

VZO / VZF

INDUSTRIAL METER

DIEHL
Metering



APPLICATION

VZO is a volumetric meter with an oscillating piston. Its design makes it extremely rugged and highly accurate, even at low flowrates. VZO may be installed horizontally, vertically or at an angle. When used with burners, it may be fitted directly on the nozzle line. Its metering chamber can be easily cleaned without removing the meter from the pipe.

VZO is made of cast iron, bronze and aluminium piston and is particularly suitable for metering non-aggressive liquid lubricants such as fuel oil or mineral oil.

Modular, VZO may be fitted at any time with a pulse emitter. The variety of values and pulse types make VZO compatible with all centralised technical management systems. The version with an electronic register (VZF) offers a multifunctional display facility, as well as pulse and analogue outputs.

FEATURES

- ▶ High measuring accuracy
- ▶ Smart meter
- ▶ From 1 to 5,000 mPa.S
- ▶ DN 15 to DN 50
- ▶ Fuel and oil measurement
- ▶ Metering in both flow directions

TECHNICAL CHARACTERISTICS

Nominal diameter	DN	mm	15	20	25	40	50
Nominal diameter	DN	inch	1/2 "	3/4 "	1 "	1-1/2 "	2 "
Nominal pressure with threaded ends		bar	16	16	16	16	16
Nominal pressure with flanges*		bar	25	25	25	25	25
Maximum temperature*		°C	130	130	130	130	130
Metering in both flow directions			yes	yes	yes	yes	yes
Maximum flow rate	Qmax	l/h	600	1,500	3,000	9,000	30,000
Permanent flow rate	Qcont	l/h	400	1,000	2,000	6,000	20,000
Minimum flow rate	Qmin	l/h	20	40	75	225	750
Starting flow rate		l/h	4	12	30	90	300
Error tolerance of volume between Qmin and Qmax			< ±1 %	< ±1 %	< ±1 %	< ±1 %	< ±1 %
Repeatability			< ±0.1 %	< ±0.1 %	< ±0.1 %	< ±0.1 %	< ±0.1 %
Volume of the metering chamber (cyclical volume)		cm ³	12	36	100	330	1,200
Verification step		l	0.01	0.1	0.1	0.1	1
Recording capacity		m ³	1,000	10,000	10,000	10,000	100,000
Max. recording time with continuous flow and no reset		h	2,500	10,000	5,000	1,667	5,000
Width of the safety filter mesh		mm	0.4	0.4	0.4	0.8	0.8

(*) Version up to 180°C also available.

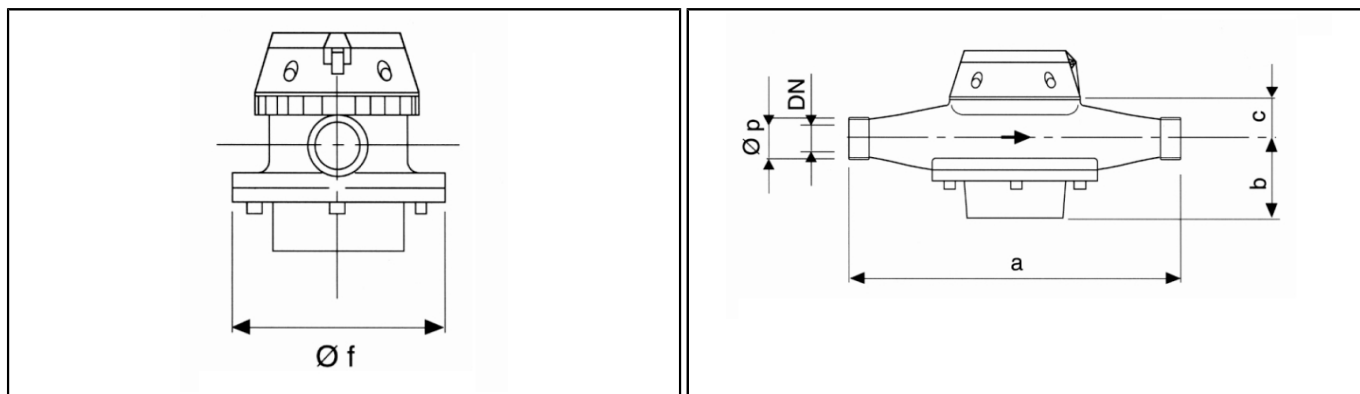
PULSE VALUES FOR EMITTERS (L/PULSE)

