



Data Sheet Calibration / Testing



Flat rate inspection charges – vane wheel flow sensors FA

calibration flat rate **not** included

| Type | Description | Article No. |
|--------------|---|-------------|
| FA | Visual inspection, cleaning, performance check, assessment of wear parts, minor repair work | PRÜ-FA |
| FAR | Visual inspection, cleaning, performance check, assessment of wear parts, minor repair work | PRÜ-FAR |
| FT | Visual inspection, cleaning, performance check of velocity and temperature sensors, assessment of wear parts, minor repair work | PRÜ-FT |
| FA Di | Visual inspection, cleaning, performance check, assessment of wear parts, minor repair work | PRÜ-FADI |

Example of possible article combination see page 7



Flat rate inspection charges – vortex flow sensors VA

calibration flat rate **not** included

| Type | Description | Article No. |
|----------------------------|---|-------------|
| VA | Visual inspection, cleaning, performance check, assessment of wear parts, minor repair work | PRÜ-VA |
| VAT | Visual inspection, cleaning, performance check of velocity and temperature sensors, assessment of wear parts, minor repair work | PRÜ-VAT |
| VA Di up to Di100 | Visual inspection, cleaning, performance check, assessment of wear parts, minor repair work | PRÜ-VADI |
| VA Di greater Di100 | Visual inspection, cleaning, performance check, assessment of wear parts, minor repair work | PRÜ-VADI2 |
| VAR TwinPipe | Visual inspection, cleaning, performance check, assessment of wear parts, minor repair work | PRÜ-VAR |

Flat rate inspection charge – ultrasonic flow meter UA

calibration flat rate **not** included

| Type | Description | Article No. |
|-------------------|--|-------------|
| ExactSonic | Visual inspection, cleaning, performance check, assessment of wear parts | PRÜ-SONIC |

Flat rate inspection charges – thermal flow sensors TA

calibration flat rate **not** included

| Type | Description | Article No. |
|--------------|---|-------------|
| TA | Visual inspection, cleaning, performance check, assessment of wear parts, minor repair work | PRÜ-TA |
| TA Di | Visual inspection, cleaning, performance check, assessment of wear parts, minor repair work | PRÜ-TADI |

Flat rate inspection charges – other sensors

| Type | Description | Article No. |
|-----------------------|--|-------------|
| Temperature probes TF | Visual inspection, cleaning, performance check | PRÜ-TF |
| Pressure sensors | Visual inspection, cleaning, performance check | PRÜ-P |
| Humidity probes | Visual inspection, cleaning, performance check | PRÜ-RH |



Calibration flat rates

for 6 standard calibration values. Inspection flat rate and calibration certificate not included.
For sensors with evaluation unit, the calibration values are selected in the scaled range, provided that the set analog output does not correspond to the physical end value.

ISO velocity calibration – flow sensors

| Terminal value | Type | Calibration values in m/s | | | | | | Article No. |
|-------------------------------|------------|---------------------------|------|------|------|------|-----|-------------|
| 1 m/s | FA | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1.0 | CV-1ZS |
| 1 m/s | TA | 0.25 | 0.35 | 0.5 | 0.6 | 0.75 | 1.0 | CV-1TA |
| 2 m/s | FA | 0.5 | 0.75 | 1.0 | 1.25 | 1.5 | 2.0 | CV-2ZS |
| 2 m/s | TA | 0.25 | 0.5 | 0.75 | 1.0 | 1.5 | 2.0 | CV-2TA |
| 3 m/s | TA, FA* | 0.5 | 0.75 | 1.0 | 1.5 | 2.0 | 3.0 | CV-3 |
| 20 m/s | TA, FA | 1 | 2 | 5 | 10 | 15 | 20 | CV-20 |
| 30 m/s | TA, FA, VA | 1 | 2 | 5 | 10 | 20 | 30 | CV-30 |
| 60 m/s | VA, VAT | 1 | 4 | 8 | 16 | 32 | 60 | CV-60 |
| 60 m/s | TA | 1 | 5 | 10 | 20 | 40 | 60 | CV-60 |
| 60 m/s | FA | 2 | 5 | 10 | 20 | 40 | 60 | CV-60 |
| 120 m/s | TA | 2 | 5 | 10 | 40 | 80 | 120 | CV-120 |
| 150 m/s | TA | 2 | 10 | 20 | 40 | 80 | 150 | CV-150 |
| 180 m/s | TA | 2 | 10 | 20 | 60 | 100 | 180 | CV-180 |
| 200 m/s | TA | 2 | 10 | 20 | 60 | 120 | 200 | CV-200 |
| additional calibration values | | per value | | | | | | CV-X |

