AI IoT Accurate Flow Meter

FineTek

Innovation · Quality · Sharing

Finetek: First Flowmeter Brand In Asia

40 years heritage, trusted by customers

With over 40 years of experience in process automation sensor technology, FineTek keeps devoting a lot of R&D resources to the development and optimization of physical measurement sensors, and also improving the production processes and testing equipment to ensure consistency in product quality to meet the needs of a wide range of customers worldwide.

FineTek has extensive product lines, and in particularly, wins long-term trust from customers by sensors and controller of transmission equipment applied in the process automation. So, FineTek has built up a great reputation of the leader manufacturer of automation sensors in Asia.

FineTek is dedicated to the production of industrial automation instruments. With headquarters in Tucheng, Taiwan, it also has established subsidiaries and production plants in Shanghai, Indonesia, and the United States, acquired the MUTEC factory in Germany and built up the second factory in Tucheng and Yilan; therefore, an effective global service network has been formed to provide sales and service support for global customers.

Taiwan - Taipei Headquarters

Taiwan - Yilan Factory

Trustworthy Quality

We are intended to make flow measurement devices better and better because we value industrial safety and strive to enhance product quality, processes excellence and environmental comfort. Finetek provides flow meters with proven and highest quality. We maintain the consistent concept of serving our customers and provide complete product solutions, from single flow measurement to system control. Each of our products has an exclusive test report based on customer requirements, and is equipped with the common communication interface used in automation plant equipment to facilitate the smoother linking of flow meters to new-realm applications.

** Accumulation, Display, Recording
** Monitoring, Controlling, Balancing
** Metering, Filling and Refueling
** Environmental Monitoring and Verification

Taiwan - Second Tucheng Factory

Germany - German subsidiary

Indonesia - Indonesia Subsidiary

China - Shanghai Subsidiary

Dedicated Development, Creating A New Market Vision

In the past, due to the lack of capacity in manufacturing flow meters in Taiwan, mechanical flow meters with low accuracy were commonly used in the market. Some of these products were OEM imported from mainland China, but no verification assured. Another option was to import electromagnetic flow meters from Europe and the United States, but with high unit prices and long lead time. In order to provide domestic and foreign customers with high-quality and accurate flow meter products at reasonable prices, FineTek has devoted itself to developing flow meter product lines since 2013, and invested several hundred million to build a water flow testing laboratory, accredited by national certification TAF (TAF certificate number 3086/3853) and international certification OIML R49.
Now this is the only flow meter calibration laboratory accredited by national standards in Taiwan. Compared to average companies who are unwilling or have difficulties to invest such capital expenditures and develop technical capabilities, this is FineTek's mission, willing to make every effort to build a high-accuracy calibrated flow measurement field, deliver products with precision validation and reasonable prices. From now on, our customers can use these flow meters with confidence.

Diverse Products, Which Meet Every Need

FineTek has a complete product line of four series of flow meters, including electromagnetic flow meters, paddle wheel flow meters, ultrasonic flow meters and intelligent flow transmitters. These products are designed to fully integrate with Environment, Social and Governance (ESG) elements, which can provide users with precise measurement and also reduce water consumption and sewage discharge to protect the environment. In recent years, our products have been applied to the district pipeline network of Taipei Water Department and to many intelligent groundwater flow management projects in the private sector. In addition to the original flow meters, the range of products has expanded flexibly to include pressure gauges and water quality monitoring equipment. Furthermore, these products can be equipped with batteries or solar energy, more environment-friendly power, and also can be integrated with IoT intelligence solutions to meet customer expectations for cloud wireless applications. FineTek's philosophy is to seek innovation and change, customer satisfaction, and profit sharing. We provide a variety of flow meters through technological innovation to achieve the goals of serving customers and making contribution to the society.

