

## Humlog 20

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

The Humlog 20 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 Humlog 20 network capable, and ensures maximum reliability in data transmission. For various requirements in the application, the four models **M1**, **M8**, **M12** and **M60** are available. Model **M60** offers the highest flexibility with analogue and digital interface for external sensors.



**HUMLOG20-M1**



**HUMLOG20-M8**



**HUMLOG20-M12**



**HUMLOG20-M60**

Measurement Categories	Model			
	M1	M8	M12	M60
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				✓
Analogue input voltage 0 - 1 V				✓
Analogue input current 0/4 - 20 mA				✓
<b>Functions</b>				
Power supply battery	✓	✓	✓	✓
Power supply USB	✓	✓	✓	✓
Measured data storage	3200000	3200000	3200000	3200000
Battery life, typ.	> 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**  
**Data centres**  
**Calibration laboratories**

### Features

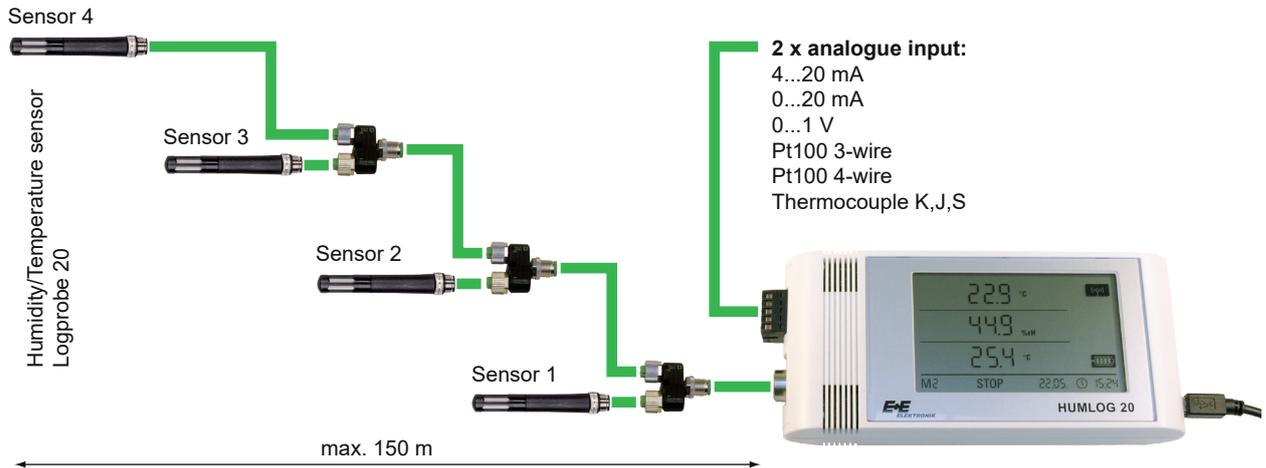
**Large data memory**  
**Large format display**  
**USB and Ethernet interface**  
**Network-capable**  
**Powerful software for data analysis**

## Humlog 20 Model M60 Configuration Examples

The HUMLOG20-M60 is equipped with a digital input, which allows the connection of up to four external humidity/temperature sensors.

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

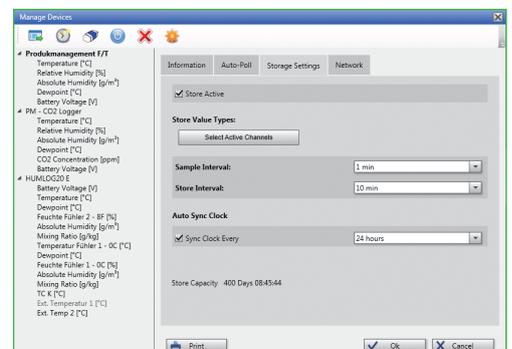
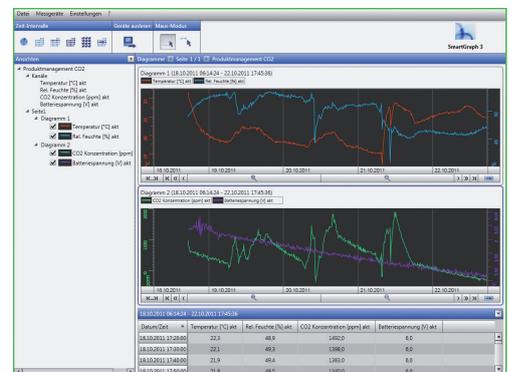
Each fully equipped HUMLOG20-M60 is a 10 channel data logger that can record various data.