Measurement uncertainty of the reference < 1 %, calibration medium - air.

*Applies to FA sensors with vane wheel set 'md20' or 'md3'.

Calibration of FAR probes generally from one direction of flow.

DAkKS velocity calibration – flow sensors

6 calibration values

| Range | Reference | Article No. |
|-------------------------------|------------|-------------|
| 0.1 m/s to 40 m/s | WK320, LDA | CV-40 DAKKS |
| 0.1 m/s to 70 m/s | WK320, LDA | CV-70 DAKKS |
| additional calibration values | per value | CV-X DAKKS |

Best measurement uncertainty of the reference 0.5 %, at least 0.01 m/s at room temperature under atmospheric conditions.

DakKS flow rate calibration – measuring tubes

6 calibration values

| Range | Reference | Article No. |
|---|-----------|---------------|
| 5 m ³ /h to 100 m ³ /h | AVP | CQ-100 DAKKS |
| 5 m ³ /h to 1600 m ³ /h | AVP | CQ-1600 DAKKS |
| 5 m ³ /h to 5500 m ³ /h | AVP | CQ-5500 DAKKS |
| additional calibration values | per value | CQ-X DAKKS |

Best measurement uncertainty of the reference 0.3 % (5 m³/h to 400 m³/h) and 0.25 % (400 m³/h to 5500 m³/h). Calibration at room temperature under atmospheric conditions. These calibrations always include as well a DakKS calibration certificate.



Air/gas flow rate calibration – measuring tubes (atmospheric)

6 standard calibration values in the scaled measuring range

| Calibration medium | Range | Article No. |
|-------------------------------|---|-------------|
| air | 0.06 m ³ /h to 100 m ³ /h | CQ-RVP |
| other gases | 0.06 m ³ /h to 100 m ³ /h | CQ-RVPS |
| additional calibration values | per value | CQ-RVPX |

The measurement uncertainty of the reference dependst on the type of calibration and the specifications. Additional costs for sensor adaption may apply for special designs.

Air/gas flow rate calibration – measuring tubes

6 standard calibration values in the scaled measuring range

| Calibration medium | Range | Article No. |
|-------------------------------|---|-------------|
| air | 0.25 m ³ /h to 100 m ³ /h at pressure up to 10 bar/1 MPa, pipe dimension up to DN200 | CQ-100 ISO |
| air | 0.25 m ³ /h to 1600 m ³ /h at pressure up to 10 bar/1 MPa, pipe dimension up to DN200 | CQ-1600 ISO |
| air | 0.25 m ³ /h to 5500 m ³ /h at pressure up to 10 bar/1 MPa, pipe dimension up to DN200 | CQ-5500 ISO |
| additional calibration values | per value | CQ-HDPX |

other gases on request

The measurement uncertainty of the reference is dependent on the type of calibration and the specifications. Additional costs for sensor adaption may apply for special designs.



Liquid flow calibration

6 standard calibration values

| Calibration medium | Range | Article No. |
|-------------------------------|-----------------------|-------------|
| water | 0.02 l/min to 9 l/min | CQ-FVP |
| additional calibration values | per value | CQ-FVPX |

Measurement uncertainty of the reference < 1 %.

