

Turbine Flowmeter Vision 1000

Flowrates 0,1 - 2,5L/min



Turbine Flowmeter Vision 2000

Flowrates 0,5 - 35L/min



Turbine Flowmeter Vision 1000

for low viscosity, non-aggressive liquids, for very small flowrates of 0,1 - 2,5L/min

Low priced Flow Sensor

- High linearity of $\pm 3\%$ of the measuring span
- 0,5 % Repeatability
- Digitally pulsed output
- Extended temperature range
- Low flow rates 0,1 - 2,5 L/min
- FDA possible materials
- Compact construction & low weight
- Operates in any mounting position
- Easy installation
- No maintenance
- High operating pressure

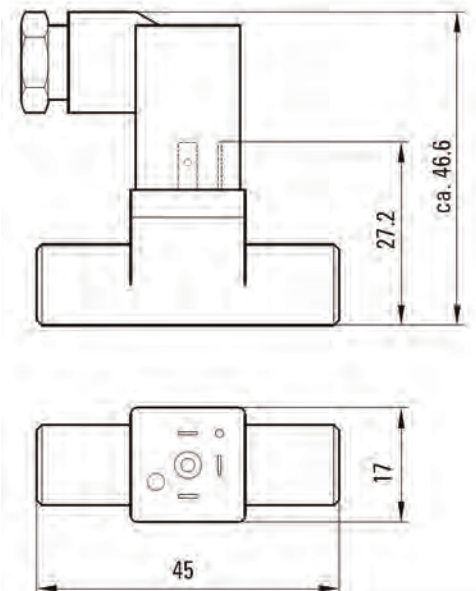


The turbine meters of the VISION1000 series are for the exact metering of small quantities of liquids. The actual flow as well as the flow already flown through can be measured.

The VISION® 2000 series is used for flow rates up to 2,5 l/min.

The meters are best suited for flow measurement of demineralized water, alkaline solutions, oils/ salad oil, fuel oil, beverage, water solutions or for fuel and fuel consumption. They are especially ideal for washing machines and dish washers, coffee machines, laser cooling plants, solar plants, bakery and steam cooking machines in large kitchen plants or cleaning of semi-conductors.

Dimensions:

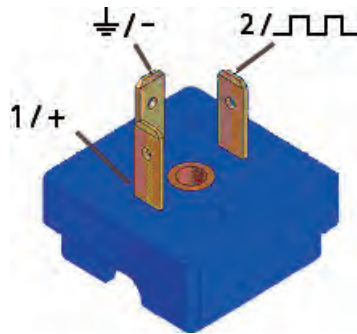


Technical data:	
Material	Trogamid (PA 12) (Opt: Grilamid)
Viscosity range	0,8 – 16 mm ² /sec
Accuracy	$\pm 3\%$ of momentary value
Repeatability	< 0,50 %
Temperature range	-20 bis +100 °C
Operating pressure	25 bar max.
Burst pressure	200 bar
Electr. Connection	Electrical connector EN 60529
Supply	5 – 24 VDC
Consumption	aprox. 8 mA
Output Signal	Pulse by open Collector NPN
Pull down resistor	1 – 2,2 kOhm (not included)
Process connections	G 1/4", NPT 1/4"

