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Datasheet Humor 20

High Precision Humidity Calibrator



Humor 20

High Precision Humidity Calibrator

The Humor 20 is a highly accurate, easy to use humidity calibrator and represents the ideal reference for calibration laboratories or for manufacturers of humidity sensors.

Primary Standard with Outstanding Performance

The calibrator operates as a dual pressure humidity generator, whereby the generated humidity reference depends only on the pressure. Since the pressure is a fundamental physical quantity, the Humor 20 represents a primary humidity standard. Due to the dual pressure principle, the calibrator features exceptional accuracy and stability as well as very short stabilization time. For details on the operation principle, please refer to the user manual.

Versatile

As a dual pressure humidity generator, the Humor 20 is independent of the ambient temperature, does not require climatized environment and is suitable for portable measurement. With a wide choice of covers, the Humor 20 accommodates up to four humidity sensors, transmitters, probes or a handheld instrument.

Easy to Use

For operation, the Humor 20 requires only distilled water, filtered oil-free air with a pressure of 10 bar and 100 - 230 V AC power supply. It offers supply for four humidity measurement devices and reads their voltage or current outputs.

Automatic Calibration

Together with the optional Automatic Calibration Module, the Humor 20 autonomously performs entire calibration cycles. The PC software included in the scope of supply facilitates the individual setup of the automatic calibration cycle and issues the calibration certificates. Additionally, it offers various adjustment possibilities for the Humor 20.

Traceable to International Standards

With the optional accredited calibration certificate, the Humor 20 becomes the humidity reference of choice for accredited calibration laboratories.



Humor 20



Automatic calibration Module (optionally available)



Oil-free, silent compressor (optionally available)

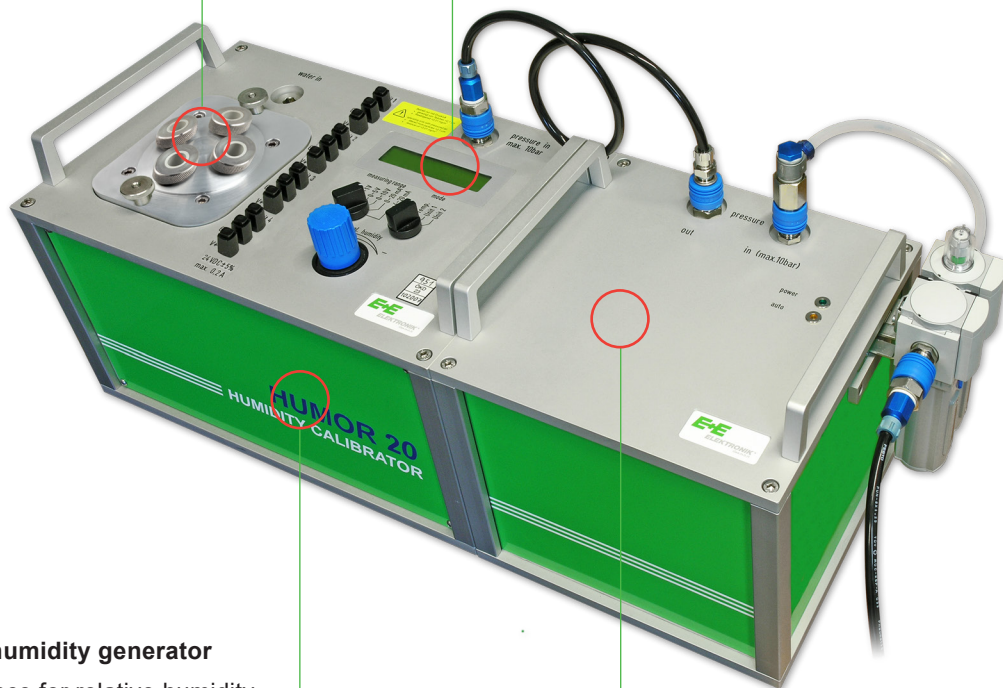
Features

Calibration

- Up to 4 RH probes simultaneously
- Very short stabilization time
- Suitable for on-site calibration

User interface

- Switchable measuring inputs
- Display with backlight
- R232 interface to PC
- Easy handling



Dual pressure humidity generator

- Primary reference for relative humidity
- Excellent accuracy and stability
- Independent of the ambient temperature

Automatic Calibration Module (Optional)

- Automatic calibration cycle
- Various adjustment possibilities

Inspection certificate

According to DIN EN 10204-3.1

Technical Data

Calibration Performance

Relative Humidity (RH)

Operating principle	Dual pressure humidity generator
Working range	10...95 %RH
Accuracy of the generated relative humidity ¹⁾²⁾	
Stabilisation time	<3 min/measuring point

- 1) The accuracy statement includes the uncertainty of the factory calibration with an enhancement factor k=2 (2-times standard deviation).
- 2) Valid for metal covers for the measuring chambers.

