![E+E ELEKTRONIK logo] YOUR PARTNER IN SENSOR TECHNOLOGY
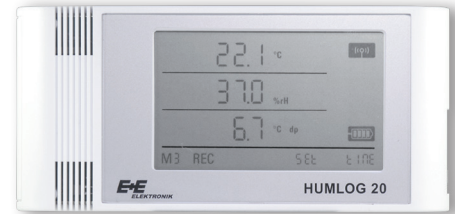
Humlog 20

Data logger for Humidity, Temperature, Air Pressure and CO_2

The Humlog 20 facilitates exact and professional recordings for climatic measurements of humidity, temperature, air pressure and CO_2 concentration.

The long battery life and large memory allow for continuous data recording over long periods of time. The configuration of the data logger and the evaluation of the measurement data are simple and straightforward using SmartGraph3 software, which is included in the scope of supply. The built-in Ethernet interface makes the Humlog 20 Network capable, and ensures maximum reliability in data transmission. For various requirements in the application, the four models **THI**, **THIP,** **TCO** and **E** are available. The Model **E** offers the highest flexibility with analog and digital interface for external sensors.

Humlog 20 THI

Measurement Categories	Model			
	THI	**THIP**	**TCO**	**E**
Temperature (air)	✓	✓	✓	
Relative humidity	✓	✓	✓	
Absolute humidity	✓	✓	✓	
Dew point temperature	✓	✓	✓	
Barometric air pressure		✓		
Relative air pressure		✓		
CO_2 Concentration			✓	
External input - digital RH/T-Sensor				✓
External input - Pt100, Thermocouple				✓
Analog input voltage 0-1 V				✓
Analog input current 0/4-20 mA				✓
Functions				
Power supply battery	✓	✓	✓	✓
Power supply USB	✓	✓	✓	✓
Power supply LAN (PoE)	optional	optional	optional	optional
Measured data storage	3,200,000	3,200,000	3,200,000	3,200,000
Typical battery life	> 1 year	> 1 year	> 4 months	> 4 months
LC-display	✓	✓	✓	✓
One-button operation	✓	✓	✓	✓
1-point calibration by operator	✓	✓	✓	✓
°C/°F switchable	✓	✓	✓	✓
Optical / acoustical alarm	✓	✓	✓	✓
Date / time	✓	✓	✓	✓
Records MIN/MAX/AVG	✓	✓	✓	✓
SmartGraph3 evaluation software	✓	✓	✓	✓
Functions Software				
Graphical representation	✓	✓	✓	✓
Numerical data display	✓	✓	✓	✓
Print function	✓	✓	✓	✓
Export function (e.g. Excel)	✓	✓	✓	✓
Gathered printouts of all measurement sites	✓	✓	✓	✓
User administration	✓	✓	✓	✓
Administration of up to 255 data logger	✓	✓	✓	✓

Humlog 20 THIP

Humlog 20 TCO

Humlog 20 E

Typical Applications

museums and exhibition spaces
clean rooms
warehouses
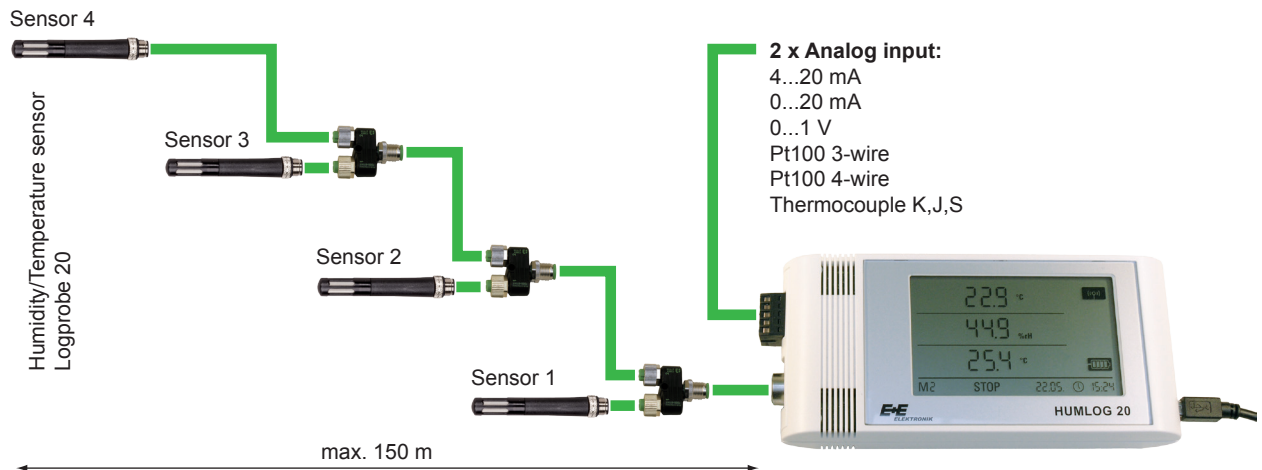**electronic-data-processing centres**
calibration laboratories

