

Truck Meter T-11-J, T-20-J und T-40-J



Further Dokumentation for this Product:

Description	Order No.
None	

Historie

Revision	Date	Editor	Status	Description
Rev. 1.11	Juni 2003	HO	released	first edition
Rev. 2.00	January 2006	JP	released	format modifications / new Drawings

Important

All information and technical specifications in this documentation have been carefully checked and compiled by the author. However, we cannot completely exclude the possibility of errors. **F.A.Sening GmbH** is always grateful to be informed of any errors.

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1 General Remarks

1.1 How to Use this Manual

This manual contains multiple information. In order to help you find the information you need, we created some orientation help.

- **Pictographs**

The information in this manual ranges from intended use, formal instructions, concrete operating steps and feed-backs to good advice. For easier reference the information is marked with a special pictograph in the left marginal column.

In this manual you will find the following symbols:



Danger! - In this case: Danger of explosion.



Action - that may damage the equipment



Action - that may have legal consequences



Work step - concrete operation



Feed-back positive



Feed-back negativ



Advice, tip – more background information



Optional or special case



Function / description



NOTE: Indicate a special Situation



IMPORTANT: To be strictly observed

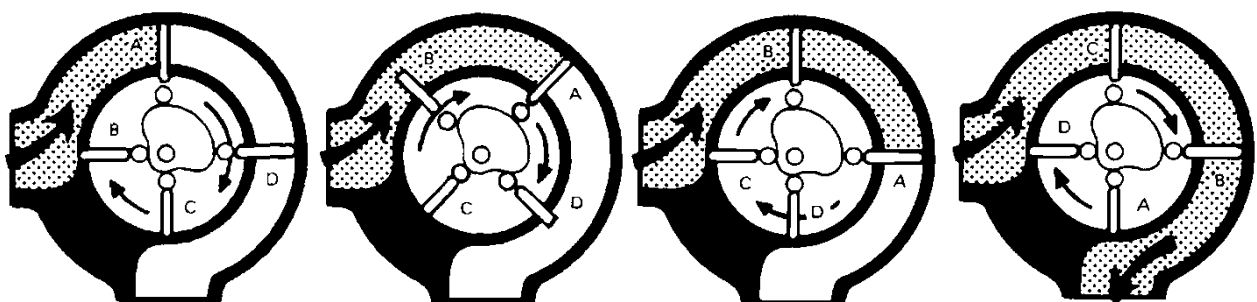
2 Product Description

2.1 Function



Figure 1: T-20-J

The truck meters T-11-J, T-20-J and T-40-J are of the positive displacement type as used in the standard Smith PD meters. As fluid flows through the meter, the rotor and blades revolve about a fixed cam causing the blades to move out- and inward. Each rotor revolution corresponds to a defined liquid quantity.



Unmeasured liquid flows in and revolves the rotor around the cam.

Vane A defines the measuring chamber, vane B moves outwards.

Vane B moves outwards and closes the chamber. In the same way the next chamber is filled.

Vane A moves inwards and opens the outlet. The measured liquid flows out.

Typical of this meters is that the revolutions are not measured mechanically by gears and mechanical counters but via electronic pulse pick-ups and slotted disc. (See Figure 4: Sectional View / page 11) Each pulse corresponds to a defined fluid quantity and can be counted by an electronic flow-computer which calculates the fluid quantity afterwards.

The accuracy of the meters is excellent because the rotor works with no friction. The meters are very stable and they are suitable either for pumped or gravity discharge.

Because of the smooth running of the rotor without friction pressure peaks could be transferred to the rotor. This must be prevented by a suitable piping and pump configuration because pressure peaks could damage the rotor or may cause errors of the flow computer. If vibrations occur the flow computer may see only forward-backward pulses in a high frequency which cannot be compensated by the flow computer.

- ✘ Pipeline vibrations within the fluid must not occur and have to be prevented by a suitable piping and design of the pumps.
- ✘ The meters have to be filled carefully. When an empty meter is filled with fluid the removing gas could cause a rotor rotating with a high speed and damaged vanes colliding with the housing rotor revolving with a high speed. Permanent use is allowed only completely filled.
- ✘ If the counters are unfilled, the rotors can be strongly accelerated and damaged when filling by the escaping gas. In order to avoid, the counters may be filled only carefully and slowly. Continuous operation is permitted only in the filled condition.

2.2 Accessories

- ☞ In principle, all combinations of the existing Smith Meter accessories for the standard T-11, T-20 and T-40 meters can be used. Details in chapter 3 Technical Data / page 11.
- ☞ The delivered quantity can be calculated with each suitable electronic flow computer which is able to read the pick-up information. Additionally a stop-valve can be controlled to realize the delivery of a pre-defined quantity (preset) e.g. F.A. Sening MultiFlow.



Figure 2: Accessories MultiFlow

- ☞ Additionally other components from the Smith Meter and F.A. Sening product range can be used:
 - Smith Meter faucets SPG-2, SP-2S, SPG-3 and SG-4 with pneumatic cylinder

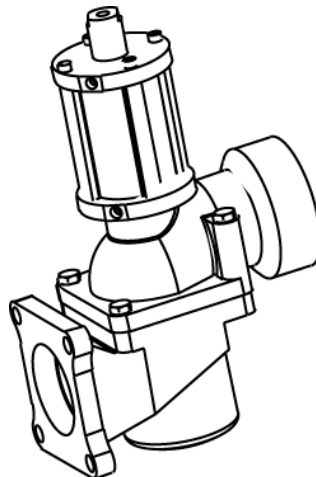


Figure 3: Accessories pneumatic cylinder

- F.A. Sening accessories which can be combined with the truck meters T-11-J, T-20-J and T-40-J.
- ☞ More information on request.

3 Technical Data

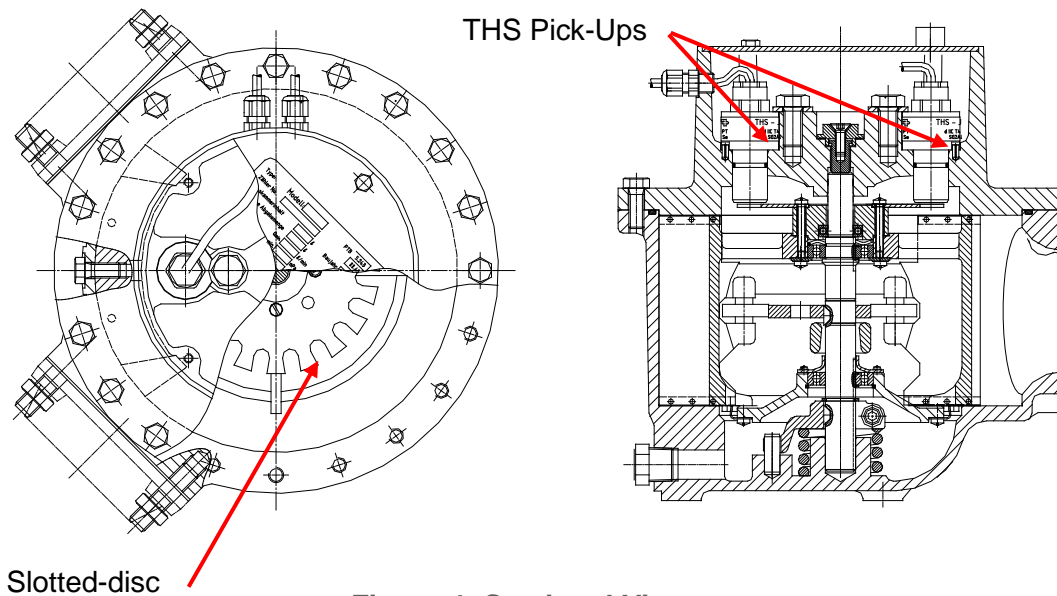


Figure 4: Sectional View

	T-11-J	T-20-J	T-40-J
Nominal Diameter	DN 50 / 2"	DN 80 / 3"	DN 100 / 4"
Nominal Pressure	PN 10	PN10	PN 10
Minimum Flow	37,5 L/min	75 L/min	150 L/min
Maximum Flow	375 L/min	750 L/min	1500 L/min
Standard – Temperature Range	-10°C bis +50°C (Other Temperatures on Request)		
Standard – Viscosity Range	0,3 bis 17 mPa*s (Other Viscosity on Request)		
Fluid	Low viscosity mineral oils, bio-fuels ⚠ The resistance of the accessories to the fluid must always be considered.		
Meter Data (Final Definition Takes Place During Calibration)			
Number of Sensors	2		
Phase shifting	Sensor adjustment causes a nominal 90° phase shifting of the signals.		
Pulses per revolution	19 Imp./revolution (Slotted disc with 19 Slots)		
	T-11-J	T-20-J	T-40-J
Pulses per Liter (from approval) [pulses / L]	15,06	8,42	5,53
Cyclic Volume (calculated) (Chamber volume) [L / revolution]	1,262	2,257	3,437
Max. Frequency [Hz] of pulses	94 at 375 L/min	105 at 750 L/min	138 at 1500 L/min
Meter Approval:			
German PTB-approval	5.243 / 00.45		