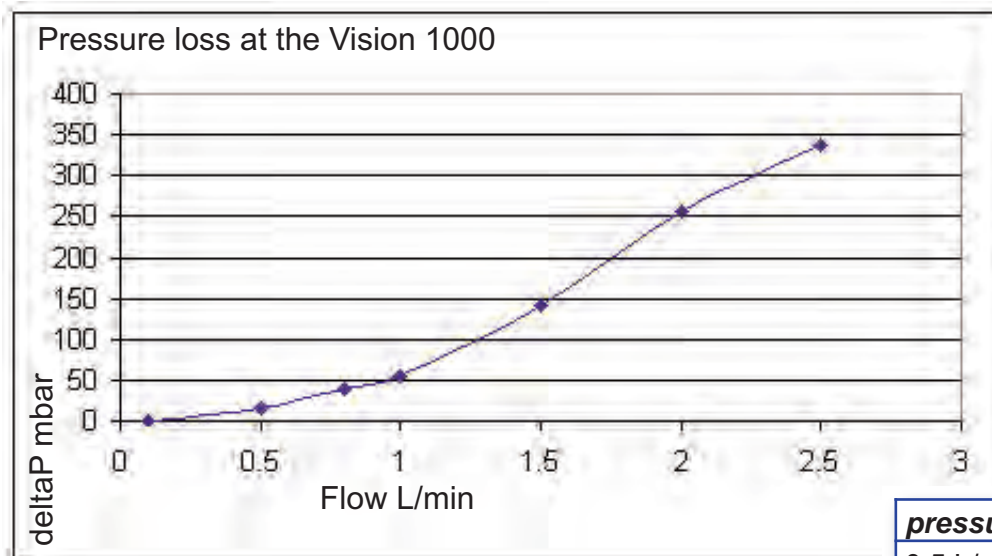
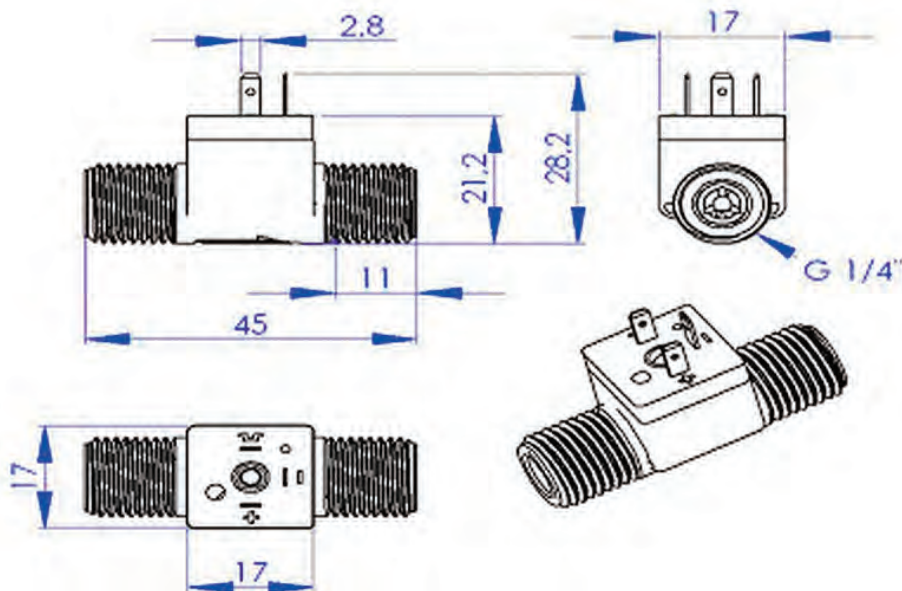
Specification:	Part number:
18.500 Imp., G 1/4", PA12	46547-163-2F66
22.000 Imp., G 1/4", PA12	56547-163-2F66
18.500 Imp., NPT 1/4", PA12	46548-163-2F66
22.000 Imp., NPT 1/4", PA12	56548-163-2F66
22.000 Imp., G 1/4", Grilamid (Limited Edition)	46540-163-2F66
Measuring Range	0,1 – 2,5 l/min
Pulses per Liter	18.500
	22.000
Size DN	5mm

Dimensions of seals: inside \varnothing 7 mm, outside \varnothing 13 mm, thickness 2 mm, hardness approx. 70Sh A

Electrical Connection:



Dimensions :



<i>pressure loss @ H2O</i>	in bar:
0,5 L/min	0,02
1 L/min	0,05
1,5 L / in	0,15
2,5 L / min	0,25

Turbine Flowmeter - Vision 2000

for low viscosity, non-aggressive liquids, for very low flows 0,5 - 35L/min

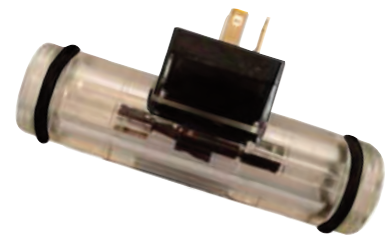
- High linearity of $\pm 3\%$ of the measuring span
- 0,5 % Repeatability
- Digitally pulsed output
- Extended temperature range
- Low flow rates 0,5 - 35 L/min
- FDA possible materials
- LDW-approved, EU-drinking water, german appr.
- Compact construction & low weight
- Operates in any mounting position
- Easy installation
- No maintainance
- High operating pressure



The turbine meters of the VISION® series are for the exact metering of small quantities of liquids. The actual flow as well as the flow already flowed through can be measured. The VISION® 2000 series is used for flow rates up to 35 l/min.

The meters are best suited for flow measurement of demineralized water, alkaline solutions, oils/ salad oil, fuel oil, beverage, water solutions or for fuel and fuel consumption. They are especially ideal for washing machines and dish washers, coffee machines, laser cooling plants, solar plants, bakery and steam cooking machines in large kitchen plants or cleaning of semiconductors.

