



**TURBINE FLOW METER VTR**

## FLOW METERS SERIES VTR

Turbine flow meters are precise and reliable measuring instruments, designed for a wide range of applications. Even under difficult application conditions in the oil, petrochemical and chemical industries as well as in other industrial sectors, the sensors of the VTR series can be installed. The range of nominal widths spans from 10 mm to 500 mm for the flange version as well as from 10 mm to 50 mm for the version with threaded connection. All VTR flow meters are individually calibrated. A wide range of electronic evaluation and display devices is available.

- **Large choice of nominal widths between DN 10 and DN 500**
- **Designed completely in stainless steel**
- **Wide temperature and pressure range**
- **Large measurement range from 110 l/h to 4,500 m<sup>3</sup>/h**

## FUNCTIONING PRINCIPLE

The basic system of the VTR Series consists of a rotor, the housing and a measurement pick-up. The flow of the fluid sets the rotor in motion. If the magnetic field lines of the pick-up system are intersected by the rotor blades, the movement of the rotor is detected. Due to the specific internal diameter, the revolution of the turbine is directly proportional to the flow. The turbine revolution is detected by an external sensor. The output signal is a flow-proportional frequency (pulse sequence). The further processing of the signal can be carried out by a separate evaluation and display device.

## SPECIFICATIONS

<b>Response time</b>	< 50 ms for sensors up to DN 40 – longer response times for larger nominal diameters and therefore larger rotor mass
<b>Filter requirements</b>	For safe operation of the flow meter, we suggest filtration requirements in order to avoid damages due to contamination. We would be pleased to provide you with details.
<b>Cable connections</b>	A 4- or 2-connection shielded cable with PUR insulation is recommended. Cross-section: 0.5 mm <sup>2</sup>
<b>Frequency</b>	3 up to 1,000 Hz
<b>Electrical connection</b>	VSE standard plug
<b>Mechanical connections</b>	Flange appropriate ANSI or DIN; other specifications on request Threading: up to DN 50, connections with NPT or pipe threads (BSP)
<b>Maximum pressure</b>	Threaded connections: maximum 250 bar; Flange connections: according to flange specifications
<b>Linearity</b>	+/- 0.5 %
<b>Repeatability</b>	+/- 0.05 %
<b>Pressure drop</b>	280 mbar at 100 % of the measurement range (density 1, viscosity 1 cSt)
<b>Temperature range</b>	- 40°C to + 120°C (- 40°F to + 248°F)

All values are valid for viscosities up to 5 cSt. Higher viscosities on request.



### DN 10-50

Outer thread G 3/8 - G 2  
or NPT 3/8" - NPT 2"



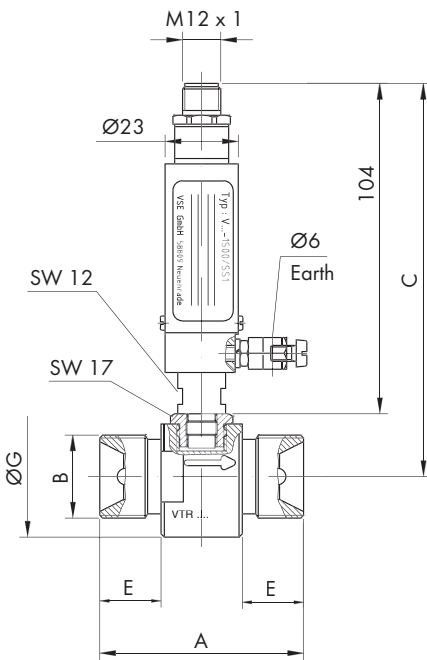
### DN 10-500

Flange design according to DIN,  
British Standard or ASA 150 RF

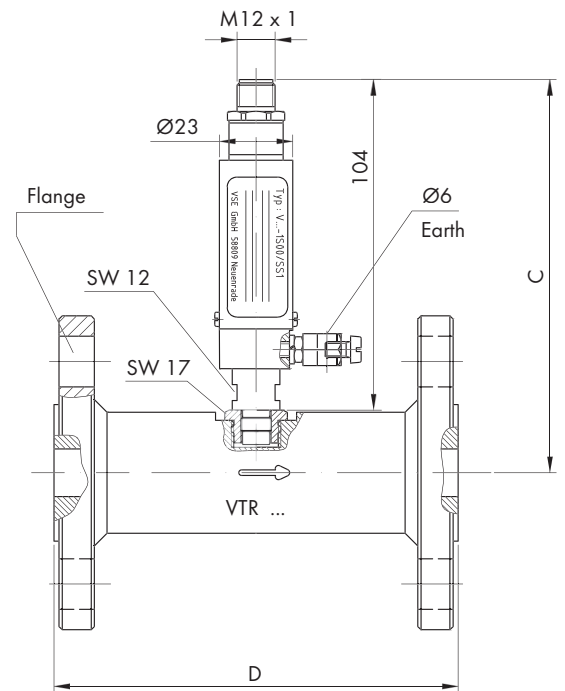
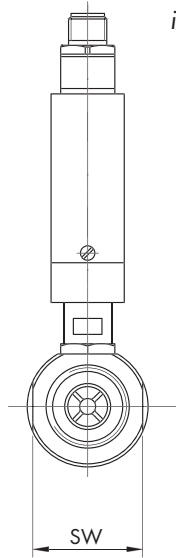
## MATERIALS

