HUMIDITY

Digital sensors

- Digital sensor element. All key sensor characteristics and settings data is stored in the sensor element itself.
- Digital transfer of measured values from the sensor element to the ALMEMO® measuring instrument. All risk of error involved in digital-to-analog conversion in the sensor and analog-to-digital conversion in the measuring instrument (as is the case with analog output signals) is excluded.
- A wide variety of connection options

ALMEMO®-D measuring module connected to an ALMEMO® measuring instrument

The ALMEMO® D measuring module can - just like any other ALMEMO® sensor - be connected to the input of an ALMEMO® measuring instrument - either directly or via an ALMEMO® D extension cable (RS422, up to 100 meters using our standard cables or over 100 meters using the customer’s own cables); the sensor’s power supply is provided via the ALMEMO® measuring instrument.

New ALMEMO®-D measuring module connected directly to a PC

In this arrangement the ALMEMO® D measuring module operates like an ALMEMO® measuring instrument and can be connected directly to a PC via a USB cable with power supply; the sensor’s power supply is provided via the PC’s USB interface. The device parameters (e.g. device address, baud rate) and sensor parameters (e.g. correction values) are programmed in the usual way via the interface.

New ALMEMO®-D measuring module connected directly in an RS422 ALMEMO® network

In this arrangement the ALMEMO® D measuring module operates like an ALMEMO® measuring instrument and can be connected directly to the RS422 output of a network distributor; the sensor’s power supply is provided via the central supply of the RS422 network distributor. The device parameters (e.g. device address, baud rate) and sensor parameters (e.g. correction values) are programmed in the usual way via the interface.

Accessories

- ALMEMO®-D extension cable, 5 meters
  Order no. ZAD999VK05
- ALMEMO®-D extension cable, 10 meters
  Order no. ZAD999VK10
- ALMEMO®-D extension cable, 20 meters
  Order no. ZAD999VK20
- ALMEMO®-D extension cable, 40 meters
  Order no. ZAD999VK40
- ALMEMO®-D extension cable, 100 meters
  Order no. ZAD999VK100

- ALMEMO® coupling with RS422 driver
  Order no. ZA5099FBV

- ALMEMO® socket-to-socket coupling cable, 1 meter
  Order no. ZA5099KK
- ALMEMO® USB data cable, with power supply, 1.5 meters
  Order no. ZA1919DKUV
**HUMIDITY**

**Capacitive ALMEMO® D humidity sensor, FHAD 46**

**Technical data**

- **Field of application**
  - FHAD460: -20 to +80 °C; 5 to 98 % RH
  - FHAD462: -20 to +60 °C; 5 to 98 % RH

- **Humidity measuring circuit**
  - Measuring range: 0 to 100 % RH
  - Sensor: CMOSens® technology
  - Measuring duration / output period: approx. 3 seconds
  - Accuracy: ±1.8% RH in range 20 to 80% RH at nominal temperature
  - Hysteresis: ±1 % RH
  - Nominal temperature: 25 °C ±2 K
  - Sensor operating press.: Atmospheric pressure
  - Response time T63: Typical 10 seconds at 25 °C, 1 m/s

- **Temperature measuring circuit**
  - Sensor: CMOSens® technology
  - Measuring duration / output period: approx. 3 seconds
  - Accuracy: ±0.3 K at 25 °C, ±1 K (±1.2 K) in range -20 to +60 (or +80) °C
  - Reproducibility: ±0.1 K
  - Response time T63: Typical 10 seconds

- **Mechanical design**

  - **Dimensions**
    - FHAD460:
      - Sensor chip (dimensions over all): approx. 6 x 14 x 3 mm
      - Connection width: approx. 7 mm
    - New Option W: Sensor terminals protected against damp with silicone and shrink-fit sleeve (sensor element cannot be plugged in)
      - Width: approx. 8 mm
    - FHAD462:
      - Sensor cover Ø 8 mm, length 36 mm
      - Plug connection Ø approx. 9 mm
      - Extension tube Ø 8 mm, length 97 mm
    - Cable: PVC, with ALMEMO D connector (for various lengths, see version data)
    - New Option OAD946AP: Atmospheric pressure sensor integrated in ALMEMO® connector
      - Measuring range: 700 to 1100 mbar Technical data as for FDAD12SA see page 11.12

- **Accessories**

  - ALMEMO® extension cable, 2 meters
    - Order no. ZA9060VK2
  - ALMEMO® extension cable, 4 meters
    - Order no. ZA9060VK4
  - ALMEMO®-D extension cable, USB data cable, RS422 coupling, see page 09.08

**Versions**

- including manufacturer’s test certificate
- ALMEMO® D humidity sensor with plug-in, digital sensor element, without protective cover, including ALMEMO® D connecting cable, length = 2 meters
  - Same, with ALMEMO® D connecting cable, length = 5 meters
  - Same, with ALMEMO® D connecting cable, length = 10 meters
  - Spare sensor element for FHAD460, digital, adjusted
- New Option W: Sensor terminals protected against damp (sensor element cannot be plugged in)
- ALMEMO® D humidity sensor with plug-in, digital sensor element, enclosed in slotted sensor cover, including ALMEMO® D connecting cable, length = 2 meters
  - Same, with ALMEMO® D connecting cable, length = 5 meters
  - Same, with ALMEMO® D connecting cable, length = 10 meters
  - New: Same, with total length (incl. sensor element) approx. : 80 mm
  - Extension tube, Ø 8 mm, length 97 mm, plug-in, for FHAD462
  - Spare sensor element for FHAD462, digital, enclosed in slotted sensor cover, adjusted

- Order no. FHAD460
- Order no. FHAD460L05
- Order no. FHAD460L10
- Order no. FHOD46
- Order no. OAD9460W
- Order no. OAD9460AP
- Order no. FHAD462
- Order no. FHAD462L05
- Order no. FHAD462L10
- Order no. ZAD9460AKL00
- Order no. ZBOD462VR
- Order no. FHOD462