Features

large data memory
large format display
USB and Ethernet interface
network-capable
powerful software for data analysis

Humlog 20

Humlog 20 E Configurations Examples

The Humlog 20 E is equipped with an digital input, which allows the connection of up to four external humidity/temperature sensors.

Two additional analog inputs for sensors with voltage or current output, Pt100 temperature sensors in 3 and 4 wire technology or Thermocouple J, K and S offers highest flexibility in the application.

Each fully equipped Humlog 20 E is a 10 channel data logger that can record various data.

Sensor 4

Humidity/Temperature sensor
Logprobe 20

Sensor 3

Sensor 2

Sensor 1

max. 150 m

2 x Analog input:
4...20 mA
0...20 mA
0...1 V
Pt100 3-wire
Pt100 4-wire
Thermocouple K,J,S

Software SmartGraph3

With SmartGraph3 the gathering of measured data is simple and as intuitive as possible:

- An Humlog 20 data logger is automatically recognized and added as a "network device".

- In addition to its data-readout function, the software possesses a recording mode that enables parallel recording to be displayed on the computer.

- The data from any desired number of Humlog 20 devices can be read out simultaneously.

- The zoom function allows for quick analyses of critical time periods.

- The exporting of measured data in csv format enables it to be imported into EXCEL.

- The device configuration can be printed out in order to check installation parameters.

- Alarm limits - like the measured data - are chronologically managed at various times so that when changes in alarm limits occur, they can be retracted.

- Automatic data readout of all measured data is supported.
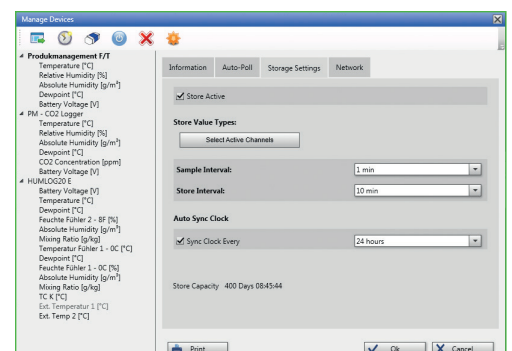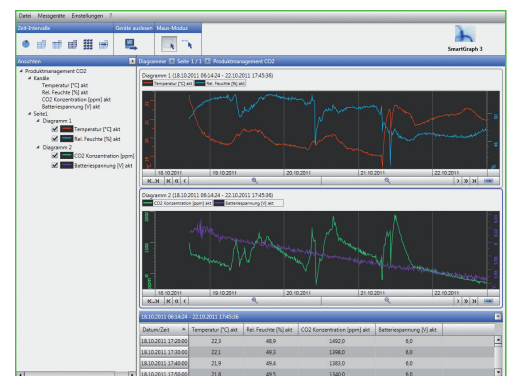
Technical Data

General

Dimensions		length 166 mm, width 78 mm, depth 32 mm
Housing / protection class		plastic ABS / IP40
Battery lifetime	THI, THIP:	> 1 year
	TCO, E:	> 4 months
Data storage		16 MB, 3,200,000 measured values
LC-Display		size 90x64 mm
Weight		approx. 250 g
Interface		USB, LAN (Ethernet)
Measurement rate		10/30 s, 1/10/12/15/30 min, 1/3/6/12/24 h
Storage rate		1/1012/15/30 min, 1/3/6/12/24 h
Power supply		Battery 4 x LRG AA Mignon (not in the scope of supply) or USB
		optionally the power supply via PoE (Power over Ethernet) is possible
Working range	Temperature:	-20...50 °C (-4...120 °F)
	Humidity:	0...95 %RH (non condensing)
CE compatibility according		EN61000-6-2 EN55022
		EN6100-4-2 to EN6100-4-6

$C\epsilon$

Measurements

Relative Humidity

Sensor	capacitive
Measurement range	10...95 %RH
Accuracy at 20°C	±2 %RH
Resolution	0.1 %RH

