

Temperature

Calibration certificate for temperature measuring chains consisting of a contact temperature sensor and an instrument (also individual sensors). The calibration of the sensors or sensor + measuring instrument (measuring chain) is performed in a liquid bath, in a dry-well calibrator or in a climatic chamber.

DAkkS Calibration Certificate

Order no.

DAkkS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025 (inter alia for the monitoring of production processes and the quality assurance applied to products).

Calibration is performed by a DAkkS authorized office which compares measured values against reference values based on national standards. .

Package offer (basic rate + 3 points 0°C, 50°C, 100°C)

KT9021D

Measuring points, freely selectable

Basic fee

KT9001D

Measuring point fee per sensor, one measuring point, temperature range up -100 to +1200 °C

KT9011D

Measuring point fee per sensor, one measuring point -196 °C

KT9012D

Factory Calibration Certificate

Calibration compares measured values against reference values based on national standards.

Package offer (basic rate + 3 points 0°C, 50°C, 100°C)

KT9021W

Measuring points, freely selectable

Basic fee

KT9001W

Measuring point fee per sensor, one measuring point, temperature range up -100 to +1200 °C

KT9011W

Measuring point fee per sensor, one measuring point -196 °C

KT9012W

Correction / adjustment of temperature sensors during calibration

To increase the accuracy, an adjustment of the probe is carried out during the initial calibration of a temperature probe. The correction values for zero point and slope are stored in the probe connector. The specified measured values in the certificate correspond to the corrected values. The correction can be performed as DAkkS and factory calibrations.

Calibration certificate - temperature - sensor deviation reduced to zero (see page 17.03)

Multi-point adjustment for ALMEMO® measuring chains (preferably using Pt100 and NTC sensors)

Order no.

For the measurable variable temperature, for calibration packages and for single points (at least 2 temperature points, temperature point 0 °C obligatory), additional charge per sensor for factory / DAkkS calibration (German calibration service)

KT9001DW

Calibration and adjustment of the ALMEMO® measuring chain are performed for the whole of the sensors measuring range at the points in the calibration package.

Calibration and adjustment of the ALMEMO® measuring chain (preferable using Pt100 and NTC sensors) are performed on the selected temperature points (temperature point 0°C obligatory). Outside the calibrated range (below the lowest and above the highest calibration points) linear interpolation is performed up to the limits of the device's measuring range (e.g. Pt100 0.01 K from -200 to +400°C).

During the calibration of the ALMEMO® measuring system, the sensor deviation is determined in every calibration point and then saved as correction value for that calibration point to the patented ALMEMO® plug. The measured values for such multi-point adjusted sensors are then listed in the calibration certificate. This means that the identified sensor deviations are close to zero.

With thermocouples, as is generally the case, the indicated (adjusted) values in the calibration certificate are only valid if the device is in a stationary, thermally steady-state condition.

Only for device types ALMEMO® 2450 (not -L), 2490 (not -L), 2470, 2590-2/-3S/-4S/-2A/-4AS, 2690, 2890, 4390, 8590, 8690, 5690, 5790, ALMEMO® V7-Measuring instruments und ALMEMO® X6-Reference measuring instrument

These device types as of serial number H0802xxxx incorporate this function as standard; for device types of serial number H0801 and below a device firmware update is possible (noted at incoming inspection as part of the calibration service).

OA0006U

Advisory note :

On temperature sensors with special linearization or special measuring ranges saved to the ALMEMO® connector (e.g. ALMEMO® connector ZA9040SS3 NTC 0.001K or ALMEMO® connectors with KTY84, YSI400, or customized NTC) multi-point adjustment is not possible..

Calibration certificates

Infrared Temperature Measurement

Calibration certificate for temperature measuring chains consisting of an IR temperature sensor and an instrument (also individual sensors).

DAkkS-Calibration Certificate

Order no.

DAkkS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025 (inter alia for the monitoring of production processes and the quality assurance applied to products).

Calibration is performed by a DAkkS authorized office which compares measured values against reference values based on national standards.

For IR transmitters MR7834, MR7838, MR7842, MR78434, ALMEMO® IR sensor FIAD43

Package offer: 3 temperature points, 25, 100, 200 °C

KI9201D

Calibration in the range -20°C to +550°C in 3 individually selectable measuring points

KI9168D

Calibration in the range +550°C to +1600°C in 3 individually selectable measuring points

KI9178D

1 additional measuring point, freely selectable, in the range -20 to +1600 °C

KI9168DP

Factory Calibration Certificate

Calibration compares measured values against reference values based on national standards.

