Digital Flowmeter typed of oval gear GT500-D

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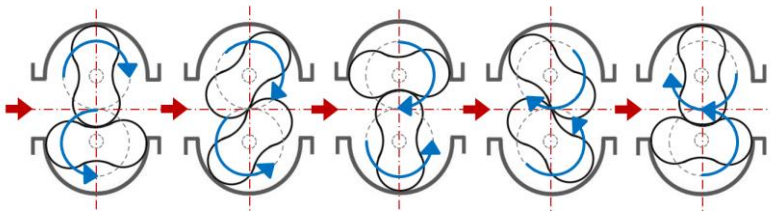
1. Product Introduction

The working principle of oval gear flowmeter is that liquid pushes a pair of oval gears to rotate. The volume of each cavity is a fixed volume; The speed of the gear is led out, the sensor sends out synchronous pulse counting, and the rotation of the oval gear is transmitted to the counter through the magnetic sealing coupling and the transmission reduction mechanism to directly indicate the total flow rate through the flowmeter.

Typical applications:

The Oval gear flowmeter is mainly used to measure high viscosity media.
Products are widely used in petroleum, petrochemical, natural gas, chemical, paper and other industries, for the measurement of small pipe diameter flow measurement.



Oval gear operation Schematic

2. Main Features

- The diameter is from 15 to 100mm
- The range is 10:1, the maximum is 50:1
- The accuracy was ±0.5%
- The installation of direct pipe section requirements: 10D+5D, need to add filters
- The viscosity can be up to 200mPa.s
- The maximum pressure level can be up to 550bar
- Heat resistance level up to -25~100°C
- Microprocessor type transmitter
- 8 digits for totalizer typed of reset.
- Self-check function