Smart Water, Of New & Advanced Management Standards

As learned from various market responses, the founder of FineTek invested a water meter measurement field based on CNMV (Technical Specification of Verification and Inspection for Water Meters) and developed an intelligence water meter in 2020, thereby breaking the market oligopoly chaos of existing products and accelerating the product quality of intelligence C-level water meters. This intelligence water meter can be used in a wide range of applications, and it is characterized by the ability to set the benchmarks according to the water usage habits, real-time monitoring and management, digital signal transmission through RS485 communication interface and remote output support by telecom communicator, high-standard LCD display module, electronic encryption function, big data management, high performance lithium battery for up to eight years, and the development trend created for automatic meter reading (AMR). Therefore, this intelligence water meter is granted several patents. These features are very useful in many applications such as long-term care services, shopping mall management, rental management, public sector management, school dormitories, intelligent green buildings and medical academic departments. Through the study of daily water consumption, we can see whether the elders are safe at home, and whether the operating units have excess water use. During the season of water stress, it is important to be aware of the water consumption of the public sector and big users, and these features will be very useful management tools with high added value, which have become new indicators of modern intelligent water management.

Flow Meters For Various Liquid

Flow is one of the physical variables commonly used in industrial processes. Fluids such as water, natural gas, steam, mineral oil, chemicals or wastewater are measured on a daily basis. There is no flow meter that can be used for every occasion, so it is FineTek's honor to provide you with the most suitable product according to your process needs.

Liquid applications / Products	Electromagnetic flow meter	Paddle wheel flow meter	Ultrasonic flow meter
Common liquid (e.g.: water)	●	●	●
Very low flow (<2 l/h)	●	×	×
Very high flow (>100000M3/h)	●	○	●
Non-conductive liquid	×	●	●
Viscous liquids (>50 cP)	●	○	×
Cryogenic liquids (e.g.: liquified natural gas)	×	×	○
Sanitary application	●	×	●
Slurry, suspended solids	●	×	×
Liquid/liquid mixture (e.g.: oil/water)	○	●	×
Liquid/gas mixture (e.g.: water/air)	○	●	×
Corrosive liquids (e.g.: acids, bases)	●	●	●
Mine application (e.g.: pulp)	●	×	×
Bidirectional measurement (forward/reverse)	●	●	●
External measurement without process interruption	×	×	●

● Applicable ○ Applicable with limitations (depending on applications, device designs and materials)

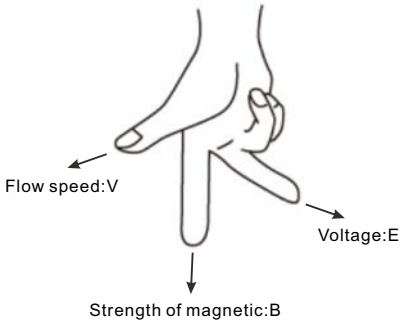
X Inapplicable

Scope of application			
Applicable nominal dameter	DN15~500	DN20~50	DN32~800
Operating pressure	16kg/cm²	10kg/cm²	depending on the transducer
Operating Ttemperature	-20~120°C	-15~100°C	-20~60°C
Range of flow rate	0.1m/s~10m/s	0.5m/s~8m/s	0.1m/s~15m/s

EPD Electromagnetic Flow Meter

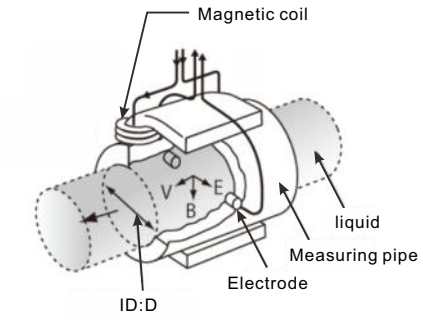
Overview

EPD electromagnetic flow meter is a high-accuracy flow meter manufactured by the latest international technology. It is widely used in pulp and paper, chemical industry, power industry, metallurgical industry, drainage, waste water treatment, liquid high-pressure metering, pharmaceutical, food, and environmental protection industries for measuring non-magnetic liquids and plasma in enclosed pipes.



Working Principle

The working principle of the electromagnetic flow meter is based on the Faraday law of electromagnetic induction. When the conducting liquid flows in the orthogonal direction of the magnetic line direction, it will cut the magnetic lines and generate induced voltage, which shows linear relationship with the flowing speed. Thus, the fluidic volume flow can be calculated.