For IR transmitters MR7834, MR7838, MR7842, MR7843, ALMEMO® IR sensors FIA844, FIAD43

Package offer 3 temperature points, 25, 100, 200 °C

KI9201W

Calibration in the range -20°C to +550°C in 3 individually selectable measuring points

KI9168W

Calibration in the range +550°C to +1600°C in 3 individually selectable measuring points

KI9178W

1 additional measuring point, freely selectable, in the range -20 to +1600 °C

(but not between 550 and 600 °C)

KI9168WP

Calibration certificates for meteorological transducers FMD7 60

DAkkS/DKD calibration certificate

Order no.

The DAkkS/DKD calibration meets the requirements of DIN EN ISO/IEC 17025 for test equipment (i.a. for monitoring production processes or qualification assurance of products).

Calibration is performed by a DAkkS/DKD authorized office which compares measured values against reference values based on national standards.

Temperature and Relative Air Humidity (description, see further below)

KH9046D

Absolute pressure (description, see further below)

KD9214D

Wind velocity (also for FMD7 20)

Package offer (calibration in the range 4 to 16 m/s for a wind direction of approx. 0 °)

KV9225D

Wind direction (also for FMD7 20)

Package offer (calibration in the range 5 ° to 355 ° for a wind velocity of approx. 10 m/s)

KV9324D

Factory Calibration Certificate

Calibration compares measured values against reference values based on national standards.

Temperature and Relative Air Humidity (description, see further below)

KH9156W

Absolute pressure (description, see further below)

KD9213W

Wind velocity and wind direction (also for FMD7 20)

Package offer (calibration in the range 2 to 50 m/s. For wind velocities in the range of 2 to 50 m/s

the deviations of the wind velocity and the wind direction are calculated from the root-mean-square of the measured values taken from different directions.)

KV9425W

Relative Air Humidity for Capacitive Humidity Sensors

Calibration certificate for humidity measuring chains consisting of a capacitive humidity sensor and measuring instrument (also individual sensors).

Factory Calibration Certificate

Order no.

Calibration compares measured values against reference values based on national standards.

Calibration is performed in a humidity generator / climate chamber at an ambient temperature of approx. 25° C.

Package offer

(Basic rate + 3 humidity points 11% / 53% / 75% r.H. + 1 temperature point at approx. 25°C)

KH9046 W

For calibration at other temperatures, see below !

Relative Air Humidity for capacitive humidity sensors / psychrometer

Calibration certificate for humidity measuring chains consisting of capacitive humidity sensor / psychrometer and measuring instrument.

DAkkS Calibration Certificate

Order no.

The DAkkS/DKD calibration meets the requirements of DIN EN ISO/IEC 17025 for test equipment (i.a. for monitoring production processes or qualification assurance of products).

Calibration is performed by a DAkkS/DKD authorized office which compares measured values against reference values based on national standards.

Calibration is performed in a humidity generator / climate chamber at an ambient temperature of approx. 25 °C.

Package offer (Basic rate + 3 humidity points 20%/53%/75% r.H. + 1 temperature point at approx. 25 °C) **KH9046D**

Package offer (Basic rate + 2 humidity points 30% / 75% r.H. + 1 temperature point at approx. 25°C) **KH9146D**

Factory Calibration Certificate

Calibration compares measured values against reference values based on national standards.

Calibration is performed in a humidity generator / climate chamber at an ambient temperature of approx. 25 °C.

Package offer (Basic rate + 3 humidity points 20%/53%/75% r.H. + 1 temperature point at approx. 25 °C) **KH9156W**

Package offer (Basic rate + 2 humidity points 30 % / 75 % r.H. + 1 temperature point at approx. 25 °C) **KH9146W**

Relative air humidity at temperatures up to +95 °C

DAkkS calibration certificate for temperatures up to +95° C

Order no.

DAkkS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025 (inter alia for the monitoring of production processes and the quality assurance applied to products).

For capacitive humidity sensors and psychrometers. Calibration is performed by a DAkkS authorized office which compares measured values against reference values based on national standards. Calibration is performed in a humidity generator / climate chamber by a DAkkS authorized office.

Measuring points, freely selectable

Basic rate **KH9166D**

Points rate per sensor for 1 climate point

Temperature in the range +10 to +95 °C and humidity in the range 10% to 95% RH **KH9166DP**

Temperature in the range +10 to +95 °C and humidity in the range 10% to 98% RH **KH9166DP2**

Measuring points rate per sensor for 1 temperature point:

Temperature in the range -30 to +150°C. **KH9166DT**

Factory calibration certificate for temperatures up to +95 °C

For capacitive humidity sensors and psychrometers. Calibration compares measured values against reference values based on national standards. Calibration is performed in a humidity generator / climate chamber.