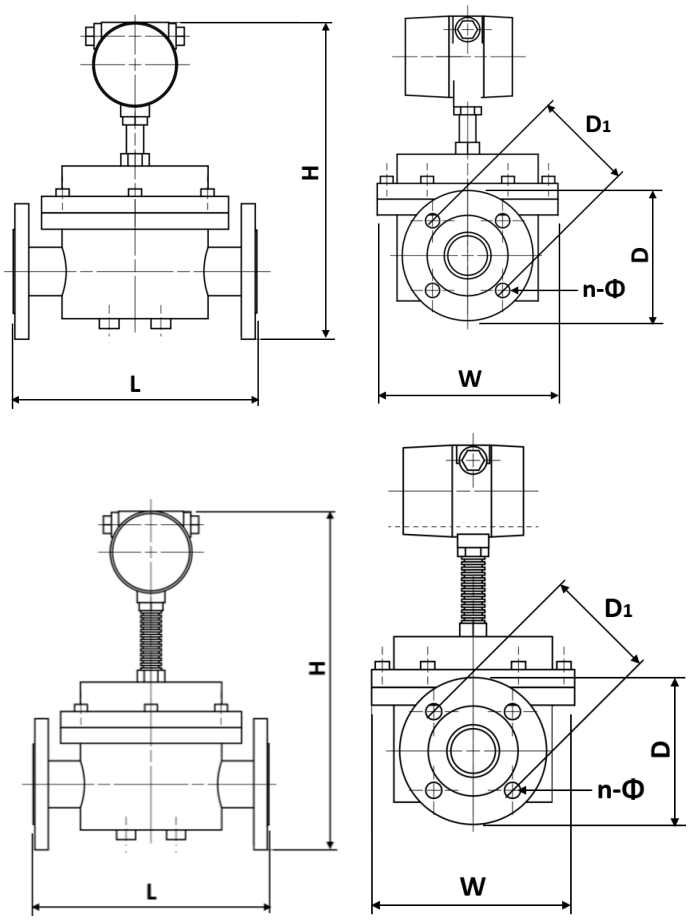
3. Technical Specification

Display		LCD 8-digits for totalizer and flow rate.
Application		Viscosity fluid with more than 2MPa.s
Accuracy		0.5% of full scale
Measuring range		0.16~100m³/h
Diameter (mm)		DN15……..DN100
Range ratio		1 : 10
Max viscosity		up to 200mPa.s
Operating temperature		-25~100°C (Option: With cooling fin: ~180°C)
Connection		Flange (Fixed welding type and Moveable type)
Material	**Meter body**	Cast steel or SUS304
	Rotor	Cast steel or SUS304
	Flange	Cast steel or SUS304
	Cable gland	SUS304
Digital transmitter		
Power		DC 12~24V (Max. 100mA, 2W) or 3.6V Lithium battery
Output		4-20mA / Pulse / RS485-Modbus (3-wire)
Press		1.6Mpa, Option: 2.5MPa, 4.0MPa, 6.4Mpa
Damping time		Adjustable
Flow coefficient		Adjustable
Pulse width		Standard 50ms, adjustable
Frequency range		5,000Hz
Cable gland		M20X1,5 or NPT1/2” Female.
Enclosure		IP65

4. Technical Parameter

Model	Nominal Diameter DN (mm, Inch)	Flow Range (m³/h)	Flow Range (l/m)	Accuracy	Pressure (MPa)
GT500-D-15	15mm (1/2”)	0.16~1.5 m³/h	2.66~25 l/m	0.5%	1.6Mpa, 2.5MPa, 4.0MPa, 6.4Mpa
GT500-D-20	20mm (3/4”)	0.3~3.0 m³/h	5~50 l/m		
GT500-D-25	25mm (1”)	0.6~6.0 m³/h	10~100 l/m		
GT500-D-40	40mm (1 1/2”)	1.5~15 m³/h	25~250 l/m		
GT500-D-50	50mm (2”)	2.4~24 m³/h	40~400 l/m		
GT500-D-65	65mm (2 1/2”)	2.4~24 m³/h 6.0~60 m³/h	40~400 l/m 100~1,000 l/m		
GT500-D-80	80mm (3”)	6.0~60 m³/h	100~1,000 l/m		
GT500-D-100	100mm (4”)	10~100 m³/h	166~1,666 l/m		

5. Dimensions



● **General type** (Unit: mm)

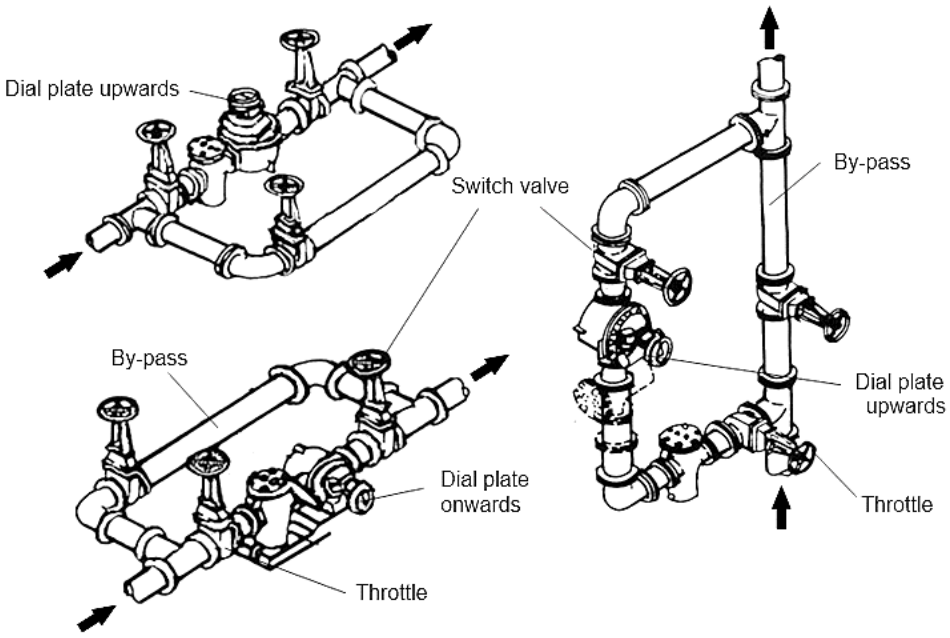
DN	L	H	D	D_1	W	n- Φ	Weight	Packing
15	200	250	105	75	120	4-Φ15	11.5kg	Carton
20	240	250	125	90	160	4-Φ15	17kg	
25	260	250	135	100	190	4-Φ19	18kg	
40	280	300	165	125	190	4-Φ19	26kg	
50	300	330	175	135	230	4-Φ19	42kg	
80	380	370	210	170	280	8-Φ19	65kg	Wooden box
100	500	500	250	200	420	8-Φ19	106kg	