Features

Low impact on environmental matter

- The measurement results are not affected by the change in liquid density, viscosity, temperature, pressure and conductivity.
- It can be widely applied in the conductive liquids that may contain fiber, solid granules and suspended matters.
- Housing protection rating: IP67 / NEMA 4X

Wide measurement range & high efficiency

- Wide measurement turndown ratio: 1: 100. Measurement range can be set randomly and achieve high accuracy for small flow measurement.
- Highly-integrated backlit display of two rows, double isolation, parameter setting, menu-type operation, memory function, reliable programming, password lock and access, small signal elimination, non-linear correction, and two-way measurement.
- Various outputs: Current output 4~20 mA, frequency output 2~8KHz, RS485 communication.

Enhanced self-diagnostics

- Power-saving and low fault rate: No moving and baffle parts in the measuring tube to prevent pressure losses and pipe blockage.
- Intelligence self-detection and self-diagnosis function, as well as various alarms.

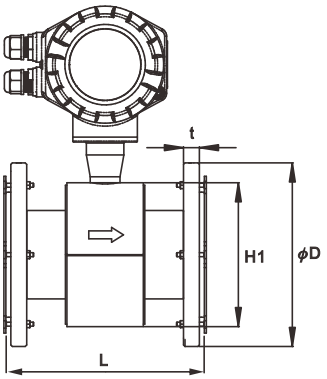
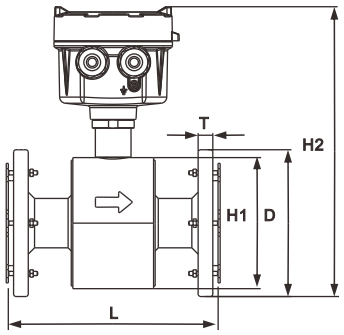
Low installation cost

- It is easy-to-install with low requirements for the straight tube section (Front 5D and back 2D).
- 2-wire analog output.
  Available for records for parameter modifications, boot/ shut device (Option)
  Authority management is available in menu (Option)

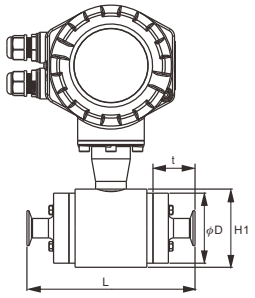
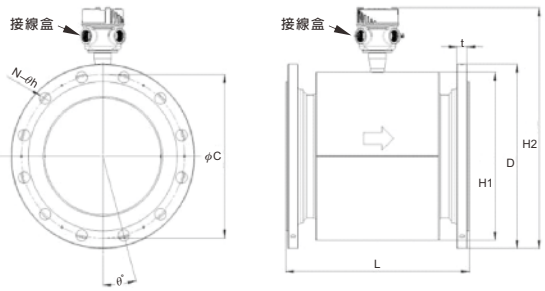
Application Fields

- Waste water treatment
- Tapped water purification
- Sewer Engineering
- Seawater desalination module
- Dyeing machinery
- Solar energy and PCB wet process
- Food manufacturing
- Pharmaceutical machines

Flow Meter Specifications

Appearance		
	EPD30 Standard Type	**EPD34 Remote Type**
Advantages	■ Measurement is virtually independent of density, viscosity, temperature, pressure and conductivity ■ Wide measurement range & high efficiency ■ Low failure because of no moving and baffle parts in the measuring tube ■ Intelligence self-test and self-diagnostics	
Technical Data		
Power Supply	AC 100~240V 24Vdc	
Process Temp.	120°C	
Product pressure Resistance	16kg/cm²(Please contact FineTek if pressure requested more than16 Kg/cm^2)	
Process Connection	Flange(DIN,ANSI,JIS)	
Materials	Carbon Steel / SUS304, 316L	
Output Signal	4~20mA,RS-485 NPN Transistor Output 32vdc/200mA	
Degree of accuracy	±0.5% of reading	
Enclosure specifications	Aluminum Alloy Baking Varnish	
IP rating	IP67	
Range of Flow Rate	0.1m/s ~ 10ms	
Product Applications	■ Tapped water purification ■ Sewage wastewater treatment discharge pipeline flow rate ■ Sewer Engineering ■ Dyeing machinery ■ Factory water cycle energy saving pipeline	

