

Flow Measurement



Oval Gear Flow Meters

Oval Gear Flow Meters, Series VO

- Positive displacement flow meters, oval gear types
- Volumetric flow rate or total flow measurement
- Applicable for fluids such as lubrication oils, mineral oils, hydraulic oils, fuels, liquified gases and others
- Flanged or threaded process connections
- Two local displays are available
 - Battery powered version, approx. 5 years life circle
 - DC powered version with pulse and analog output signal



Measuring principle

Function

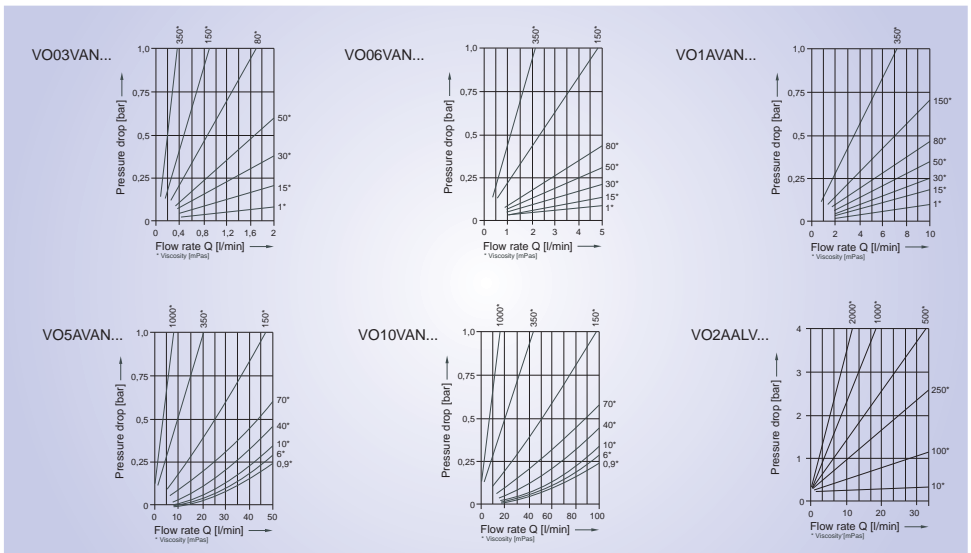
The flow measuring unit consists of two highly precise meshing oval gears. The liquid flow causes the rotation of these gears. The exact liquid volume moved through the meter at one revolution is defined by the geometry of the measuring chamber.

The rotation is picked-up by a sensing element. A battery powered local display indicates the rate of flow and the total flow. The DC powered display additionally provides two output signals for further processing.

Options

- Pulse output signal NPN open collector, no local display
- Individual calibration
- O-ring material FEP
($P_{max} = 25$ bar, not applicable for VO2AALV...)

Pressure drop diagrams



Technical data and Order code

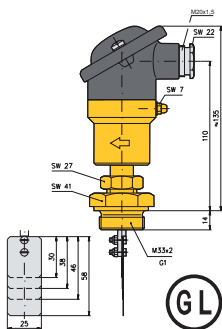
Technical data		Stainless steel version, threaded		Aluminium version, flanged	
Measuring accuracy		±1 % of reading		±1 % of reading	
Repeatability		±0.1 %		±0.1 %	
Medium temperature		-20...70 °C		-10...70 °C	
Ambient temperature		-20...70 °C		-20...70 °C	
Nominal pressure		PN 40		PN 16	
Viscosity range (higher viscosities on request)		1.5...150 mPas		1.5...150 mPas	
Materials					
Housing		Stainless steel		Aluminium	
Oval gears		Stainless steel		Aluminium	
O-ring		NBR		FKM	
Local display		battery powered	with signal output	battery powered	with signal output
Power supply		Build-in battery	14...24 V DC	Build-in battery	14...24 V DC
Protection class		IP65	IP65	IP65	IP65
Signal output	Analog output	x	4...20 mA	x	4...20 mA
	Pulse output	x	NPN open collector	x	NPN open collector
	Pulse rate	x	100 pulses per litre	x	100 pulses per litre
Flow range	Process connection	Order code	Order code	Order code	Order code
1...30 l/min	Flanges acc. DIN 2633	x	x	VO2AALVDF4K	VO2AALVTF4K
0.2...2 l/min	½" BSP female	VO03VANDI3K	VO03VANTI3K	x	x
0.5...5 l/min	½" BSP female	VO06VANDI3K	VO06VANTI3K	x	x
1...10 l/min	½" BSP female	VO1AVANDI3K	VO1AVANTI3K	x	x
5...50 l/min	1" BSP female	VO5AVANDI5K	VO5AVANTI5K	x	x
10...100 l/min	1" BSP female	VO10VANDI5K	VO10VANTI5K	x	x



Please ask for customised specifications

Paddle Flow Switches

Paddle Flow Switches for Liquids, Series VH500



- Applicable for water, oil etc.
- Insertion into pipes or pipe sections (Tees) DN 25...DN 50 or larger
- Four paddles in different sizes included, selection in accordance to the pipe size
- Robust construction
- Vibration proof to 4 g (2 g at dry test)
- Wide set point ranges, universally applicable
- Setpoint adjustment by paddle size selection and by adjustment screw
- Micro switch with high contact rating
- Approved by Germanischer Lloyd

Technical data				
Max. medium temperature	100 °C			
Max. ambient temperature	85 °C			
Change over contact, max. contact rating	24 VDC, 5 A resistive load, 4 A inductive load 60 VDC, 1 A resistive load, 0.5 A inductive load 250 VAC, 10 A resistive load, 10 A inductive load (pf 0.75)			
Protection class	IP54			
Material	Brass			
Max. pressure rating	6 bar		10 bar	
Max. test pressure (2 min.)	10 bar		15 bar	
Germanischer Lloyd Certificate No.	89 824-94 HH		94 970-10 HH	
Thread connection	1" BSP	M 33x2	1" BSP	M 33x2
Order code	VH500NI3451R41	VH500NM3451M41	VH500RI3451R41	VH500RM3451M41

Set point ranges

Size of pipe section*	Paddle to select	Set point ranges [m ³ /h]**, water (20 °C, up to 2 bar)			
		VH500N...		VH500R...	
		ON	OFF	ON	OFF
DN 25	25 x 30 mm	1.10...1.25	1.05...1.20	1.60...1.80	1.40...1.55
DN 32	25 x 38 mm	1.70...2.05	1.60...1.95	2.45...2.60	2.00...2.25
DN 40	25 x 46 mm	2.20...2.55	2.10...2.45	2.55...2.80	2.05...2.35
DN 50	25 x 58 mm	3.25...3.85	3.15...3.75	3.90...4.25	3.20...3.55

* Installation into tees acc. EN 10242

** Higher set points achievable by use of smaller paddle sizes.

Tolerance of the set point ranges: ±15 %, set points for bigger pipe sizes on request

