S-ROTA
SMART LINE Series

Rotameters for liquids and gas

Applications

- Chemical and petrochemical industry
- Pharmaceutical industry
- Food and Beverage industry
- Water treatment plants
- Power stations

Features and Benefits

- Robust design, all metal structure
- Reliable measurement, with or without power in critical and harsh environments
- Suitable for high pressure, high temperature or strong corrosive mediums
- Local display and multi-line LCD display offer high resolution, high visibility and 4-20 mA output
- Horizontal installation type and vertical installation type

S-ROTA

EXTREMELY CONVENIENT FLOW MEASURE FOR PROCESS AND SERVICE APPLICATIONS

S-ROTA rotameter of the SMART LINE series adopts he variable area measuring principle, which is applicable for measuring liquids, gases and steam.

The variable area flowmeters are one of the oldest flow measurement systems with a remarkably simple design: a float rises inside a conically shaped tube as the flow increases and its position on a scale can be read off as the flow rate value.

This measuring method is only mechanical; thus, it is as simple and reliable. If you require flexibility (from the measurement of air to an extremely aggressive medium), the flowmeter **S-ROTA** is the right choice.

It has a 0-10mA, 4-20mA standard analog signal output and local display, digital communication and different power supply functions.

FUNCTIONS

The S-ROTA rotameter allows the flow reading of fluids, especially turbid and opaque liquids, in closed pipes.

- Indication of flow rate (m³/h)
- Totalizer (m³)
- Medium temperature (°C)
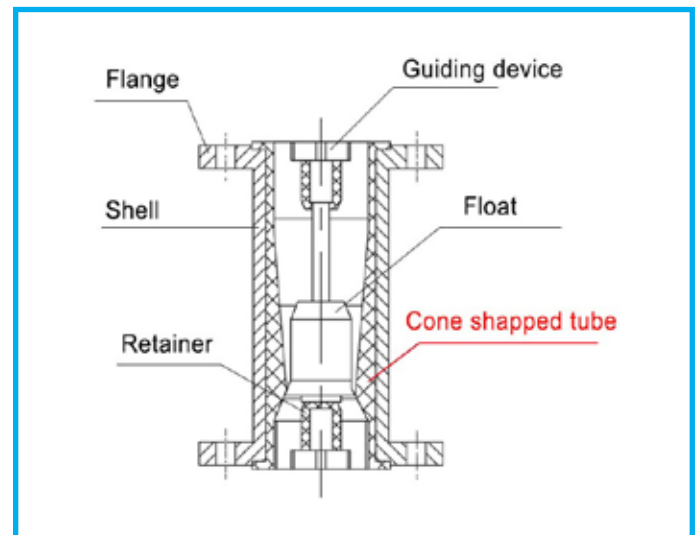- Pressure (Kpa)
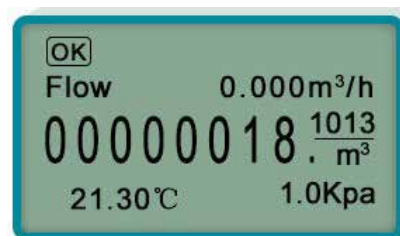
DESIGN

ALL-METAL STRUCTURE DESIGN

Thanks to the chemically and mechanically resistance in terms of pressure and temperature, it also offers security against incidents.

Optional materials for the measuring parts: stainless steel, titanium, Hastelloy, PTFE, FEP etc.

Cone tube design

The metal tube rotameter adopts the cone-shape design, reducing the flow area and, thus, reducing errors and increasing accuracy.