Measuring points, freely selectable

Basic rate **KH9166W**

Points rate per sensor for 1 climate point

Temperature in the range +10 to +95 °C and humidity in the range 10% to 95% RH **KH9166WP**

Temperature in the range +10 to +95 °C and humidity in the range 10% to 98% RH **KH9166WP2**

Measuring points rate per sensor for 1 temperature point:

Temperature in the range -30 to +150°C **KH9166WT**

Dew point

Test certificate - for dewpoint sensor only FHAD 46-DTC2.

Test Certificate

Order no.

Test according to the comparative method at an ambient temperature of approx. 25 °C.

basic rate + 1 dew point in the range -80 to +20 °C dew point **KH9316W**

Supplement for KH9316W

1 additional dew point in the range -80 to +20 °C dew point **KH9316WP**

Calibration certificates

Pressure

Calibration according to DIN 16005/16086.

This calibration can be performed in 5 or 10 measuring points with pressure transducers or transducer + measuring instrument (measuring chain): to 100bar, medium: gas to 700bar, medium: oil

DAkKS Calibration Certificate

Order no.

DAkKS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025 (inter alia for the monitoring of production processes and the quality assurance applied to products).

Calibration is performed by a DAkKS authorized office which compares measured values against reference values based on national standards.

Positive overpressure in the range 0 to 700 bar, 10 points (Procedure B according to DKD-R 6-1)

KD9012D

Positive and negative overpressure for pressure sensors in the range -1 to 700 bar, 10 points

KD9014D

Absolute pressure in the range from 0.03bar to 700bar, 10 points (Procedure B according to DKD-R 6-1)

KD9112D

Factory Calibration Certificate

Calibration compares measured values against reference values based on national standards.

Positive overpressure in the range 0 to 700 bar, 10 points (Procedure C according to DKD-R 6-1)

KD9012W

Positive overpressure in the range 0 to 700 bar, 5 points (Procedure C according to DKD-R 6-1)

KD9013W

Positive and negative overpressure for pressure sensors in the range -1 to 700 bar, 10 points

KD9014W

Absolute pressure in the range from 0.03bar to 700bar, 10 points (Procedure C according to DKD-R 6-1)

KD9113W

Absolute pressure in the range from 0.03bar to 700bar, 5 points (Procedure C according to DKD-R 6-1)

KD9112W

Calibration certificate - pressure - sensor deviation reduced to zero (see page 17.06)

Multi-point adjustment for ALMEMO® measuring chains

Order no.

For the measurable variable pressure, for calibration packages, additional charge per sensor for factory / DAkKS calibration

KD9001DW

For the ALMEMO® measuring chain, calibration and adjustment are carried out in the entire measuring range of the sensor at the points of the calibration package.

During the calibration of the ALMEMO® measuring system, the sensor deviation is determined in every calibration point and then saved as correction value for that calibration point to the ALMEMO® plug. The measured values for such multi-point adjusted sensors are then listed in the calibration certificate. This means that the identified sensor deviations are close to zero.

Only for device types ALMEMO® 2450 (not -L), 2490 (not -L), 2470, 2590-2/-3S/-4S/-2A/-4AS, 2690, 2890, 4390, 8590, 8690, 5690, 5790, ALMEMO® V7 measuring instruments and ALMEMO X6 reference measuring instrument.

These device types as of serial number H0802xxxx incorporate this function as standard; for device types of serial number. H0801 and below, a device firmware update is possible (noted at incoming inspection as part of the calibration service). **OA0006U**

Absolute pressure for digital atmospheric pressure sensor FDAD12SA

Calibration certificate for barometric pressure sensors integrated in the ALMEMO® device or in the ALMEMO® D6 plug

DAkKS Calibration Certificate

Order no.

DAkKS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025 (inter alia for the monitoring of production processes and the quality assurance applied to products).

Calibration is performed by a DAkKS authorized office which compares measured values against reference values based on national standards.

Absolute pressure 5 points in the range 700 to 1100 mbar (Procedure C according to DKD-R 6-1)

KD9213D

Absolute pressure 10 points in the range 700 to 1100 mbar (Procedure B according to DKD-R 6-1)

KD9214D

Factory Calibration Certificate

Calibration compares measured values against reference values based on national standards.

