E+E ELEKTRONIK ® *Ges.m.b.H.*
YOUR PARTNER IN SENSOR TECHNOLOGY

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 common humidity sensors, transmitters, probes or handheld instruments at once.

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

Key Features

Excellent accuracy and stability
Primary reference for relative humidity
Dual pressure humidity generator
Independent of the ambient temperature
Very short stabilization time
Traceable to international standards
Suitable for on-site calibration
Easy handling

Size and Shape of the Specimens

Cylindrical probes: Diameter 8…25.5 mm (0.3...1")
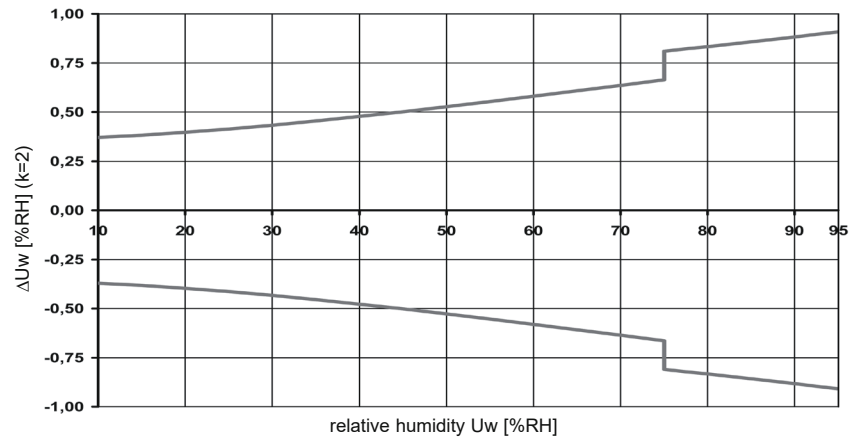Compact devices: Max. 100 x 85 x 40 mm (3.9 x 3.3 x 1.6") or 95 x 95 x 40 mm (3.9 x 3.9 x 1.6")

Technical Data

Calibration Performance

Function principle	Dual pressure humidity generator
Working range	10...95 % RH
Accuracy of the generated humidity[1][2]	

relative humidity Uw [%RH]

Stabilisation time	< 3 min/measuring point
Accuracy temperature measurement in measuring chamber[2], typ.	±0.3 °C (±0.54 °F)
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.	Voltage: < 5 mV
	Current: < 30 µA

General

Power supply	100 - 230 V AC, 50/60 Hz, max. 20 W	
Integrated power supply	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 above	
Environmental conditions	Temperature:	10...40 °C (50...104 °F)
	Humidity:	10...80 % RH
	Installation altitude:	up to 2000 m above sea level
	Application:	indoors
CE conformity	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
Dimensions	400 x 260 x 240 mm (15.7 x 10.2 x 9.4")	
Weight	Humor 20: approx. 23 kg (51 lbs)	
	Humor 20 incl. aluminium transport case: approx. 36.5 kg (80.5 lbs)	

1) The extended uncertainty of measurement results from the standard inaccuracy increased by a multiplying factor of K=2.
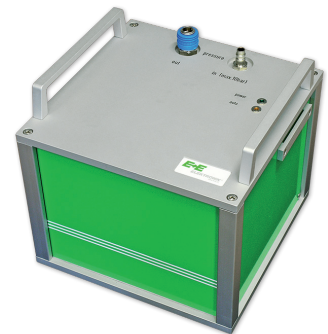2) Valid for metal covers for the measuring chambers

Accessories

Automatic Calibration Module

Technical Data

Compressed air supply	Min. 9.8 bar (142 psi); max. 12 bar (174 psi); filtered oil-free compressed air, max. particle size: 5 µm
Electrical supply	100 - 230 V AC, 50/60 Hz max. 15 W
Interface to PC	RS232 (COM Port)
Protection class	I
Protection rating	IP40
Surge voltage category	II
Pollutional index	2

Environmental conditions	Temperature:	10...40 °C (50...104 °F)
	Humidity:	10...80 % RH
	Installation altitude:	up to 2000 m above sea level
	Application:	indoors

