

HUMIMAP 20 Series **Multi-channel instrument for measurement of relative humidity, temperature, dewpoint, absolute humidity...**

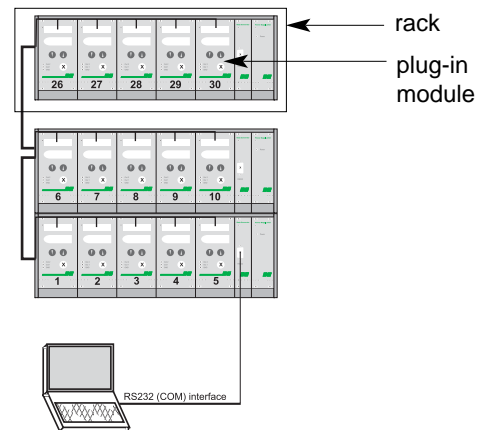
Accurate mapping of humidity and temperature in climatic chambers is a key requirement of the quality assurance system.

Due to its modular design the multi-channel measurement system HUMIMAP 20 is a cost effective mapping and monitoring solution which can be easily customized. Beside the measurement of relative humidity and temperature, HUMIMAP 20 calculates all correlated physical quantities such as dew point temperature, mixing ratio and absolute humidity.



Modular design

One HUMIMAP 20 19" rack can accommodate up to five plug-in modules. Several racks can be connected together which allows system expansion up to 32 channels.



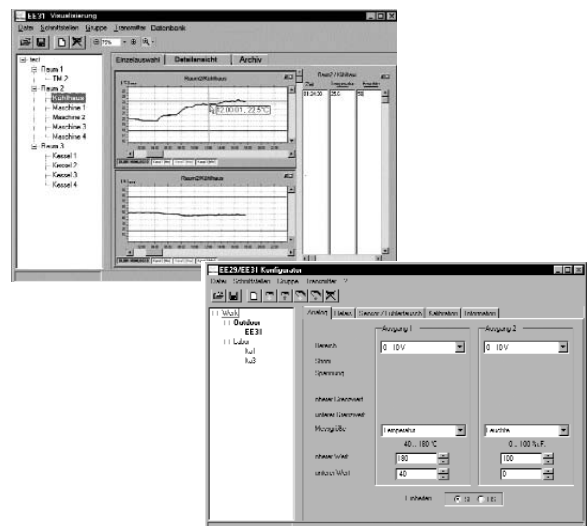
Software

Configuration software:

The user friendly configuration software is included in the standard scope of supply. It allows easy custom setup of the HUMIMAP 20 system such as number of channels, assignment and scaling of analogue outputs, calibration, sensor and probe exchange.

Data logging and analysis software:

Measurement data can be saved and processed by using the optional data logging und visualisation software. One can display and analyze data in graphical or spread sheet format, can set alarms levels and alarm signals can be sent by email or SMS.



Functions HUMIMAP 20

measurement of relative humidity and temperature
calculated values h, r, dv, Tw, Td, Tf, e
extendable up to 32 channels (also additional)
two freely scaleable and configurable analogue outputs per plug-in module
remote sensing probe up to 20m (66ft), interchangeable
on-site adjustment for relative humidity and temperature
LED indication of status
local displays, adjustable measurand incl. MIN/MAX indication
configuration and data output via RS232 interface
data logging and analysis software

Interchangeable sensing probe

The HUMIMAP 20 sensing probes have maximum cable length of 20m (66ft) and plug connection to the plug-in modules. The configuration software allows easy probe replacement without the need of recalibration.

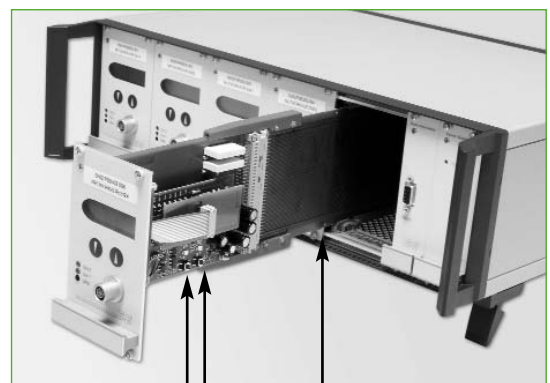
A metal grid filter specially designed for high humidity (even condensation) and high temperature environment protects the sensor elements against mechanical stress and pollution.



Calibration and adjustment of plug-in modules

The optional extension module allows easy calibration of an entire measurement loop (sensing probe, plug-in module, rack, data logging and analysis software) without break.

Using push buttons on the plug-in module the user can easily perform an one or two point adjustment of humidity and temperature. The adjustment can be done by using the configuration software included in the standard scope of supply as well.



push-buttons for
humidity / temperature
calibration

optional adapter
PCB

Technical Data

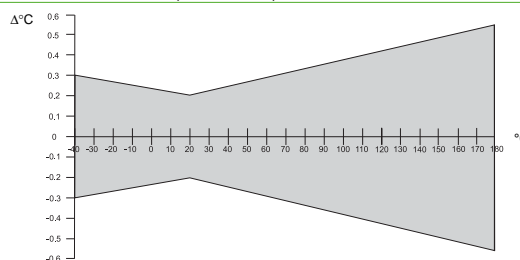
Measuring values

Relative humidity

Humidity sensor ¹⁾	HC1000-400		
Working range ¹⁾	0...100% RH		
Accuracy including hysteresis and non-linearity			
- special calibration against certified standards	± 1% RH (0...90% RH)	± 2% RH (90...100% RH)	
- standard calibration	± 2% RH (0...90% RH)	± 3% RH (90...100% RH)	
Temperature dependence of electronics	typ. ± 0.01% RH/°C		
Temperature dependence of sensing probe	typ. ± (0.002 + 0.0002 x RH[%]) x ΔT [°C]	ΔT = T - 20°C	
Response time with metal grid filter 20°C (68°F) / t ₉₀	< 15s		

Temperature

Temperature sensor element	Pt1000 (Tolerance class A, DIN EN 60751)
Working range sensing head	-40...180°C (-40...356°F)
Accuracy (typ.)	