Flow Meter Specifications

Appearance		
	EPD36 Sanitary Connection Standard Type	**EPD39 Battery-powered Type**
Advantages	■ Measurement is virtually independent of density, viscosity, temperature, pressure and conductivity ■ Wide measurement range & high efficiency ■ Low failure because of no moving and baffle parts in the measuring tube ■ Intelligence self-test and self-diagnostics	■ It can be widely applied in the conductive liquids that may contain fiber, solid granules and suspended matters. ■ Housing/wire/connection protection IP68 ■ Built-in battery without supply mains (batteries as consumables) ■ Support for setting measurement recording time and signal return interval
Technical Data		
Power Supply	24Vdc/100~240Vac,50/60Hz	14.4VDC
Process Temp.	120°C	70°C
Product pressure Resistance	16kg/cm²(Please contact FineTek if pressure requested more than16 Kg/cm^2)	
Process Connection	Flange(DIN,ANSI,JIS)	Flange(DIN,ANSI,JIS)
Materials	SUS 316L	SUS 316L
Output Signal	4~20mA,RS-485 NPN Transistor Output 32vdc/200mA	4~20mA , RS485,Modbus
Degree of accuracy	±0.5% of reading	±0.25% F.S.
Enclosure specifications	Aluminum alloy baking varnish	Aluminum alloy baking varnish
IP rating	IP67	IP68
Range of Flow Rate	0.1m/s ~ 10ms	0.015m/s ~ 10ms
Product Applications	■ Clear water or food manufacturing pipelines ■ Pharmaceutical machines ■ Seawater desalination module	■ Water or waste water treatment equipment ■ Monitoring of the district pipeline network of tapped water ■ Sewer Engineering ■ Applicable in environments without supply mains

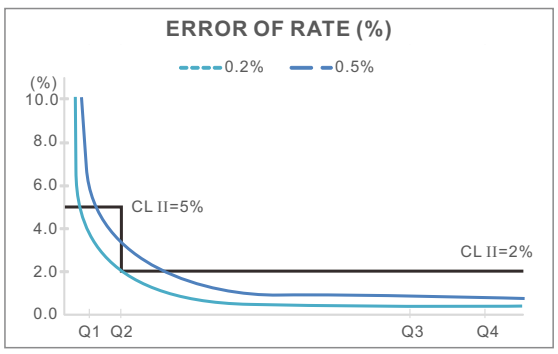
Selection of Pipe Diameter, Flow Range and Accuracy

Pipe diameter (mm)	Flow range m3/h	
	Flow rate 0.1~1.0m/s	Flow rate 1.0~10m/s
15	0.06~0.64	0.64~6.4
25	0.17~1.77	1.77~17.7
40	0.45~4.5	4.5~45.2
50	0.71~7.1	7.1~71
65	1.19~11.9	11.9~119
80	1.81~18.1	18.1~181
100	2.83~28.3	28.3~283
125	4.42~44.2	44.2~442
150	6.36~63.6	63.6~636
200	11.3~113	113~1130
250	17.7~177	177~1770
300	25.4~254	254~2540
350	34.6~346	346~3460
400	45.2~452	452~4520
450	57.2~572	572~5720
500	70.7~707	707~7070

DN	Q4	Q3	Q2	Q1
(mm)	(m^3/h)	(m^3/h)	(m^3/h)	(m^3/h)
15	8	6.3	0.06*1	0.04*1
25	20	16	0.16	0.10*1
40	50	40	0.40	0.25
50	78.75	63	0.63	0.394
65	125	100	1.01	0.63
80	200*2	160	1.60	1.00
100	313*2	250*2	2.52	1.57
125	500	400	4.00*3	2.50*3
150	788	630	6.31	3.94*3
200	1250	1000	10.00	6.25
250	2000*4	1600*4	16.00	10.00
300	3125*4	2500*4	25.01	15.63
350	5000*4	4000*4	40.00	25.00
400	5000*4	4000*4	40.00	25.00
450	7875*4	6300*4	63.00	39.38
500	7875*4	6300*4	63.00	39.38

*1: Tested at 0.11 m^3/h
* 2: Tested at 190 m^3/h
* 3: Tested at 4.4 m^3/h
* 4 Tested at 1530 m^3/h