Technical data:	
Material	Grilamid TR 55 (PA 12) or Trogamid
Viscosity range	0,8 – 16 mm ² /sec
Accuracy	$\pm 3\%$ of momentary value
Repeatability	< 0,50 %
Temperature range	-20 bis +100 °C
Operating pressure	25 bar max.
Burst pressure	200 bar
Electr. Connection	Electrical connector EN 60529 or Cable
Cable	PVC, 3x0,25 ² , grey, potted, IP68
Supply	5 – 24 VDC
Consumption	ca. 8 mA
Output signal	Open collector NPN pulse
Pull down resistor	1 – 2,2 kOhm
Process connections	G 1/4", NPT 1/4" or O-Ring



Vision 2000 Material-List	
Housing	Grilamid TR55 oder Trogamid
Turbine / Rotor	PA 12 Ferrite
Bearing	PTFE
Weight	~ 15 g
Approvals	KTW, NSF

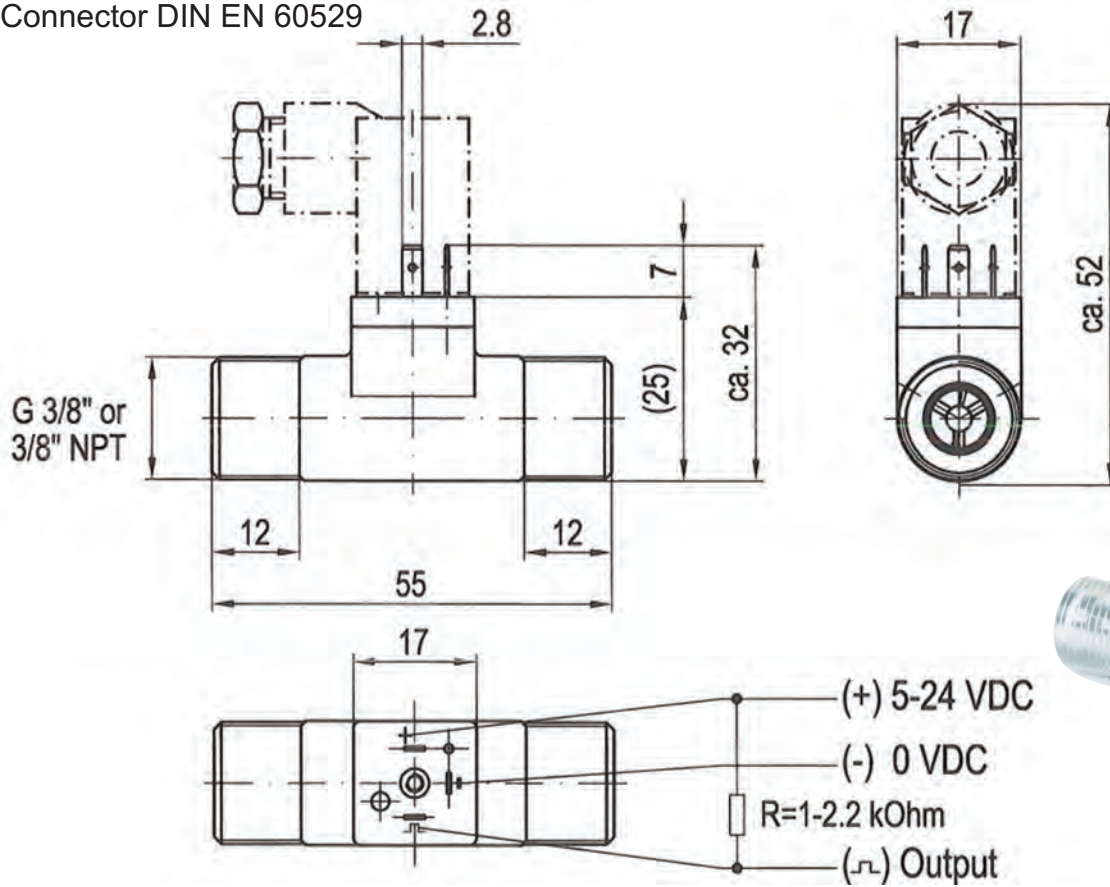
Turbine Flowmeter - Vision 2000

Measurements & Installation

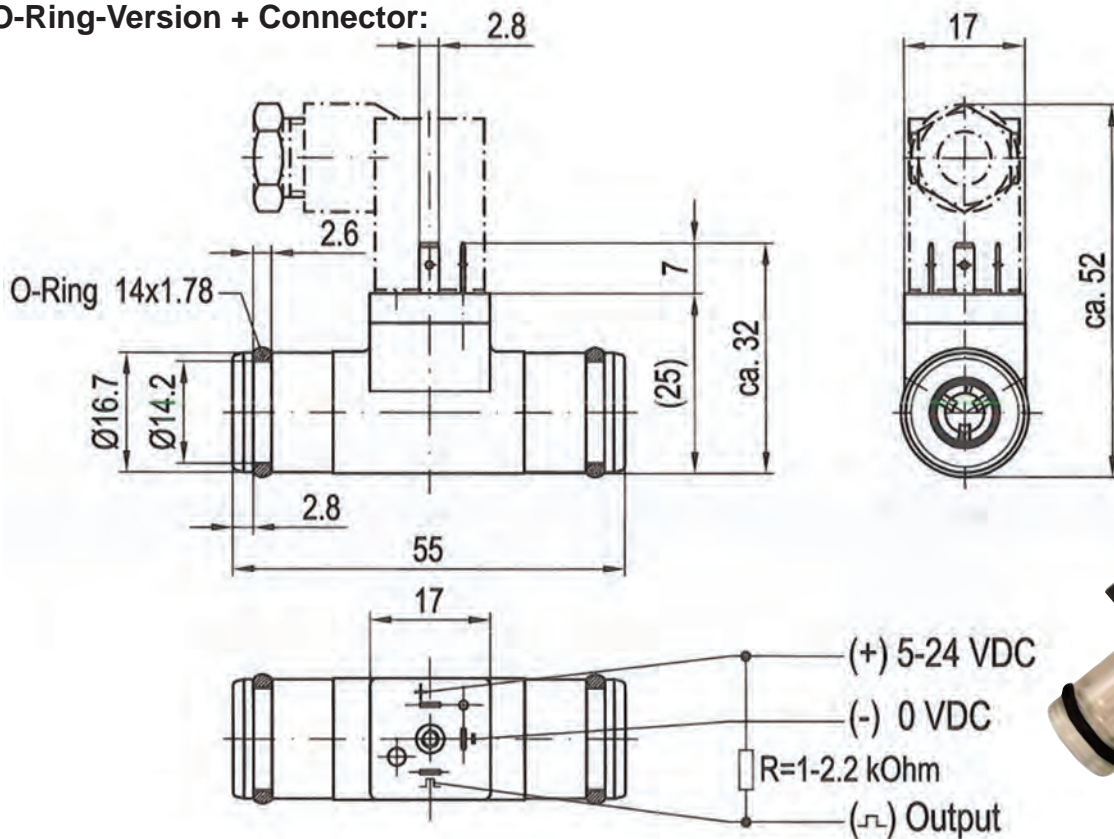
Threads & Connector:

Threads: G3/8" or NPT 3/8"

Connector DIN EN 60529



O-Ring-Version + Connector:



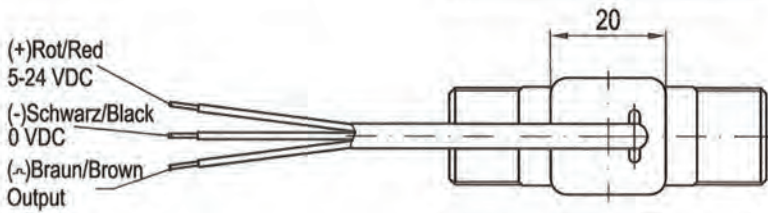
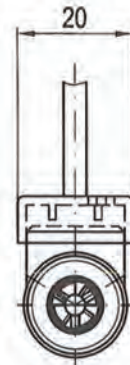
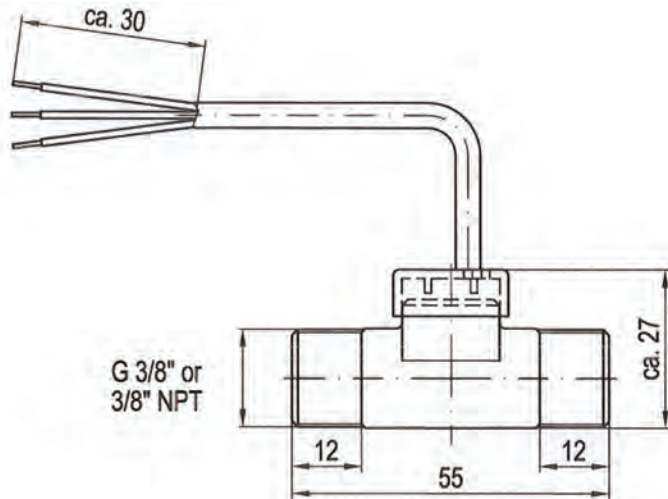
Turbine Flowmeter - Vision 2000

Measurements & Installation

Threads & Cable:

