

Oval gear flow meter // V0, sensor



Your advantages

Type

V0, sensor

- high measurement accuracy and repeatability
- low pressure drop
- applicable for fluids such as lubrication oils, mineral oils, hydraulic oils, fuels and liquefied gases
- insensitive to vibrations, pressure changes and viscosity changes

Type	V0015	V006	V01	V02	V05	V010	V050	V0115
Technical data								
Measuring range [l/min]								
→ Oval gears st. steel (V0...VA)	0.03...1	0.2...5	0.4...10	1...30	2...50	4...100	15...300	35...660
→ Oval gears PEEK (V0...VP / AP)	0.03...1	0.2...7	0.4...14	1...30	2...60	3...120		
Process connection								
→ Thread	G 1/4	G 1/2	G 1/2	G 3/4	G 1	G 1	G 2	G 2
→ Flange (according to DIN EN 1092-1)				DN 15		DN 25	DN 50	DN 50
Nominal puls rate [1/l]								
	3100	333	166	100	40	20	4	1.7

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Type	VO...VA	VO...VP**	VO...AP**
Technical data			
Accuracy*	±0.5 % of reading		
Repeatability*	< 0.05 %		
Pressure rating	PN 68 (PN 25 with FEP O-ring)	PN 40 (PN 25 with FEP O-ring)	
Temperature range			
Standard	-20...70 °C		-10...80 °C
High temperature sensor	-40...130 °C		
Materials***			
Housing	Stainless steel	Stainless steel	Aluminium
Oval gears	Stainless steel	PEEK	PEEK
O-ring	FKM (standard) or EPDM (option) or FEP (option)	FKM (standard) or EPDM (option) or FEP (option)	FKM (standard) or EPDM (option) or FEP (option)
Medium			
Allowable Viscosity	0.3...350 mPa s	0.3...150 mPa s	
Max. particle size	25...100 µm		
Electrical data			
Supply voltage → Standard → High temperature sensor	10...30 VDC 18...30 VDC	10...30 VDC	10...30 VDC
Electrical connection → Standard → High temperature sensor	M12 x 1 connector 2 m silicone cable, 3 x 0.14 mm		
Signal output			
Standard High temperature sensor	NPN, PNP PNP	NPN, PNP	NPN, PNP
Degree of protection EN 60529	IP67		

* Test conditions:

→ Viscosity >3 mPa s

→ Media temperature 20 °C

** Not available for VO50 and VO115

*** Other material combinations on request

Oval gear flow meter // V0, display

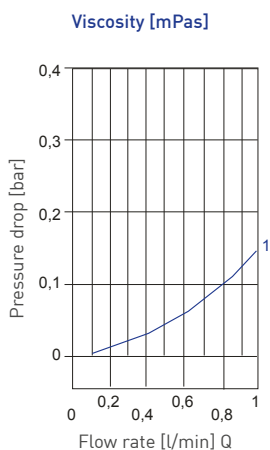
Your advantages

Type	V0, display
	<ul style="list-style-type: none"> • Actual flow rate indication • Up to two VO sensors can be connected; configurable for differential measurement (Display 2 and 3) • Total flow indication, password protected counter • Optionally available for wall mounting with bracket (for media temperatures up to 70 °C)

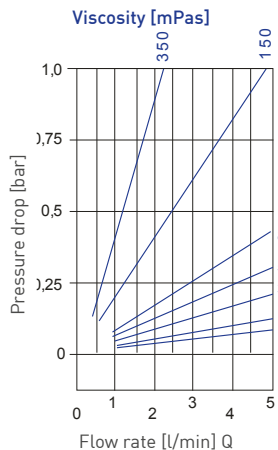
Type	Display 1	Display 2	Display 3
Display	8 digit		
Electrical data			
Power supply	Battery	Battery	10...30 VDC
Power consumption			100 mA, 28 V
Signal outputs		Pulse output NPN open collector	Pulse output NPN open collector Analogue output 4...20 mA / 2-wire
Electrical connection		Terminal block / cable gland	
Cable length*		2000 mm	
Degree of protection EN 60529	IP65		
Temperature range			
Medium temperature			
→ standard	-20...70 °C		
→ high temperature	-40...130 °C		
Ambient temperature	-20...70 °C		
Storage temperature	10...55 °C		
Type			
Local (meter mounted)	✓	✓	✓
Remote (wall mounting)		✓	✓

