



# Turbine Flow Sensor

## Series VTR



# SIKA Turbine Flow Sensor Series VTR

## Extra robust, impressively precise

SIKA's VTR turbine flow sensor allows you to determine precisely, dependably and easily the flow rates of different liquids, such as water and other low viscosity liquids, under the most severe conditions.

The VTR sensor is particularly robust and, due to the wide range of nominal diameters and five different pick-ups, can cope with even the most severe conditions.

### How it works

The VTR sensor consists of the measuring turbine and a pick-up mounted on the outside.

The liquid flows into the measuring turbine and causes the rotor to move. Due to the characteristic internal diameter the speed of rotation is directly proportional to the flow rate.

The moving rotor blades are detected by the pick-up and this is converted into a pulsed signal proportional to the flow rate.

The characteristic variable is the K-factor (pulses per litre) which is specific to each measuring unit, is determined by calibration and specified on the name plate. A five point calibration report can be supplied on request.

### SIKA VTR for use in

- Cooling circuits
- Petrochemicals
- Chemical industry
- Water conditioning
- Plastics and hydraulics



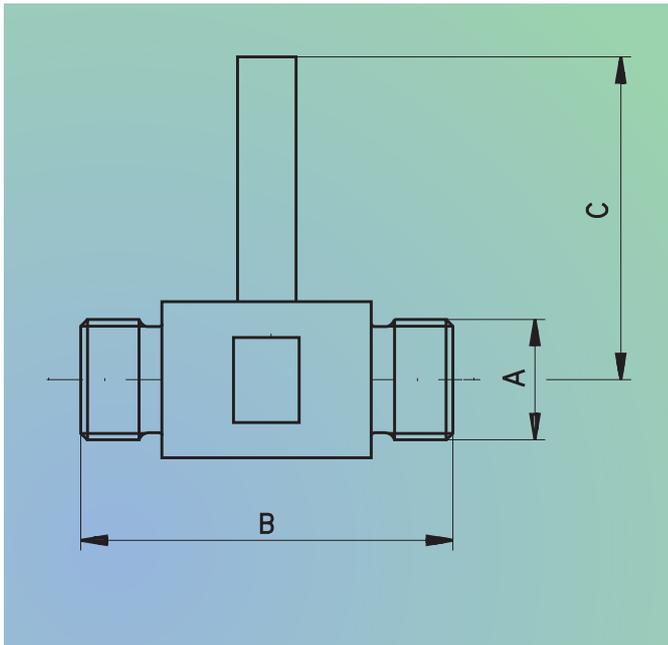
### Technical data measuring turbine

General data	
Linearity	± 0,5 % of measured value
Repeatability	± 0,05 % of measured value
Response time	< 50 ms up to DN 40; > 50 ms up to DN 300
Process-connections	Flange: DIN, ANSI, others on request, thread (up to DN 50 only): BSP (ISO 228) or NPT male thread
Pressure drop	280 mbar at 100% measurement range (density 1, viscosity 1 mm <sup>2</sup> /s)
Minimum pressure	2 x pressure drop of sensor
Maximum pressure	Threaded connection: 250 bar Flanged connection: corresponding to flange specification
Mediums temp.	Max. 150 °C
All figures specified apply to viscosities up to 5 cSt. Higher viscosities on request.	

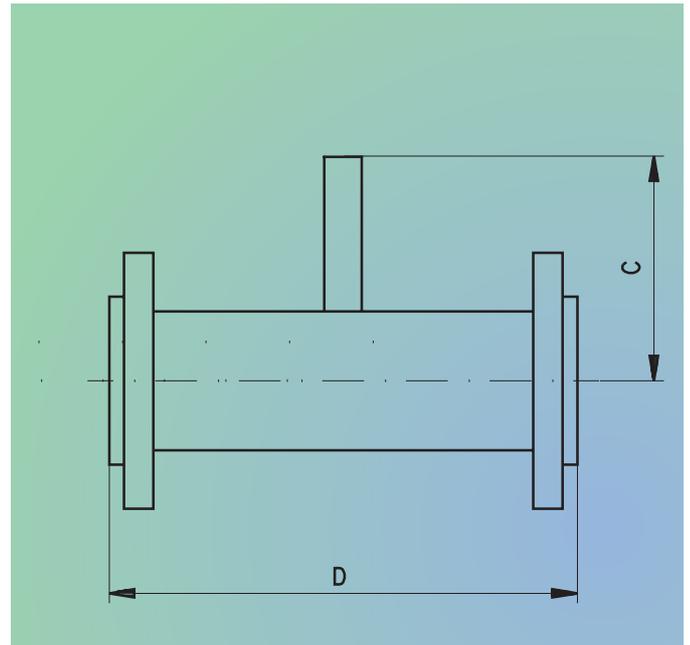
Materials	
Turbine body	AISI 316 stainless steel
Flange	AISI 105 carbon steel or AISI 316 stainless steel
Rotor	up to VTR 1020: stainless steel (18 % Cr 2 % Mo) VTR 1025-1200: stainless steel (20 % Cr 2 % Mo)
Bearing support	AISI 316 stainless steel
Rotor bearing	Tungsten carbide sleeve bearing, others (e.g. ball bearings) on request
Pick-up	VISPP: AISI 314 stainless steel VISPP-HT: AISI 316 stainless steel VSAPPS / VSAPPSHT: brass nickel-plated