Table 1: Mechanical Data



Sensor THS-J:				
Sensor Type	THS-J SG2AL			
ATEX Certificate	PTB 03 ATEX 1032			
Type of Protection Against Ignition	 II 2 G EEx d IIC T4			
Supply Line	Cross-Section 2 x 0,75mm ² , Outer Diameter Ø5,5mm, Shield: no			
Terminal Assignment	brown: +Vcc white: -Vcc			
Electrical Values	Min.	Nominal	Max.	Units
DC Supply Voltage	8,0	12	16	V
I low	5,5	7	8,5	mA
I high	11,0	14	17	mA
Temp. Range	-40	-	+70	°C
Frequency	0	-	20	kHz
Ramp Response / Fall Time	-	1	-	µs
Comments	I _{low} < 5,5 mA means cable break I _{high} > 17 mA means short circuit The values C _i and L _i have not to be considered.			
Sensor THS-O:				
Sensor Type	THS-O SG2AL			
ATEX Certificate	PTB 03 ATEX 1032			
Type of Protection Against Ignition	 II 2 G EEx d IIC T4			
Supply Line	Cross-Section 3 x 0,34mm ² , Outer Diameter: Ø5,5mm, Shield: yes			
Terminal Assignment	brown: + green: - output white: -			
Electrical Values	Min.	Nominal	Max.	Units
DC Supply Voltage	6	12	28	V
U _{A rest} (10 mA)	-	520	-	mV
U _A (switch)	-	-	40	V
Temp. Range	-40	-	+70	°C
Frequency	0	-	10	kHz
Ramp Response / Fall Time (U _b =12V, R _L = 1K2)	-	8	-	µs
I _{AS} (Short Circuit Current)	20	28	-	mA
Comments	npn open collector			