● **High temperature type (with cooling fin)** (Unit: mm)

DN	L	H	D	D_1	W	n- Φ	Weight	Packing
15	200	300	105	75	120	4-Φ15	11.5kg	Carton
20	240	300	125	90	160	4-Φ15	17kg	
25	260	300	135	100	190	4-Φ19	18kg	
40	280	350	165	125	190	4-Φ19	26kg	
50	300	380	175	135	230	4-Φ19	42kg	
80	380	420	210	170	280	8-Φ19	65kg	Wooden box
100	500	550	250	200	420	8-Φ19	106kg	

6. Installation

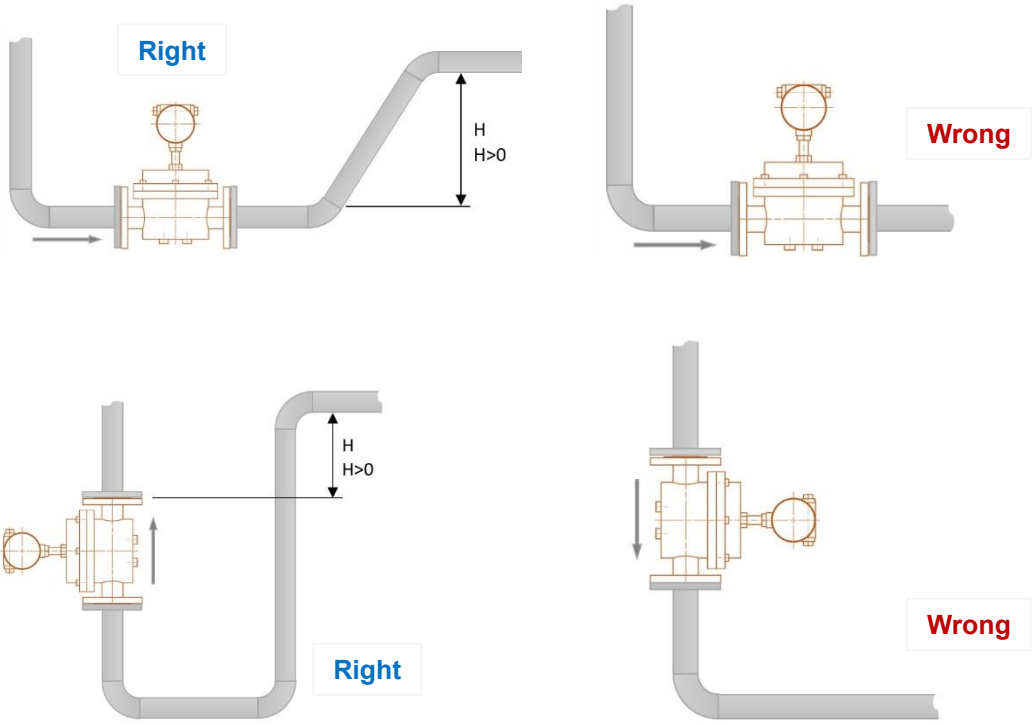
- **Stand installation**



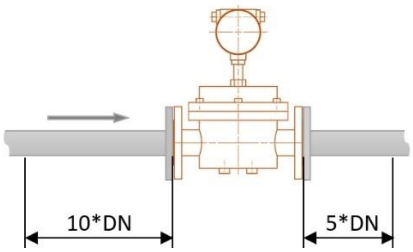
Horizontal Installation *Vertical Installation*

- **Ensure full package**

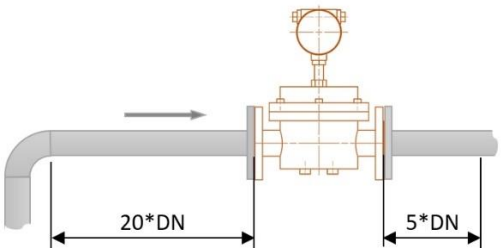
At all times, the pipe must be completely filled with liquid. Otherwise, the flow display will be affected, resulting in measurement error.