## Two different measuring turbines available

Male threads DN 10...DN 50 (available from stock)



Flange version DN 10...DN 300



## Flow range and dimensions

Type	Size	Flow range		Dimensions			
	DN	[m <sup>3</sup> /h]	[l/min]	A (ISO 228)	B [mm]	C max [mm]	D [mm]
VTR 1010	10	0,11...1,1	1,8...18,3	G ½	64	150	127
VTR 1015-S	15	0,22...2,2	3,7...36,7	G ¾	64	150	127
VTR 1015	15	0,4...4	6,7...66,7	G ¾	64	150	127
VTR 1020	20	0,8...8	13,3...133	G ¾	83	150	140
VTR 1025	25	1,6...16	26,7...267	G 1	88	200	152
VTR 1040	40	3,4...34	56,7...567	G 1½	114	200	178
VTR 1050	50	6,8...68	113...1133	G 2	132	200	197
VTR 1075	75	13,5...135	225...2250	—	—	200	254
VTR 1100	100	27...270	450...4500	—	—	300	356
VTR 1150	150	55...550	917...9167	—	—	300	360
VTR 1200	200	110...1100	1833...18333	—	—	350	457
VTR 1250	250	190...1900	3173...31730	—	—	350	457
VTR 1300	300	270...2700	4509...45090	—	—	400	457

## TD 32 500 – local flow rate and total flow measuring instrument

- Delivery directly assembled on the turbine flow sensor
- Display switchable
  - flow rate
  - total flow (resettable)
  - fix total flow (not resettable)
  - optionally temperature
- In addition bargraph 0...100% to display flow rate, total flow (resettable) or optionally temperature
- Menu-driven programming via two light-reflex buttons
- Key lock for unintentional operation
- Robust stainless steel casing, with a closed glass window front
- Rotating case gives improved reading
- Display selection German, English or French
- Fixed connecting cable or plug connector M12x1



## The perfect team!



## Options

- Additional temperature display, input for resistance thermometer Pt 100/ 3-wires
- Analogue output 0/4... 20 mA or 0...10 V, freely adjustable, allocated to: flow rate, total flow (resettable) or optional temperature
- Two fast-switching alarm outputs min or max, allocation selective: flow rate, total flow (resettable) or optional temperature, a red LED signals clearly alarms
- Pulse output for flow rate, if required with frequency divider (pulse reduction)

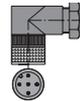
For further informations, technical datas and order codes please ask for our catalogue "Electronic instruments for flow rate and total flow measurement".

## Technical data pick-ups

Type	VISPP	VISPP-HT	VSAPPS	VSAPPSHT	VSANTD
	Inexpensive, fitted as standard	For high medium temperature	Square wave signal	Square wave signal, for high medium temperature	For TD 32500 see page 5
Output signal	Sinus	Sinus	Square wave NPN or PNP to choose		Square wave NPN
Measuring principle	inductive	inductive	magnetically biased Hall effect sensor		
Temperature range	-20...120 °C	-20...230 °C*	-20...85 °C	-20...100 °C	-20...85 °C
Power supply	—		10...30 VDC		via TD 32500
Protection class	IP 54		IP 67		
Electrical connection	Amphenol plug connection MS 10 SL 3102		4 pin plug connection M12x1		—
Cable socket	inclusive		Accessory		—

\* Notice the max. medium temperature of measuring turbine (150 °C).



Accessory	Length	Order code	
Connection cable for VSA... with cable socked M12x1 molded lead, 4 pin, screened, sheathing material PUR (T <sub>max</sub> = 80 °C)	3 m 5 m 10 m	XVT 2053 XVT 2009 XVT 2070	
4 pin cable socket M12x1 angle type unesssembled for VSA...		VT 1331	

# Our Production and Sales Range



Flow Sensors without moving Parts



Axial Turbine Flow Sensor



Flow Switches



Pressure Gauges and Pressure Sensors



Industrial Thermometers



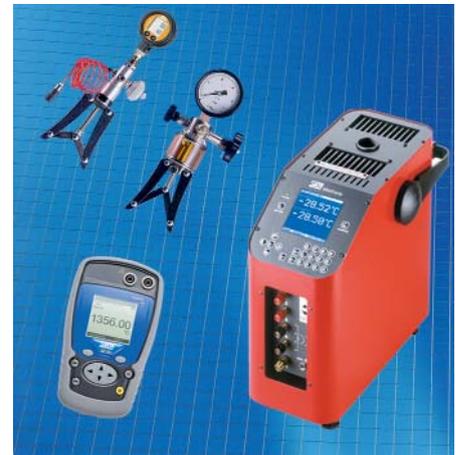
Electronic Digital Thermometer, Dial Thermometer



Measuring Instruments



Temperature Sensors



Calibrators, DKD-Laboratory

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Subject to technical modification