Absolute pressure 5 points in the range 700 to 1100 mbar (Procedure C according to DKD-R 6-1)

KD9213W

Absolute pressure 10 points in the range 700 to 1100 mbar (Procedure B according to DKD-R 6-1)

KD9214W

Air Flow

Calibration certificate for rotating vanes, Pitot tubes and thermoanemometers.

DAkkS Calibration Certificate

Order no.

DAkkS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025 (inter alia for the monitoring of production processes and the quality assurance applied to products).

Calibration is performed in a wind tunnel based on measurement comparison against a laser Doppler anemometer by a DAkkS authorized office.

Package offer (Basic rate + 5 points in the range 0,2 m/s to 65 m/s)

KV9075D

Supplement to KV9075D: 1 additional measuring point

KV9075DP

Factory Calibration Certificate

The calibration can be performed with the sensor and the meas. instrument (meas. chain). Calibration in a wind tunnel.

Reference standards: Wind tunnel and reference rotating vanes (calibrated acc. to the laser-Doppler method).

Package offer (basic rate + 3 points 0.5m/s / 5m/s / 10m/s)

KV9025W

Package offer (basic rate + 3 points 5m/s / 10m/s / 19m/s)

KV9035W

Package offer (basic rate + 3 points 7m/s / 20m/s / 30m/s)

KV9045W

Package offer (basic rate + 3 points 0.5m/s / 1m/s / 1,75m/s)

KV9055W

Package offer (basic rate + 3 points 0.5m/s / 0.8m/s / 1m/s)

KV9065W

Measuring points, freely selectable

Basic rate

KV9005W

Per measuring point and sensor Meas. range 0.2m/s to 65m/s.

KV9015W

Flow measurement in liquids

Calibration certificate for turbine flow meters or flow sensors

DAkkS Calibration Certificate

Order no.

DAkkS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025 (inter alia for the monitoring of production processes and the quality assurance applied to products).

Calibration is performed by a DAkkS authorized office which compares measured values against reference values based on national standards.

Calibration of the volume flow rate in l/min (up to maximum 200 l/min) in the flow test bench.

Measuring medium: Water

Calibration at 5 measuring points, logarithmically distributed within the measuring range of the sensor.

For recalibration:

calibration of the current state. Package offer

KV9145D

linked to the new delivery of the flowmeter for liquids:

determination of the K factor, programming of the ALMEMO plug, calibration of the original state.

Package offer

KV9145DE

Gas Concentration

Calibration certificate for CO₂

ÖKD Calibration Certificate

Order no.

ÖKD calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025 (inter alia for the monitoring of production processes and the quality assurance applied to products).

Calibration is performed by a ÖKD authorized office which compares measured values against reference values based on national standards.

Package offer for CO₂ probe FYAD00CO2B10 (3 measuring points at approx. 1000 / 4000 / 7000 ppm)

KY9626D

Package offer for CO₂ probe FYAD00CO2B05 (3 measuring points at approx. 500 / 2500 / 4500 ppm)

KY9627D

Factory Calibration Certificate

Order no.

Calibration is performed based on measurement comparison against a reference gas specified by the manufacturer.

Package offer for CO₂ probe FYA600CO2 (approx. 10 measuring points)

KY9620W

Calibration certificates

Conductivity

Calibration certificate for conductivity measuring chains.

Factory Calibration Certificate

Calibration compares measured values against reference values based on national standards.

Package offer for conductivity probe FYA641LF /LFP1
(Basic rate + 3 points 0.5mS / 2.77mS / 10mS)
(Basic rate + 2 points 2.77mS / 12.8mS)

Order no.

KY9041W
KY9044W

Package offer for conductivity probe FYA641LF2 /LFP2
(Basic rate + 3 points 10µS / 147µS / 190µS)

KY9042W

Package offer for conductivity probe FYA641LF3 /LFP3
(Basic rate + 3 points 5mS / 50mS / 111,8mS)

KY9043W

Package offer for digital conductivity probe FYD7 41-LF (ALMEMO® D7)
(Basic rate + 3 points 147 µS / 12,8 mS / 111,8 mS, i.e. 1 point per ALMEMO® D7 measuring range)

KY9045W

DAkKS Calibration Certificate

Order no.

The DAkKS calibration fulfills the requirements of DIN EN ISO/IEC 17025 for test equipment
(e.g. for monitoring production processes or quality assurance of products).

The calibration is carried out by a DAkKS office according to the comparison method against reference standards that are traceable to national standards.

