Liquid Turbine Flowmeter

Overview

Application

Lomas Turbine flowmeters are precision flow measuring instruments that measure the flow and total volume of clean, non-corrosive liquids and gases. They are widely used in petroleum, chemical, metallurgy, scientific research, and other fields.

Working Principle

When the measured fluid flows through the flowmeter, the impeller rotates under the action of the fluid. The impeller's rotational speed is proportional to the average flow velocity of the fluid in the pipeline. The rotation of the impeller periodically changes the magnetic circuit's resistance, causing the magnetic flux in the detection coil to change periodically. This generates an induced electromotive force with the same frequency as the impeller's rotational frequency. After being amplified, this signal is converted and processed to determine the fluid flow rate.

Product Structure

The basic structure of a turbine flowmeter, as shown in Figure 1-1, consists of a meter body, a front guide, a rear guide, an impeller, a magnetic pickup coil, and a signal converter.

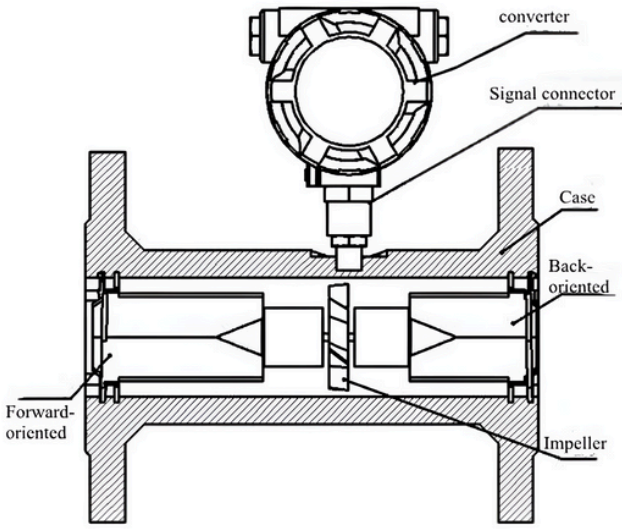


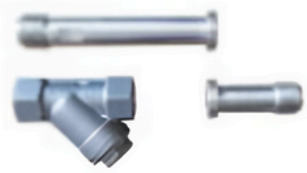
Figure 1-1 Flange turbine structure drawing

Flowmeter Types

Converter

		
Pulse output type	Current output type	Intelligent display type

Sensor

		
Thread connection	Tri-clamp connection	Flange connection
		
Accessories: filter and straight pipe section	Accessories: clamp, chuck	

Technical Parameters

Applicable medium

- No impurities
- Low viscosity
- No strong corrosive liquid

Temperature

- **Ambient temperature:** (-20~+60)℃
- **Relative humidity:** 5%~90%
- **Atmospheric pressure:** (86~106)kPa.
- **Medium temperature:**

  (-20~+200) ℃ (Standard)

  (-20~+130) (customization)

Nominal diameter

- **Applicable caliber:** Dn4-200mm
- DN4-50mm (Thread connection)
- DN4-100mm (tri-clamp connection)
- Dn4-200mm (Flange connection)

Power supply

- Main power: 24VDC
- Battery-powered: 3.6V lithium battery.

Output signal

- Pulse; 4 ~ 20 mA
- RS485 Modbus protocol communication.

Flow Range

Caliber (mm)	Flow range(m3/h)	Extended flow rangem3/h)
4	0.04~0.25	0.04~0.4
6	0.1~0.6	0.06~0.6
10	0.2~1.2	0.15~1.5
15	0.6~6	0.5~5
20	0.8~8	0.45~9
25	1~10	0.5~10
32	1.5~15	0.8~15
40	2~20	1~20
50	4~40	2~40
65	7~70	5~70
80	10~100	7~100
100	20~200	10~200
125	25~250	13~250
150	30~300	15~300
200	80~800	40~800
Accuracy	0.5%	1.0%