Round Cable 3x AWG24

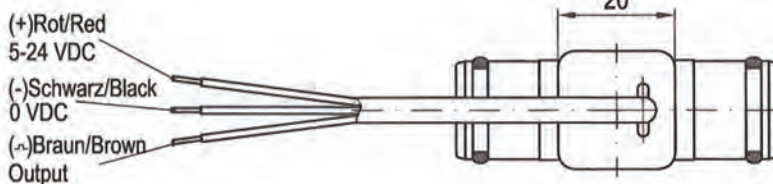
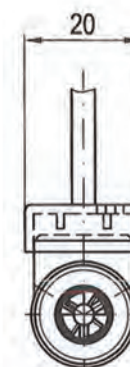
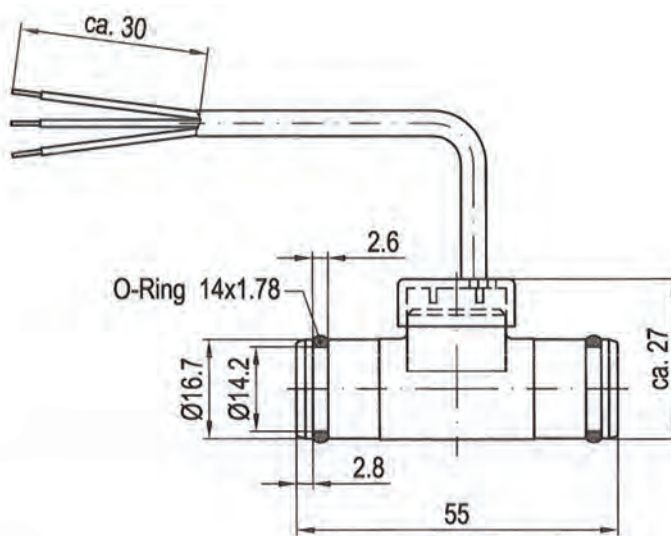
Threads: G3/8" or NPT 3/8"



O-Ring-Version & Cable:

Round Cable 3x AWG24,

O-Ring



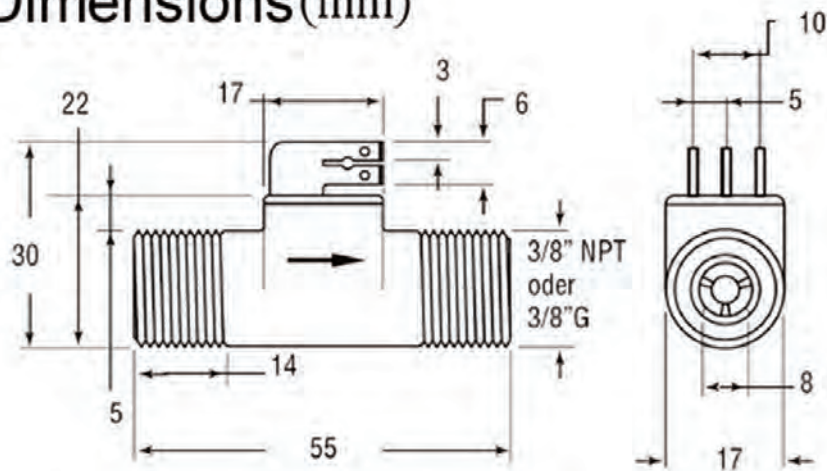
Turbine Flowmeter - Vision 2000

Measurements & Installation

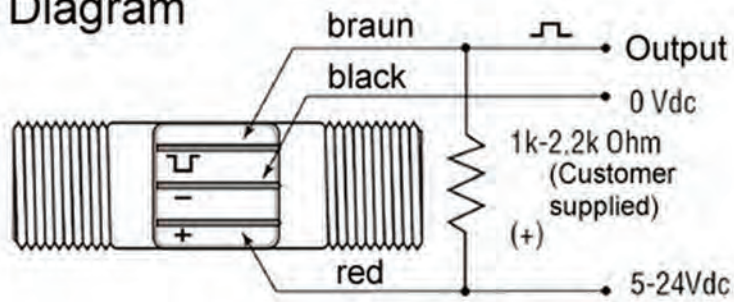
AMP-Faston Spade Terminals 2.8/ 6.3 x . 8mm



Dimensions(mm)