Temperature

Sensor	NTC
Measurement range	-20...50 °C (-4...120 °F)
Accuracy	±0.3 °C (0...40 °C; 32...102 °F), otherwise ±0.5 °C
Resolution	0.1 °C

Air pressure (only Model THIP)

Measurement range	300...1300 hPa absolute
Accuracy at 25°C	±0.5 hPa in the range of 700...1100 hPa
Resolution	0.1 hPa

CO_2 (only Model TCO)

Sensor	NDIR 2-Beam Principle
Measurement range	0...5000 ppm
Accuracy	± (50 ppm +3 % of measured value)
Resolution	1 ppm
Long-term stability	20 ppm/year
Response time t_{90}	< 195 s for measurement rate 10 s
Temperature dependence	typ. 2 ppm CO_2/°C (0...50 °C / 32...122 °F) different from 25 °C (77 °F)

Voltage input 0-1V (only Model E)

Measurement range	0...1 V
Accuracy	±(200 µV +0,1 % of measured value)
Resolution	500 µV

Current input (only Model E)

Measurement range	2-wires: 4...20 mA
	3-wires: 0...20 mA
Accuracy	±(4 µA +0,1 % of measured value)
Resolution	5 µA
Resistance	max. 50 Ohm

Thermocouple K, J, S (only Model E)

Measurement range	for K, J:	-200...1200 °C
	for S:	-50...1700 °C
Accuracy	for -200...0 °C:	±(1 °C +0,5 % of measured value)
	for 0...1700 °C:	±(1 °C +0,2 % of measured value)
Resolution	0,2 °C	

Pt100 (only Model E)

Measurement range	-200...500 °C
Accuracy	±(0,2 °C +0,1 % of measured value)
Resolution	0,02 °C

Technical Data Logprobe 20

General

Housing / protection class		plastic PC / IP65
Working range	Temperature:	-40...80 °C (-40...176 °F)
	Humidity:	0...100 %RH
CE compatibility according [1]		EN61326-2-3
		EN61326-1
Maximum cable length		150 m

CE

Measurements

Relative Humidity

Sensor	capacitive	
Measurement range	relative humidity	0...100 %RH
	absolute humidity	0...290 g/m³
	mixing ratio	0...550 g/kg
	dew point temperature	-40...80 °C (-40...176 °F)
Accuracy at 20°C	±2 %RH (0...90 %RH)	
	±3 %RH (90...100 %RH)	

Temperature

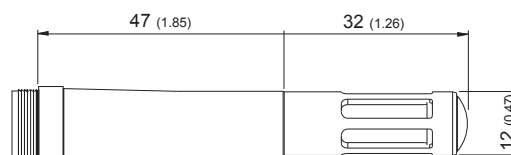|	
Sensor	Pt1000 DIN B
Measurement range	-40...80 °C (-40...176 °F)
Accuracy	±0.2 °C at 20 °C (68 °F); ±0.4°C (-10...50 °C 14...122 °F);
	±0.6 (-40...80 °C -40...176 °F)

[1] is not protected against surge

Connection Diagram

4 ○   ○ 3
1 ○   ○ 2
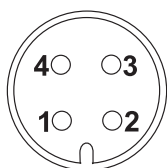
1...+UB
2...RS485 B
3...RS485 A
4...GND

Dimensions mm (inch)

47 (1.85)   32 (1.26)   12 (0.47)

Ordering Guide

DATA LOGGER		Accessories - Data logger	
Temperature and relative humidity	HUMLOG20 THI	Power supply for Humlog 20	HA030106
Temperature, rel. humidity, air pressure	HUMLOG20 THIP	theft-proof installation kit	HA030104
Temperature, rel. humidity, CO_2	HUMLOG20 TCO		
external inputs	HUMLOG20 E		
optional PoE (Power over Ethernet)	-POE (add to the end)		
HUMIDITY/TEMPERATURE SENSOR for Humlog 20 E		**Accessories - Humlog 20 E**	
RH/T-Sensor with metal grid filter	LOGPROBE20-HTPC	T-coupler M12 - M12	HA030204
RH/T-Sensor with stainless steel sintered filter	LOGPROBE20-HTPD	cable 2 m (6.6 ft)	HA010816
		cable 5 m (16.4 ft)	HA010817
		cable 10 m (32.8 ft)	HA010818
		male connector M12x1 self-assembled	HA010706
		female connector M12x1 self-assembled	HA010708

Order Example

HUMLOG20 THI
Data logger for Temperature and relative Humidity

HUMLOG20 TCO-POE
Data logger for Temperature, relative Humidity and CO_2 with PoE (Power over Ethernet)