Table 2: Electronic Sensor Data

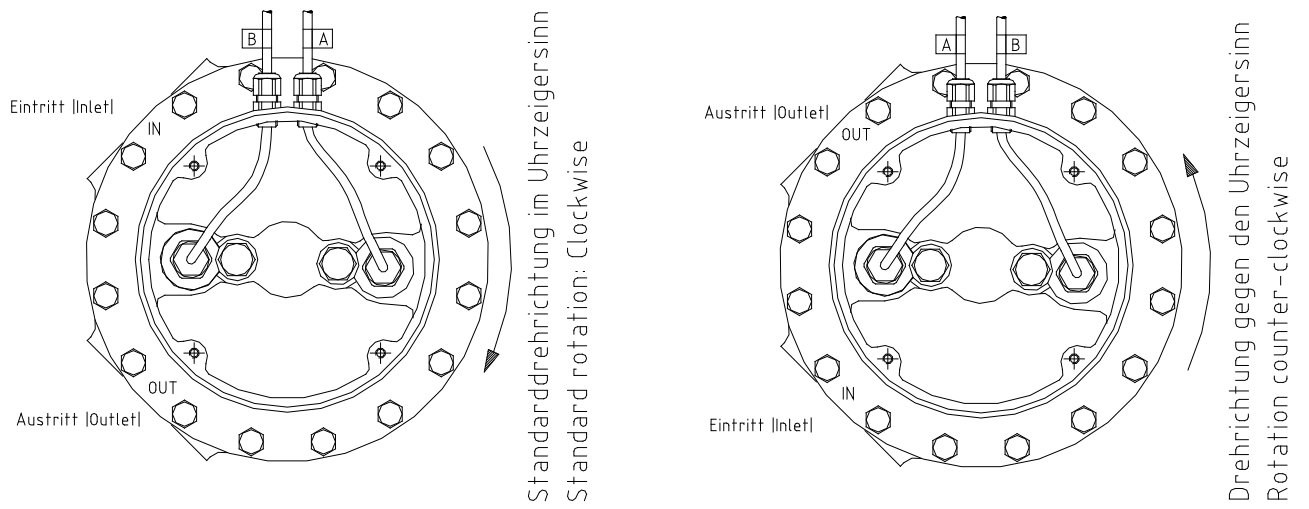


Figure 5: Marking of Cables regarding the Rotation

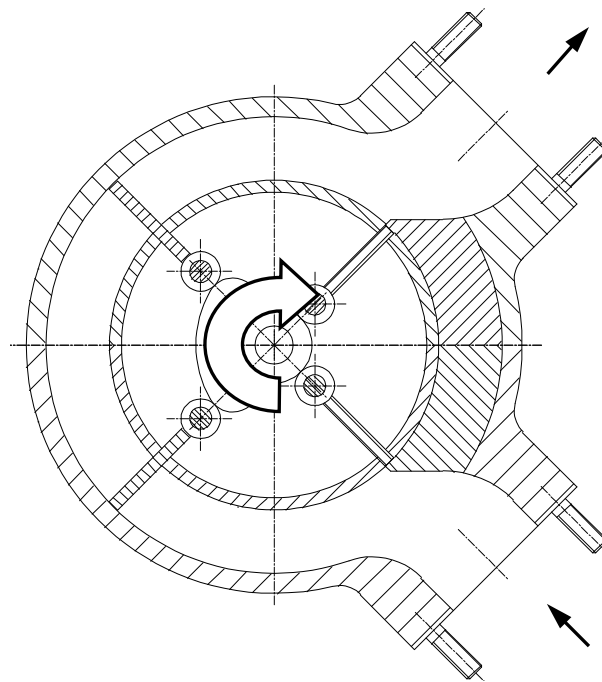


Figure 6: Standard Rotation, View from Top of the Meter

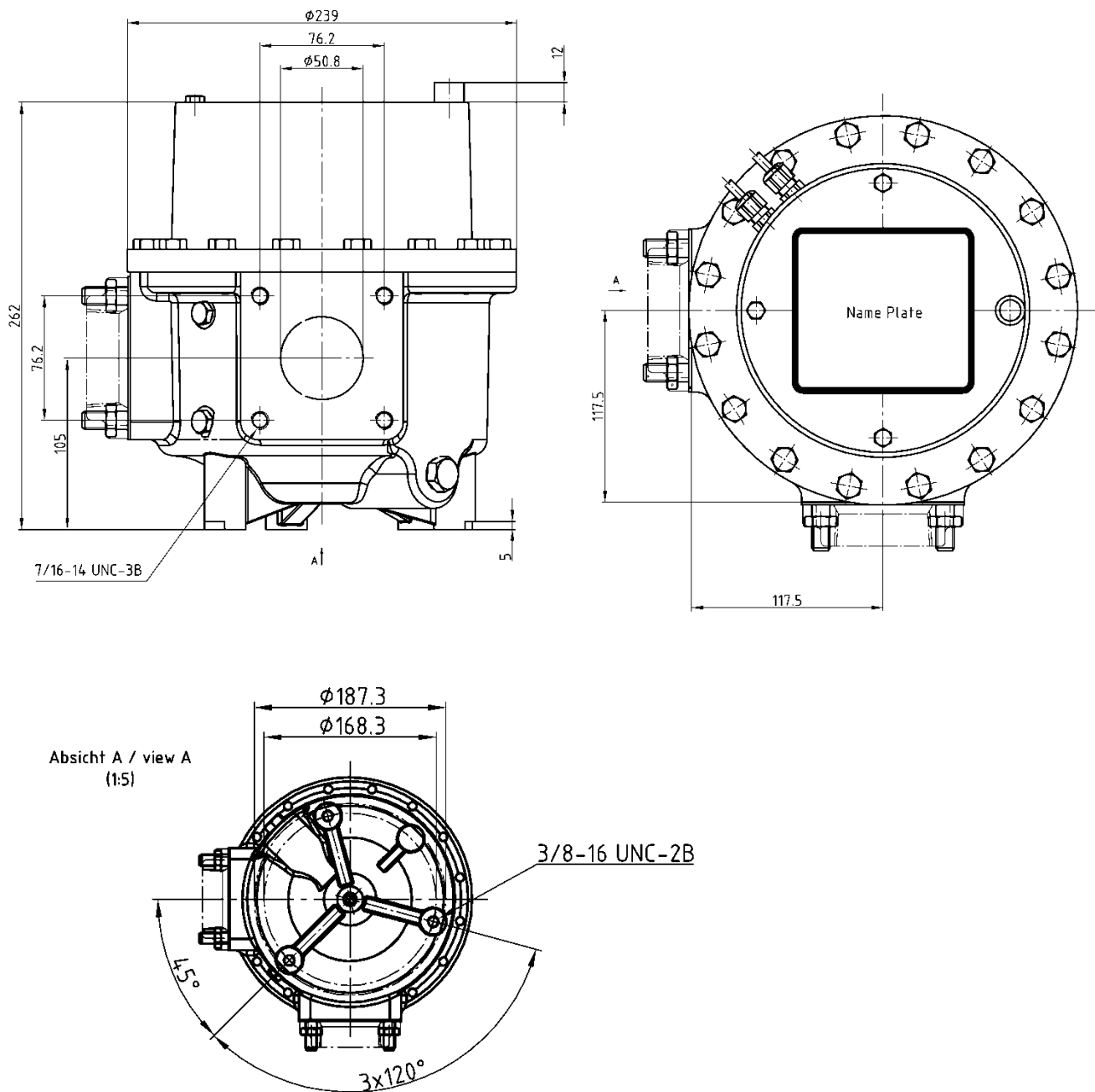


Figure 7: T-11-J Dimensions

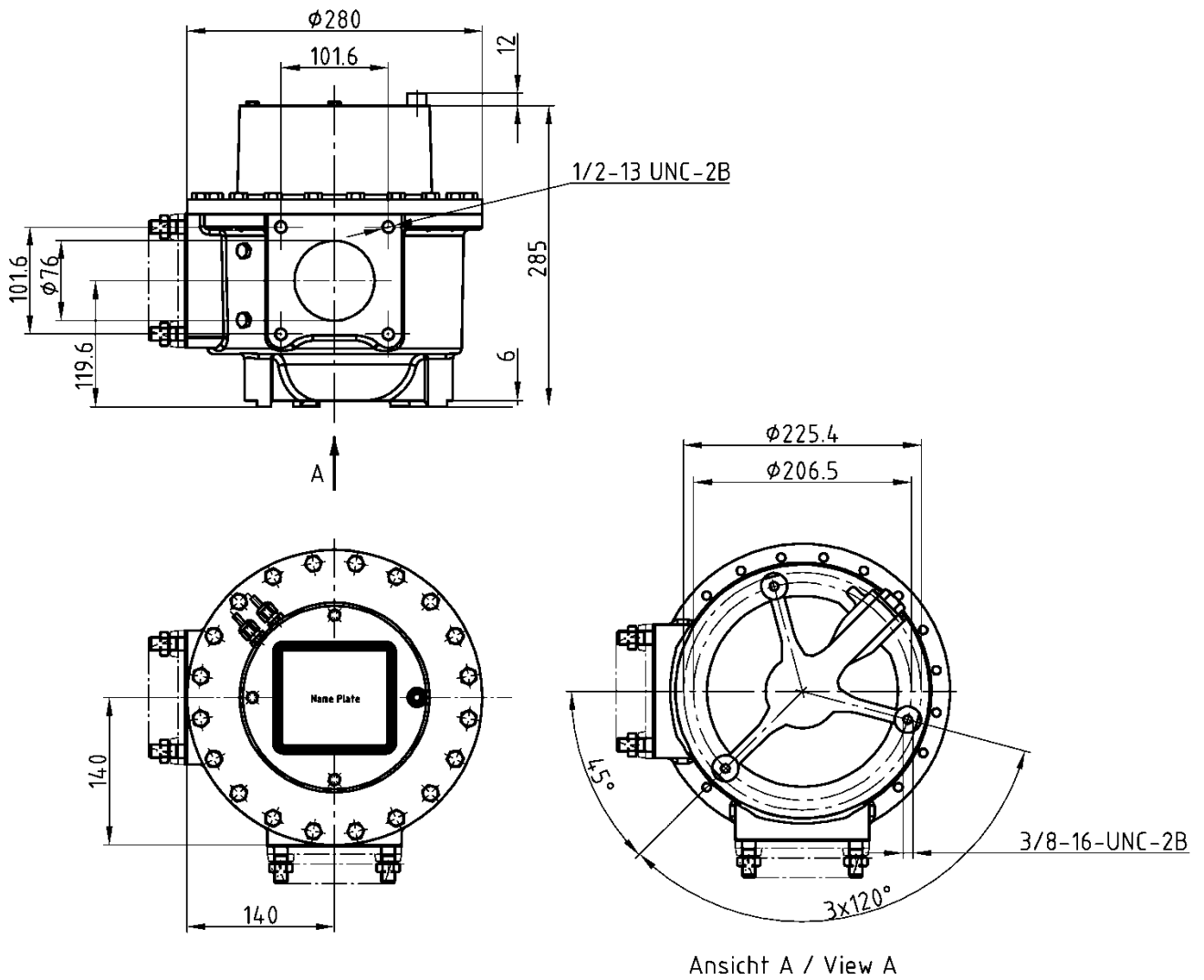


Figure 8: T-20-J dimensions

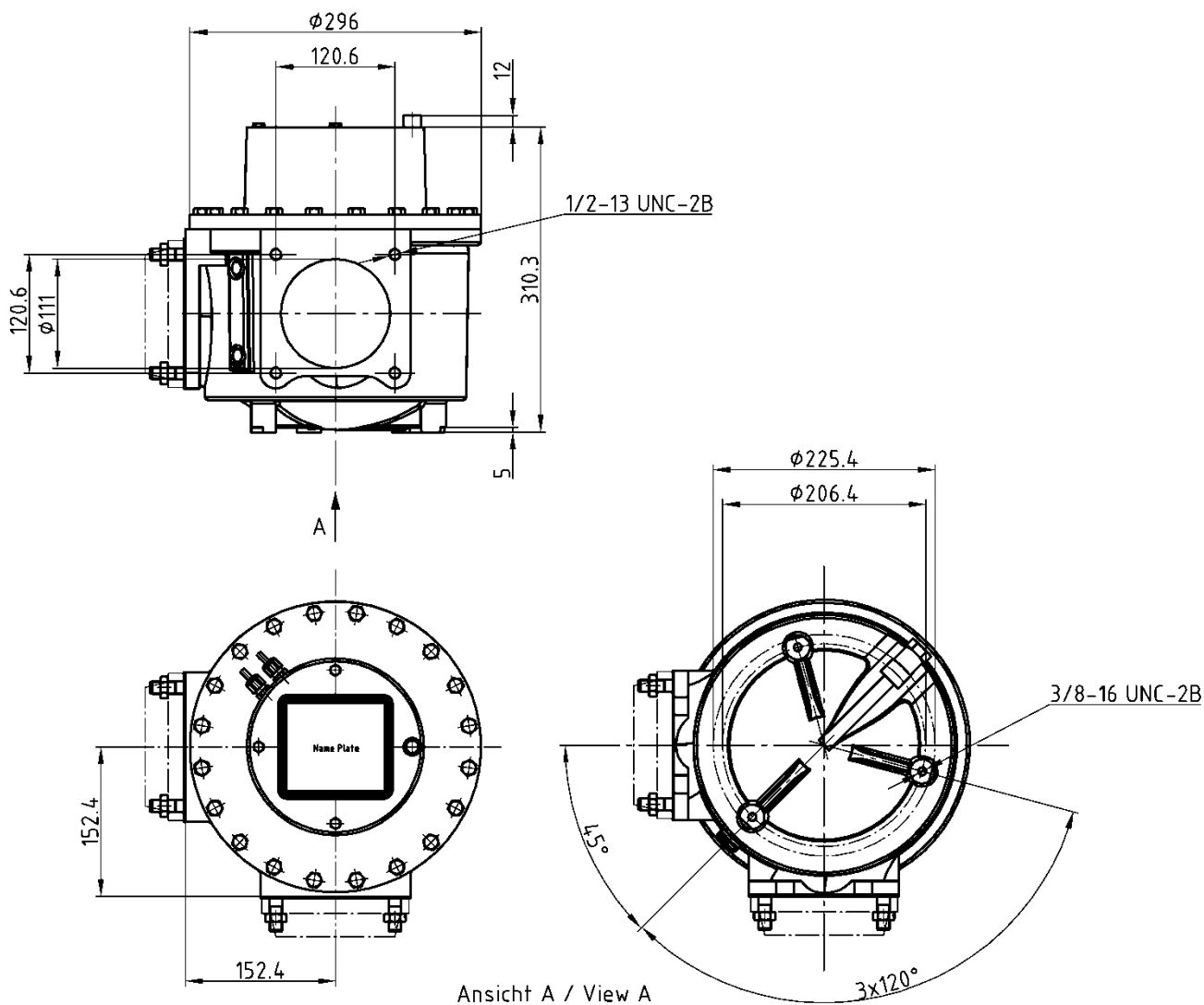


Figure 9: T-40-J dimensions

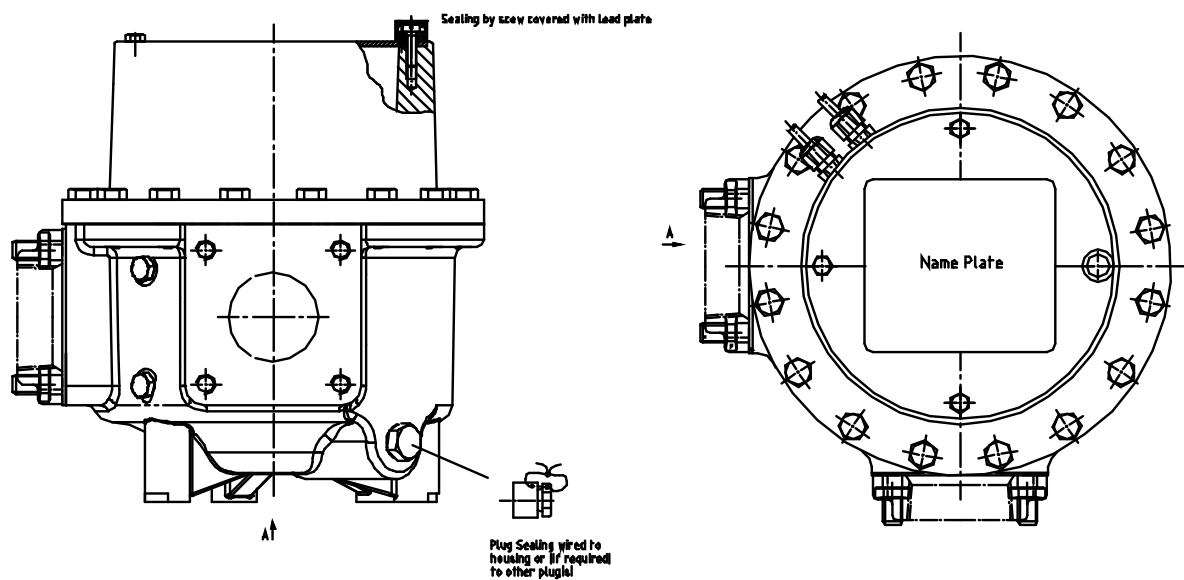


Figure 10: Sealing of the Meter

4 Accessories

4.1 Air Eliminator and Stop-Valves