- Housing: Stainless steel 1.4301, optional 1.4401
- Flange: Steel 1.0432, optional stainless steel 1.4301 or 1.4401
- Rotor: Up to VTR 1020: stainless steel 1.4016,  
VTR 1025 and higher: stainless steel with 1.75 % to 2.25 % molybdenum
- Bearings: Tungsten-Carbide
- Ball bearing: Stainless steel

## DIMENSIONS



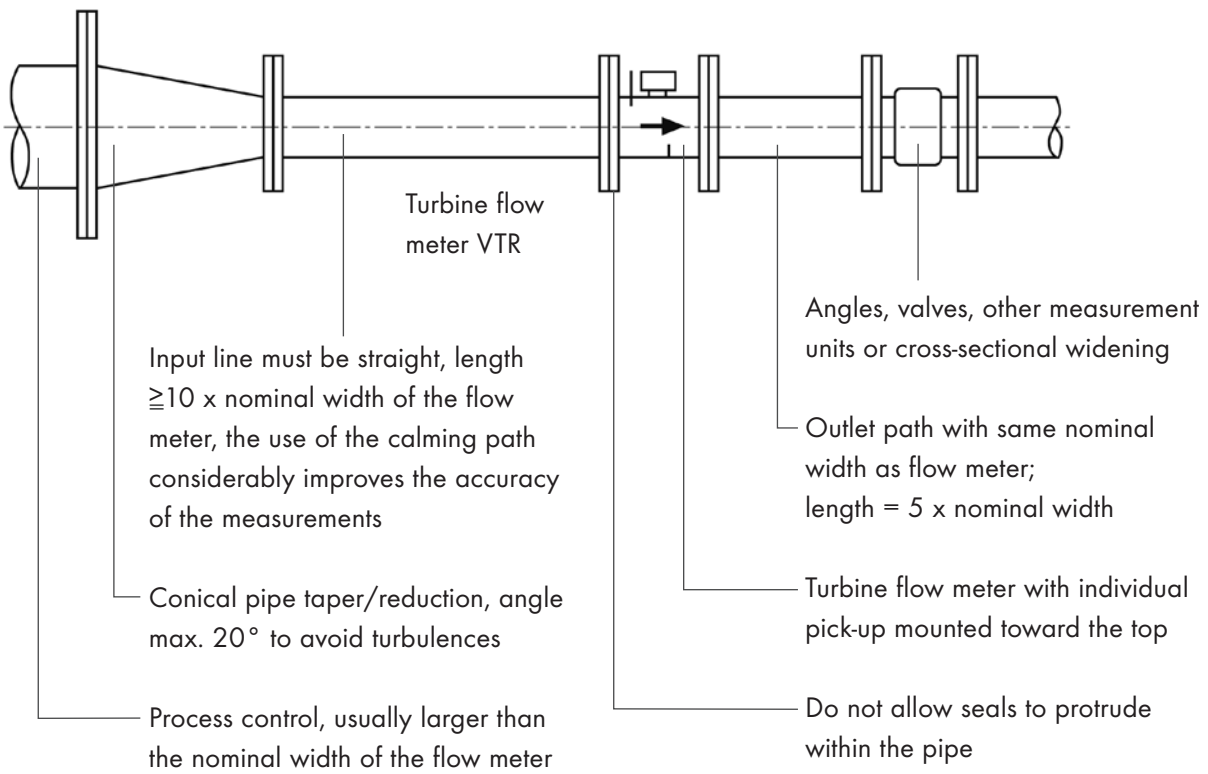
Dimensions are specified in mm



A	E	B	ØG	SW	C	TYPE	DN	D	m <sup>3</sup> /h	l/min.	Imp./l
62	19	G 1/2	33	30	121	VTR 1010	10	-	0.11 - 1.1	1.8 - 18	3000
64	19	G 3/4	38	35	123	VTR 1015-S	15	127	0.22 - 2.2	3.6 - 36	1700
64	19	G 3/4	38	35	123	VTR 1015	15	127	0.4 - 4	6.7 - 67	1100
83	22	G 3/4	41	38	125	VTR 1020	20	140	0.8 - 8	13 - 130	400
89	23	G 1	47	44	128	VTR 1025	25	152	1.6 - 16	27 - 270	190
115	28	G 1 1/2	60	52.5	134	VTR 1040	40	178	3.4 - 34	57 - 570	60
133	29.5	G 2	70	-	139	VTR 1050	50	197	6.8 - 68	113 - 1130	24

Further sizes and versions are available on request. Each turbine flow meter is individually calibrated. This individual pulse count/l (K-Factor) is indicated on the type plate.

## INSTALLATION OF THE VTR FLOW METER





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