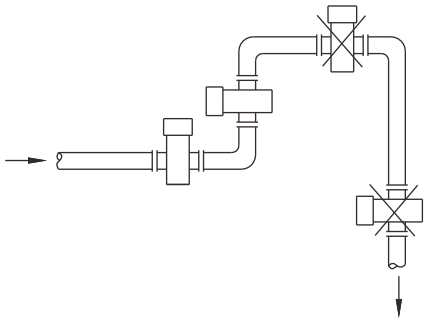
OIML Accuracy Class And Allowable Error



Type	EPD 3x
Nominal diameter(DN)	50
Q_3/Q_1 *	160
Q_2/Q_1	1,6
Q_1(m^3/h)	0.394
Q_2(m^3/h)	0.63
Q_3(m^3/h)	63
Q_4(m^3/h)	78.75

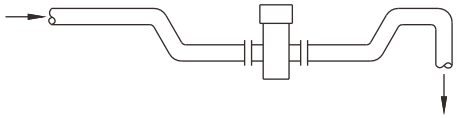
Installation Instructions

1. The flow meter must be free from strong electromagnetic field. The magnetic intensity of the flow meter installation site must be smaller than 400A/m (It should not be installed near large motors or transformers).
2. It should be installed at the lower point and the vertically upward point of the horizontal pipe. Don't install it at the highest point and the vertically downward point of the pipe.

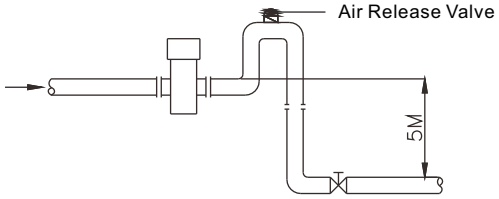


3. It should be installed at the rising point of the pipe.

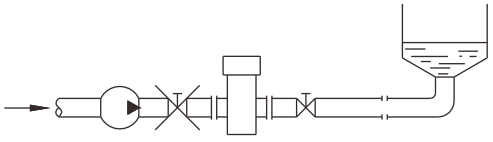
4. It should be installed at the lower point of the pipe when it is installed on the pipe with opening for drainage.



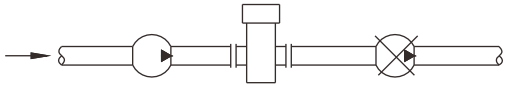
5. If the pipe gap exceeds 5m, the air release valve should be installed at the downstream of the sensor. The downstream of the sensor should have some back pressure.



6. The control valve and cut valve should be installed at the downstream of the sensor rather than the upstream.

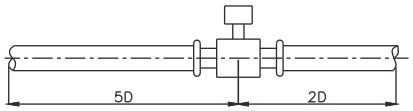


7. The sensor should be installed at the pump outlet rather than the inlet.

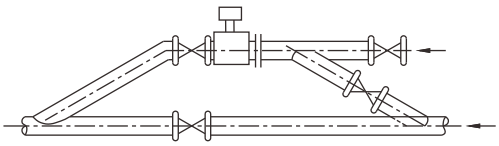


8. The fluidic must flow towards the arrow direction of the flow meter.
9. The axial line of the measuring electrode must be approximate to the horizontal direction (The angle of from the horizontal direction).
10. The measuring pipe must be completely filled with liquid.

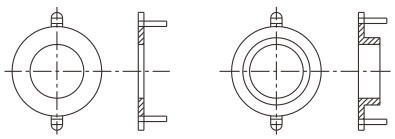
11. The straight tube section is required to be at least 5D (internal diameter of the flow meter) on the front side, and at least 2D on the rear side.



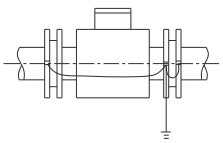
12. When measuring the mixture of different media, the distance between the mixing point and the flow meter must be 30D at least.
13. For convenient cleaning and maintenance of the flow meter, a bypass pipe must be installed.