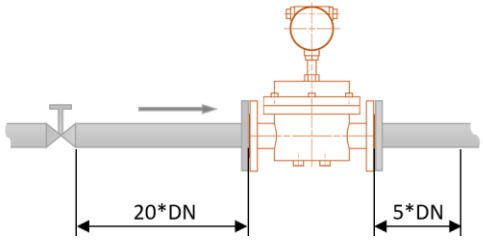
- **Straight pipe section requirements**



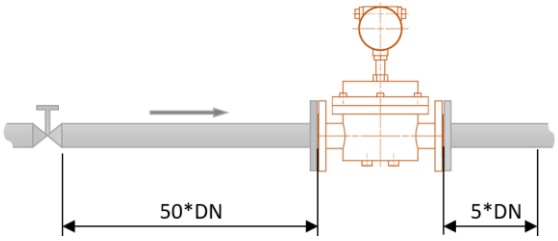
General pipeline



90 deg Bend



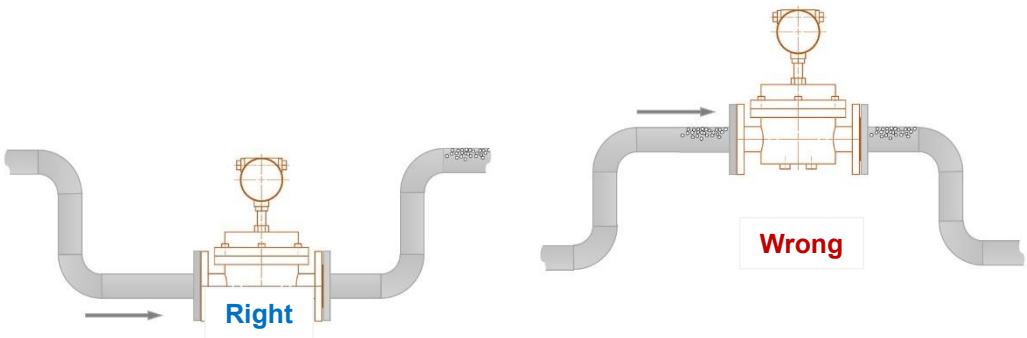
Open the valve

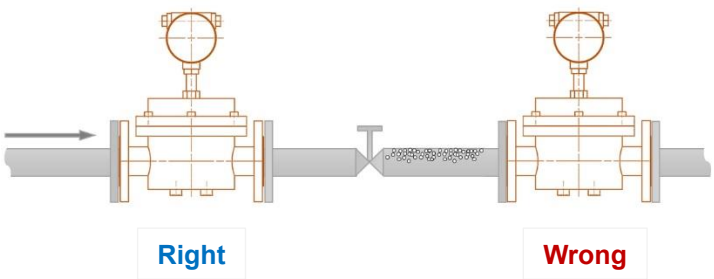


Partially open the valve

- **To avoid air bubbles**

If bubbles enter the measuring tube, the flow indication will most likely be affected, leading to measurement error.





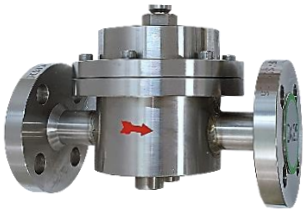
7. Components of a product

- **Converter & Name plate**

Converter

Name plate

- **Flange style**



***(F):** fixed welding*

***(M):** Movable*

- **Wiring diagram & battery**

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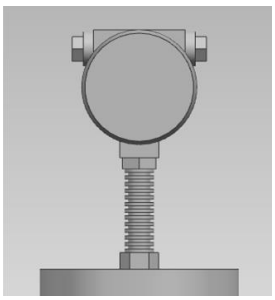
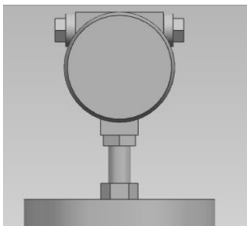


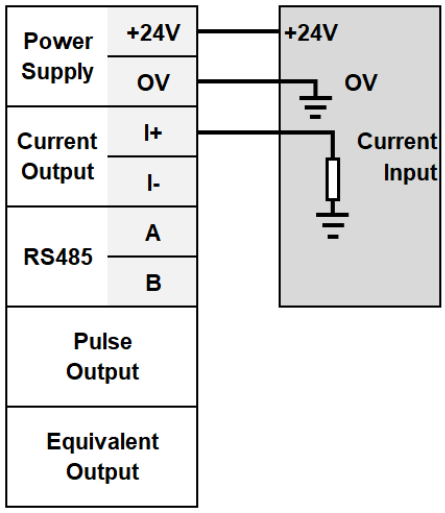
High temperature type (with cooling fin): -25~100°C