TECHNICAL DATA

Measured medium	Liquid, gas or steam
Accuracy	Normal type: ±2.5%, high accuracy type: ±1.5% or 1.0%
Medium temperature	Standard type: -80~+200°C High Temperature type: 300 °C Lined with FEP type: ≤85 °C
Medium viscosity	DN15: ≤ 5 mPa.s ≤ 30 mPa.s DN25: ≤ 250 mPa.s DN50-200: 300 mPa.s
Working pressure	DN15-DN50 4.0 MPa DN15-DN150 PN16 MPa (special type 25 MPa) DN80-DN150 PN10 MPa (special type 16 MPa) Jacket pressure rating 1.6 mPa
Measuring range	Water (20 °C) 16 ... 150000 l/h Air (0.1013 MPa at 20 °C) 0.5 ... 4000 m³/h
Turn down	10:1 (special type 20:1)
Ambient temperature	-40..+120 °C (remote display without LC ≤ 85°C; remote display with LC ≤ 70 °C)
Load influence	≤ ±0.1%
Housing material	Aluminium alloy
Measuring pipe material	Normal type 1Cr18Ni9Ti, anti-corrosive type PTFE
Protection class	IP65, IP67
Pipe connection	Flange, thread, Tri-Clamp
Power supply	24 VDC, 3.6V lithium battery power
Output	- Standard signal: two-wire system 4-20 mA (with HART communication - Standard signal: three-wire system 0-10 mA - Alarm signal: 1. Two-way relay output. 2. One-way or two-approach switches - Pulse: 0-1 KHz isolated output
Communication	Remote transfer converter: 4-20mA, HART protocol

MODELS

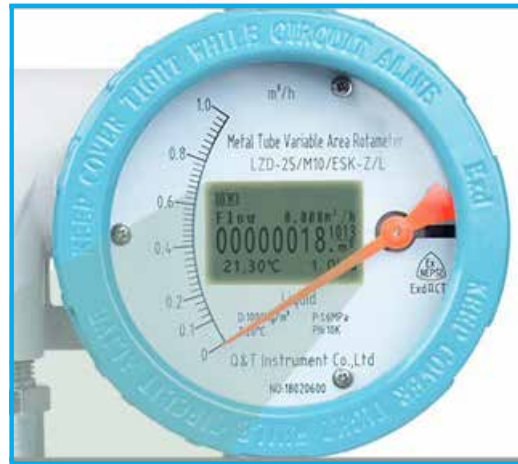**INDICATOR** WITH POINTER DISPLAY

- High resolution
- High accuracy
- Long-term operation

INDICATOR WITH LCD DISPLAY AND OUTPUT

- Multi-line LCD display
- High visibility
- 4-20 mA output
  Output options: 4-20 mA + HART, 4-20 mA + RS485,
  4-20 mA + Alarm, 4-20 mA + pulse