Temperature (T)

Accuracy temperature measurement in measuring chamber ¹⁾ , typ.	±0.3 °C (±0.54 °F)
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- 1) Valid for metal covers for the measuring chambers.

Inputs

Number of measuring inputs	4 (switchable ... 4 - 20 mA / 0 - 20 mA / 0 - 1 V / 0 - 5 V / 0 - 10 V)				
Accuracy of the inputs, typ.	<table border="0"> <tr> <td style="text-align: right; padding-right: 10px;">Voltage</td> <td><5 mV</td> </tr> <tr> <td style="text-align: right; padding-right: 10px;">Current</td> <td><30 µA</td> </tr> </table>	Voltage	<5 mV	Current	<30 µA
Voltage	<5 mV				
Current	<30 µA				


Size and Shape of the Specimens

Measuring Chamber

Cylinder	Ø8...25.5 mm (0.3...1")
Compact, max.	100 x 85 x 40 mm (3.9 x 3.3 x 1.6") or 95 x 95 x 40 mm (3.9 x 3.9 x 1.6")


Technical Data

General

Power supply	100 - 230 V AC, 50/60 Hz, max. 20 W	
Integrated power supply for specimen	24 V DC, max. 200 mA	
Protection class	I	
Protection rating	IP40	
Surge voltage category	II	
Pollutional index	2	
Display	Dot-matrix display with backlight	
Interface for PC connection	RS232 (COM port)	
System requirements for software tools	MS Windows 7 and newer versions	
Environmental conditions	Temperature	10...40 °C (50...104 °F)
	Humidity	10...80 % RH
	Installation altitude	Up to 2000 m above sea level
	Application	Indoors
Electromagnetic compatibility	EN 61000-6-3:2007/A1:2011	EN 61326-1:2013
	EN 61000-6-2:2005	EN 61010-1:2010
Additional standards	EN 60068-2-6	EN 60068-2-29
Conformity		
Dimensions	L x W x H	400 x 260 x 240 mm (15.7 x 10.2 x 9.4")
Weight, approx.	Humor 20	23 kg (51 lbs)
	Humor 20 incl. aluminium transport case	36.5 kg (80.5 lbs)

Technical Data

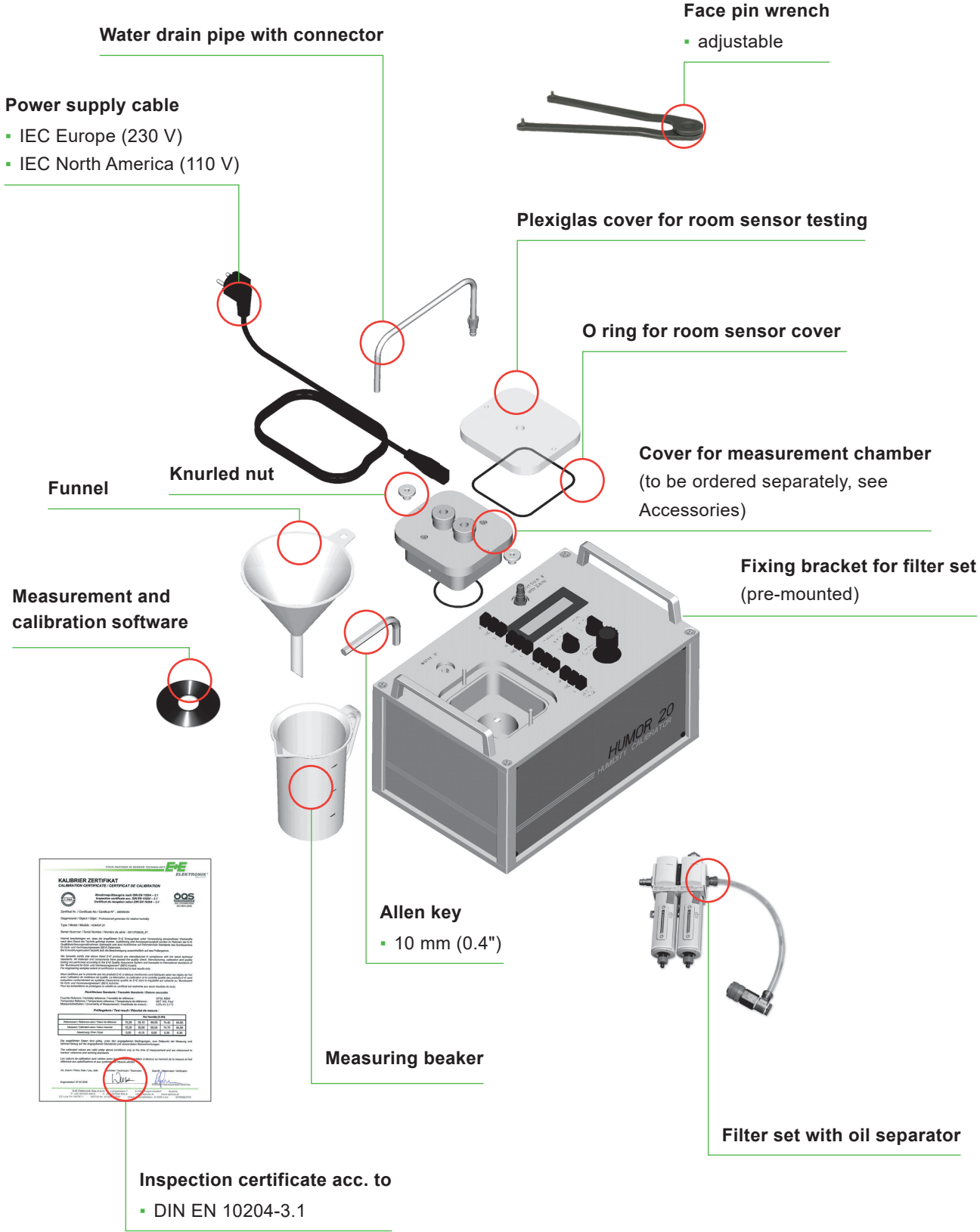
Accessory - Automatic Calibration Module

