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Reference measuring instrument ALMEMO® 1036-2





ALMEMO® Reference measuring instruments for humidity and temperature
High-precision measurement with the Pt100 psychrometer and Pt100 sensors
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
- Automatic atmospheric pressure compensation is provided for pressure-dependent humidity variables by means of a digital atmospheric pressure sensor integrated in the ALMEMO® device.
- 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), 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. For the digital sensors FHAD 36-Rx, it is not possible to program the multi-point adjustment via the measuring instrument.

Technical data ALMEMO® 1036-2

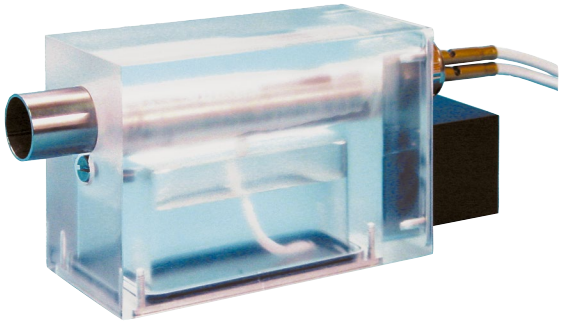
Measuring inputs	Two ALMEMO® input sockets for Pt100 psychrometer FPA 836-3P3 or Precision digital capacitive temperature / humidity sensors FHAD 36 Rx
Electrical isolation	Semiconductor relay (50 V)
A/D converter	Delta-sigma, 24-bit, 1.25 mops
Measuring range	Pt100, -200 to +400 °C
Resolution	0.001 K
Measuring current	1 mA
Measuring method	ratiometric
Accuracy	±0.010 K ±1 digit in range -50 to +400 °C
Nominal conditions	23 °C ±2 K, 1013 mbar, battery mode
Temperature drift	typical 2 ppm / K
Calculated humidity quantities	Analytic equation (not an approximation)
Digital atmospheric pressure sensor (integrated in the device)	
Measuring range	700 to 1100 mbar
Accuracy	±2.5 mbar (at 23 °C ±5 K)

Outputs	Two ALMEMO® sockets for interface cable and ALMEMO® memory connector
Standard equipment	
Display	Graphics display, 128 x 64 pixels, 8 rows Illumination 2 white LEDs
Keypad	7 silicone keys (of which 4 soft-keys)
Date and time-of-day	Real-time clock, buffered by battery
Individual value memory, internal	100 measured values
Power supply	
Battery set	3 AA alkaline batteries
Mains adapter	ZA1312NA12 100 to 240 VAC to 12 VDC, 1.5 A, electrically isolated
Current consumption (without input and output modules)	approx. 20 mA
With illumination	approx. 40 mA
Housing	127 x 83 x 42 mm (LxWxH) ABS, 290 g
Ambient conditions	see general technical specifications

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**

Set with Pt100 psychrometer FPA 836-3P3



Psychrometer FPA 836-3P3

Technical data Pt100 psychrometer FPA 836-3P3

Operating temperature	0...+90 °C (no ice formation)
Humidity measuring range	approx. 10 to 100 % RH
Measuring system	psychrometric
Accuracy	±0.8 % RH in the range of 10 to 100 % RH at 10 to 90 °C and 900 to 1050 mbar
Temperature sensors	sheet resistance 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 cables	2 cables, each 5 meters, FEP / shield / FEP
ALMEMO® plug	Pt100, resolution 0.001 K

Options

	Order no.
Added functions for ALMEMO® 1030 and 1036: 1. Extension of the measurement range with resolution 0.001 K (P314): -200...560 °C. 2. New measurement range with resolution 0.01 K (P214): -200...850 °C. 3. The 4 sensor specific parameters R0 and A, B, C of the Callendar–Van Dusen equation can be programmed for Pt 100 sensors by the user	**OA1030FE**

Standard delivery

Order no.

Reference measuring instrument for humidity measurement with accessories, evaluation software, and Pt100 psychrometer, Complete set including DAkkS accredited calibration certificate

Reference measuring instrument ALMEMO® 1036-2, with integrated digital atmospheric pressure sensor including 3 AA alkaline batteries, mains unit ZA1312NA12, USB data cable ZA1919DKU, instrument case, and evaluation software ALMEMO® View SW5500AV (see chapter software) and Pt100 psychrometer FPA 836-3P3 including mains unit, extension cable for power supply unit ZB5090VK05, water bottle, pair of wicks, with DAkkS accredited calibration certificate temperature at approx. +25 °C, relative humidity at approx. 30 % / 75 % RH, and atmospheric pressure in range 700 to 1100 mbar (5 points) **SP10362D**

Precision resistance temperature detector Pt100 (Accessories)

	Order no.
Precision temperature sensors for ALMEMO® 1030, 1033, 1036, 8036. Technical data see chapter 01, ALMEMO® 1033	
for the operating range -50 … +400 °C	**FPA923L0250**
for the operating range -100 … +660 °C	**FPA924L0500H**

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