STRUCTURE

Bottom - top

Side - side

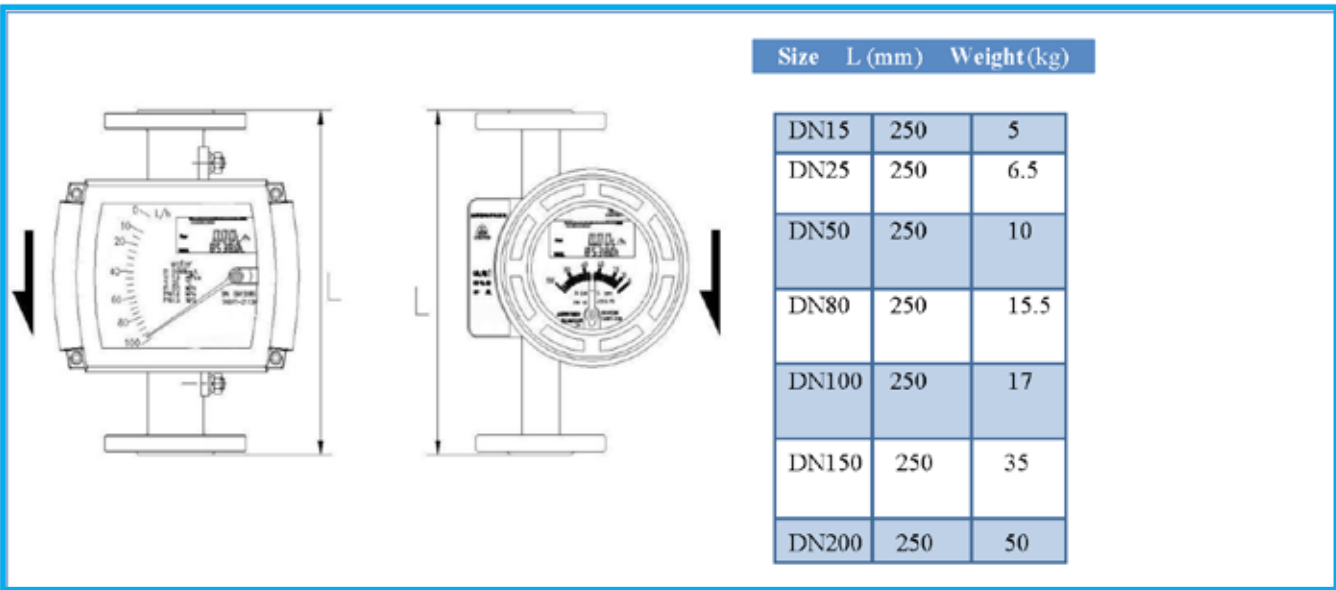Left - right, right - left
(horizontal)

DIAMETER, FLOW RANGE, PRESSURE LOSS

Diameter (mm)	Work number	Flow range			Pressure loss kpa		
		Water L/h		Air m3/h	Water Kpa		
		Normal type	Anti-corrossion type	Normal type Anti-corrossion type	Normal type	Anti-corrossion type	Air
15	1A	2.5~25	--	0.07~0.7	6.5	-	7.1
	1B	4.0~40	2.5~25	0.11~1.1	6.5	5.5	7.2
	1C	6.3~63	4.0~40	0.18~1.8	6.6	5.5	7.3
	1D	10~100	6.3~63	0.28~2.8	6.6	5.6	7.5
	1E	16~160	10~100	0.48~4.8	6.8	5.6	8.0
	1F	25~250	16~160	0.7~7.0	7.0	5.8	10.8
	1G	40~400	25~250	1.0~10	8.6	6.1	10.0
	1H	63~630	40~400	1.6~16	11.1	7.3	14.0
25	2A	100~1000	63~630	3~30	7.0	5.9	7.7
	2B	160~1600	100~1000	4.5~45	8.0	6.0	8.8
	2C	250~2500	160~1600	7~70	10.8	6.8	12.0
	2D	400~4000	250~2500	11~110	15.8	9.2	19.0
40	4A	500~5000	300~3000	12~120	10.8	8.6	9.8
	4B	600~6000	350~3500	16~160	12.6	10.4	16.5
50	5A	630~6300	400~4000	18~180	8.1	6.8	8.6
	5B	1000~10000	630~6300	25~250	11.0	9.4	10.4
	5C	1600~16000	1000~10000	40~400	17.0	14.5	15.5
80	8A	2500~25000	1600~16000	60~600	8.1	6.9	12.9
	8B	4000~40000	2500~25000	80~800	9.5	8.0	18.5
100	10A	6300~63000	4000~40000	100~1000	15.0	8.5	19.2
150	15A	20000~100000	--	600~3000	19.2	--	20.3
200		20000-200000	--	600-5000		--	

SIZE AND WEIGHT

Top - Bottom type

Size	L (mm)	Weight (kg)
DN15	250	5
DN25	250	6.5
DN50	250	10
DN80	250	15.5
DN100	250	17
DN150	250	35
DN200	250	50

Side - Side type

Size	DN15	DN25
F (mm)	120	120
L (mm)	250	250
Weight (kg)	6	7.2
Pressure Loss (kpa)	21	30