## Software SmartGraph3

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

- A 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 export of measured data in csv format enables further processing in 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	
Enclosure / protection rating	Plastic ABS / IP40	
Battery lifetime	M1, M8:	> 1 year
	M12, M60:	> 4 months
Data storage	16 MB, 3 200 000 measured values	
LC-Display	Size 90x64 mm	
Weight	Approx. 250 g (0.55 lbs)	
Interface	USB, LAN (Ethernet)	
Sampling interval	10/30 s, 1/10/12/15/30 min, 1/3/6/12/24 h	
Storage interval	1/10/12/15/30 min, 1/3/6/12/24 h	
Power supply	Battery 4 x LRG AA Mignon (not in the scope of supply) or USB	
Working range	Temperature:	-20...50 °C (-4...120 °F)
	Humidity:	0...95 %RH (non-condensing)
CE compatibility according		EN 61000-6-2
		EN 55022
		EN 6100-4-2 to EN 6100-4-6



### Measurands

#### Relative Humidity

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

#### Temperature

Sensor	NTC
Measuring 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 M8)

Measurement range	300...1 300 hPa absolute
Accuracy at 25°C	±0.5 hPa in the range of 700...1 100 hPa
Resolution	0.1 hPa

#### CO<sub>2</sub> (only Model M12)

Sensor	Dual wavelength NDIR operation principle
Measuring range	0...5 000 ppm
Accuracy	± (50 ppm + 3 % of measured value)
Resolution	1 ppm
Long-term stability	20 ppm/year
Response time t <sub>90</sub>	< 195 s for sampling interval 10 s
Temperature dependency, typ.	2 ppm CO <sub>2</sub> /°C (0...50 °C / 32...122 °F) different from 25 °C (77 °F)

#### Voltage input 0-1V (only Model M60)

Measuring range	0...1 V
Accuracy	±(200 µV + 0.1 % of measured value)
Resolution	500 µV

#### Current input (only Model M60)

Measuring 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 Ω

#### Thermocouple K, J, S (only Model M60)

Measuring range	K, J:	-200...1 200 °C
	S:	-50...1 700 °C
Accuracy	-200...0 °C:	±(1 °C + 0.5 % of measured value)
	0...1 700 °C:	±(1 °C + 0.2 % of measured value)
Resolution	0.2 °C	

#### Pt100 (only Model M60)

Measuring range	-200...500 °C
Accuracy	±(0.2 °C + 0.1 % of measured value)
Resolution	0.02 °C

## Technical Data Logprobe 20

### General

Enclosure / protection rating	Plastic PC / IP65	
Working range	Temperature:	-40...80 °C (-40...176 °F)
	Humidity:	0...100 %RH
CE compatibility according to <sup>1)</sup>	EN 61326-2-3 EN 61326-1	
Maximum cable length	150 m	



### Measurements

#### Relative Humidity

Sensor	Capacitive	
Measurement range	relative humidity	0...100 %
	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)

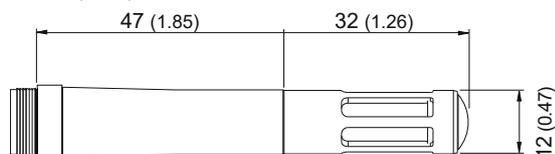
#### Temperature

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.

### Dimensions

Values in mm (inch)



### Ordering Guide

		HUMLOG20-
<b>Model</b>	Temperature and relative humidity	M1
	Temperature, relative humidity, air pressure	M8
	Temperature, relative humidity, CO <sub>2</sub>	M12
	External inputs	M60
<b>Humidity/Temperature Sensor for HUMLOG20-M60</b>		LOGPROBE20-
	RH/T sensor with metal grid filter	HTPC
	RH/T sensor with stainless steel sintered filter	HTPD

### Order Examples

#### HUMLOG20-M1

Data logger for temperature and relative humidity

#### HUMLOG20-M60

Data logger with external inputs

#### LOGPROBE20-HTPD

RH/T sensor with stainless steel sintered filter

## Accessories

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### Data logger

- Power supply for Humlog 20 HA030106
- Theft-proof installation kit HA030104

### HUMLOG20-M60

- T-coupler M12 - M12 HA030204
- Cable 2 m (6.6 ft) HA010816
- Cable 5 m (16.4 ft) HA010817
- Cable 10 m (32.8 ft) HA010818
- M12x1 cable connector, 5 pole plug for self assembly HA010706
- M12x1 cable connector, 5 pole socket for self assembly HA010708