	Pos. 1	Pos. 2	Pos. 3
Package T-11-J			
- Gravity Discharge	T3A with Reducer	T-11-J	SPG-2 with pneum. cylinder
- Pumped Discharge (For T2A there is more information on request)	T2A	T-11-J	SP-2S with pneum. cylinder
Package T-20-J			
- Gravity Discharge	T3A	T-20-J	SPG-3 with pneum. cylinder
- Pumped Discharge	T3A	T-20-J	SPG-3 with pneum. cylinder BPV2½" recommended
Package T-40-J			
- Gravity Discharge	T4A	T-40-J	SG-4 with pneum. cylinder

Table 3: Air Eliminator and Stop-Valves

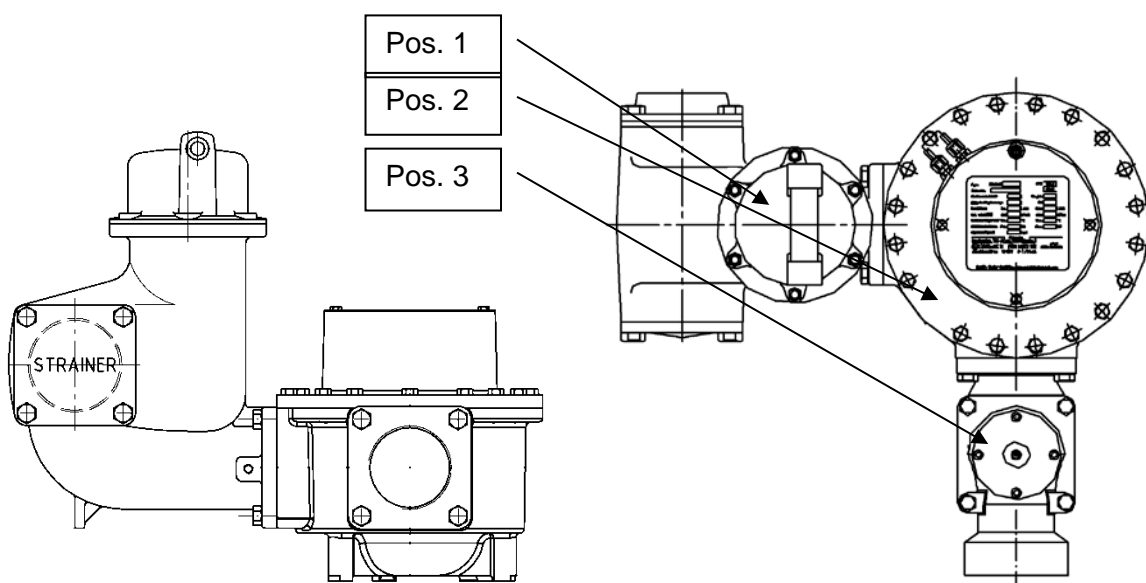


Figure 11: Accessories (Other accessories on request)

