## Digital sensor for temperature, humidity, atmospheric pressure FHAD 46-C4AG in protective all-weather housing with ALMEMO® D6 plug

- All relevant ambient parameters are measured with one sensor.
- Suitable for mounting on a wall or a mast
- Sensor cable up to 100 meters long, clamped in terminal box
- All sensors in 1 multi-sensor module: capacitive digital sensor for humidity and temperature, digital atmospheric pressure sensor. Additional EEPROM data storage medium in the sensor module
- The sensor module is thoroughly adjusted. All sensor characteristic and adjustment data are stored in the data storage medium of the sensor module itself. In the process of readjusting the individual sensors, the adjustment values are directly saved in the data storage medium of the sensor module.
- Replacement sensor modules are inexpensive: The sensor module is pluggable and can be simply exchanged on-site. Full accuracy without any adjustment, especially with calibrated sensors. The ALMEMO® connecting cable and the ALMEMO® measuring instrument have no influence on the calibration.
- ***new:*** The atmospheric pressure is measured directly at the measuring point in the sensor tip. Hence, the atmospheric pressure dependent humidity variables are automatically pressure compensated.
- 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 variables: Absolute humidity in g/m³.
- The humidity variables are calculated from the three primary measuring channels (real measurable variables): temperature, humidity and atmospheric pressure.
- Four measuring channels are rogrammed (ex factory): temperature (°C, T, t), relative humidity (%H, RH, Uw), dew point (°C, DT, td), atmospheric pressure (mbar, AP, p). Alternatively further humidity variables are selectable. Mixture (g/kg, MH, r), absolute humidity (g/m³, AH, dv), vapor pressure (mbar, VP, e), enthalpy (kJ/kg, En, h). The configuration is performed on the ALMEMO® V7 measuring instrument or directly on the PC using the USB adapter cable ZA1919AKUV (Chapter "Network technology").

**On request**

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| Temperature sensor Pt100 in protective all-weather housing | FPA930AG |

## Technical Data

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| **Operative range** | -30 to +60 °C, 5 to 98 % RH |
| **Digital temperature / humidity sensor** (including A/D converter) | |
| **Humidity** | |
| Measuring range | 0 to 98 % RH |
| Sensor | CMOSens® technology |
| Accuracy | ±3 % RH in range 10 to 90 % RH |
| (incl. hysteresis) | ±5 % RH in range 5 to to 98 % RH at nominal temperature |
| Hysteresis | typical ±1 % RH |
| Nominal temperature | +23 °C ±5 K |
| Sensor operating pressure | Atmospheric pressure |
| **Temperature** | |
| Sensor | CMOSens® technology |
| Accuracy | typical ±0.2 K at 5 to 60 °C |
| | maximum ±0.4 K at 5 to 60 °C |
| | maximum ±0.7 K at -20 to +80 °C |
| Reproducibility | typical ±0.1 K |

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| **Digital atm. pressure sensor** (integrated in the multi-sensor module) | |
| Measuring range | 700 to 1100 mbar |
| Accuracy | ±2.5 mbar (at 23 °C ±5 K) |
| **ALMEMO® connecting cable** | |
| PVC, for available lengths see variants with ALMEMO® D6 plug | |
| **ALMEMO® D6 plug** | |
| Refresh time | 1 second for all four channels |
| Supply voltage | 6 to 13 VDC |
| Current consumption | 12 mA |
| **Mechanical design** | |
| Sensor tube | Plastic, diameter 12 mm |
| Filter cap | PTFE-Sinterfilter, SK6 |
| All-weather protection | Ø 105 mm, height approx. 110 mm |
| Terminal box | 51 x 53 x 36 mm |
| Screw-fit cable gland | Splash-protected |

| Accessories | Order no. |
|---|---|
| ALMEMO® transmitter 2490-1R02U with double analog output 10 V or 20 mA | MA24901R02U |
| (For other data, options, accessories, see chapter 01 Measuring instruments) | |

| Standard delivery | Order no. |
|---|---|
| Digital sensor for temperature, humidity, atmospheric pressure in protective all-weather housing with connecting cable and ALMEMO® D6 plug, manufacturer's test certificate, 2 fixtures for mounting on a mast | |
| Connecting cable | |
| Length = 5 meters | **FHAD46C4AGL05** |
| Length = 10 meters | **FHAD46C4AGL10** |
| Length = 20 meters | **FHAD46C4AGL20** |
| Length = 40 meters | **FHAD46C4AGL40** |
| Length = 100 meters | **FHAD46C4AGL100** |
| Replacement multi-sensor module, digital, adjusted, plug-in | **FH0D46C** |

DAkkS or factory calibration KH9xxx, temperature, humidity, and KD92xx, atmospheric pressure, for digital sensor (see chapter Calibration certificates).

DAkkS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025.