

EPT Thermodynamic Flowmeter



Introduction

The thermodynamic flowmeter is installed in pipelines to measure flowing liquid. When the fluid comes into contact with its heated probe, it takes away the heat on the probe. By measuring the probe's change in temperature, the flow rate is measured and converted into a 4~20mA current output, simultaneously measuring both temperature and flow rate.

The thermodynamic flowmeter needs to be combined with a screw adapter during assembly. The lock is attached to the pipe, and the sensing probe is inserted into the pipe to measure the temperature and flow rate of the liquid.

Product Features

- Has flow rate and temperature measurement functions.
- Supports Modbus digital communication.
- IP68/IP69K protection level.
- Built-in anti-surge protection.
- There is no wear-and-tear on the mechanical structure.
- Liquids containing impurities can also be detected because there is no mechanical structure.
- The length of the sensor rod can be designed and produced in accordance with the size of the pipe on site.



Specifications

Working power supply	12~32VDC
Current consumption	<100mA @24V
Medium temperature	0~125°C (Note 1)
Temperature measurement range	-25~150°C
Ambient temperature	-25~80°C
Medium	water
Measuring range	10~400cm/s
Measurement error	<2% @under standard field conditions (Note 2)
Temperature change response time	10s
Pressure	100bar
Analog output	4~20mA
	Group 1 Measuring flow rate (cm/s)
	Group 2 Measuring temperature (°C) (optional)
Communication interface	RS-485 (Note 3)
	Flow rate (cm/s), temperature (°C)
Response time	2~5s
Short circuit protection	Yes
Reverse power supply protection	Yes
Electrical connection	M12*1 (6pin)
Shell material	316L
Protection level	IP68/IP69K

Note 1:
The sensor is calibrated for water as the medium. Technically, the sensor is usable when the medium's temperature is -25°C. To reach below 0°C, different substances must be added to the water. According to different measurement results, for temperatures below 0°C, the mixture must be tested separately.

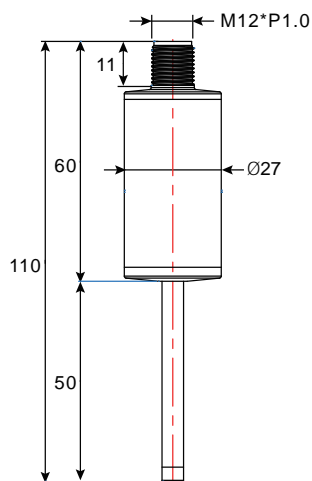
Note 2:
The temperature of the flowing water is 26±1°C, the pressure is 1±0.2bar, and the pipe is installed vertically. The sensor's sensing probe is located at the centre of the pipe. The inner diameter of the pipe is 25mm (D). The length of the pipe is 12D or more on the upstream side and 12D or more on the downstream side.

Note 3:
RS-485 communication. Up to 20 units can be connected.

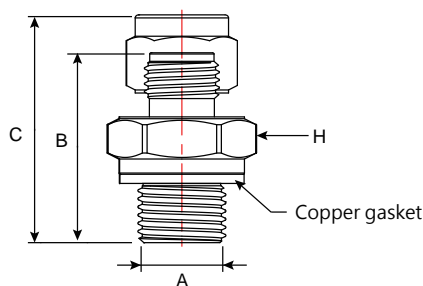
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External Size

(Unit:mm)



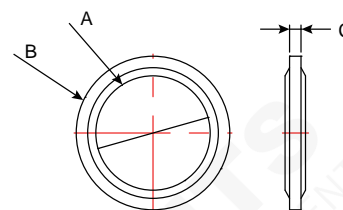
Quick connector (optional)



A	B	C	H(Hex)
1/2" PF	37.1	44.7	27
1/4" PF	30.1	37.5	19

Oil sealing gasket (optional)

Matching clamp size	A	B	C
1/2" PF	24.3	33.3	2.3
1/4" PF	14.9	22.3	2



Ordering Instructions

EPT 1 0 0 0 0 - A 1 0 0 0 0 0 0 17 18 19 20 21

⑰ Output / input

A : 12~32VDC, 4~20mA, With RS-485

C : 12~32VDC, 4~20mA*2, With RS-485

D : 12~32VDC, With RS-485

⑱⑲⑳㉑ Total length

Code	Probe length
0032	32mm
0050	50mm
0075	75mm
0100	100mm
0200	200mm

Optional



M12 Cable

Part number	Specifications
PC312-22316B2M01	Single head M12, General type 180, PVC, Without lamp, 6C, 2M
PC312-22316B5M01	Single head M12, General type 180, PVC, Without lamp, 6C, 5M



Quick Connector

Part number	Specifications
HP411-AIR001A503	1/2"PF*ID6,SUS316
HP411-AIR001A212	1/4"PF*ID6,SUS316



Oil Sealing Gasket

Part number	Specifications
HP403-C030352803	OD33.3*ID24.3*2.3t,1/2"PF用,VITON(FKM)
HP403-C020252802	OD22.3*ID14.9*2t,1/4"PF用,VITON(FKM)

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