

VTX : A new Vortex generation for liquids, gas and steam

Vortex Meters Series VTX2

Designed for process measurement :

- extremely robust
- excellent metrological characteristics
- outstanding compensation of vibrations
- insensitive against pulsations, pressure pushes and temperature shocks
- with intelligent electronics
- simply operated transmitters with faster signal treatment and diagnosis statistics
- 2-wire technique



Measuring principle

When a fluid (liquid, gas or steam) meets an obstructive body with a certain minimum flow velocity the fluid can only follow the contour of this body up to a particular point, after which it curls up to form a vortex. This happens in turn on either side of the bluff body.

The vortices (eddies) travel downstream, forming the "Karman Vortex Street". The Vortex meter series VTX is equipped with a trapezoidal bluff body which induces a precise detachment of the vortices with high repeatability. Liquids, gases and steam can be measured equally well.

Due to the special design of the bluff body the frequency of the vortices is proportional to the flow velocity and independent from pressure, temperature, density and viscosity.

The vortices, detaching reciprocally from the bluff body, engender local changes in velocity and pressure, which are detected by a sensor and converted to a signal (4-20mA or NAMUR pulses) by a transmitter, equipped with an auto-adaptive and microprocessor-driven signal processing.



Technical specifications

Accuracy	Gas / steam : $\pm 0,9$ % of measured value Liquids : $\pm 0,6$ % of measured value
Repeatability	$\pm 0,15$ % of read value
Operating temperature	-40°C to +270 °C standard -200 °C to +450 °C special design
Ambient temperature	-40°C to +70 °C
Process connection	Sandwich: DN 15 to 300; PN 10 to 40; Class 150 and 300. Flange: DN 15 to 300; PN 40; Class 150 and 300. Models up to PN 100 on request
Power supply	14 - 30 VDC, 2 -wire – technology Cable fitting M20x1,5
Outputs	4-20 mA, HART ® or pulses (without HART ®) Option : pulses NAMUR output (scalable)
Materials	Bluff body: 1.4404 Housing: 1.4404 Gaskets: Viton, Graphite Electronic housing: casted aluminium
Safety class	II 2G EEx ia IIC T6 II 2G EEx d [ib] IIC T4 (only with output 4-20mA)
EG-declaration of conformity	acc. EMV-guideline 89/336/EWG DIN EN 61000-6-2 / DIN EN 61000-6-3 and NAMUR NE 21

Ranges

DN	Gas / Steam [m³/h]		Liquids [m³/h]	
	Qmin	Qmax	Qmin	Qmax
mm				
15	2	25	0,4	8
25	5	130	1,0	20
40	10	330	2,5	50
50	15	560	4	80
80	40	1600	6	180
100	60	2300	10	300
150	130	5300	20	600
200	250	9400	40	1200
250	400	16000	80	1800
300	500	20000	120	2500

Nominal size > DN 300
on request available

Benefits of the Vortex Meter Series VTX

A highly reliable sensor ...

- excellent metrological characteristics
- outstanding compensation of vibrations
- insensitively against pulsations, pressure pushes and temperature shocks
- high fluid temperature capability
- rugged design and service-free
- with a piezoelectric sensor
- no thin diaphragms
- high flexibility in applications
- at change of the sensor no recalibration necessary

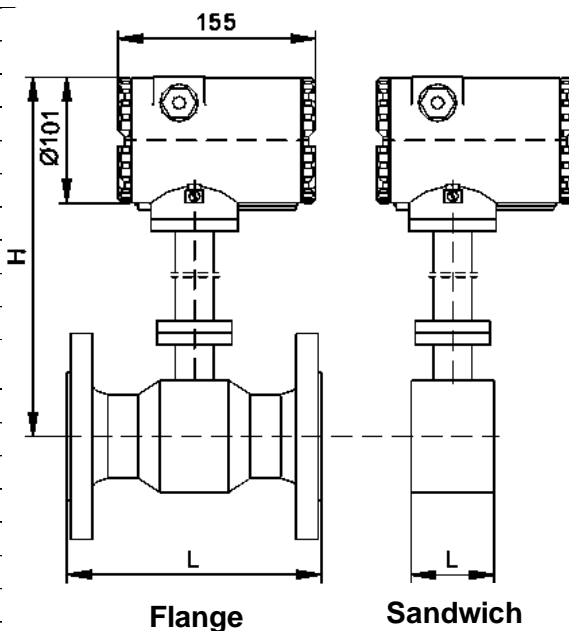
Main dimensions

Sandwich-Version

DN	L	H
15	65	335
25	65	330
40	65	340
50	65	340
80	65	355
100	65	370
150	90	395
200	120	425
250	140	440
300	160	465

Flange-Version

DN	L	H
15	150	335
25	150	330
40	150	340
50	150	340
80	200	355
100	200	370
150	200	395
200	300	425
250	400	440
300	450	465



... and modern electronics with communication module

- with auto - adaptive and digital signal treatment
- in 2 - wire - technology
- with 3 simultaneously independently of each other useful signals (analogue, digital and pulses)
- 4 - 20 mA - output or pulses (scaled for remote counter or unscaled with vortex frequency)
- With local display 8 digits
- touch keys for configuration and easy service
- modern, user-friendly software tool available
- with HART - Protocol

Connecting diagram

