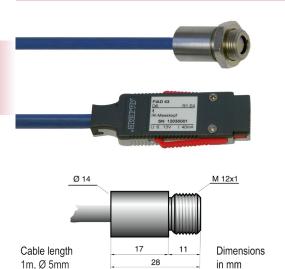# Infrared measuring technology

**Digital infra-red sensor for measuring surface temperature FIAD43
Miniature probe head, integrated electronics, ALMEMO® D6 plug**

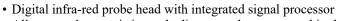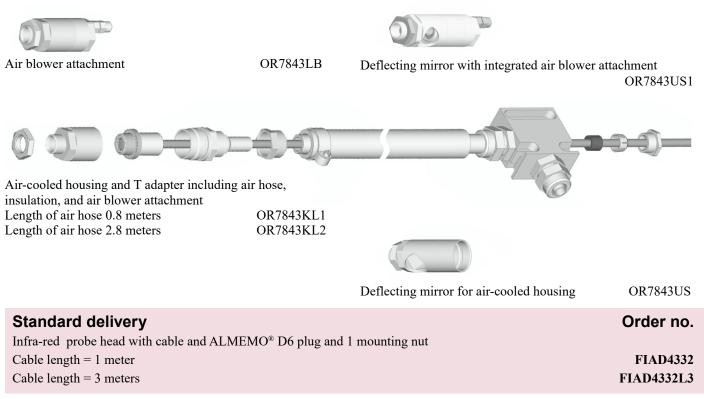**ALMEMO® D6**



Cable length
1m, Ø 5mm

Ø 14    M 12x1

17    11    Dimensions
28    in mm

- Digital infra-red probe head with integrated signal processor
- All sensor characteristics and adjustment data are stored in the probe head itself.
- Digital transmission ensures that measured values are not affected by the sensor cable being moved, bent, or twisted.
- Surface temperature is measured over a wide range up to 600°C.
- Robust stainless steel housing, protection class IP65
- The probe head, thanks to its small dimensions, can be installed in cramped and restricted conditions.
- The probe head is threaded for quick and easy installation.
- The sensor cable in polyurethane (PUR) is suitable for industrial use and is resistant to oily, acidic, basic environments.
- The sensor can be connected directly via the cable's ALMEMO® D6 plug to any ALMEMO® device.
- One measuring channel is preprogrammed on leaving our factory - surface temperature (°C).
- Emissivity 0.95 are preprogrammed (on leaving our factory).
- This can be programmed from 0.1 to 1.0 at the current ALMEMO® V6 devices via the device or via interface (some only via interface).
- Transmittance 1.0 is preprogrammed (on leaving our factory). When using the focal point lens attachment or the protective window, the transmittance of the focal point lens attachment or the protection window must be adjusted. Transmittance can be modified in the ALMEMO® D6 sensor menu directly on the PC using USB adapter cable ZA1919AKUV (see page 114) 35/5000 or with an ALMEMO® V7 measuring device.

**General features and accessories, ALMEMO® D6 sensors**
see page 15

## Measuring Field

D:S = 10:1



6    18    31    40

0    150    300    400    mm

## Options fitted at our factory



Air blower attachment    OR7843LB



Deflecting mirror with integrated air blower attachment
OR7843US1



Air-cooled housing and T adapter including air hose,
insulation, and air blower attachment
Length of air hose 0.8 meters    OR7843KL1
Length of air hose 2.8 meters    OR7843KL2



Deflecting mirror for air-cooled housing    OR7843US

| Standard delivery | Order no. |
|---|---|
| Infra-red  probe head with cable and ALMEMO® D6 plug and 1 mounting nut | |
| Cable length = 1 meter | **FIAD4332** |
| Cable length = 3 meters | **FIAD4332L3** |

DAkkS or factory calibration KI9xxx temperature for digital sensor, see chapter „Calibration certificates".
DAkkS calibration meets all the requirements regarding test resources laid down in DIN EN ISO/IEC 17025.

## Technical data

### Digital infra-red probe head (including A/D converter)

| | |
|---|---|
| Temperature measuring range | -40 to +600 °C |
| Spectral sensitivity | 8 to 14 µm |
| Optical resolution (90 % energy) | 10:1<br>with focal point lens attachment  1 mm at distance of 10 mm<br>Transmittance can be programmed to 0.75.  (see below) |
| Accuracy | ±1 % of meas. value or ±1 K  (whichever value is higher)  ±2 K for meas. values <20 °C |
| Reproducibility | ±0.5 % of measured value or ±0.5 K          (whichever value is higher) |
| Nominal conditions | 23 °C ±5 K, emissivity 1.0 |
| Temperature coefficient | ±0.05 K / K or ±0.05 % of measured value / K (whichever value is higher) |
| Temperature resolution | 0.1 K |
| Response time | 130 ms (90 %) |
| Emissivity | 0.95  (preprogrammed on leaving our factory)  This can be programmed from 0.1 to 1.0<br>at the current ALMEMO® V6 devices via the device (some only via interface). |
| Transmittance the focal point lens attachment or the protective window : | 1.0  (preprogrammed on leaving our factory)   This can be programmed from 0.1 to 1.0<br>directly on the PC using USB adapter cable ZA1919AKUV (please place a special order,<br>see page 114) |
| Protection class | IP65 (NEMA 4) (National Electric Manufacturers Association) |
| Ambient temperature | -10 to +120 °C    with air-cooled housing  -10 to +200 °C |
| Storage temperature | -20 to +120 °C |
| Relative atmospheric humidity | 10 to 95 %  non-condensing |
| Housing | Stainless steel |
| Dimensions | Probe head  Length 28 mm x Ø 14 mm      Thread  M12 x 1 |
| Weight | Probe head   50 grams  with 1-meter cable |
| Connecting cable(s) | permanently fitted        Polyurethane (PUR)        For available lengths see variants.<br>with ALMEMO® D6 plug |
| ALMEMO® D6 plug | Refresh time        0.25 seconds for all channels<br>Supply voltage      6 to 13 VDC<br>Current consumption    4 mA |

## Accessories



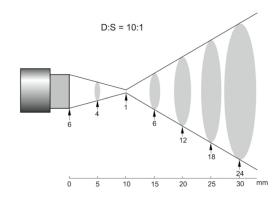Focal point lens attachment   (cannot be used together with air blower attachment or air-cooled housing)
Transmittance 0.75                                ZR7843CFL

Measuring field with focal point lens attachment





Protective window  (cannot be used together with air blower attachment or air-cooled housing)
Transmittance 0.75                                ZR7843PW



Mounting bracket, rigid                          ZR7842H



Mounting bracket, adjustable                          ZR7842JH