

## Turbine flow sensors for liquids, series Turbotron

### DN 25 ... compact and reliable!

#### Turbotron VT 25 with pulse output

The turbine flow sensors of the product line Turbotron are sensors for flow rate measurement or dosing applications for liquids. Through its especially compact type, its very wide measuring range and its convincing precision of measurement, it has an almost unlimited application.

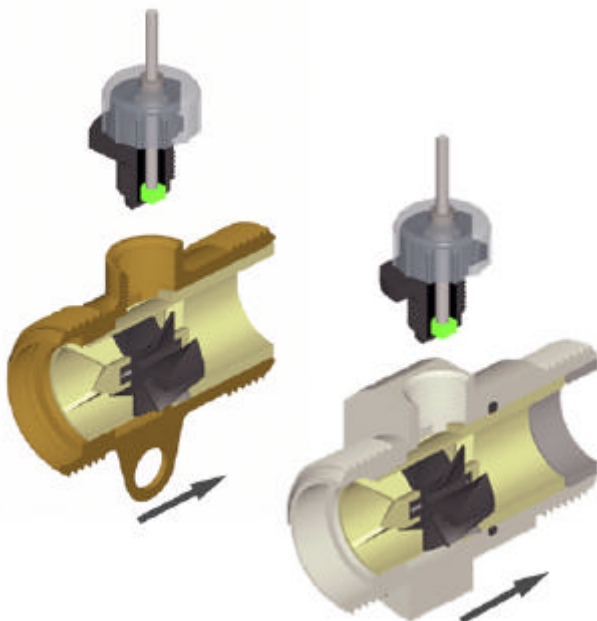
#### Convincing advantages

Especially suitable and proven in numerous serial applications through

- fixed pulse rate, thus practically no serial deviation
- wide measurement range 1:45, universally usable
- high-quality sapphire/PA bearing, low abrasion and extremely long running period
- any position, can be versatile installed
- available materials: plastic, brass and stainless steel, thus suitable for numerous applications
- plug adapter or fixed connecting cable.



#### Design and function



Schematic representation

The liquid which flows through the flow sensor, makes the turbine wheel rotate. The high-quality sapphire-bearings and the low rotation rate provide the turbine with an exceptional life time.

The rotation of the rotor is now converted into an electrical pulsed signal (frequency):

- VTH and VTM have rotors which are equipped with magnets. A Hall-sensor recognizes the rotation of the rotor.
- The rotor of VTI is equipped with stainless steel pins. An inductive proximity switch detects the rotation of the rotor.

In both cases, a flow-proportional frequency signal (square wave signal) is available.

## Technical data

	VTH economy-priced type for standard and serial applications, fixed connection cable		VTM higher pressure, plug connection		VTI magnet-free rotor, plug connection	
Material, pipe section	brass	plastic PP	brass	stainless steel	brass	plastic PP
Measurement range	4...160 l/min, max. 80 l/min with continuous operation					
Accuracy	± 3 % of measured value					
Reproducibility	± 0,5 %					
Signal output from	< 1 l/min					
max. medium temperature	85 °C	80 °C at 2 bar 60 °C at 5 bar 30 °C at 10 bar	85 °C		60 °C	60 °C at 5 bar 30 °C at 10 bar
Nominal pressure	PN10		PN50		PN10	
Diameter	DN 25					
Process connection	1¼" BSP male thread*	1¼" BSP male thread	1¼" BSP male thread*			1¼" BSP male thread
Sensor	Hall effect sensor		Hall effect sensor		inductive proximity switch	
Output signal - pulse rate / K-factor - resolution - signal shape  - signal current	65 pulses/liter 15 ml/pulse square wave signal NPN open collector max. 20 mA				65 pulses/liter 15 ml/pulse square wave signal PNP open collector max. 200 mA	
Electrical connection	2 m PVC cable, screened (T <sub>max</sub> = 75 °C)		4-pin plug connector M12x1			
Power supply	4,5...24 VDC				10...30 VDC	
Type of protection	IP 54					
Max. size of particles in the medium	< 0,63 mm					
Option						
Screen filter	Flat filter, mesh size 0.63 mm					

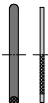
\* supplementary screwed connection required!