4.2 Pneumatic Diagram

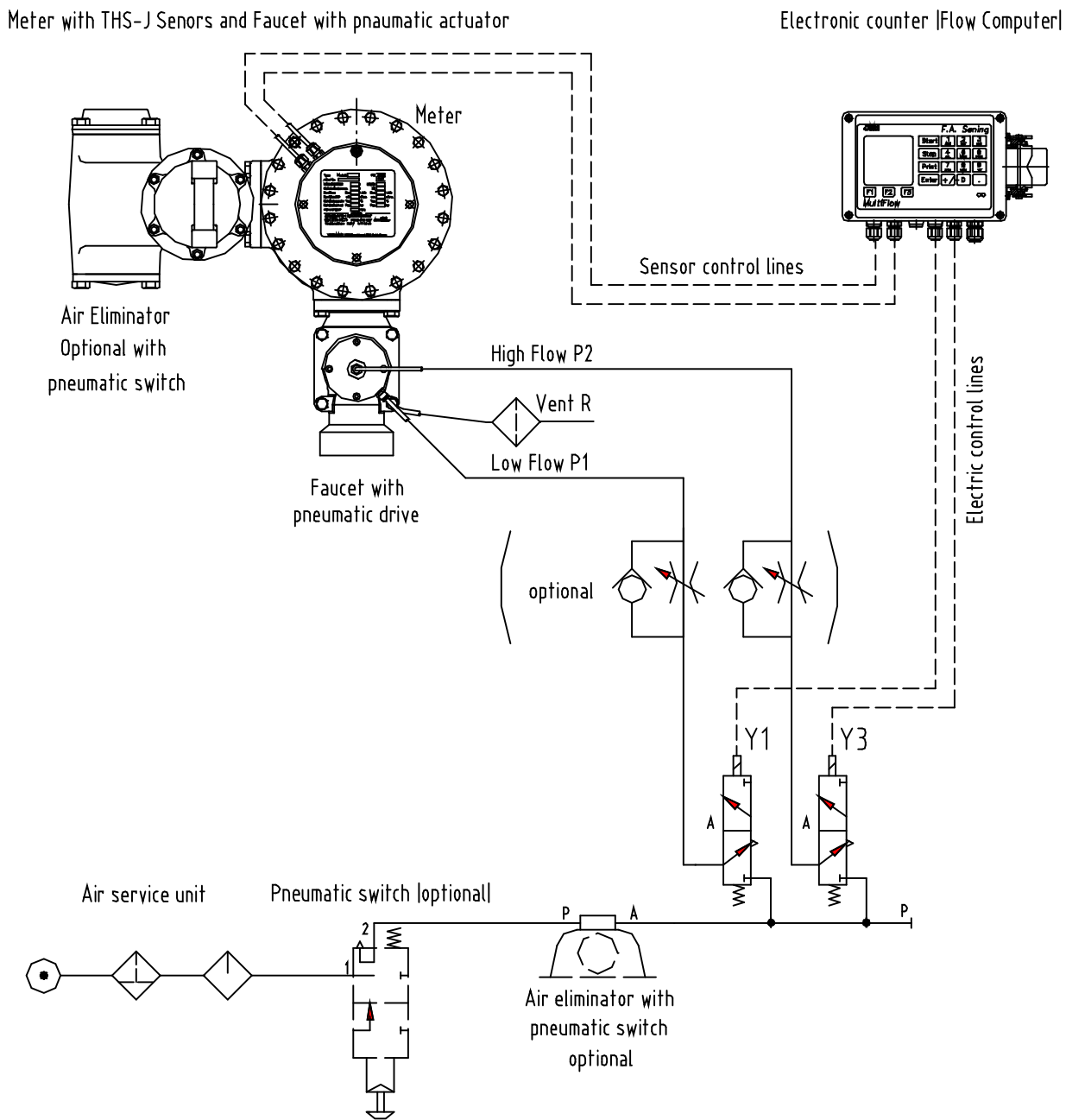




Figure 12: Pneumatic Diagram


5 Notes on Assembly and Operation and Hazards

The following notes have to be considered to make sure that the meters operate precise. Additionally the meter-installation has to comply with all legal requirements and standards of the country where the meters are in operation.

 The following notes must be considered to eliminate all dangers regarding cracks, leakages and other failures.

 If leakages occur there will be the danger of fire and explosions. Environmental hazards must be considered in cases of leakage, fire or explosion.

5.1 Assembly

- The meters do not operate correctly if means remain which shall protect the parts while transport and storage. All of this means have to be removed.
- The meters are to be mounted on a flat and suitable bases. The mounting has to comply with all legal requirements of the country where it is operating.
- The brackets with threads at the bottom have to be used to fix the meters.
- No forces must not act via piping on the housings. Suitable means have to prevent those forces, e.g. holders which connected the inlet- and outlet flange to the scaffold.
- The meters and connecting flanges must not be mounted with mechanical stress acting on the housing.
- The correct flow direction has to be ensured.
-  In principle the meter can operate in both flow directions. It has to be considered that an electronic flow computer detects the flow direction by measuring the phase shift of the two sensors A and B. (See Figure 5: Marking of Cables regarding the Rotation / page 13) If the sensors are connected not correctly to the interface the flow computer detects an error because it sees the wrong flow direction.
- The right position of the sealings and gaskets must be ensured.
- All flange connections have to be tested if they are tight.
- The flange bolts have to be screwed on cross-over.
- Depending on the type of meter package the accessories have to be assembled correctly. Lay the vent and control lines accurately to guarantee a correct operating.
- For an accurate measuring special devices are necessary to prevent gas flowing through the meter. Assemble those devices correctly and use their operating instructions. In case of wrong assembly there is the danger that the fluid-quantity is not measured correctly.
- Paint the outer surface of the meter for corrosion protection.

5.2 Operation

- Vibrations, e.g. caused by pumps or other devices, must not be transferred to the housing because there is the danger of cracks.
- Explosion-proof protection and fire protection requirements have to be fulfilled.
- The meters are designed for a max. working pressure. The actual working pressure must not be higher.
- Neither fast pressure changes nor heavy pressure peaks are allowed.
- Temperature limits must be considered otherwise there is the danger of decreasing stability.
- To avoid damaged inner parts and housings fluids are only allowed when they are approved for the meters. Particulate material within the fluid will damage the inner parts.
- The flow-rate and the viscosity must be within the allowed ranges.
- Prevent uncontrolled draining of the meter. Suitable draining valves and vessels have to be used.
- Rising pressure within the meters caused by expansion of the medium is not allowed. (e.g. thermal expansion) Relief valves shall prevent the expansion.

5.3 Maintenance

- In principle the meters are maintenance-free. Nevertheless, regularly inspections are necessary to check the tightness and the correct operating.
 - ✘ In case of leakage or unexpected noise a repair is necessary.
- The meters are calibrated regularly in accordance to the local rules and regulations. In case of not sufficient accuracy a repair or exchange of the meter is necessary.
- If not allowed accuracy-changes are visible while the meters are operating, an inspection and repair is necessary.
- Only trained people and authorized service stations are allowed to do the maintenance and repairs. Suitable measures of precaution are necessary.

ATTENTION: Aggressive fluids can cause injuries!

ATTENTION: The opening of pressurized housings is extremely dangerous!

- ✘ Parts which are not assembled correctly may fail and cause leakages.
- ✘ Bolts are to be tightened correctly and specified torques have to be applied.
- ✘ Not original spare parts may fail and cause leakages.
- Repair-weldings are not allowed!

5.4 Explosion Protection Notes

- The housing of the THS sensor is explosion-proof according to type of protection „d “pressure resistant packaging.
- In the case of a damage of the sensor line or the sensor housing the complete sensor is to be replaced. In the pressure resistant packaging is the sensor with electronics.
- In the sensor housing are no construction units maintenance or an adjustment require.
- With a sensor defect is the complete sensor to be replaced. The electrical connection has to take place only to devices also for it suitable current supply.