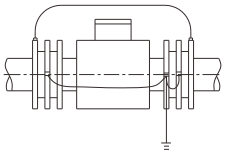
14. When installing the sensor, it should ensure that the measuring pipe and the process pipe must be on the same axial line. For the flow meter with the pipe meter of 50mm or below, the axial line deviation should not exceed 2mm. For those of DN65～DN150, the axial line deviation should not exceed 3mm. For those of ≥DN200, the axial line deviation should not exceed 4mm.
15. The shim installed between the flanges should have excellent anti-corrosion property. The shim should not intrude in the pipe, which will affect the fluidic in the pipe.
16. The sensor and transmitter should be equipped with high-quality independent grounding wire (The section area of the copper core is 1.6mm2). The grounding resistance should be <10Ω. If the grounding is poor, it won't work normally. The grounding ring is needed if the pipe connecting with the sensor is insulating, and the material of the grounding ring should be the same as that of the electrode. If the test medium is abrasive, the neck grounding ring should be selected.



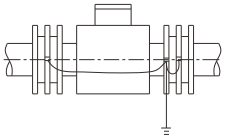
16.1 It is for installing the flow meter on the metal pipe not coated with insulating layer internally.



16.2 When installing the flow meter on the protective pipe of the cathode, the pipe with the protection of electrolytic corrosion generally has insulating walls and protruding sides. Thus, during installation, the grounding ring and the flanges on the pipe should be insulating.



16.3 When installing the flow mater on the plastic pipe or the pipe with insulating coating material, paints or lining, grounding rings on both ends of the sensor should be installed.



※ Electrode Material

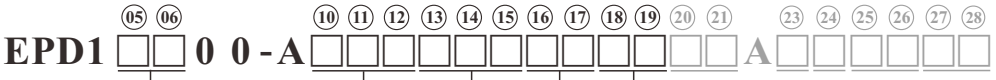
Electrode material	Anti-corrosion property
Stainless steel (316L)	It is applied in water, sewage and organic and non-organic corrosive medium.
Hastelloy alloy	It is resistant to the corrosion of the medium mixture of oxidizing acid such as Nitric acid, mixed acid or Sulfuric acid. Moreover, it is resistant to the corrosion of the oxidizing salt such as Fe^{2+} 、 Cu^{2+} or other substances containing oxidants such as the salt solution of hypochlorous acid above the ambient temperature and sea water.
Titanium	It is resistant to the corrosion of sea water, various oxides, salt solution of hypochlorous acid, oxidating acid (including fuming Nitric acid) and organic acid and alkane. It is not resistant to the corrosion of pure reducing acid (such as Sulfuric acid and Hydrochloric acid). However, the anti-corrosion property will be greatly degraded if the acid contains some oxidants.
Tantalum	It has excellent corrosion resistance. Its characteristic is similar to glass. In addition to hydrofluoric acid , nitric acid , alkali, it could resist almost all chemical medium (including boiling hydrochloric acid, nitric acid and sulfuric acid below 175 ℃). It could not resist corrosion in alkali.

※ Lining Material

Lining material	Main properties	Application scope
NBR	1. Excellent flexibility, highly tearing force capability, good wear resistance 2. It is resistant to low concentrations of acid, alkali, salt solution;It is not tolerant the corrosion of oxidizing mediums.	1. < 80℃ 2. Neutral-strong wearing mineral pulp, coal slurry and mud slurry
Neoprene	1. Neutral wearing capability 2. It is resistant to low concentrations of acid, alkali, acid corrosion.	1. < 80℃ 2. Water, Industrial water , Seawater
PTFE	1. Stable chemical properties, resistant to various acid, alkane, and salt solutions and various organic solvents. It is not tolerant to the corrosion of CIF_3, high-temperature OF3 and high-speed liquid oxygen and ozone. 2. The anti-abrasion property is average.	1. -20~120℃ 2. Strong corrosive medium such as concentrated acid and alkane.

Model Number / Order Code Comparison Table Ordering Information

Model Number	Order Code
EPD30	EPD10000-A
EPD34	EPD10400-A



⑤⑥ Type

00：Standard
04：Remote type

⑩⑪⑫ Pipe diameter

015：15mm	100：100mm	350：350mm
025：25mm	125：125mm	400：400mm
040：40mm	150：150mm	450：450mm
050：50mm	200：200mm	500：500mm
065：65mm	250：250mm	
080：80mm	300：300mm	

(Next page)