（DN15～DN25）

Size	F (mm)	L (mm)	H (mm)	Weight kg	Pressure loss kpa
DN50	120	250	650	13	36
DN80	150	300	800	34	45
DN100	150	350	800	49	58
DN150	180	350	850	66	63

（DN50～DN150）
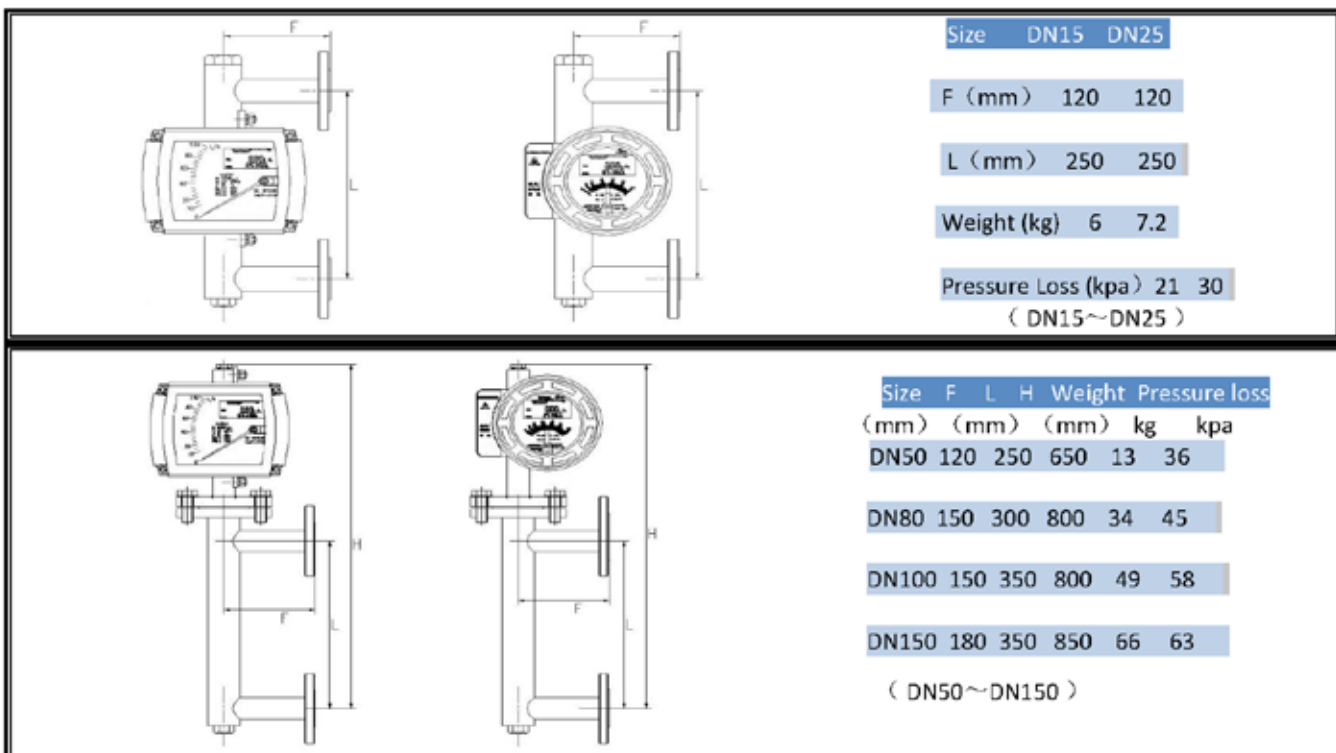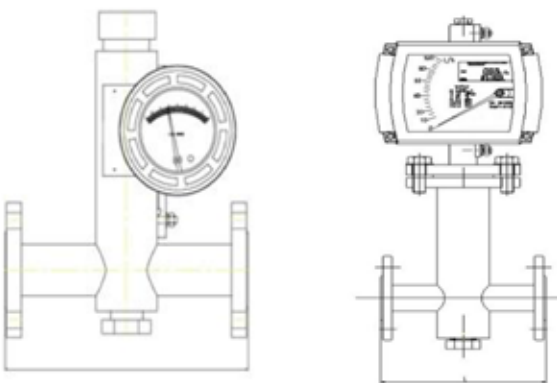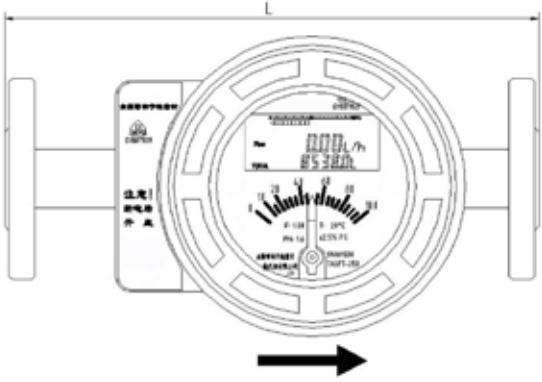
Horizontal installation type
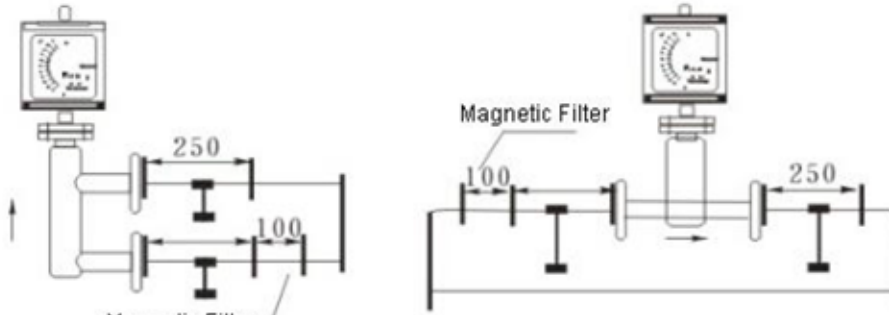
（DN15-DN200 Gas）