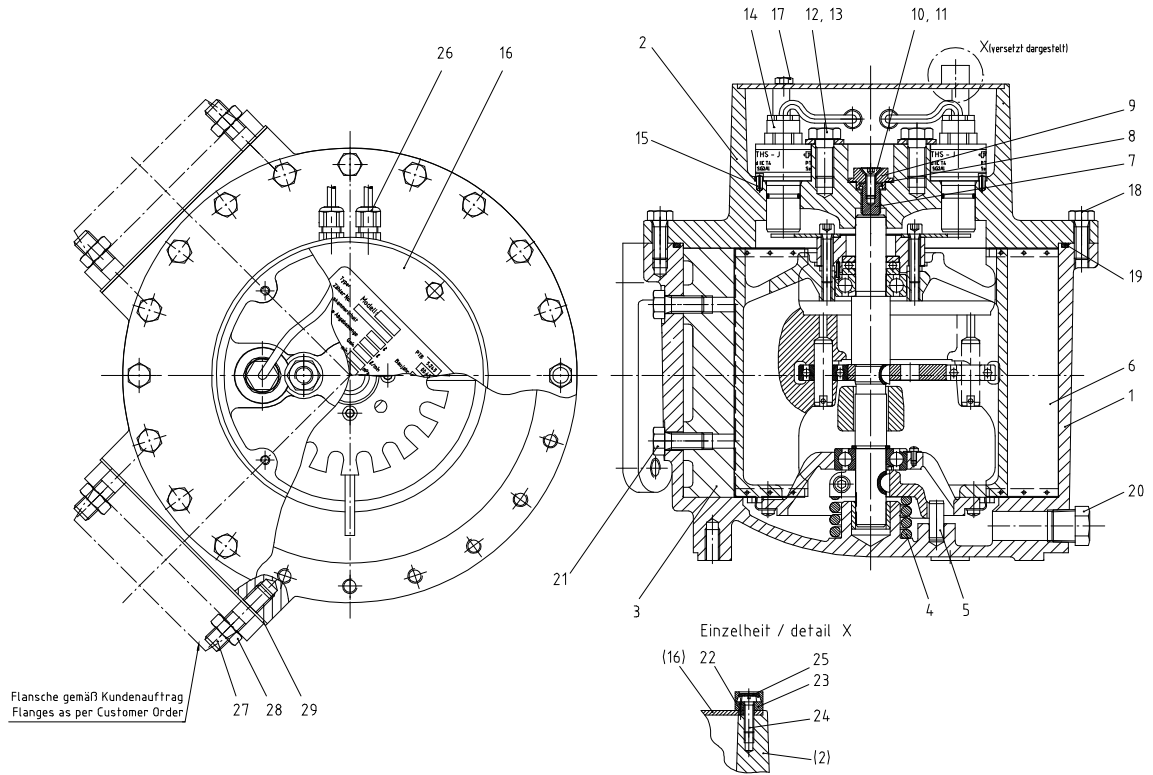


No intervention, either mechanical or electrical, is permitted

R I S K O F E X P L O S I O N

6 Spare Parts

T-11-J, T-20-J und T-40-J



Only T-11-J

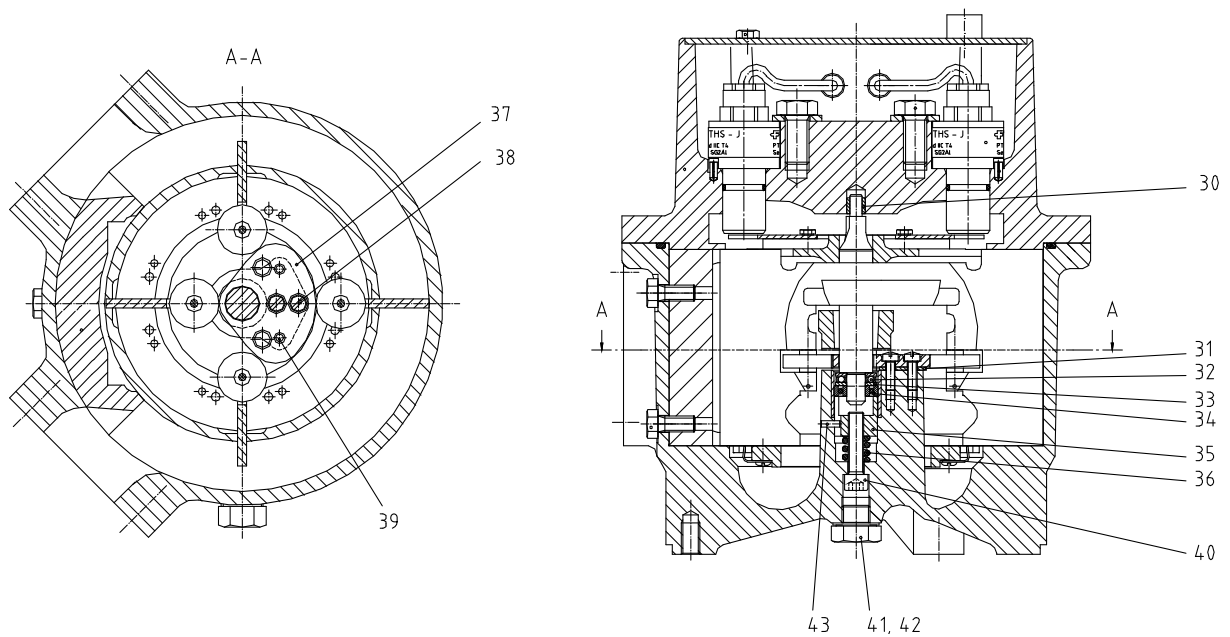


Figure 13: Spare Parts

Position		T-11-J	T-20-J	T-40-J
1	Gehäuse / Housing	1x 577393001	1x 577394001	1x 577395001
2	Deckel / Cover	1x 577193001	1x 577191001	1x 577164001
3	Block	1x 002667001	1x 003956001	1x 538294001
4	Feder / Spring	-	1x 503311002	
5	Stift / Pin	-	1x 503484001	
6	Rotor	1x 577192001	1x 577190001	1x 577186001
7	Schraube / Screw	-	1x 013668001	
8	Dichtung / Gasket	-	1x 060341001	
9	Kappe / Cap	-	1x 013667001	
10	Dichtung / Gasket	-	1x 013669001	
11	Schraube / Screw	-	1x 645916401	
12	Schraube / Screw	2x 4100159		
13	Scheibe / Washer	2x 4300105		
14a	Sensor THS-J	2x 250455		
14b	Sensor THS-O	2x auf Anfrage		
15	Stift / Pin	2x 4400138		
16	Schild / Plate	1x 577189001		
17	Schraube / Screw	3x 670185416		
18	Schraube / Screw	16x 670968401	20x 670968401	
19a	Deckel / Cover O-Ring Buna-N	1x 640888031	1x 670130406	1x 670130407
19b	Deckel / Cover O-Ring VITON	1x 670130418	1x 670130416	1x 670130417
20	Verschluss / Plug	1x 006505002		
21	Schraube / Screw	2x 002046400	2x 007558400	2x 014168400
22	Stift / Pin	1x 4400162		
23	Plombenhalter / Seal Holder	1x 577197001		
24	Schraube / Screw	1x 4100497		
25	Plombe / Seal	1x 14604		
26	Kabelverschraubung / Cable Fitting	2x 7030102		
27	Bolzen / Stud	8x 640256001	8x 642362407	
28	Mutter / Nut	8x 006618002	8x 006399002	
29	Dichtung / Gasket	2x 003958001	2x 003959001	2x 501826001
30	Lager Deckel / Bearing Cover	1x 014018001	-	-
31	Unterlegscheibe / Spacer	1x 512672002	-	-
32	Lager / Bearing	1x 070360002	-	-
33	Lagerscheiben / Thrust Bearing Plate	2x 001111001	-	-
34	Lager / Bearing	1x 006019001	-	-
35	Stellring / Collar	1x 519629001	-	-
36	Feder / Spring	1x 001094002	-	-
37	Kurvenscheibe / Cam	1x 519630001	-	-
38	Schraube / Screw	2x 008338400	-	-
39	Passhülse / Dowel	2x 003628001	-	-
40	Schraube / Screw	1x 643273402	-	-
41	Dichtung / Gasket	1x 011139001	-	-
42	Verschluss / Plug	1x 011140001	-	-
43	Sicherung / Collar	1x 001096001	-	-

Table 4: Spare Parts Numbers

7 Warranty and Service

In addition to the dealer's legal warranty in the purchase agreement we grant the end user a warranty for this device on the following conditions:

1. The warranty period is twelve months and starts at the time of delivery of the device by F. A. Sening. With electronic products the registration form must have been received at Sening fully completed and signed by the installation department.
2. The warranty includes the rectification of all device damage or defects occurring within the warranty period and which can be shown to be due to material or production faults.

The warranty does not include:

- slight deviations from the intended quality which are insignificant for the value or usefulness of the device,
 - damage or defects due to connection other than as specified, improper handling or non-observance of the installation guidelines and instructions for use,
 - damage caused by the chemical and electrochemical effects of water or other liquids, electrical or electromagnetic influences and or caused by abnormal ambient conditions in general,
 - damage due to external effects such as damage in shipment, damage due to shock or impact, the effects of the weather or other natural phenomena.
3. The right to claim under warranty becomes invalid if repairs or tampering have been carried out by persons not authorised by us for the work or if our devices have been fitted with supplementary parts or accessories which are not suitable for our devices and not released by us for that purpose.
 4. The warranty service is carried out, free of charge and according to our choice, by repairing defective parts or replacing them by perfect parts. Replaced parts become our property.
 5. During the first six months of the warranty period the warranty service is carried out without billing. Thereafter, travelling times, travelling costs and working time for the service staff and any transport costs occurred are billed or not reimbursed.
 6. Work under warranty does not imply any extension of the warranty period nor does it initiate a further period of warranty. The warranty period for installed replacement parts terminates with the end of the warranty period for the complete device.
 7. Any more extensive or additional claims, in particular those for compensation of damages or consequential damages occurred outside of the device are expressly excluded, provided no liability is deemed mandatory in law.

8 Address and contact

Important Note

All explanations and technical details given in this documentation have been produced and edited by the author with the greatest care. However the possibility of errors cannot be completely eliminated. **Smith Meter GmbH - F. A. Sening** would be very grateful for the notification of any errors found.

