

S-OVAL SMART LINE Series

Oval gear flowmeters



Applications

- Even very viscous fluids, acid, alkaline and organic solutions
- Chemical, refinery and petrochemical plants, oil pipelines (refined oil)
- Loading of tanks, ships, planes and trucks
- Measurement and monitoring of the food and beverage productions

Features and Benefits

- Continuous and intermittent flow measurement
- Wide measuring range
- Accuracy class 0.5 and 0.2 A
- Fluid temperature -20 ... 200 °C
- Flanges DN10 -DN50, DN80, DN100
- Low pressure drop
- Ease of installation and calibration

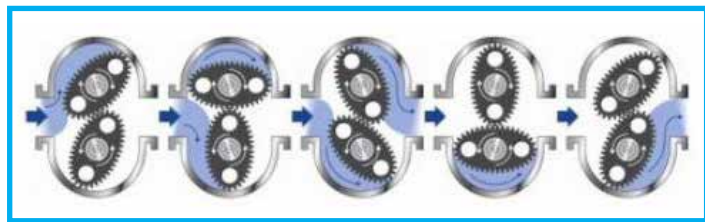


S-OVAL

EXTREMELY CONVENIENT FLOW MEASURE FOR PROCESS AND SERVICE APPLICATIONS

The volumetric flowmeters or volume meters are also known as "Positive Displacement" meters (PD), an English term that highlights their operating principle based on the metering of known volumes, which are filled and emptied cyclically from the measuring fluid.

The measuring element of the oval gear flowmeter S-OVAL consists of two toothed precision oval wheels which are driven by the fluid passing through the flowmeter. The number of revolutions is an exact measure of the volume.



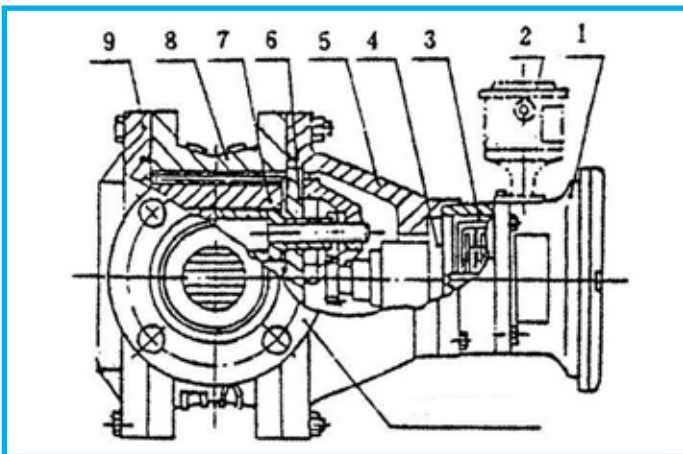
Maintenance and recalibration requirements are minimal because of the lack of moving parts.

The gear meter is often selected over the mass flowmeters because of its accuracy and longevity - it is not susceptible to interference from pressure or temperature changes and general wear.

It is used, for example, for the transfer of petroleum and chemical products, loading of tank trucks and tank wagons, calibration of tanks and cisterns, calibration of already installed meters, in-line mixing, to produce fibres, in research science and in the naval sector.

STRUCTURE

The S-OVAL flowmeter consists mainly of a measurement chamber, a meter, the oval wheel gear and the coupling (magnetic and sub-axial coupling).



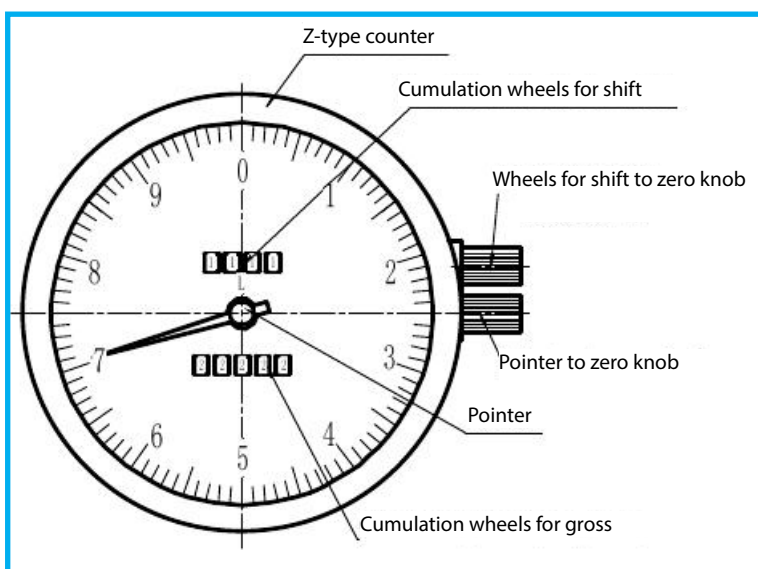
- | | |
|---|----------------|
| 1. Counter | 5. Front cover |
| 2. Signal output | 6. Flat |
| 3. Precision regulator
(only > DN50) | 7. Oval gear |
| 4. Sealing | 8. Shell |
| | 9. Rear cover |



