



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. If the measuring tube does not have a dedicated transducer, then profile factor and pairs of values from frequency and average flow velocity are determined in the calibration and documented in the calibration certificate. The pairs of values provide optimal conformance of sensor and transducer to achieve the highest possible accuracy.



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