Our service department would be pleased to advise and help you.
They can be reached under:

FMCTechnologies

Measurement Solutions

F. A. Sening GmbH

Regentstrasse 1
D-25474 Ellerbek

Tel.: +49 (0) 4101 304 - 0 (Switchboard)

Fax: +49 (0) 4101 304 - 152 (Service)

Fax: +49 (0) 4101 304 - 133 (Sales)

Fax: +49 (0) 4101 304 - 255 (Customer Service)

E-mail: info.ellerbek@intl.fmcti.com

Web: www.fmctechnologies.com/measurementsolutions

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Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin



Innerstaatliche Bauartzulassung

Type-approval certificate under German law

Zulassungsinhaber: Smith Meter GmbH
Issued to: Regentstraße
25474 Ellerbek
Deutschland

Rechtsbezug: § 13 des Gesetzes über das Meß- und Eichwesen (Eichgesetz)
In accordance with: vom 23. März 1992 (BGBl. I S. 711)

Bauart: Treibschieberzähler
In respect of:

Zulassungszeichen:

5.243
00.45

Approval mark:

Gültig bis: unbefristet
Valid until:

Anzahl der Seiten: 6
Number of pages:

Geschäftszeichen: 1.32 - 00038565
Reference No.:

Im Auftrag
By order

Braunschweig, 2000-06-07

Siegel
Seal




Dr. Michael Rinker

394 00 c-1b

Merkmale zur Bauart sowie ggf. inhaltliche Beschränkungen, Auflagen und Bedingungen sind in der Anlage festgelegt, die Bestandteil der innerstaatlichen Bauartzulassung ist. Hinweise und eine Rechtsbehelfsbelehrung befinden sich auf der ersten Seite der Anlage.

Characteristics of the instrument type approved, restrictions as to the contents, special conditions and approval conditions, if any, are set out in the Annex which forms an integral part of the type-approval certificate under German law. For notes and information on legal remedies, see first page of the Annex.

Anlage zur innerstaatlichen Bauartzulassung

Annex to type-approval certificate under German law

vom 2000-06-7, Zulassungszeichen:

5.243

Seite 2 von 6 Seiten

dated 2000-06-7, Approval mark:

00.45

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Vorschriften

Für die Meßgeräte der zugelassenen Bauart gelten folgende Vorschriften:

- Allgemeine Vorschriften der Eichordnung (EO-AV) vom 12. August 1988 (BGBl. I S. 1657), zuletzt geändert durch die Zweite Verordnung zur Änderung der Eichordnung vom 21. Juni 1994 (BGBl. I S. 1293)
- Anlage 5 zur Eichordnung vom 12. August 1988, zuletzt geändert durch die Zweite Verordnung zur Änderung der Eichordnung vom 21. Juni 1994 (BGBl. I S. 1293)

und die PTB-Anforderung Volumenmeßgeräte für strömende Flüssigkeiten außer Wasser (PTB-A 5), Ausg. 5.94.

1. Bauartbeschreibung

1.1 Gegenstand der Zulassung

1.1.1 Meßwerk

Treibrchieberzähler mit elektrischem Abgriff der Zählimpulse. Der Gesamtaufbau des Meßwerkes ist aus der Zeichnung Nr. 46-W&M-001.0 vom 19.04.2000 ersichtlich.

Hersteller: Smith Meter GmbH, Ellerbek
Typenbezeichnung des Herstellers: T-11-J, T-20-J, T-40-J
ST-40-J, ST-75-J, ST-160-J

Hinweise

Innerstaatliche Bauartzulassungen ohne Unterschrift und Siegel haben keine Gültigkeit. Diese innerstaatliche Bauartzulassung darf nur unverändert weiterverbreitet werden. Auszüge bedürfen der Genehmigung der Physikalisch-Technischen Bundesanstalt.

Note

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Rechtsbehelfsbelehrung

Gegen diesen Bescheid kann innerhalb eines Monats nach Bekanntgabe schriftlich oder zur Niederschrift Widerspruch bei der Physikalisch-Technischen Bundesanstalt unter einer der nachstehenden Adressen eingelegt werden:

Information on legal remedies available

Objection may be made to this notification within one month of its receipt either in writing or orally recorded, to the Physikalisch-Technische Bundesanstalt at one of the following addresses:

Physikalisch-Technische Bundesanstalt

Bundesallee 100
D-38116 Braunschweig

Abbestraße 2-12
D-10587 Berlin

Fürstenwalder Damm 388
D-12587 Berlin

Anlage zur innerstaatlichen Bauartzulassung

Annex to type-approval certificate under German law

vom 2000-06-7, Zulassungszeichen:
dated 2000-06-7, Approval mark:

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1.1.2 Impulsgeber

Der Impulsgeber ist unter dem Zulassungszeichen 5.552 / 97.18 für den eichpflichtigen Verkehr zugelassen.

1.1.3 Elektronisches Zählwerk

Es darf jedes zur Innerstaatlichen Eichung zugelassene elektronische Zählwerk verwendet werden.

1.2 Meßtechnische Daten

1.2.1 Meßgut

Flüssigkeiten (außer nicht-newtonschen Flüssigkeiten und flüssigen Lebensmitteln), deren dynamische Viskosität in einem der folgenden Bereiche liegt:

0,3 mPa's	bis	17 mPa's
8 mPa's	bis	350 mPa's
25 mPa's	bis	1000 mPa's
300 mPa's	bis	3000 mPa's

1.2.2 Kenndaten

Typen- bezeichnung	Nenn- weite mm	kleinster Durchfluß L/min	größter Durchfluß L/min	Impuls- wertigkeit L	zyklisches Voiumen L	Nenn- druck bar
T-11-J	50	10	400	0,0664	1,268	10, 16
T-20-J	80	60	1000	0,1188	2,258	10, 16
T-40-J	100	50	1600	0,1809	3,449	5, 10, 16
ST-40-J	50	10	400	0,0664	1,268	10, 16, 25
ST-75-J	65	60	1000	0,1188	2,258	10, 16, 25
ST-160-J	80	50	1600	0,1809	3,449	10, 16, 25

1.2.3 Temperaturbereich

-35 °C	bis	25 °C
-10 °C	bis	50 °C
20 °C	bis	80 °C
50 °C	bis	110°C
110°C	bis	170°C
140°C	bis	200°C
170°C	bis	230°C
200°C	bis	260°C

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1.2.4 Kleinste Meßmenge

Die kleinste Meßmenge darf nicht kleiner als das Volumen von 200 Ziffernschritten des verwendeten Zählwerks sein.

2 Zulassungsunterlagen

Die Geräte müssen in Aufbau und Ausführung folgenden Unterlagen entsprechen:

Zeichnungsnr.	Datum	Benennung
46-W&M-001.0	19.04.2000	Meßwerk mit integrierten Impulsgebern....
46-W&M-002.0	19.04.2000	Typenschild

3 Bezeichnung und Aufschriften

Die Aufschriften entsprechen dem Typenschild auf der Zeichnung Nr. 46-W&M-002.0

4 Sicherungsstempelstellen

Die Plombierung des Meßwerks erfolgt gemäß Zeichnung Nr. 46-W&M-001.0. Bei Einbau in eine Meßanlage ist das Meßwerk gegen Ausbau zu sichern.

5 Eichtechnische Prüfung

Die meßtechnische Prüfung erfolgt gemäß den „Richtlinien für die Eichung und Prüfung von Meßgeräten für strömende Flüssigkeiten außer Wasser“ (EA 5) in der Fassung Entwurf September 1997.

Anlage zur innerstaatlichen Bauartzulassung

Annex to type-approval certificate under German law

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dated 2000-06-7, Approval mark:

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1.2.4 Kleinste Meßmenge

Die kleinste Meßmenge darf nicht kleiner als das Volumen von 200 Zifferschritten des verwendeten Zählwerks sein.

2 Zulassungsunterlagen

Die Geräte müssen in Aufbau und Ausführung folgenden Unterlagen entsprechen:

Zeichnungsnr.	Datum	Benennung
46-W&M-001.0	19.04.2000	Meßwerk mit integrierten Impulsgebern....
46-W&M-002.0	19.04.2000	Typenschild

3 Bezeichnung und Aufschriften

Die Aufschriften entsprechen dem Typenschild auf der Zeichnung Nr. 46-W&M-002.0

4 Sicherungsstempelstellen

Die Plombierung des Meßwerks erfolgt gemäß Zeichnung Nr. 46-W&M-001.0. Bei Einbau in eine Meßanlage ist das Meßwerk gegen Ausbau zu sichern.