Package offer for digital conductivity probe FYD7 41-LF (ALMEMO® D7) (Basic fee + 3 selectable points in 1 selected ALMEMO® D7 measuring range: 500 µS/cm or 50 mS/cm or 500 mS/cm)

KY9043D

Measurable Variables for Optical Radiation

Calibration certificate for broad-band light detectors

Factory Calibration Certificate

single point calibration of absolute size
(ONLY for probes FLA603x, FLA613RD/UV/VL)

KL9033W

Calibration of absolute variable in 3 points (zero point and 2 points, sensor dependent)
(ONLY for probes FLA613x, FLA23x, FLA633x, FLADx, FLD7x)

KL9034W

Optical Speed Sensors

Calibration certificate for contactless tachometers.

DAkKS Calibration Certificate

Order no.

DAkKS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025 (inter alia for the monitoring of production processes and the quality assurance applied to products).

Calibration is performed by a DAkKS authorized office which compares measured values against reference values based on national standards.

Calibration of the optical transducer at 8 measuring points
(not applicable for the tachometer probe FUA919-MF)

KU9029D

Factory Calibration Certificate

Calibration compares measured values against reference values based on national standards.

Calibration of the optical transducer at 8 measuring points
(not applicable for the tachometer probe FUA919-MF)

KU9029W

Force

Calibration for tension and compression sensors

Factory calibration certificate

Order no.

Calibration is performed based on the measurement comparison method for Ahlborn force transducers;

4 series of measuring operations upwards and 2 series downwards

3 steps (0%, 20%, 60%, 100% of final value) Tension or compression (indicate direction), up to 1 kN

KK9021W

3 steps (0%, 20%, 60%, 100% of final value) Tension or compression (indicate direction), up to 10 kN

KK9031W

3 steps (0%, 20%, 60%, 100% of final value) Tension or compression (indicate direction), up to 100 kN

KK9041W

3 steps (0%, 20%, 60%, 100% of final value) Tension or compression (indicate direction), up to 1000 kN

KK9051W

Electrical Calibration for all ALMEMO® measuring instruments with interface

DAkkS calibration certificate

Order no.

DAkkS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025 (inter alia for the monitoring of production processes and the quality assurance applied to products).

Calibration is performed by a DAkkS authorized office which compares measured values against reference values based on national standards.

Full calibration of ALMEMO device in 9 measuring ranges

2.6 V (volt), 55 mV (mV), 26 mV (mV1), 260 mV (mV2), NiCr-Ni (NiCr), Pt100 0.1 K (P104), Pt100 0.01 K (P204), NTC type N (NTC), relative humidity, capacitive (% RH)

Package offer

KE9005D

Factory calibration certificate

Calibration compares measured values against reference values based on national standards.

Full calibration of ALMEMO® device in 9 measuring ranges

2.6 V (volt), 55 mV (mV), 26 mV (mV1), 260 mV (mV2), NiCr-Ni (NiCr), Pt100 0.1 K (P104), Pt100 0.01 K (P204), NTC type N (NTC), relative humidity, capacitive (% RH)

Package offer

KE9005W

Electrical Calibration of Measuring and Indicating Devices

Calibration certificate for all ALMEMO® devices

DAkkS Calibration Certificate

Order no.

DAkkS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025 (inter alia for the monitoring of production processes and the quality assurance applied to products).

Calibration is performed by a DAkkS authorized office which compares measured values against reference values based on national standards.

The calibration is performed at approx. 10 measuring points.

Calibration for one measuring range

KE9010D

Each further measuring range

KE9020D

Calibration for 1 digital ALMEMO® measuring module ZA990xABx, ZAD90xABx, ZED7xxABx: AC/DC voltage

up to 400 V (50 Hz) or AC/DC current up to 20 A (50 Hz) (NOT power in W) or

for 1 ALMEMO® adapter cable ZA9603AKx AC voltage or measuring chain or

for 1 FEA 60x AC/DC current clamp

up to 10 A (50 Hz) Package offer, approx. 10 points

KE9030D

Factory Calibration Certificate

Calibration compares measured values against reference values based on national standards.

The calibration is performed at approx. 10 measuring points.

Calibration for one measuring range

KE9010W

Each further measuring range

KE9020W

Calibration for 1 digital ALMEMO® measuring module ZA990xABx, ZAD90xABx, ZED7xxABx: AC/DC voltage

up to 400 V (50 Hz) or AC/DC current up to 20 A (50 Hz) (NOT power in W) or

for 1 ALMEMO® adapter cable ZA9603AKx AC voltage or measuring chain or

for 1 FEA 60x AC/DC current clamp

up to 10 A (50 Hz) Package offer, approx. 10 points

KE9030W