Temperature dependence of electronics	typ. ± 0.005°C/°C
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Outputs²⁾

Two freely selectable and scaleable analogue outputs	0 - 5V	-1mA < I _L < 1mA
	0 - 10V	-1mA < I _L < 1mA
	4 - 20mA	R _L < 500 Ohm
	0 - 20mA	R _L < 500 Ohm

Max. adjustable measurement range²⁾³⁾

		from	up to	units
Humidity	RH	0	100	% RH
Temperature	T	-40 (-40)	180 (356)	°C (°F)
Dew point temperature	Td	-80 (-112)	100 (212)	°C (°F)
Frost point temperature	Tf	-80 (-112)	0 (32)	°C (°F)
Wet bulb temperature	Tw	0 (32)	100 (212)	°C (°F)
Water vapour partial pressure	e	0 (0)	1100 (15)	mbar (psi)
Mixture ratio	r	0 (0)	999 (9999)	g/kg (gr/lb)
Absolute humidity	dv	0 (0)	700 (300)	g/m ³ (gr/f ³)
Specific enthalpy	h	0 (0)	2800 (999999)	kJ/kg (lbf/lb)

General

Supply voltage	90...250V AC (50/60 Hz)
System requirements for software	WINDOWS 98 or later; serial interface
Sensor protection	metal grid filter up to 180°C (356°F)
Operating temperature range of electronics	-20...+50°C (-4...122°F)
Storage temperature range	-40...+60°C (-40...140°F)
Electromagnetic compatibility according to	EN61000-6-2 EN61000-6-3
Display	graphical LC display (128x32 pixels), with integrated push-buttons for selecting parameters and MIN/MAX function
Dimensions	463 x 145 x 360mm (18 x 6 x 14") (w x h x d)

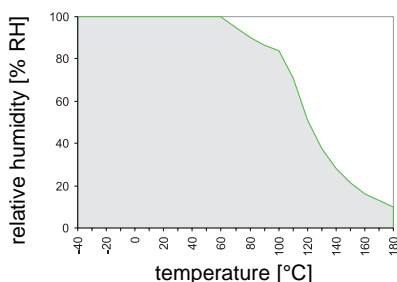


¹⁾ Refer to working range of the humidity sensor!

²⁾ Can be easily changed by software.

³⁾ Refer to accuracies of calculated values.

Working range humidity sensor



The grey area shows the allowed measurement range for the humidity sensor.

Operating points outside of this range do not lead to destruction of the element, but the specified measurement accuracy cannot be guaranteed.

Ordering Guide

				HUMIMAP 20		
Hardware Configuration						
Number of plug-in modules	1 piece			01		
	2 pieces			02		
	3 pieces			03		
		
	up to 32 pieces			32		
Analogue outputs pluggable on backside of HUMIMAP 20				CA09		
Filter	metal grid filter (up to 180°C/356°F)			9		
Cable length	2m (7ft)			02		
	5m (16ft)			05		
	10m (33ft)			10		
	20m (66ft)			20		
	50mm (2")			2		
Probe length	200mm (8")			5		
Software Configuration						
Physical parameters of outputs	Relative Humidity	RH [%]	(A)	output 1	select according to ordering guide (A - H,J)	
	Temperature	T [°C]	(B)			
	Dew point temperature	Td [°C]	(C)	output 2		select according to ordering guide (A - H,J)
	Frost point temperature	Tf [°C]	(D)			
	Wet bulb temperature	Tw [°C]	(E)			
	Water vapour partial pressure	e [mbar]	(F)			
	Mixture ratio	r [g/kg]	(G)			
	Absolute humidity	dv [g/m ³]	(H)			
	Specific enthalpy	h [kJ/kg]	(J)			
Type of output signals	0-5V			2		
	0-10V			3		
	0-20mA			5		
	4-20mA			6		
Measured value units	metric / SI			E01		
	non metric / US					
Scaling of T-output	-40...60 (T02)	-20...100 (T14)	output T	select according to ordering guide (Txx)		
Scaling of Td-output	-10...50 (T03)	+20...120 (T15)				
	0...50 (T04)	0...120 (T16)				
	0...100 (T05)	0...80 (T21)				
	0...60 (T07)	-40...80 (T22)	output Td	select according to ordering guide (Tdxx)		
	-30...70 (T08)	-20...80 (T24)				
	-30...120 (T09)	-40...160 (T33)				
	-20...120 (T10)	+20...180 (T40)				
	-40...120 (T12)	-40...180 (T52)				

Accessories / Replacement Parts

(For further information, see data sheet "Accessories")

- | | | | |
|---------------------|---------------|--------------------|------------|
| - filter caps | (HA0101xx) | - adapter PCB | (HA060101) |
| - replacement probe | (Pxx) | - 1% calibration | (EE90/3H) |
| - humidity sensor | (FE09 / FE10) | - OEKD-certificate | |

Order Example

HUMIMAP20-059052/BC2-T07-Td03

Multichannel-instrument

Number of plug-in modules: 5 pieces
 Filter: metal grid filter
 Cable length: 5m
 Probe length: 50mm

Output 1: T
 Output 2: Td
 Output signal: 0-5V
 Measured value units: metric
 Scaling of T-output: 0...60°C
 Scaling of Td-output: -10...50°C

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