CE conformity	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

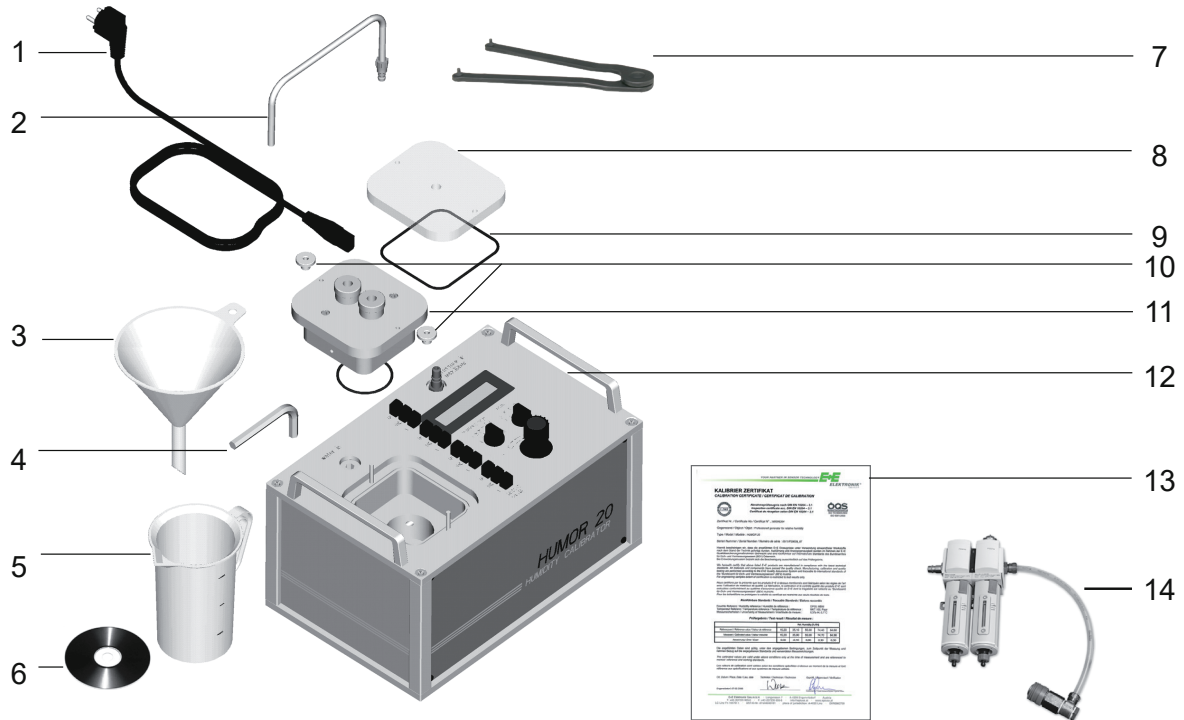|	
Weight	Device: 9 kg (20 lbs)
	Device incl. aluminium transport case: 23 kg (51 lbs)
Dimensions	260 x 260 x 240 mm (L x W x H) (10.2 x 10.2 x 9.4")

Oil-free, silent compressor

Technical Data

Max. pressure	12 bar (174 psi)
Supply voltage	230 V AC[1] // 50 or 60 Hz
Noise level	57 dB(A)/lm
Dimensions (L x W x H)	410 x 410 x 500 mm (16 x 16 x 20")
Weight	21 kg (46 lbs)

1) 110 V AC upon request

Humor 20 - Scope of Supply

1 Power supply cable IEC Europe (230 V) +
   power supply cable IEC Northamerica (110 V)
2 Water drain pipe with connector
3 Funnel
4 Allen key (10 mm / 0.4")
5 Measuring beaker
6 Measurement and calibration software
7 Face pin wrench

8 Plexiglas cover for room sensor testing
9 O-ring for room transmitter
10 Knurled nut
11 Cover for measurement chamber (to be ordered separately, see ordering information)
12 Fixing bracket for filter set (pre-mounted)
13 Inspection certificate acc. DIN EN 10204-3.1
14 Filter set with oil separator

Ordering Information

HUMIDITY CALIBRATOR

Humor20 (without cover for measurement chamber)	HUMOR20-M1
Automatic Calibration Module	HA020301

COVER FOR MEASUREMENT CHAMBER

Humor cover 2x Ø 12…16 mm (0.5...0.6")	HA020201
Humor cover 1x Ø 16…20.5 mm (0.6...0.8")	HA020202
Humor cover 1x Ø 20.5…25.5 mm (0.8...1")	HA020203
Humor cover 3x Ø 8…12 mm (0.3...0.5")	HA020204
Humor cover 4x Ø 12…13 mm (0.5...0.52")	HA020205
Humor cover 4x Ø 12…16 mm (0.5...0.6")	HA020207
Humor cover 4x Ø 16…20.5 mm (0.6...0.8")	HA020208
Humor cover 1x Ø 30 mm (1.2")	HA020209
Humor cover 1x Ø 9.5…12,7 mm (3/8...½") ISO	HA020213
Humor cover 2x Ø 12.7 mm (½") ISO	HA020214
Humor cover 2x Ø 12.7 mm (½") NPT	HA020215
Adapter for EE33 - model J[1]	HA020401

1) only useable in combination with HA020204 or HA020201

ACCESSORIES

Oil-free compressor for 230 V AC power supply (110 V AC upon request)	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