Wiring Diagram



Turbine Flowmeter - Vision 2000

Ordering generator

Specification:						
Type	2006 4F 44	2006 2F 66	2008 4F 17	2008 4F 22	2008 4F44	2008 2F 66
Measuring Range L / min	1 - 10	0,5 - 5	2 - 35	1,5 - 25	1 - 15	0,5 - 7,5
Pulses per Liter	3300	6900	750	1000	2200	4700
Frequenzy (Hz)	55 - 550	57,5 - 575	50 - 437,5	25 - 416,67	36,67 - 550	39,17 - 587,5
Nominal Dia DN (mm)	6	6	8	8	8	8

Ordering Key:						
Type	2006 4F 44	2006 2F 66	2008 4F 17	2008 4F 22	2008 4F44	2008 2F 66
Material of Housing: Trogamid						
G 3/8"	56510	56510	56500	56500	56500	56500
NPT 3/8"	56512	56512	56502	56502	56502	56502
O-Ring	56521	56521	56520	56520	56520	56520
Material of Housing: Grilamid TR55						
G 3/8"	46510	46510	46500	46500	46500	46500
NPT 3/8"	46512	46512	46502	46502	46502	46502
O-Ring	46521	46521	46520	46520	46520	46520

Part number example:						
Housing		electrical connection		Turbine type		Cable length
46500	-	163	-	4F17	-	2
See list		163 = DIN Connector		see list		1 = 1 m Cable
		164 = AMP-Faston				2 = 2 m Cable
		165 = Cable				3 = 3 m Cable

Additional data VISION 2000 Flowsensor

The principles of the Vision 1000 Flowmeter are valid also for the Vision 2000 Flowmeter.

The hall effect turbine flow rate sensor is ideal for OEM applications involving low flow liquid monitoring. The low cost coupled with 1/ 2% repeatability makes it an ideal candidate for replacing dispensing timer systems. Unlike existing timing systems, turbine technology is not influenced by changes in system pres filters. The sensors standard power and output specifications make it easy to retrofit to existing systems.

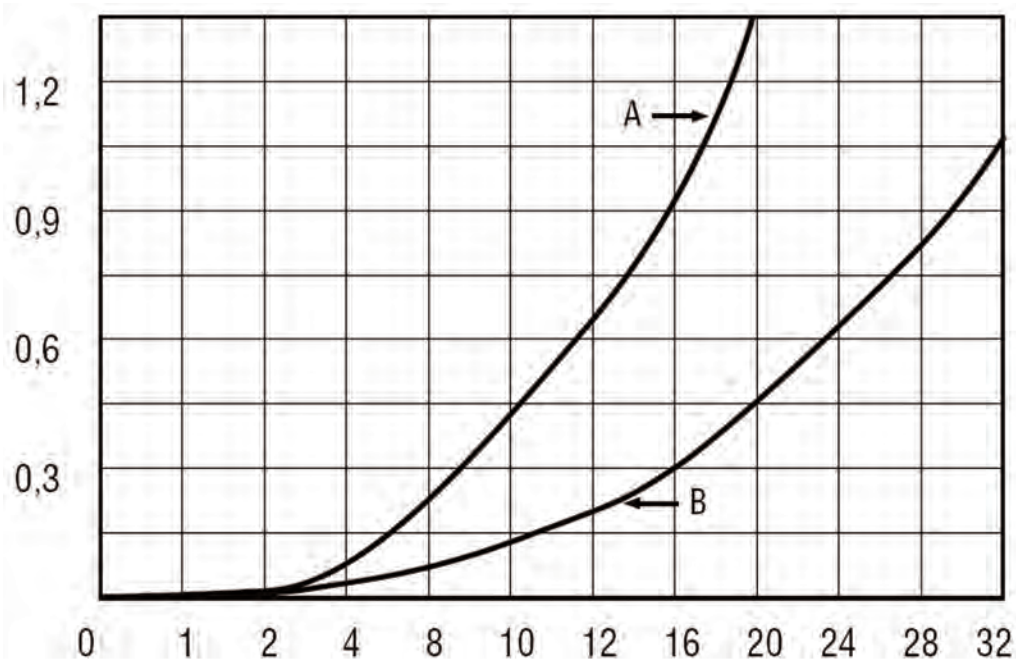
Dimensions of seals: inside \varnothing 8,5 mm, outside \varnothing 14,5 mm, thickness 2 mm, hardness approx. 70Sh A

Pressure loss at Vision 2000:

