Zertifiziertes QM-System
DIN EN ISO 9001
Zertifikat-Nr. 01017

Turbine Flowmeter

for liquids

measuring • monitoring • analysing

TUV

Model: ADI-1...

Model: TUV...

- Measuring ranges: 0.3 - 1.5 ... 35 - 400 l/min water
- Linearity: ± 1% of reading
- p_{max}: 630 bar; t_{max}: -60 ... +125 (350) °C
- Viscosity range: 1 - 30 mm^2/s
- Connection: G¼ ... G1½ female
- Material: stainless steel
- Output: pulses

S4

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Method of Operation

The TUV model turbines are based on the principle of the Woltmann rotating vane meter. A turbine wheel of negligible mass is concentrically mounted in a pipe and supported by bearings. The liquid flows through the turbine wheel in the axial direction. The medium flow is smoothed by a flow straightener, and reaches the turbine wheel as a quasilaminar flow stream. The speed of the turbine wheel is proportional to the average flow velocity across the pipe cross-section. The rotational speed is thus proportional to the volumetric flow over a wide range.

An inductive transducer screwed into the turbine housing senses the speed of the turbine wheel in a non-contacting manner.

The sensor signal is amplified and converted to produce a pulse signal. The pulse count per time unit is proportional to the actual flow rate.

All turbines are calibrated and delivered with their own calibration reports. Variations in viscosities in your application can be taken into consideration during calibration of the most commonly found viscosities.

Areas of Application

Turbine flow rate measuring transducers serve to precisely measure actual flow rates and to meter the flow of liquids of low viscosity.

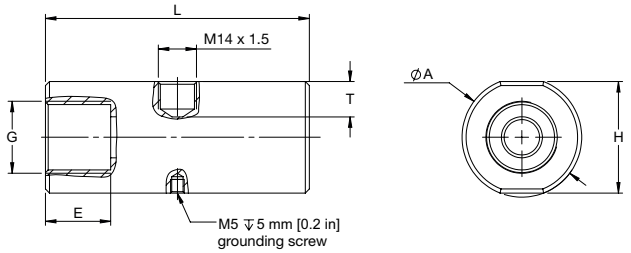
Examples:

- Fuel
- Liquefied gases
- Solvents
- Light heating oil
- Pharmaceutical liquids
- Tap water and demineralised water

Technical Details

Max. temperature:	-60 ... +125 °C option: +350 °C
Viscosity range:	1 - 30 mm²/s (calibrated for viscosity)
Linearity:	±1% of reading
Repeatability:	± 0.1%
Response time:	5 ... 50 ms
Recommended filter:	100 µm (to TUV-1205), 300 µm (from TUV-1206)
Material:	
Case / interior sections:	stainless steel 1.4404
Turbine wheel:	stainless steel 1.4460
Bearings:	HM
Auxiliary power:	10 ... 30 V_{DC}
Output:	Push-Pull
Voltage level:	U_{max} 30 V
Electr. connection:	5-pin M12

Dimensions [mm]



Model	DN	L	SW
TUV-1200	4	60	30
TUV-1201	4	70	30
TUV-1202	5	70	30
TUV-1203	5	74	30
TUV-1204	7	79	30
TUV-1205	9	79	30

Model	DN	L	AF
TUV-1206	11	86	30
TUV-1207	13	97	41
TUV-1208	19	125	46
TUV-1209	28	161	60
TUV-1210	30	181	60

Order Details (Example: **TUV-1200**)

Model	Connection female thread (dimension »C«)	Measuring range [l/min]	Average K factor* [Imp./l]		Max. pressure [bar]	Frequency* [Hz] at FS	
			≥ 1 cSt	> 8 cSt		≥ 1 cSt	> 8 cSt
TUV-1200	**G ¼**	0.3 - 1.5	32 000	32 500	630	1100	-
TUV-1201	**G ¼**	0.5 - 4	24 000	19 500	630	1170	-
TUV-1202	**G ⅜**	0.8 - 6	17 800	17 800	630	1740	-
TUV-1203	**G ⅜**	1.2 - 10	11 000	11 000	630	2100	-
TUV-1204	**G ⅜**	2 - 20	5 200	5 200	630	1800	-
TUV-1205	**G ⅜**	3.3 - 33	1 900	4 200	630	1080	2200
TUV-1206	**G ⅜**	6 - 60	1 300	2 730	400	1350	2700
TUV-1207	**G ¾**	8.5 - 85	900	1 900	400	1300	2600
TUV-1208	**G 1**	15 - 150	310	650	400	925	2000
TUV-1209	**G 1 ½**	30 - 360	155	320	315	960	2000
TUV-1210	**G 1 ½**	35 - 400	130	270	315	1000	1800

* The tap of the wheel is halved for higher viscosities (>8 mm²/s), K factors and frequencies are thus doubled.
The free cross section »DN« must remain free when a connection adapter is used.

Digital indicators and transducers see data sheet ADI-1.

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