## Materials

Type	VTH 25 MS-180	VTH 25 K6-180	VTM 25 MS-180	VTM 25V A-180	VTI 25 MS-180	VTI 25 K6-180
Pipe section	Brass CuZn36Pb2As CW602N	PP	Brass CuZn36Pb2As CW602N	Stainless steel 1.4571	Brass CuZn36Pb2As CW602N	PP
Turbine cage	PPO Noryl GFN 3V 960					
Rotor	PPO Noryl GFN 2V 73701					
Rotor assembly	Magnets, Recoma 28 nickel-plated				Stainless steel 1.4305	
Shaft	Stainless steel 1.4436					
Bearing	Sapphire / PA					
Housing for Hall sensor	PPO Noryl GFN 1630 V		Brass CuZn36Pb2As CW602N	Stainless steel 1.4571	PA66-natur	
O-ring	72 NBR 872					
Screen filter (option) associated O ring	St. st. 1.4301 70 EPDM 281	–	Stainless steel 1.4301 70 EPDM 281			–
Spacer	–	PP	–	–	–	–

## Options

Please specify in the order code:

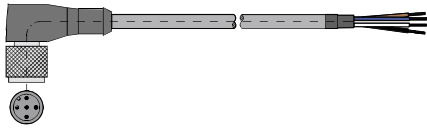
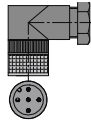
Screen filter with O-ring, in the inlet	
Turbine flow transmitter, analog output 4...20 mA,	Description see page 20
Turbine flow switch (contact)	Description see page 22 and 23

## Order code

Order number		VT2511	XX	XX	X	000	X*	X*
Material of pipe section	Brass		MS					
	Plastic PP		K6					
	Stainless steel		VA					
Type	VTH			HN				
	VTM			MN				
	VTI			IP				
Electrical connection	Cable (only VTH)				P			
	4 pin connector M12x1 (only VTI, VTM)				S			
Options								
Filter	Flat filter (only brass or stainless steel version)						F	
	none						0	
Electronics	incl. transducer 4...20 mA corresponds with 0...60 l/min corresponds with 0...100 l/min corresponds with 0...160 l/min							E F G
	Switching output VE							6
	Switching output VE with pulse output							7
	Version for local display TD 32500 (display must be ordered separately)							4

\* if you do not require one of the options, digits of the order code do not apply.

## Accessory

Accessory part	Length	Order code	
Connection cable for turbine flow sensor with cable socked M12x1 molded lead, 4 pin, screened, sheathing material PUR ( $T_{max} = 80^{\circ}\text{C}$ )	3 m 5 m 10 m	XVT 2053 XVT 2009 XVT 2070	
4 pin cable socket M12x1 angle type unassembled		VT 1331	

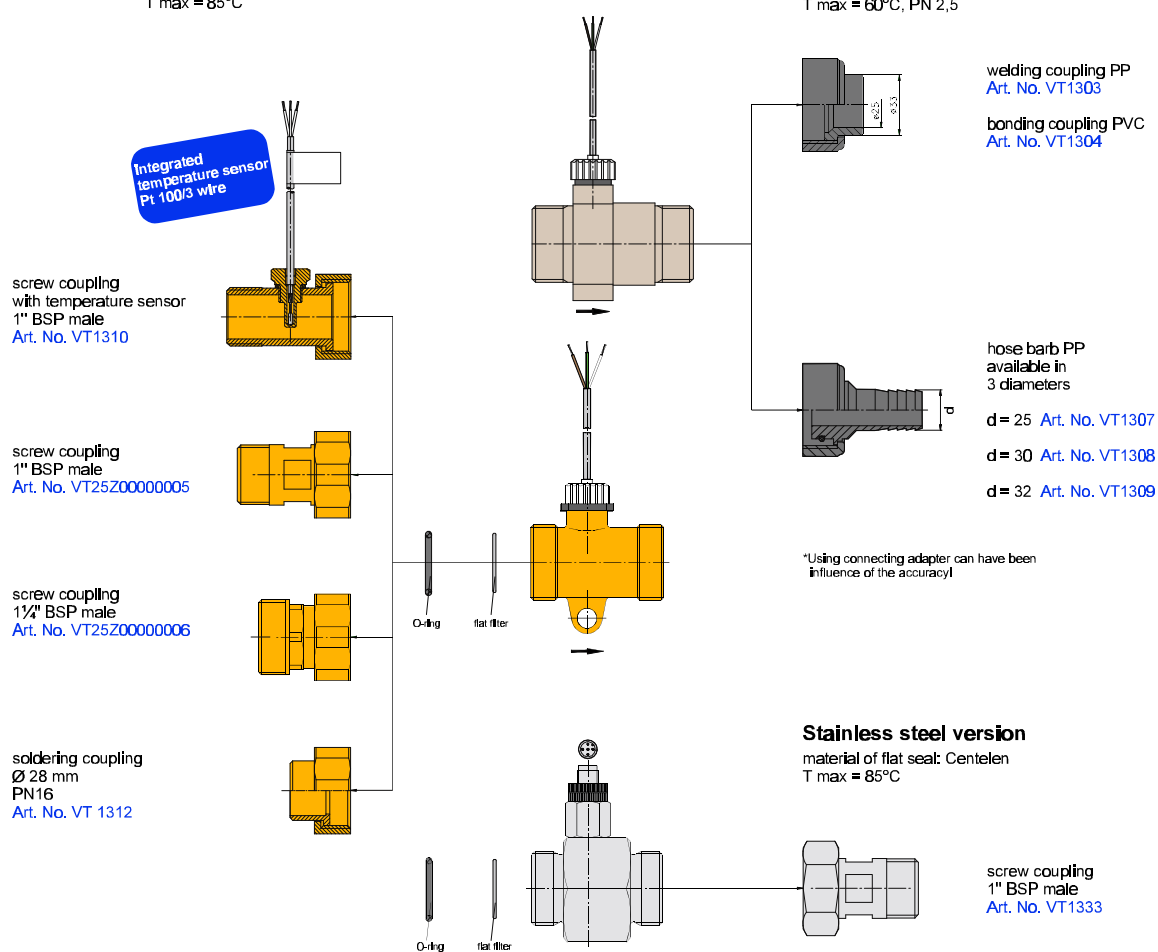
Connecting adapter, delivery piecemeal see following drawing.