Part number	2006 4F 44	2006 4F 66	2008 4F 16,5	2008 4F 23	2008 4F44	2008 2F 66
Flow in L / min						
0,5	-	-	-	-	-	-
1,0	~ 0	~ 0	~ 0	~ 0	~ 0	~ 0
1,5	-	-	-	-	-	-
2,0	0,06	~ 0	~ 0	~ 0	0,05	~ 0
5,0	0,2	0,12	~0	0,05	0,2	0,05
10	0,7	0,4	0,12	0,17	0,4	0,2
15	-	0,9	0,25	0,27	-	0,4
20	-	1,3	0,45	0,48	-	0,7
25	-	-	0,60	0,65	-	-
30	-	-	0,92	0,97	-	-

values in bar H₂O at 20°C

Graphic Model of pressure loss



Turbine Flowmeter - Vision 2000-Brass

for low viscosity, non-aggressive liquids, for very low flow ranges 2 - 25L/min

- High linearity of $\pm 3\%$ of the measuring span
- 0,5 % Repeatability
- Digitally pulsed output
- Extended temperature range
- Low flow rates 0,5 - 35 L/min
- Compact construction & low weight
- Operates in any mounting position
- Easy installation
- No maintenance
- High operating pressure



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Measuring flows at Inks, Paints, Oils, Coolants et cetera are more applications

Specification:		
Turbinen Type	2008 4F 23	2008 2F 66
Measuring r.: L / min	3 - 25	2 - 8
Pulses per Liter	1000	4200
Frequency	50 - 416,67	140 - 560
Nominal w. DN (mm)	8	8

Material	
Housing	Brass
Turbine	PA 12 Ferrite
Bearing	Trogamid/PTFE
Weight	~ 80 g

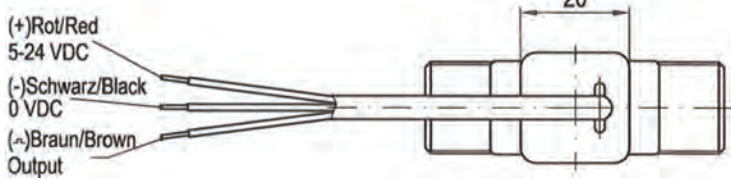
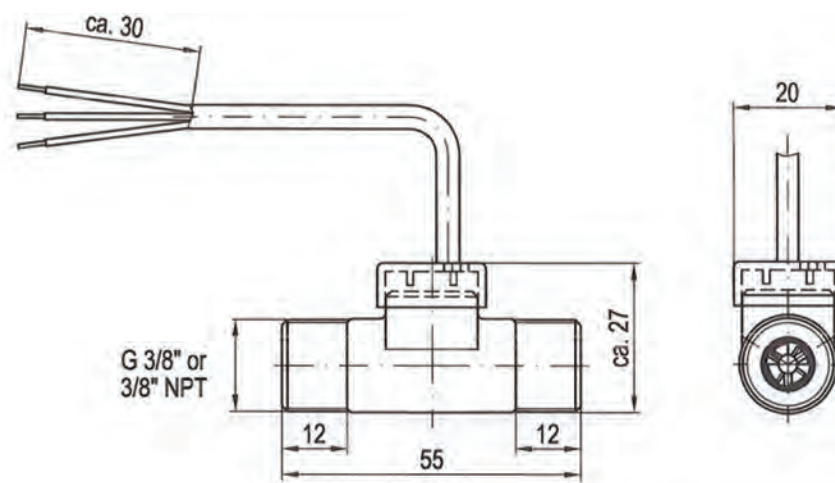
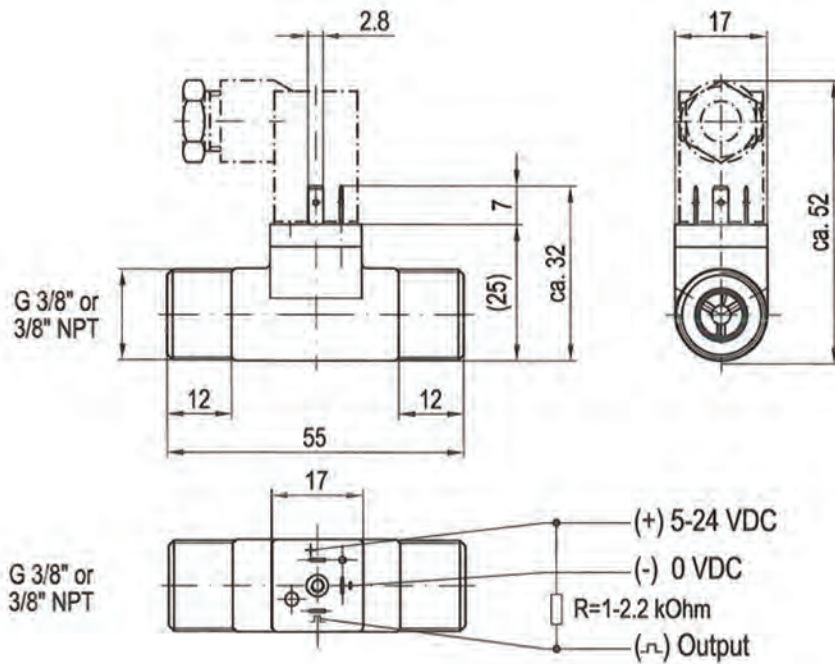
Mechanical Connection	Choice of
	G 3/8"
or :	NPT 3/8"