* remote type / wall mounting

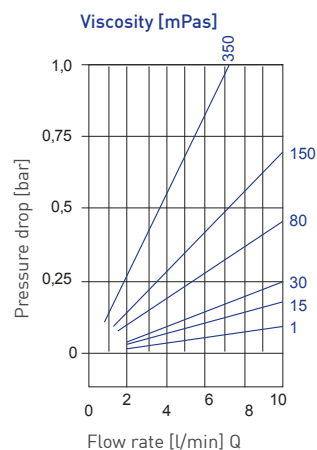
Typical pressure drop V0015



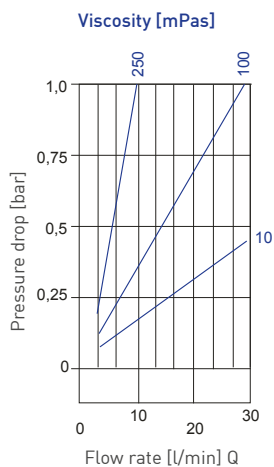
Typical pressure drop V006



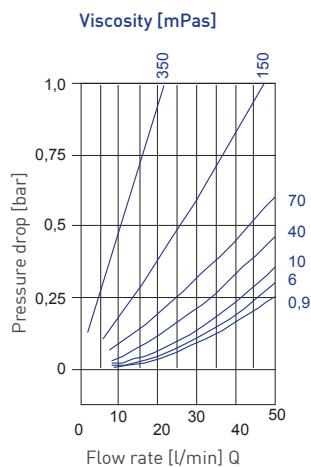
Typical pressure drop V01



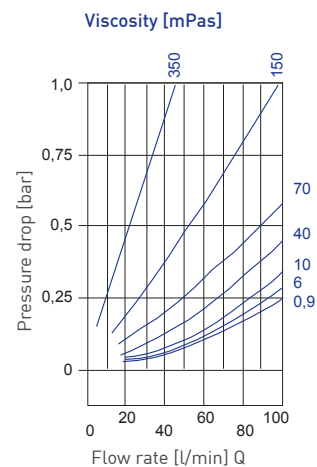
Typical pressure drop V02



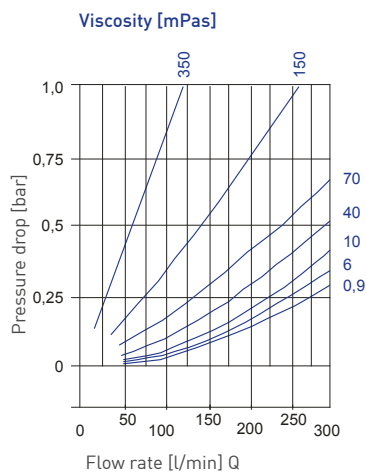
Typical pressure drop V05



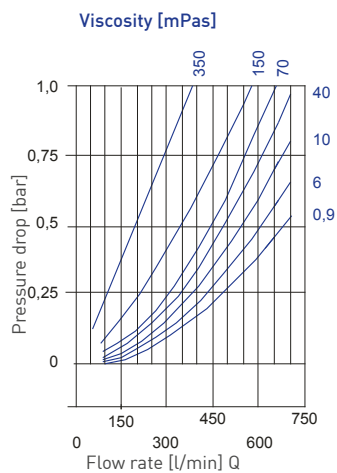
Typical pressure drop V010



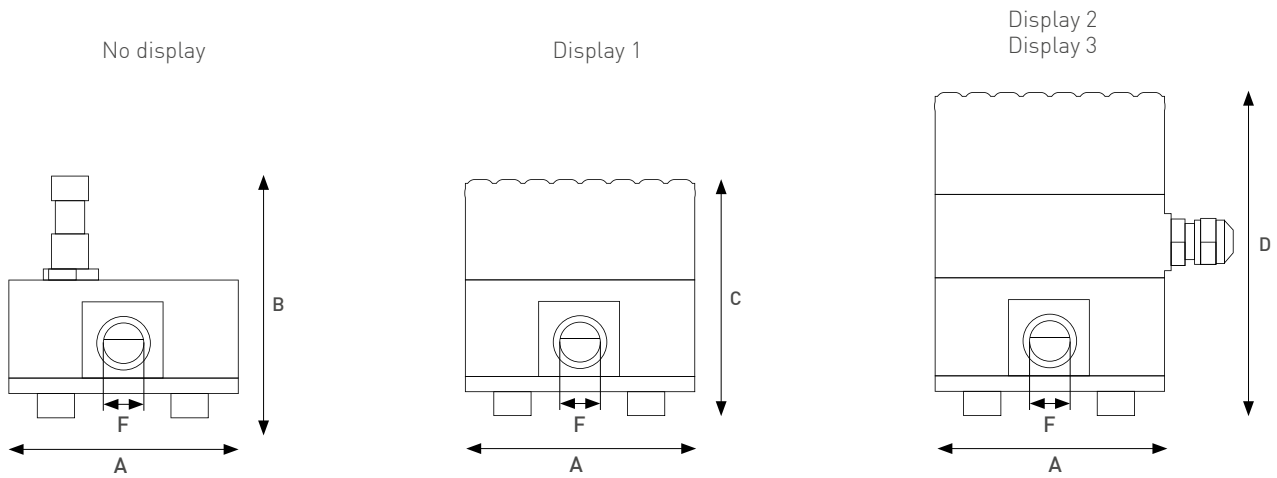
Typical pressure drop V050



Typical pressure drop V0115



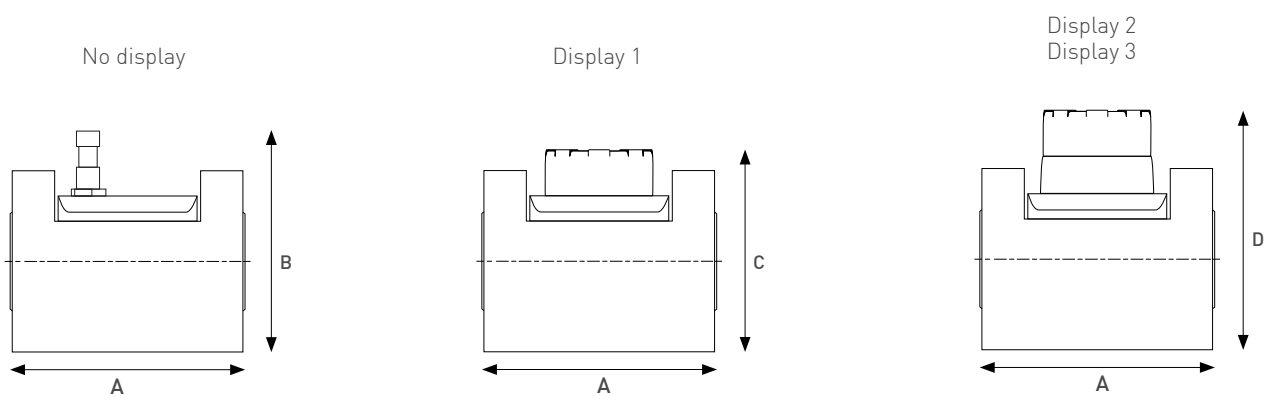
Process connection threaded



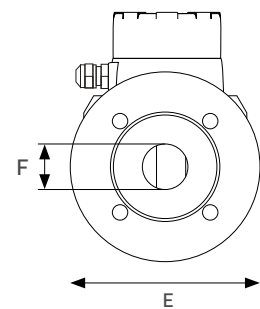
Size	V0015	V006	V01	V02	V05	V010	V050	V0115
A [mm]	78	78	78	99	112	112	220	260
C [mm]	70	75	85	93	98	125	187	245
B_{max}*, D [mm]	96	101	111	120	125	152	213	271
Installation [mm]	73	73	73	90	102	102	184	196
F / Process connection	G 1/4	G 1/2	G 1/2	G 3/4	G 1	G 1	G 2	G 2

* Depends on sensor

Process connection flanged according to DIN EN 1092-1



Size	V0 2	V0 10	V0 50	V0 115
A / Installation [mm]	140	170	184	196
C [mm]	108	153	165	243
B_{max}*, D [mm]	135	180	192	270
E [mm]	95	130	220	260
F / Process connection	DN 15	DN 25	DN 50	DN 50



* Depends on sensor

Order code							
Type							
Oval gear meters, series VO		VO					