### Brass version

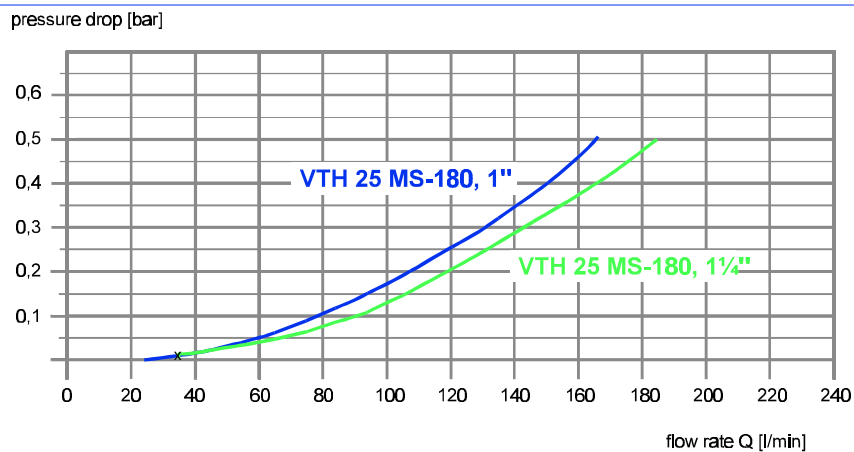
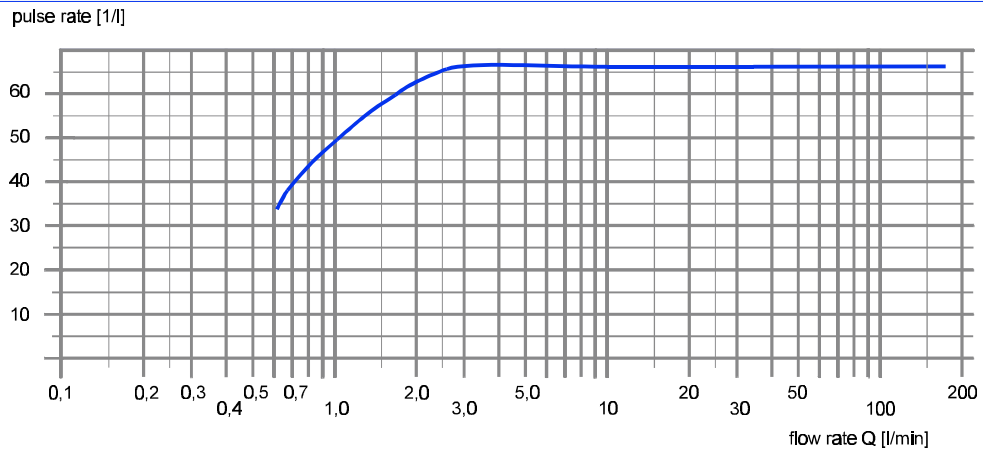
material of flat seal: Centelen  
 $T_{max} = 85^{\circ}\text{C}$

### plastic version\*

$T_{max} = 20^{\circ}\text{C}$ , PN10  
 $T_{max} = 60^{\circ}\text{C}$ , PN 2,5



## Characteristic curve and pressure drop



## Dimensions

