

REFERENCE INSTRUMENT

High-precision humidity measuring instrument ALMEMO® 1036-2
Measuring operations using Pt100 psychrometer, with resolution parameters temperature 0.001 K, relative humidity 0.01 %, dew point 0.01 K



Technical features

- ▶ Humidity measurement with very high resolution, precision, and linearity using Pt100 psychrometer
- ▶ Suitable as reference device in calibration laboratories and quality assurance procedures
- ▶ Very high level of accuracy using the Pt100 psychrometer - thanks to multi-point adjustment of the two temperature sensors (on leaving our factory)
- ▶ Pt100 psychrometer optimized for measuring operations involving high humidity levels and performed over long periods
- ▶ **new:** Automatic atmospheric pressure compensation is provided for pressure-dependent humidity variables by means of a digital atmospheric pressure sensor integrated in the ALMEMO® device.
- ▶ **new:** Humidity calculation on the basis of formulae as per Dr. Sonntag and enhancement factor as per W. Bögel (correction factor fw(t,p) for real mixed gas systems) This substantially widens the measuring range and improves the accuracy of humidity variable calculations.
- ▶ Resolution parameters - temperature Pt100 0.001 K, - relative humidity 0.01%, - dew point 0.01 K
- ▶ The humidity variables are calculated from the three primary measuring channels (real measurable variables). Dry temp. (°C), humid temp. (°C), atmospheric pressure (mbar)
- ▶ 3 humidity variables displayed simultaneously, freely selectable Relative humidity (%), dew point (°C), mixture (g/kg)
new: Absolute humidity (g/m³), vapor pressure (mbar), enthalpy (kJ/kg)
- ▶ 2 electrically isolated measuring inputs for Pt100 sensors
- ▶ High-resolution A/D converter, delta-sigma, 24-bit, 1.25 mops (measuring operations per second)
- ▶ Two output sockets for digital interface, ALMEMO® memory connector
- ▶ Compact, modern, ergonomic design
- ▶ Graphics display, illuminated with white light
- ▶ Easy and convenient to operate - by means of 4 soft-keys and cursor block
- ▶ Measured value display: Sensor display (up to 4 measured values), measuring points list, atmospheric pressure
- ▶ Measuring functions: Zero-setting, smoothing, Maximum / minimum values, individual value memory for 100 values
- ▶ Data logger with ALMEMO® memory connector (Accessory)
- ▶ Sensor programming: Smoothing, designation, measuring range selection, locking
- ▶ Device configuration: Illumination, contrast, device address, baud rate, atmospheric pressure
- ▶ Choice of language: German, English, French
- ▶ Humidity measurement in temperature range -100 to +200 °C
- ▶ With high-precision digital capacitive temperature / humidity sensors FHAD 36 Rx, With ALMEMO® D6 plug (Accessories, see page XREF). Configuration of ALMEMO® D6 sensors on ALMEMO® device itself

Technical data

ALMEMO® 1036-2

Measuring inputs	2 ALMEMO® input sockets for Pt100 psychrometer FPA 836-3P3 or High-precision digital capacitive temperature / humidity sensors FHAD 36 Rx
Electrical isolation	Semiconductor relay (50 V)
A/D converter	Delta-sigma, 24-bit, 1.25 mops
Measuring range	Pt100 -200 to +400 °C
Resolution	0.001 K
Measuring current	1 mA
Accuracy	±0.010 K ±1 digit in range -50 to +400 °C
Nominal conditions	23 °C ±2 K, 1013 mbar, battery operation
Temperature drift	typical 0.5 ppm / K
Humidity variables	Analytic equation (not an approximation)

Digital atmospheric pressure sensor

(integrated in the ALMEMO® device)

Measuring range	700 to 1100 mbar
Accuracy	±2.5 mbar (at 0 to +65 °C)

Outputs

Outputs	2 ALMEMO® sockets for interface cable and ALMEMO® memory connector
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Standard equipment