TECHNICAL DATA

Model	S-OVAL-PHLC
Transmitter	Analogical display (pointer with zero return); analogical display with output; LCD
Medium	Fuel oil, petroleum and derivatives, vegetable oils, liquid foods, chemicals
Accuracy	±0.2%; ±0.5%
Nominal diameter	DN 8...DN 200
Rated pressure	1.6...6.3 MPa
Medium temperature	-10...280 °C
Medium viscosity	2...3000 mPa·s
Power supply	12 VDC; 24 VDC
Output signal	Pulse; 4-20 mA DC; RS485
Display	Mechanical counter, backlit LCD (total and instantaneous flow)
Error adjustment	Pulse regulation via gear internal modification
Protection degree	IP 65
Ex proof	Approval pending
Ambient temperature	-20...55 °C
Body material	Cast iron, cast steel, stainless steel
Sensor connection	Flange, thread, sanitary Tri-Clamp

Ex ia certification pending



FLOW RANGE

CAST IRON TYPE (A) - CAST STEEL TYPE (E) - STAINLESS STEEL TYPE (B)

Model	Cast iron LC-A	Cast steel LC-E	Inox LC-B
Pressure (MPa)	1.0 / 1.6	2.5 / 4.0 / 6.4	1.0 / 1.6
Medium viscosity	2...200 mPa.s		
Operating temperature	-20...100 °C		



Flow range m ³ /h						
Model Nominal size	LC-A Cast Iron		LC-E Cast Steel		LC-B Stainless Steel	
	0.5	0.2	0.5	0.2	0.5	0.2
10	0.08~0.4	0.1~0.4	0.08~0.4	0.1~0.4	0.1~0.5	0.1~0.5
15	0.25~1.5	0.5~1.5	0.25~1.5	0.3~1.5	0.3~1.5	0.3~1.5
20	0.5~3	0.6~3	0.5~3	0.6~3	0.6~3	0.6~3
25	1~6	1.2~6	1~6	1.2~6	1.2~6	1.2~6
40	2.5~15	3~15	2.5~15	3~15	3~15	3~15
50	4~24	4.8~24	4~24	4.8~24	4.8~24	4.8~24
80	10~60	12~60	10~60	12~60	12~60	12~60
100	16~100	20~100	16~100	20~100	20~100	20~100
150	32~190	38~190	32~190	38~190	38~190	38~190
200	34~340	68~340	34~340	68~340	68~340	68~340

High temperature cast iron type (TA) - Cast steel type (TE) - Stainless steel type (TB)

HIGH-TEMPERATURE:

CAST IRON TYPE (TA) - CAST STEEL TYPE (TE) - STAINLESS STEEL TYPE (TB)

High-temperature model	Cast iron LC-TA	Cast steel LC-TE	Inox LC-TB
Pressure (MPa)	1.0 / 1.6	2.5 / 4.0 / 6.4	1.0 / 1.6
Medium viscosity	2...200 mPa.s		
Operating temperature	100...280 °C		



