

# Reference Measuring Instruments

## ALMEMO® 1036-2



**Reference measuring instrument for humidity**  
**High-precision measuring with Pt100 psychrometer**  
**Resolution Temperature 0.001 K**  
**Relative humidity 0.01 %**  
**Dew point 0.01 K**

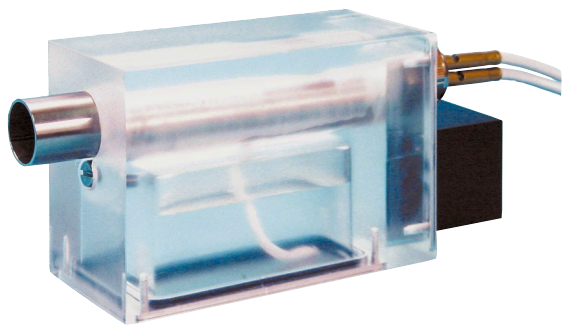
### Technical features

- 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
- Pt100 psychrometer optimized for measuring operations involving high humidity levels 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 the 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 : 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 temperature (°C), humid temperature (°C), atmospheric pressure (mbar)
- Three 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)
- Two 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 precision digital capacitive temperature / humidity sensors FHAD 36 Rx, with ALMEMO® D6 connector (Accessories, see chapter „Atmospheric humidity“). Configuration of ALMEMO® D6 sensors on ALMEMO® device itself

### Technical data ALMEMO® 1036-2

<b>Measuring inputs</b>	Two ALMEMO® input sockets for Pt100 psychrometer FPA 836-3P3 or Precision digital capacitive temperature / humidity sensors FHAD 36 Rx	<b>Outputs</b>	Two ALMEMO® sockets for interface cable and ALMEMO® memory connector
Electrical isolation	Semiconductor relay (50 V)	<b>Standard equipment</b>	
A/D converter	Delta-sigma, 24-bit, 1.25 mops	Display	Graphics display, 128 x 64 pixels, 8 rows Illumination 2 white LEDs
Measuring range	Pt100, -200 to +400 °C	Keypad	7 silicone keys (of which 4 soft-keys)
Resolution	0.001 K	Date and time-of-day	Real-time clock, buffered by battery
Measuring current	1 mA	Individual value memory, internal	100 measured values
Accuracy	±0.010 K ±1 digit in range -50 to +400 °C	<b>Power supply</b>	
Nominal conditions	23 °C ±2 K, 1013 mbar, battery mode	Battery set	3 AA alkaline batteries
Temperature drift	typical 2 ppm / K	Mains adapter	ZA1312NA7 230 VAC to 12 VDC, 1 A, electrically isolated
Calculated humidity quantities	Analytic equation (not an approximation)	Current consumption (without input and output modules)	approx. 20 mA
<b>Digital atmospheric pressure sensor</b> (integrated in the device)		With illumination	approx. 40 mA
Measuring range	700 to 1100 mbar	Housing	127 x 83 x 42 mm (LxWxH) ABS (maximum 70 °C), 290g
Accuracy	±2.5 mbar (at 0 to +65 °C)		

# Reference Measuring Instruments



Psychrometer FPA 836-3P3

## Technical data Pt100 psychrometer FPA 836-3P3

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

### Accessories

	Order no.
Ethernet data cable	ZA1945DK
ALMEMO® memory connector with micro SD	ZA1904SD
Rubberized impact protection, gray	ZB2490GS2
DIN rail mounting	ZB2490HS
Spare wicks (2 pieces)	ZB98462ED
Extension cable for mains units, 3-pin bayonet coupling, length 5 meters	ZB5090VK05

### Variants

### Order no.

**Reference measuring instrument for humidity measurement with accessories, evaluation software, and Pt100 psychrometer, Complete set including DAkKS / DKD calibration certificate**

Reference measuring instrument ALMEMO® 1036-2, with integrated digital atmospheric pressure sensor including 3 AA alkaline batteries, desktop mains 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, pair of wicks with DAkKS / DKD calibration certificate  
 Temperature at approx. +25 °C, relative humidity at approx. 30 % / 70 % RH, and atmospheric pressure in range 700 to 1100 mbar (5 points)

**SP10362D**