Compressed air supply	Min. Max. Max. particle size Filtered oil-free compressed air	9.8 bar (142 psi) 12 bar (174 psi) 5 µm
Power supply		100 - 230 V AC, 50/60 Hz, max. 15 W
Protection class		I
Protection rating		IP40
Surge voltage category		II
Pollutional index		2
Environmental conditions	Temperature Humidity Installation altitude Application	10...40 °C (50...104 °F) 10...80 % RH Up to 2000 m above sea level Indoors
Electromagnetic compatibility		EN 61000-6-3:2007/A1:2011 EN 61326-1:2013 EN 61000-6-2:2005 EN 61010-1:2010
Additional standards		EN 60068-2-6 EN 60068-2-29
Conformity		
Dimensions	L x W x H	260 x 260 x 240 mm (10.2 x 10.2 x 9.4")
Weight	Device Device incl. aluminium transport case	9 kg (20 lbs) 23 kg (51 lbs)

Accessory - Oil-free, silent compressor

Pressure, max.		12 bar (174 psi)
Power supply		230 V AC, 50/60 Hz
Noise level		57 dB(A)/1m
Dimensions	L x W x H	410 x 410 x 500 mm (16 x 16 x 20")
Weight		21 kg (46 lbs)

Scope of Supply



Ordering Guide

Feature	Description	Code
Model	RH + T	Humor20- M1

Accessories

For further information see datasheet [Accessories](#).

Humidity Calibrator - Automatic Calibration Module

Description	Code
Automatic Calibration Module	HA020301

Cover for Measurement Chamber

Description	Code
Humor cover 2x Ø12...16 mm (0.5...0.6")	HA020201
Humor cover 1x Ø16...20.5 mm (0.6...0.8")	HA020202
Humor cover 1x Ø20.5...25.5 mm (0.8...1")	HA020203
Humor cover 3x Ø8...12 mm (0.3...0.5")	HA020204
Humor cover 4x Ø12...13 mm (0.5...0.52")	HA020205
Humor cover 4x Ø12...16 mm (0.5...0.6")	HA020207
Humor cover 4x Ø16...20.5 mm (0.6...0.8")	HA020208
Humor cover 1x Ø30 mm (1.2")	HA020209
Humor cover 1x Ø9.5...12.7 mm (3/8...1/2") ISO	HA020213
Humor cover 2x Ø12.7 mm (1/2") ISO	HA020214
Humor cover 2x Ø12.7 mm (1/2") NPT	HA020215
Adapter for EE33 - model T17 ¹⁾	HA020401

1) Useable in combination with HA020204 or HA020201 only.

Miscellaneous

Description	Code
Oil-free compressor for 230 V AC power supply	HA020101
USB/RS232 converter	HA020110
Face pin wrench adjustable	HA020402
Accredited calibration certificate with multiple humidity calibration points please contact your E+E sales representative	OEKD-AGxx



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