Flow range m ³ /h						
Model Nominal size	LC-TA Cast Iron		LC-TE Cast Steel		LC-TB Stainless Steel	
	0.5	0.2	0.5	0.2	0.5	0.2
10	0.08~0.4	0.1~0.4	0.08~0.4	0.1~0.4	0.1~0.5	0.1~0.5
15	0.24~1.35	0.35~1.35	0.24~1.35	0.35~1.35	0.36~1.35	0.36~1.35
20	0.54~2.7	0.72~2.7	0.54~2.7	0.72~2.7	0.72~2.7	0.72~2.7
25	1.2~5.4	1.4~5.4	1.2~5.4	1.4~5.4	1.4~5.4	1.4~5.4
40	2.7~13.5	3.6~13.5	2.7~13.5	3.6~13.5	3.6~13.5	3.6~13.5
50	4.4~21.6	5.75~21.6	4.4~21.6	5.75~21.6	5.75~21.6	5.75~21.6
80	10.8~54	14.4~54	10.8~54	14.4~54	14.4~54	14.4~54
100	18~90	24~90	18~90	24~90	24~90	24~90
150	38~170	45.6~170	38~170	45.6~170	45.6~170	45.6~170
200	34~340	68~340	34~340	68~340	68~340	68~340

**HIGH-VISCOSITY:
CAST IRON TYPE (NA) - CAST STEEL TYPE (NE) - STAINLESS STEEL TYPE (NB)**

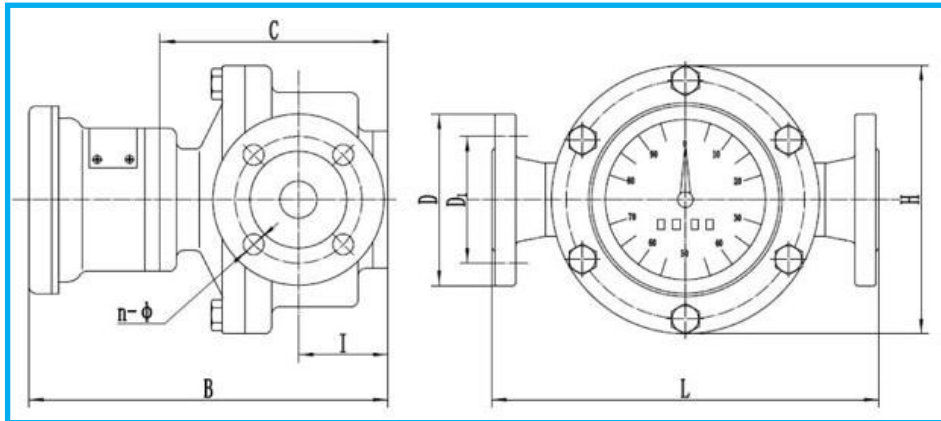
Model	Cast iron LC-NA	Cast steel LC-NE	Inox LC-NB
Pressure (MPa)	1.0 / 1.6	2.5 / 6.4	1.6
Medium viscosity	200...3000 mPa.s		
Operating temperature	-10...100 °C		
Accuracy	0.5		

Flow range m ³ /h										
DN	10	15	20	25	40	50	80	100	150	200
Flow	0.04~0.2	0.15~0.75	0.3~1.5	0.6~3	1.5~7.5	2.4~12	6~30	10~50	38~100	34~300