Display	Graphics display, 128 x 64 pixels, 8 rows, Illumination: 2 white LEDs
Keypad	7 silicone keys (of which 4 softkeys)
Date and time-of-day	Real-time clock, buffered by device battery
Individual value memory	internal 100 measured values

Power supply

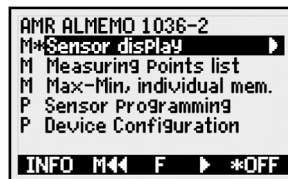
Battery set	3 AA alkaline batteries
Mains adapter	ZA1312NA7 230 VAC to 12VDC, 1A, electrically isolated
Current consumption (without input and output modules)	approx. 20 mA
With illumination	approx. 40 mA

Housing

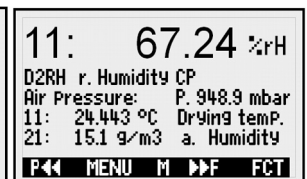
Housing	127 x 83 x 42 mm (LxWxH) ABS (70 °C maximum) 290 g
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Accessories

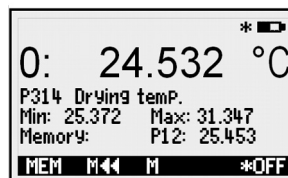
Ethernet data cable	Order no. ZA1945DK
ALMEMO® memory connector with micro-SD	Order no. ZA1904SD
Rubberized impact protection, gray	Order no. ZB2490GS2
DIN rail mounting	Order no. ZB2490HS



Menu selection



Sensor display

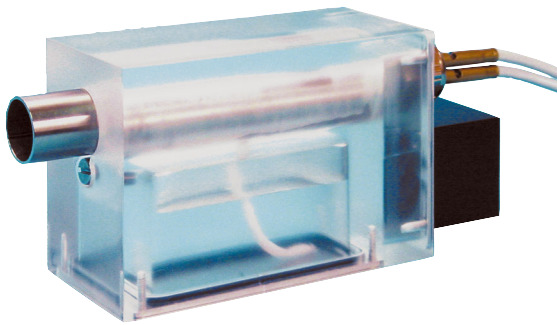


Function menu



Measuring points list

04/2012 We reserve the right to make technical changes.



Technical data

Pt100 psychrometer FPA 836-3P3

Operating temperature	up to +90 °C (no ice)
Humidity measuring range	approx. 10 to 100 % RH
Measuring system	psychrometric
Accuracy	< ±1 % RH under nominal conditions
Nominal conditions	23 °C ±2 K, 1013 mbar, 50 % RH
Temperature sensor(s)	2 x Pt100, class B, ALMEMO® adjusted
Housing	Plastic PMMA
Dimensions	175 x 50 x 75 mm (LxWxH)
Ventilator power supply	12 VDC via mains unit cable, approx. 1.5 meters (included in delivery)
Connecting cable(s)	2 cables, each 5 meters, FEP / silicone
ALMEMO® plug	Pt100 Resolution 0.001 K

Accessories

Spare wicks (2 pieces)	Order no. ZB98462ED
Extension cable for mains units, 3-pin bayonet coupling, length 5 meters	Order no. ZB5090VK05

04/2012 We reserve the right to make technical changes.

Variants

High-precision humidity measuring instrument with accessories, evaluation software, and Pt100 psychrometer Complete set including DKD calibration certificate

ALMEMO® 1036-2 measuring instrument Integrated digital atmospheric pressure sensor including 3 AA alkaline batteries, desktop power supply unit ZA1312NA7, USB data cable ZA1919DKU, instrument case, and evaluation software ALMEMO® View SW5500AV (see page 06.16) and Pt100 psychrometer FPA 836-3P3 including mains unit, water bottle, two wicks DKD / DAkkS calibration certificate Temperature approx. +25 °C, relative humidity approx. 30 / 70 % RH and atmospheric pressure 700 to 1100 mbar (5 points) **Order no. SP10362D**