Calibration in other liquids on request.

Additional costs for sensor adaption may apply for special designs.

Liquid flow calibration – flow sensors

6 standard calibration values

| Calibration medium | Range | Article No. |
|-------------------------------|---|-------------|
| water | 0.5 m ³ /h to 100 m ³ /h (0.02 m/s to 3.5 m/s) | CQ-WVP |
| additional calibration values | per value | CQ-WVPX |

Measurement uncertainty of the reference < 0.7 %.

The average flow velocity based on flow rate together with a profile factor are determined and documented in the calibration certificate.

Calibration of FAR probes generally from one direction of flow.

Additional costs for sensor adaption may apply for special designs.

Velocity calibration – flow sensors - in high-temperature testing facility

6 standard calibration values

| Calibration medium | Range | Article No. |
|-------------------------------|--|-------------|
| air | 0.5 m/s to 70 m/s, operating temperature +20 °C to 400 °C | C-HTP |
| additional calibration values | per value | C-HTPX |

Measurement uncertainty of the reference < 2 %.

Calibration – temperature probes

3 standard calibration values incl. calibration certificate

| | Range | Article No. |
|-------------------------------|-------------------|-------------|
| temperature calibration | +20 °C to +100 °C | CT |
| additional calibration values | per value | CT-X |

Comparison with reference thermometer in liquid bath.

Measurement uncertainty of the reference < 0.1 K.

ISO / DAkkS Calibration certificates

| | | Article No. |
|-------------------------|---|-------------|
| Calibration certificate | ISO or DAkkS calibration certificate as proof of traceability | KLB |



Flat rate inspection charges – evaluation units

| Type | Description | Article No. |
|--|---|-------------|
| Transducer - separate or integrated in the sensor | visual inspection, assessment, performance check and adjustment, software update, minor repair work | PRÜ-U |
| Ex-transducer – separate or integrated in the sensor | visual inspection, assessment, performance check and adjustment, software update, check of parameters relevant for explosion protection, minor repair work | PRÜ-Ex |
| System unit with keypad and display | visual inspection, assessment, performance check and adjustment | PRÜ-S |
| Ex-system unit with keypad and display | visual inspection, assessment, performance check and adjustment, software update, check of parameters relevant for explosion protection, minor repair work | PRÜ-S-Ex |
| Handheld unit | visual inspection, assessment, performance check and adjustment, software update, minor repair work | PRÜ-H |
| Ex-handheld unit | visual inspection, assessment, performance check and adjustment, determination of battery life, software update, check of parameters relevant for explosion protection, minor repair work | PRÜ-X |
| External devices | visual inspection, assessment, performance check | PRÜ-FREMD |

Miscellaneous

| Type | Description | Article No. |
|------------------|--|-------------|
| EMC test | in Höntzsch EMC test laboratory, incl. test certificate | PRÜ-EMV |
| Temperature test | performance check of flow sensors at varying temperatures in the range +20 °C to +600 °C in temperature test chamber | PRÜ-VT |





| Inspection documents for metallic products according to 10204:2004 | | |
|--|---|-------------|
| Type | Description | Article No. |
| 2.1 Declaration of compliance with the order | Manufacturer's statement of compliance with the order | WB 2.1 |
| 2.2 Test report | Manufacturer's statement of compliance with the order with indication of results on non-specific inspection | WB2.2 |
| 3.1 Inspection certificate | Statement of compliance with the order with indication of results of specific inspection by manufacturer's authorized inspection representative independent of the manufacturing department | WB 3.1 |
| Compliance statement | ISO 9001 | CECONF |

| Example of possible article combination | | |
|---|---|--|
| Sensor | Service | Article No. |
| ZS25 with integrated transducer | Calibration certificate "as found" (optional) Inspection charge FA Inspection charge transducer Calibration up to 30 m/s Calibration certificate "as left" (optional) | KLB PRÜ-FA PRÜ-U CV-30 KLB |