Technical data:	
Material	Brass
Viscosity range	0,8 – 16 mm ² /sec
Accuracy	$\pm 3\%$ of momentary value
Repeatability	< 0,50 %
Temperature range	-20 bis +100 °C
Operating pressure	25 bar max.
Burst pressure	200 bar
Electr. Connection	Electrical connector EN 60529
	or Cable
Cable	PVC, 3x0,25 ² , grey, potted, IP68
Supply	5 – 24 VDC
Consumption	ca. 8 mA
Output signal	Open collector NPN pulse
Pull down resistor	1 – 2,2 kOhm
Process connections	G 1/4", NPT 1/4" or O-Ring

Turbine Flowmeter - Vision 2000-Brass

Measurements & Installation

All Measurements in mm



Details per part number		
Turbinen Type	2008 4F 23	2008 2F 66
Measuring R.: L / min	3 - 25	2 - 8
Pulses per Liter	1000	4200
Conn: G 3/8"	47000	47000
Conn: NPT 3/8"	47001	47001

Part number Example:			
Housing	Electrical Connection	Turbine type	Cable length
47000	- 163	- 4F23	- 2
see Detail-list	163 = DIN Connector	see Detail-list	1 = 1 m Cable
	165 = Cable		2 = 2 m Cable
			3 = 3 m Cable

Description - Remarks - Instructions:

Principle:

Flow causes the bladed rotor of the VISION 2000 to turn at an angular velocity directly proportional to the velocity of the fluid measured. As the blades pass beneath a magnetic pickup coil, a frequency signal is generated. Each pulse is equivalent to a discrete volume of fluid. The frequency pulse is directly proportional to the rotor angular velocity and the flow rate. The waves are readily transmitted to local or remote electronic instrumentation.

Advantages:

The large number of pulses gives a good resolution. As the mass of the turbine are very small the response time is very short. It is not necessary to install a straight length of pipeline at the upstream side. The simple mechanical construction of the sensor VISION 2000 guarantees a long lifespan without any loss of accuracy. Pressure pulses do not affect the measuring system

Vision 1000 + Vision 2000 Instruction:

use only in clean liquids. particles may block the mechanics, use a. of a 20 μ Filter depending on particle size a 5 to 40 Mikron-filter may be necessary.

Mounting: recommended torque: approx. 6Nm

General Installation and Instruction of use:

1. Check compatibility of media with sensor material Grilamid TR55 (PA 12) Datasheet available at h.miksch@lico.at
2. Solid particles in the medium require a filter in front of sensor to avoid soilings
3. Install sensor into properly cleaned pipeline only
4. Check electrical connection according to electrical wiring plan
5. Do NOT exceed specified limits
6. The VISION Flowmeter is a volumetric measuring device, i.e. air/gas in liquid will be included in measured volume
7. Correctly installed the sensor works entirely maintenance free
8. The VISION 2000 is an industrial product and not for general public use and is to be installed and applied by trained personnel only
9. The data given in this catalog have been achieved by tests, material and data which we consider as reliable.

Despite, we strongly recommend to test the sensor for the intended purpose and to ascertain feasibility of application - independent of any given data and specifications -

11. Initial Set-up

Please make sure, that the installation is filled slowly with media PRIOR switching on!

Not filling up the system before turning on system can result in damage of bearings, since an multiple overload might appear.

Materials:	Housing Trogamid TR55 (PA12) or Grilamid
	Rotor PA12 Ferrit
	Bearing PTFE / 15% Graphite

Consult the Material data sheet for compatibility with media
<http://www.grilamid-tr.com/> <http://www.trogamid.de>

LICO reserves the right to typing errors and or technical changes anytime.

Data Processing unit



A Data Processing Unit

assures the correct reading, processing and transfer of the the counted pulses..

Part number: 112

allows the reading of the actual flow, as well as the total and accumulated total..

Data output is 4-20 mA or 0-10V according to linearised flow, scaled pulse output according to linearised total.

An extensive and comprehensive manual allows to set all parameters necessary to achive a precise reading and data output.

The large 90 x 40 mm Display allows perfect reading of actual and totalized data.

The unit is Ex-certified and can be operated by external power or by battery (both not included)