Size	L(mm)
15	250
20	250
25	250
40	300
50	300
65	400
80	400
100	400
125	500
150	500
200	500

Size	L(mm)
15	250
20	250
25	250
40	250
50	250
65	250
80	250
100	250
125	250
150	250
200	**250**

（DN15～DN200 Liquid）
(M8/M9 Converter Selectable)

Magnetic Filter

Side - Side Installation

Magnetic Filter

Horizontal Installation (Left - Right, Right-Left)

![SMERI INTERNATIONAL logo]

FLOAT

Embedded stainless steel float
Optional materials: SS304, SS316, Titanium, Hastelloy, PTFE, FEP etc.

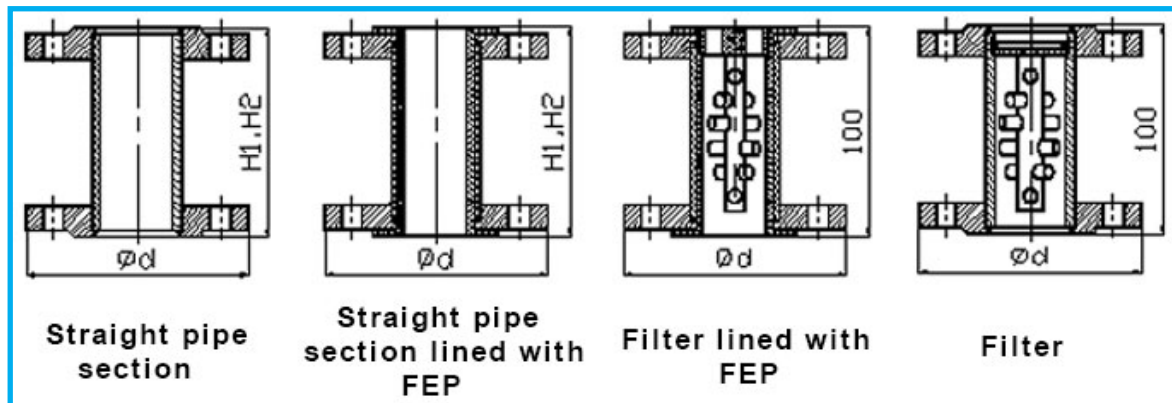## FLOAT STOP SHAFT

Prevent the float straying from the right path and guarantees the measuring accuracy.

INSTALLATION CONDITIONS

Straight pipe section

Straight pipe section lined with FEP

Filter lined with FEP

Filter

SIZE	DN15	DN25	DN50	DN80	DN100	DN150
INLET RUN	75	125	250	400	500	750
OUTLET RUN	250	250	250	250	250	250
Ød (mm)	95	115	165	200	220	285

SELECTION GUIDE

The order code consists of the root of the product
(S-ROTA-PHLZ-) followed by the 10 positions based on the
selected options.

S-ROTA-PHLZ

1	**INDICATOR**	
	LOCAL INDICATOR	Z
	LCD INDICATOR + OUTPUT	D

2	**NOMINAL DIAMETER (PN 16)**	
	DN 15 mm	15
	DN 20 mm	20
	DN 25 mm	25
	DN 32 mm	32
	DN 40 mm	40
	DN 50 mm	50
	DN 65 mm	65
	DN 80 mm	80
	DN 100 mm	100
	DN 125 mm	125
	DN 150 mm	150

3	**STRUCTURE**	
	BOTTOM-UP	0
	LEFT-RIGHT (HORIZONTAL)	H1
	RIGHT-LEFT (HORIZONTAL)	H2
	SIDE-SIDE	AA
	BOTTOM-SIDE	LA
	THREAD CONNECTION	S
	TRI-CLAMP CONNECTION	M

4	**BODY MATERIAL**	
	SS 304	R4
	SS 316	RSL
	HASTELLOY C	HC4
	TITANIUM	TI
	LINER PTFE	F
	MONEL	M

5	**INDICATION TYPE**	
	LINEAR INDICATOR (ANALOG DISPLAY)	M7
	NON LINEAR INDICATOR (LCD DISPLAY)	M9

6	**INDICATOR ANTI CORROSIVE TYPE**	AC

7	**POWER SUPPLY/OUTPUT**	
	24 VDC + 4…20mA	S
	24 VDC + 4…20mA + HART	Z
	BATTERY POWER SUPPLY	D

8	**OPTIONS**	T
	INSULATION JACKET	HT
	HIGH TEMPERATURE VERSION (120°C)	

9	**CERTIFICATE**	
	NON ATEX CERTIFICATE	N
	ATEX certification pending.	

10	**ALARM OUTPUT**	
	ONE ALARM	K1
	TWO ALARM	K2
	NO ALARM	N

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

Specifically, we look at the internalization of some measuring systems that, due to shipping speed, performance, and low costs, can be offered in multiple industrial branches, from food to petrochemicals, from pharmaceuticals to energy production, from naval to water treatment.

Each process has specific requirements, which depend on the characteristics of the system, the environment, and the fluid to be treated.

SMERI International offers tailor-made instrumentation for liquids and gases, from the most common to the most critical ones.

We have the luck and the merit to benefit from a young and highly dynamic team of experts, who can recommend ad-hoc solutions for each application to optimize customers' processes in terms of economic efficiency and safety.

The motto is *Finding solutions together* and summarizes the spirit of SMERI: **a close collaboration with the customer and according to an ethical behavior of respect, fairness, and confidentiality.**

In the European market, SMERI is represented and distributed by companies well-known in the industrial world for their seriousness and experience.

SMERI INTERNATIONAL