HUMIDITY
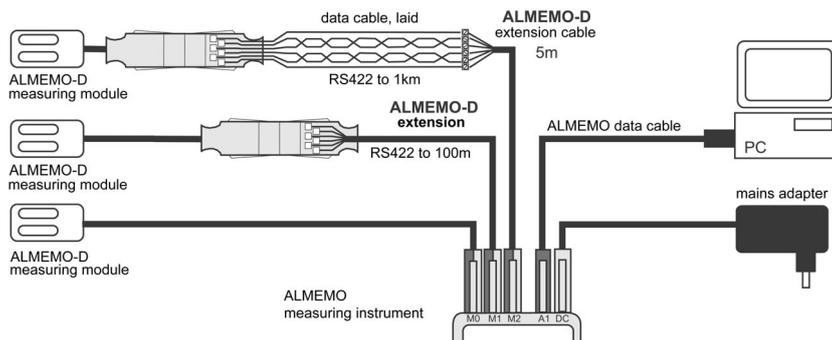
Digital sensors

▶ 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

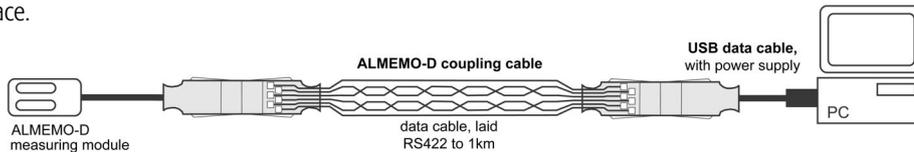### ALMEMO®-D measuring module connected to an ALMEMO® measuring instrument

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.

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

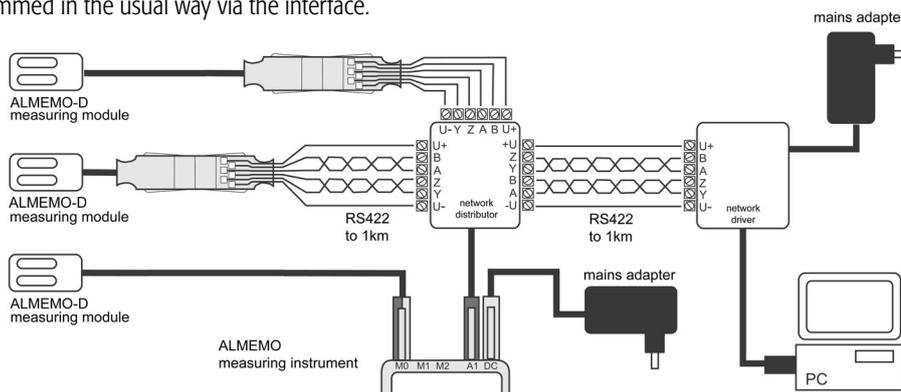### *New* ALMEMO®-D measuring module connected directly to a PC

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.

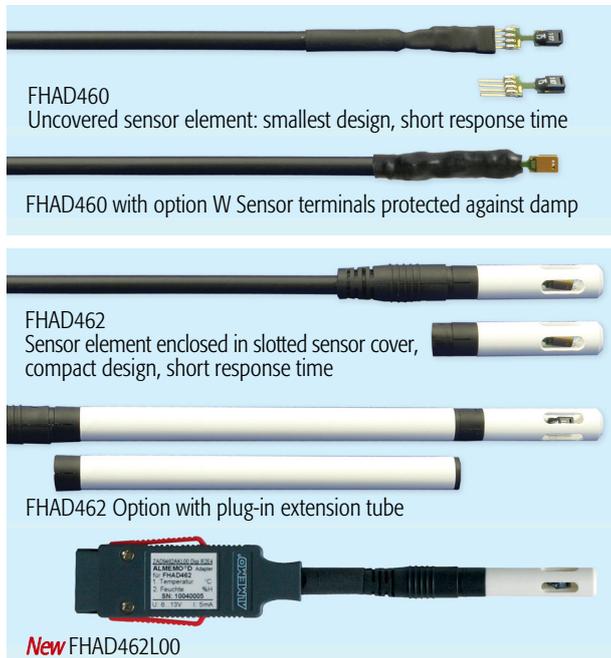| Accessories	ALMEMO® socket-to-socket coupling cable, 1 meter	Order no. ZA5099KK
	ALMEMO® USB data cable, with power supply, 1,5 meters	Order no. ZA1919DKUV

New ALMEMO®-D measuring modul 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® coupling with RS422 driver	Order no. ZA5099FBV

HUMIDITY

Capacitive ALMEMO® D humidity sensor, FHAD 46

FHAD460
Uncovered sensor element: smallest design, short response time

FHAD460 with option W Sensor terminals protected against damp

FHAD462
Sensor element enclosed in slotted sensor cover, compact design, short response time

FHAD462 Option with plug-in extension tube

New FHAD462L00

▶ Digital sensor element. All key sensor characteristics and settings data is stored in the sensor element itself.

▶ Plug-in sensor element. Spare elements are inexpensive; a replacement can be inserted quickly and easily on site by virtually anyone; it will be fully accurate and need no prior adjustment.

▶ 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.

▶ ALMEMO® connecting cable with digital ALMEMO® D measuring module Cable extensions up to 100 meters and various connection methods see page 09.08.

▶ Four climate variables can be displayed, temperature, relative humidity, dew point, and mixture ratio.

▶ Factory or DKD calibration is performed on the sensor element alone. Fully accurate - irrespective of connecting cable and ALMEMO® measuring instrument

▶ Operation in sleep mode only possible with devices with sleep delay function (only ALMEMO® 2590-2/3S/4S, 2690-8, 2890-9, 5690, 8590-9, 8690-9A, update may be possible)

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

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