Nominal diameter	DN	mm	15	20	25	40	50
IN (Inductive) K=10			0.01	0.01	0.1	0.1	1
IN (Inductive) K=1			0.1	0.1	1	1	10
RV (reed) K=1			0.1	1	1	1	10
RV (reed) K=10			1	-	-	10	100
VZF programmable pulse			max. freq. 100Hz	max. freq. 100Hz	max. freq. 100Hz	max. freq. 100Hz	max. freq. 100Hz
VZF passive analogue output		mA	4-20	4-20	4-20	4-20	4-20

ELECTRONIC REGISTER (VZF)

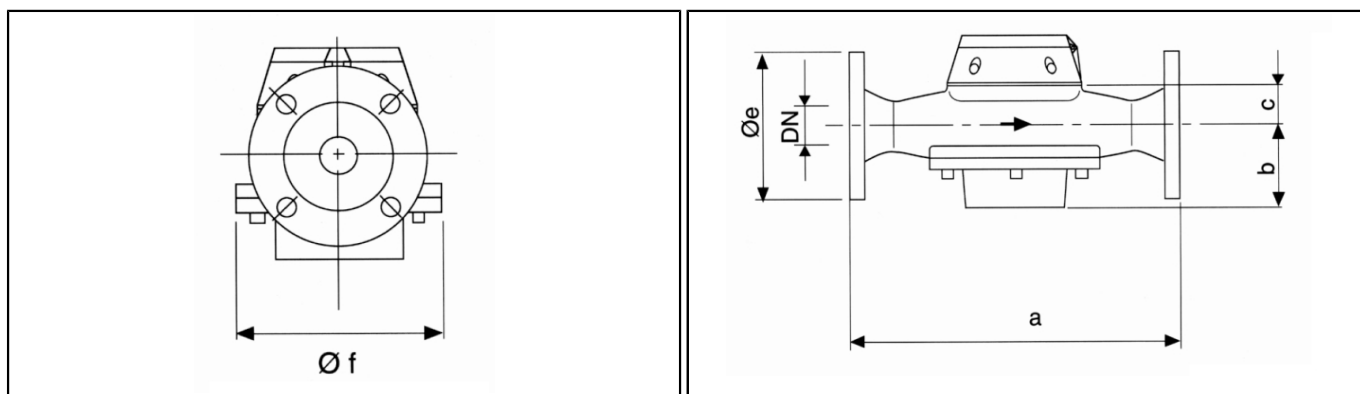
VZO / VZF	
Displayed values	Total volume, volume with reset, instant flow rate value. Run time and other information in Service submenu.
Display	8-segment LCD with parameter identification, 8-mm digit height, instant flow rate value (meter load) by a bar diagram.
Temperature	Ambient temperature -10°C to +70°C / Storage temperature -20°C to +80°C
Safety	EC, fatigue and impact resistance tests to DIN IEC 68
Power supply	Standard lithium battery, CR 1 / 2AA or CR2 type
Data backup	Non volatile EEPROM memory
Battery replacement	After five years, on the basis of a six-year lifetime, with digital display of the instant value for 10 hours max.

DIMENSIONS : BODY WITH THREADED ENDS



Nominal diameter	DN	mm	15	20	25	40	50
Length	a	mm	165	165	190	300	
Height under pipe	b	mm	45	54	77	116	
Height	c	mm	20	20	24	37	
Meter diameter	Øf	mm	105	105	130	210	
Threads	Øp	inches	3/4"	1"	1-1/4"	2"	
Weight		Kg	2.1	2.5	4.2	15.9	

DIMENSIONS : BODY WITH FLANGES



Nominal diameter	DN	mm	15	20	25	40	50
Length	a	mm	165	165	190	300	350
Height under pipe	b	mm	45	54	77	116	166
Height	c	mm	20	20	24	37	43
Flanges diameter	Øe	mm	95	105	115	150	165
Meter diameter	Øf	mm	105	105	130	210	280
Weight		kg	3.8	4.5	7.7	20.5	40

ASSEMBLY

Rotary piston meters may be fitted on horizontal or vertical pipes at an angle. They do not require the presence of straight lengths before or after the meter. The dial of the register must never be installed head down. Rotary piston meters are precision instruments and must always be protected by a filter. The mesh width must be less than 100 microns (0.1 mm).