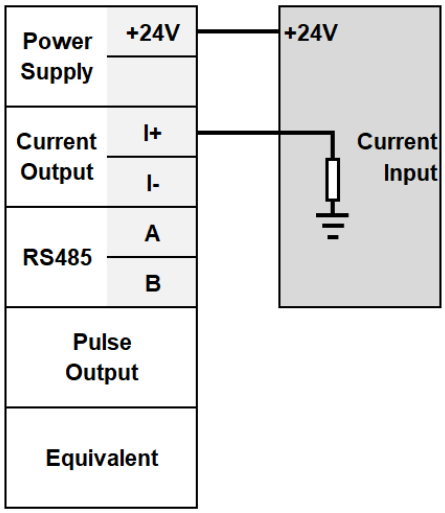
General type: -25~80°C

8. Outputs Connection

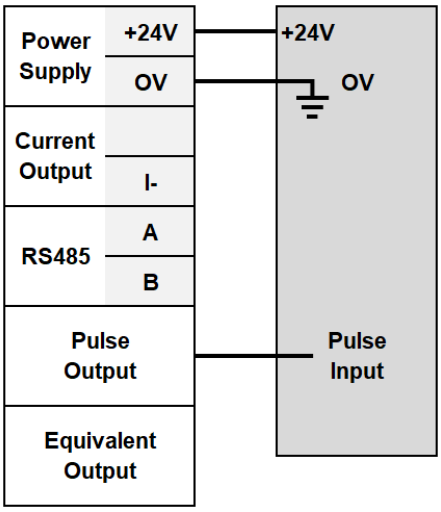
1. Three-Wire Current Output Wiring



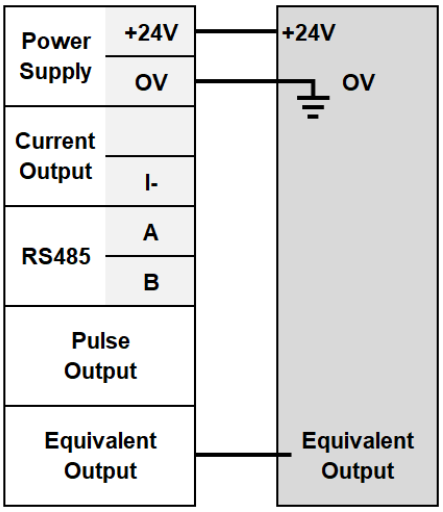
2. Two-Wire Current Output Wiring



3. Three-Wire Pulse Output Wiring
(Flow rate)



4. Three-Wire Equivalent Output Wiring
(Total flow)



9. Model selection

Model: **GT500-D**			
Meter & Function			Oval Gear Flowmeter typed of digital.
Material	**Body**	**C**	Cast steel
		S	SUS304
	Rotor/ Gear	**C**	Cast steel
		S	SUS304
	Flange	**C**	Cast steel
		S	SUS304
Nominal diameter		**15…..100**	DN15…….. DN100
Special request		**N**	No.
		Y	Flange reduced (extended)
Process temperature		**N**	-25~80°C
		H	-25~100°C
		C	-25~180°C
Nominal pressure		**-16**	1.6 MPa
		-25	2.5 MPa
		-40	4.0 MPa
		-63	6.3 MPa
Flange rating and style		**D ( )**	DIN: PN16, PN25, PN40, PN60
		A ( )	ANSI: 150LB, 300LB, 600LB, 900LB
		J ( )	JIS: 10K, 20K, 30K, 63K
		( )	**(F):** fixed welding, **(M):** Movable
Counter			Digital counter and transmitter.
Power supply		**D**	DC 12~24V (Max. 100mA, 2W)
		B	3.6V Lithium battery, No output
Signal output		**I**	4~20mA (Standard)
		Option added to linear output	
		P	Pulse output (NPN open collector)
		R	RS485 (Modbus)
Cable gland		**M**	M20X1,5 (SUS304)
		N	NPT1/2” (SUS304)
		O	Others