refer to HD 31 data sheet for details.

PHOTOMETRIC AND RADIOMETRIC PROBES:

Wide assortment of photometric and radiometric probes (ready for connection with SICRAM plugs) for measurement of:

- Lighting strength (Lux)
- Luminance (cd/m²)
- UVA, UVB, UVC irradiance (W/m²)
- U_{eff} irradiance, weighted (W/m²)
- Irradiance in the visible and NIR range, 400 ... 1050 nm (W/m²)
- "PAR" photosynthetically active radiation (W/m²)
- Irradiance of blue light, 380 ... 550 nm (W/m²)
- Global solar radiation (W/m²)



LP 471 PYRA02.5

for measurement of solar radiation (Class 2 pyranometer according to WMO. Further pyranometers according to Class 1, secondary standard or low-cost version with silicone sensor on request)



CO₂ PROBE

CO₂ probe (NDIR) with SICRAM plug, measuring range 0 ... 5000 ppm CO₂, operating temperature -5 ... +50 °C



Please visit our website www.ghm-group.de for complete information about our HD 31 multi-function data logger. You will also find a complete overview of all compatible probes for the specified parameters.