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Anlage zur innerstaatlichen Bauartzulassung

Annex to type-approval certificate under German law

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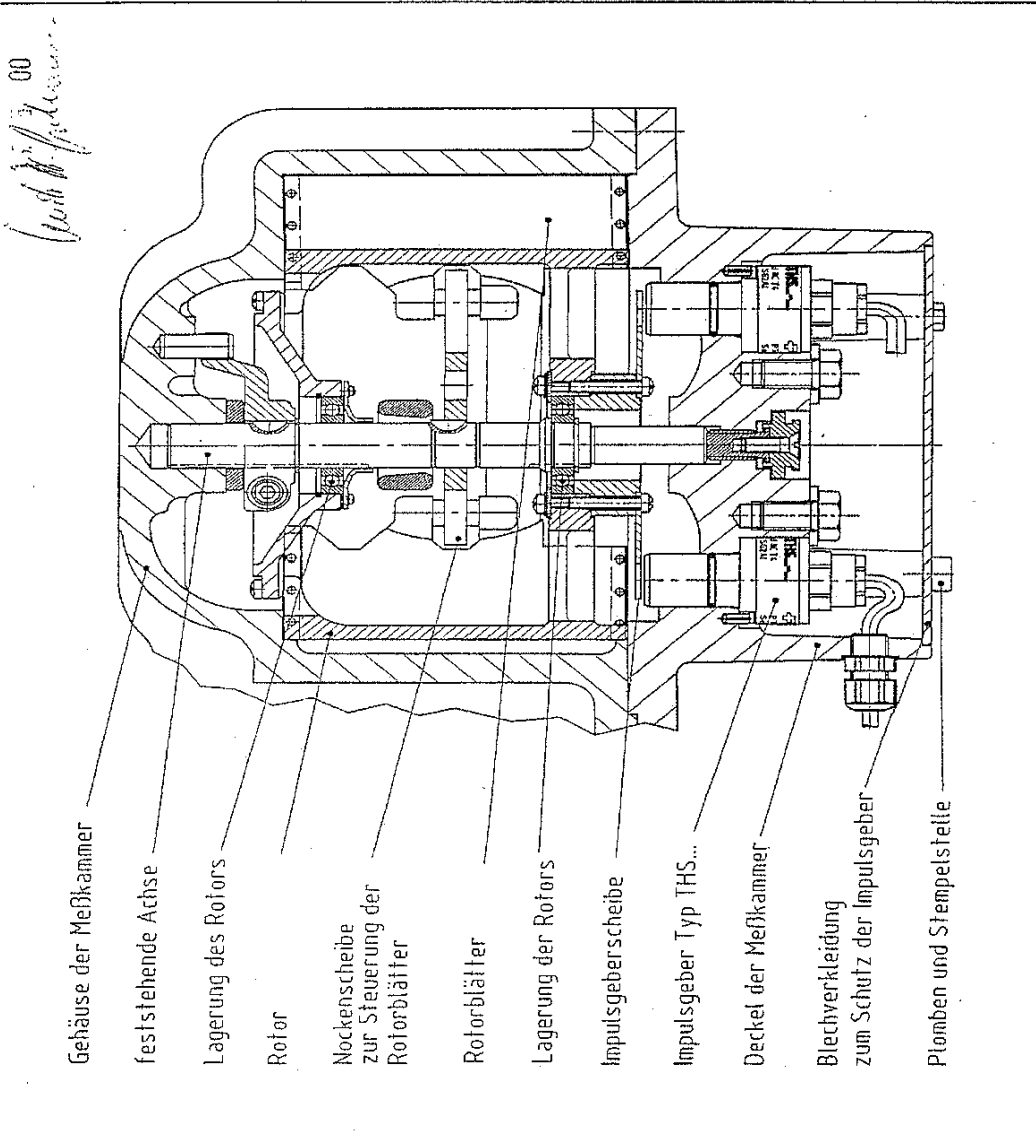
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Smith Meter GmbH
An FMC EnergySystems business
Regentstraße 1 - 25474 Ellerbek
Tel. 04101/304-0



Schutzvermerk nach DIN 34 beachten

Meßwerk mit integrierten
Impulsgebern
Aufbau T-11-J, T-20-J, T-40-J
ST-40-J, ST-75-J, ST-160-J

FMC
EnergySystems

Smith Meter GmbH
Ellerbek, Germany

Geänd. am :	Datum :	Name :
	19.04.2000	R. Drews
	Zeichnungs-Nr.	Rev.
	46-W&M-001.0	

Anlage zur innerstaatlichen Bauartzulassung

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vom 2000-06-7, Zulassungszeichen:
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Smith Meter GmbH
An FMC EnergySystems business
Regenstraße 1 - 25474 Ellerbek
Tel. 04107/304-0

W. Drews

Type: Modell: <input type="text"/>		PTB X.XXX
Zähler Nr. <input type="text"/>		YY.YY
Messkammerinhalt <input type="text"/> l	Baujahr <input type="text"/>	
Kleinste Abgabemenge <input type="text"/> l	DN <input type="text"/>	
Durchfluss Q _{min.} <input type="text"/> l/min	Q _{max.} <input type="text"/> l/min	
Dyn. Viskosität min. <input type="text"/> mPa·s	max. <input type="text"/> mPa·s	
Betriebstemperatur T _{min.} <input type="text"/> °C	T _{max.} <input type="text"/> °C	
Betriebsüberdruck P _{min.} <input type="text"/> bar	P _{max.} <input type="text"/> bar	
Impulswertigkeit <input type="text"/> Imp/l		
Eingebaute Impulsgeber: THS- <input type="text"/>		
EEx d IIC T4	Kanalanzahl: <input type="text"/>	
PTB Nr.: Ex-96.D.1010	Type: SG2Al	
Smith Meter GmbH Ellerbek, Germany		
Schutzvermerk nach DIN 34 berichten Angaben die nicht den eichpflichtigen Verkehr betreffen können geändert oder ergänzt werden.		
Typenschild T-11-J, T-20-J, T-40-J ST-40-J, ST-75-J, ST-160-J		Smith Meter GmbH Ellerbek, Germany Geänd. am : Datum : 19.04.2000 Name : R.Drews Zeichnungs-Nr. 46-W&M-002.0 Rev.

EG - Konformitätserklärung





EC - Declaration of Conformity

im Sinne der EG-Richtlinie über explosionsgeschützte Geräte
nach 94/9/EG (ATEX)
as defined by non-electrical explosion protected Equipment Directive 94/9/EC

Der Hersteller / *The Manufacturer*

Smith Meter GmbH, Regentstraße 1, D-25474 Ellerbek

erklärt hiermit, dass das (die) explosionsgeschützte(n) Gerät(e)
herewith we declare, that the explosion protected Equipment

Produktbezeichnung: <i>Product:</i>	Zündschutzart: <i>Type of protection:</i>	EG – Baumusterbescheinigung <i>EC – Type Test Approval</i>
Device: PMHS-AB-2 Type: SG3/45	 II 2 G EEx d IIC T4	PTB 03 ATEX 1032
Device: Magnetic Switch Type: SG5/43 – MS 1	 II 2 G EEx d IIC T4	
Device: THS-J / -O Type: SG2AL	 II 2 G EEx d IIC T4	
Device: PT100 Type: PT100SG4/43 -...	 II 2 G EEx d IIC T4	

einschließlich aller Ergänzungen / including all supplements

in der gelieferten Ausführung den folgenden Sicherheitsanforderungen entspricht (entsprechen):
Corresponds to following safety requirements in the delivered implementation:

Grundlegende Normen / CENELEC: EN 50 014: 1997 + A1 + A2, EN 50 018: 2000
Basic norms:

Angewandte harmonisierte Normen, insbesondere:
Applied harmonized standards, in particular:

Andere angewandte Bestimmungen / EG-Richtlinien:
Other applied appointments / EC-Directives:


Benannte Stelle / Produktionsüberwachung: Physikalisch-Technische Bundesanstalt
Notified Body Production control PTB 99 ATEX Q001; CE 0102

Prüfungen/Überwachung/Kontrollen während der Fertigung: Hersteller
Examination/inspection/tests during manufacturing: *Manufacturer*

Die zugehörige Betriebsanleitung enthält wichtige sicherheitstechnische Hinweise und Vorschriften für die Aufstellung, Inbetriebnahme, Wartung und Instandhaltung der (s) Gerät(es).
The appropriate operator's manual contains important safety technical notes and regulations for the installation, placing into operation, maintenance and maintenance of the equipment.

Ort und Datum: Ellerbek, den 30.11.2005
Location and date

Geschäftsführer
General Manager



(H. Short)

The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect.

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