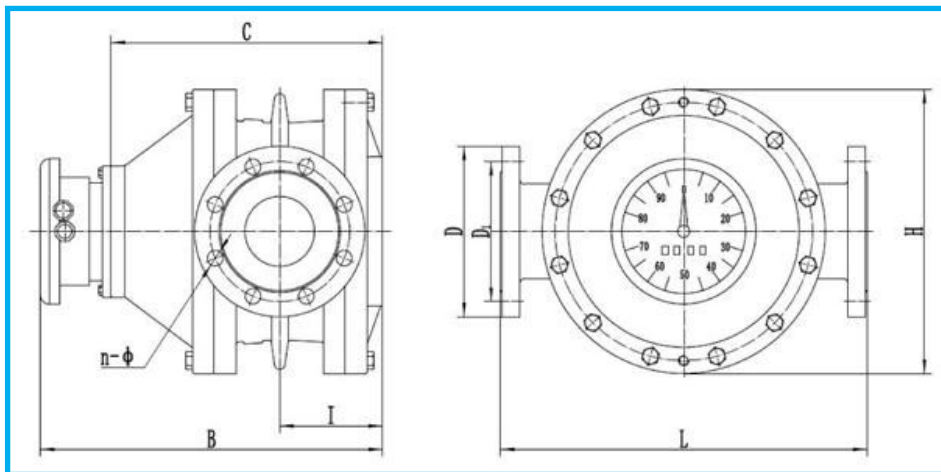


DIMENSIONS

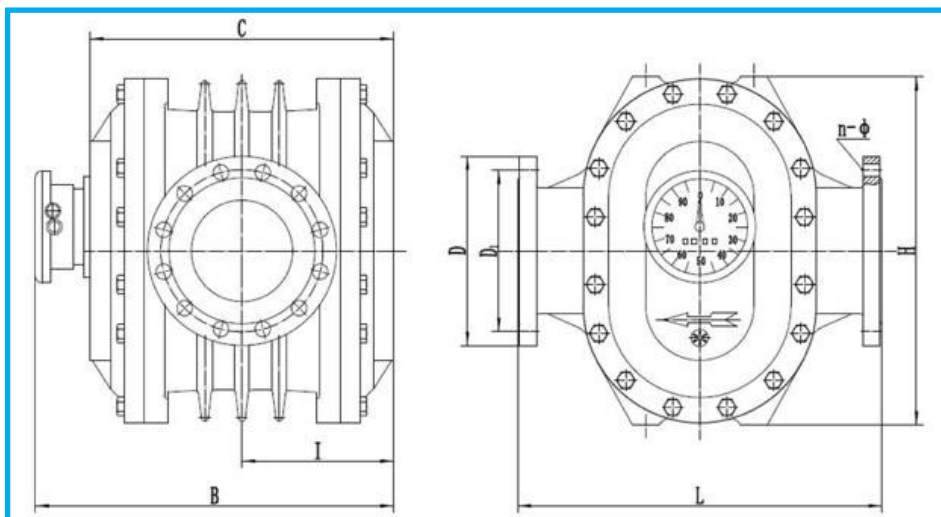
DN 10-40



DN 50-100



DN 150-200



DIMENSIONS

CAST IRON TYPE (A) / HIGH-VISCOSITY CAST IRON TYPE / OTHER CAST IRON TYPES

DN	L	H	A	B	D	D1	N	Φ
10	150	100	165	210	90	60	4	14
15	170	118	172	226	95	65	4	14
20	200	150	225	238	105	75	4	14
25	260	180	232	246	115	85	4	14
40	245	180	249	271	145	110	4	18
50	340	250	230	372	160	125	4	18
65	420	325	270	386	180	145	4	18
80	420	325	315	433	195	160	8	18
100	515	418	370	458	215	180	8	18
150	540	515	347	557	280	240	8	23
200	650	650	476	720	335	295	12	23

Dimensions in mm

CAST STEEL TYPE (B) / HIGH-VISCOSITY STEEL TYPE / HIGH-TEMPERATURE STEEL TYPE

DN	L	H	B	A	D	D1	N	Φ
15	200	138	232	180	105	75	4	14
20	250	164	220	160	125	90	4	18
25	300	202	252	185	135	100	4	18
40	300	202	293	208	165	125	4	23
50	384	262	394	312	175	135	4	23
80	450	337	452	332	210	170	8	23
100	555	442	478	310	250	200	8	25
150	540	510	557	347	300	250	8	26
200	650	650	720	476	36	310	12	26

Note

For cast iron, cast steel oval gear flow meters type high-temperature size: DN15~DN25: A, B according to table +160mm extension tube; DN40~DN80: A, B increases with pipe thermal extension of 300mm

STAINLESS STEEL TYPE (C)

DN	L	H	B	A	D	D1	N	Φ
15	208	120	228	172	95	65	4	14
20	236	150	238	225	105	75	4	14
25	287	195	246	232	115	85	4	14
40	265	178	349	265	145	110	4	18
50	265	178	349	265	160	125	4	18
65	365	260	436	319	180	145	4	18
80	420	305	459	324	200	160	8	18
100	515	400	554	373	220	180	8	18
150	540	515	607	397	280	240	8	23

Dimensions in mm

SELECTION GUIDE

The order code consists of the root of the product (S-OVAL-PHLC-) followed by the positions based on the available options. Please, contact us for the identification of the model matching your specification.





We are a company with more than 50 years of experience in the field of industrial measurement and control instrumentation.

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Via Mario Idiomi, 3/13

I - 20090 Assago (MI)

Tel. +39 02 539 8941

E-mail smeri@smeri.com

www.smeri-international.com

