

# HUMLOG20

## Data logger for Humidity, Temperature, Air Pressure and CO<sub>2</sub>

The HUMLOG20 facilitates exact and professional recordings for climatic measurements of humidity, temperature, air pressure and CO<sub>2</sub> 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 HUMLOG20 Network capable, and ensures maximum reliability in data transmission. For various requirements in the application, the three models **THI**, **THIP**, **TCO** and **E** are available. The Model **E** offers the highest flexibility with analog and digital interface for external sensors.



Measurement Categories	Model			
	THI	THIP	TCO	E
Temperature (air)	✓	✓	✓	
Relative humidity	✓	✓	✓	
Absolute humidity	✓	✓	✓	
Dew point temperature	✓	✓	✓	
Barometric air pressure		✓		
Relative air pressure		✓		
CO <sub>2</sub> Concentration			✓	
External input - digital RH/T-Sensor				✓
External input - Pt100, Thermocouple				✓
Analog input voltage 0-1V				✓
Analog input current 0/4-20mA				✓
<b>Functions</b>				
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	✓	✓	✓	✓
<b>Functions Software</b>				
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	✓	✓	✓	✓

### Typical Applications

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

### Features

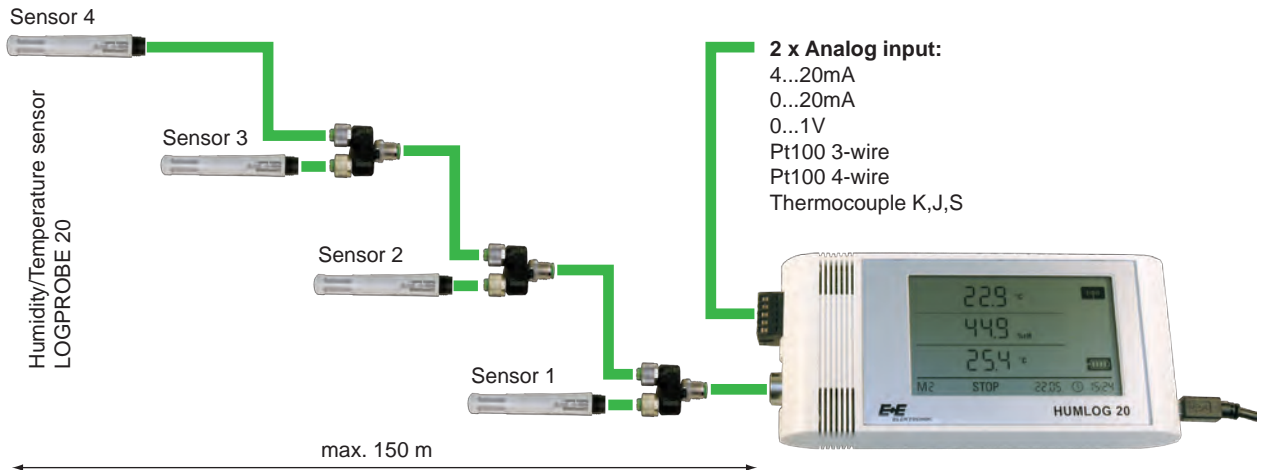
- large data memory
- large format display
- USB and Ethernet interface
- network-capable
- powerful software for data analysis

## HUMLOG20 E Configurations Examples

The HUMLOG20 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.

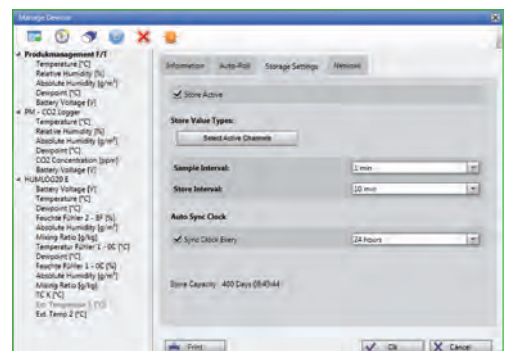
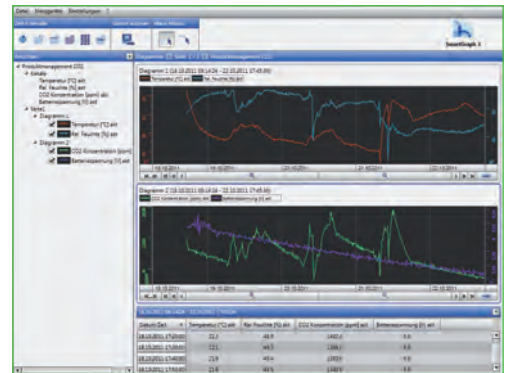
Each fully equipped HUMLOG20 E is a 10 channel data logger that can record various data.



## Software SmartGraph3

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

- An HUMLOG20 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 HUMLOG20 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. 250g	
Interface	USB, LAN (Ethernet)	
Measurement rate	10/30s, 1/10/12/15/30min, 1/3/6/12/24h	
Storage rate	1/10/12/15/30min, 1/3/6/12/24h	
Power supply	Battery 4 x LRG AA Mignon 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	



### Measurements

#### Relative Humidity

Sensor	capacitive
Measurement range	10...95%RH
Accuracy at 20°C	±2%RH
Resolution	0.5%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<sub>2</sub> (only Model TCO)

Sensor	NDIR 2-Beam Principle
Measurement range	0...5000 ppm
Accuracy	± (50ppm +3% of measured value)
Resolution	1 ppm
Long-term stability	20 ppm/year
Response time t <sub>90</sub>	< 195s for measurement rate 10s

#### Voltage input 0-1V (only Model E)

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

#### Current input (only Model E)

Measurement range	2-wires: 4...20mA 3-wires: 0...20mA
Accuracy	±(4µA +0,1% of measured value)
Resolution	5µA
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 LOGPROBE20

### General

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

### Measurements

#### Relative Humidity

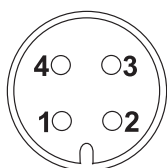
Sensor	capacitive		
Measurement range	relative humidity	0...100%RH	
	absolute humidity	0...290 g/m <sup>3</sup>	
	mixing ratio	0...550 g/kg	
	dew point temperature	-40...80°C (-40...176°F)	
Accuracy at 20°C	±2%RH (0...90%RH)		
	±3%RH (90...100%RH)		

#### 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)		

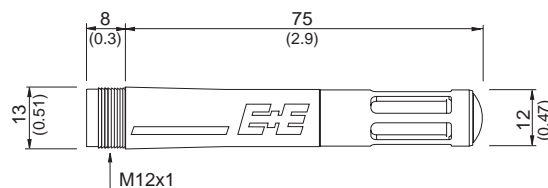
1) is not protected against surge

### Connection Diagram



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

### Dimensions mm (inch)



### Ordering Guide

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

### Order Example

#### HUMLOG20 THI

Data logger for Temperature and relative Humidity

#### HUMLOG20 TCO-POE

Data logger for Temperature, relative Humidity and CO<sub>2</sub> with PoE (Power over Ethernet)