

Digital psychrometer FNAD 46 with ALMEMO® D6 plug
with integrated atmospheric pressure sensor, for automatic pressure compensation



General features,
ALMEMO® D6 sensors
see page 15

- A digital atmospheric pressure sensor integrated in the ALMEMO® D6 plug itself provides automatic pressure compensation for all pressure-dependent humidity variables.
- 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.
- Humidity variable Absolute humidity in g/m³
- High-precision NTC sensors for dry temperature and wet temperature
- Temperatures are measured using an A/D converter incorporated in the ALMEMO® D6 plug.
- The humidity variables are calculated from the three primary measuring channels (real measurable variables):
Dry temperature, wet temperature, atmospheric pressure
- Freely selectable measurable variables
Four measuring channels are programmed (at our factory):
dry temperature (°C, TT, t), wet temperature (°C, HT, tw), relative humidity (%H, RH, Uw), atmospheric pressure (mbar, AP, p)
- Other humidity variables can also be selected:
dewpoint (°C, DT, td), mixture (g/kg, MH, r), absolute humidity (g/m³, AH, dv), vapor pressure (mbar, VP, e), enthalpy (kJ/kg, En, h)
This device can be configured directly on a PC using USB adapter cable ZA 1919 AKUV (see chapter „Networking“).

Technical data FNAD 46

Digital atmospheric pressure sensor
(integrated in ALMEMO® D6 plug)

Measuring range	700 to 1100 mbar
Accuracy	±2.5 mbar (at 23 °C ±5 K)
A/D converter incorporated in ALMEMO® D6 plug	
Inputs	2 NTC sensors (clamped connection in plug)
Resolution	0.01 K

Linearization	error-free computing method according to Galway Steinhart (no approximations)
Accuracy	±0.05 K
Nominal temperature	23 °C ±2 K
Temperature drift	0.004 %/K (40 ppm)
Calculated humidity variables	Analytic equation (not an approximation)
Refresh rate	0.4 seconds for all four channels

Hand-held digital psychrometer FNAD 46



For test measurements

General description and common technical data FNAD 46 (see page 205)

Technical data

Operating temperature	0 to +60 °C (no ice)	Housing	Plastic
Humidity measuring range	10 to 100 % RH	Dimensions	Ø 50 mm, length 245 mm
Measuring system	psychrometric	Weight	approx. 300 g
Accuracy	±1 % RH under nominal conditions	Sensor connector	Built-in plug
Accuracy in measuring range	10... 100 % r.h.: typ. ±1 % r.h. at 25 °C ±3 K, 1013 mbar	ALMEMO® connecting cable	coupling, 1.5 meters, PVC cable with ALMEMO® D6 plug
Nominal conditions	+25 °C ±3 K, 1013 mbar, 50 % RH	Supply voltage	9 to 13 VDC
Temperature sensors	2 x NTC type N	Current consumption	20 mA
Accuracy	±0.2 K at 0 to 60 °C		
Ventilator power supply	via ALMEMO® D6 plug		

Accessories

Order no.

Spare wicks (2 pieces)

ZB9846ED

Variants

Order no.

Hand-held digital psychrometer with NTC sensor
Hand-held psychrometer, connecting cable with ALMEMO® D6 plug,
integrated digital atmospheric pressure sensor, water bottle, two wicks

FNAD46