Size	Process connection						
015	G¼ female	01				I1K	
06	G½ female	06				I3K	
1	G½ female	1A				I3K	
2	G¾ female	2A				I4K	
5	G 1 female	5A				I5K	
10	G 1 female	10				I5K	
50	G 2 female	50*				I8K	
115	G 2 female	11*				I8K	
2	DN 15 flange	2A				F3K	
10	DN 25 flange	10				F5K	
50	DN 50 flange	50*				F8K	
115	DN 50 flange	11*				F8K	
Materials							
Body	Oval gears						
Stainless steel	Stainless steel		VA				
Stainless steel	PEEK		VP				
Aluminium	PEEK		AP				
O-rings							
FKM (standard)				V			
EPDM				E			
FEP				P			
Sensor pulse output without display							
NPN					N		
PNP					P		
PNP (high temperature)*					H		
Sensor with display							
Display 1							
Battery powered, local display						D	
Display 2							
Battery powered, display and pulses						C	
Battery powered, remote display with 2 m cable length and pulses						B	
Battery powered, high temperature version, remote display and pulses						F*	
Display 3							
Display, pulses and analog output (4...20mA)						T	
Remote display with 2 m cable length, pulses and analog output (4...20mA)						A	
High temperature version, remote display, pulses and analog output (4...20mA)						G*	
Example order number		VO	01	VA	V	N	I1K

* For stainless steel / stainless steel only, specified

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