⑬⑭⑮ Connection specification

C48：ANSI B16.5 Class 150
C49：ANSI B16.5 Class 300
A41：JIS B2220 7.5K
A42：JIS B2220 10K
A45：JIS B2220 20K
D57：DIN 2501 PN10
D58：DIN 2501 PN16
D60：DIN 2501 PN40

⑯⑰ Casing and flange

MD：Carbon steel
MA：SUS304
MC：SUS316L

⑱⑲ Lining material

08：Neoprene
21：PTFE
37：NBR

⑳㉑ Electrode material

MC：SUS316L
MF：Titanium
MK：Tantalum
MJ：Hastelloy alloy(C-276)

㉓ Power supply

A：100~240Vac, 50/60Hz
D：24Vdc
N: 100~240Vac,50/60Hz with date logger
R: 24Vdc with date logger

㉔ Accuracy

F：0.5%
G：0.3%
H：0.2%

㉕㉖ Grounding material

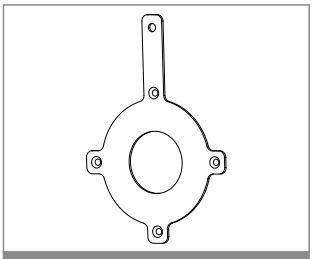
00：None
MA: SUS304
MC：SUS316L
MF：Titanium
MK：Tantalum
MJ：Hastelloy alloy(C-276)

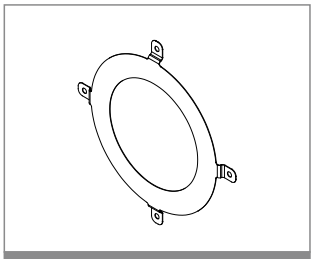
㉗㉘ Cable length

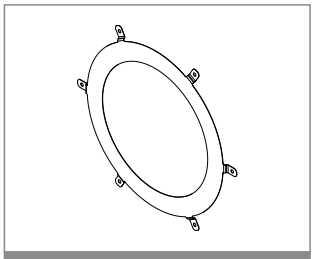
00：None(Only available for standard type)
10：10 M(Remote type standard)
15：15 M
20：20 M
⋮
95：95 M
A0：100 M

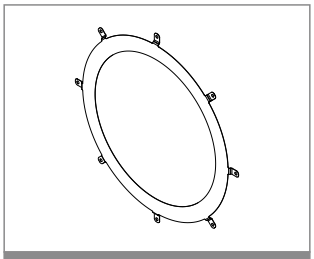
Accessory–grounding Ring

New Order Number	Old Order Number	Specification
EPDAM1P-MA03A00001	EPA-1007-100-4	SUS304 0.5T, DN100
EPDAM1P-MA03A20001	EPA-1007-125-4	SUS304 0.5T, DN125
EPDAM1P-MA03A50001	EPA-1007-150-4	SUS304 0.5T, DN150
EPDAM1P-MA03B00001	EPA-1007-200-4	SUS304 0.5T, DN200
EPDAM1P-MA03B50001	EPA-1007-250-4	SUS304 0.5T, DN250
EPDAM1P-MA03C00001	EPA-1007-300-4	SUS304 0.5T, DN300
EPDAM1P-MC03400001	EPA-1007-40-L	SUS316L 2.0T, DN40
EPDAM1P-MC03500001	EPA-1007-50-L	SUS316L 2.0T, DN50
EPDAM1P-MC03650001	EPA-1007-65-L	SUS316L 2.0T, DN65
EPDAM1P-MC03800001	EPA-1007-80-L	SUS316L 2.0T, DN80
EPDAM1P-MC03A00001	EPA-1007-100-L	SUS316L 0.5T, DN100
EPDAM1P-MC03A20001	EPA-1007-125-L	SUS316L 0.5T, DN125
EPDAM1P-MC03A50001	EPA-1007-150-L	SUS316L 0.5T, DN150
EPDAM1P-MC03B00001	EPA-1007-200-L	SUS316L 0.5T, DN200
EPDAM1P-MC03B50001	EPA-1007-250-L	SUS316L 0.5T, DN250
EPDAM1P-MC03C00001	EPA-1007-300-L	SUS316L 0.5T, DN300
EPDAM1P-MF03400001	EPA-1007-40-T	Titanium 2.0T, DN40
EPDAM1P-MF03500001	EPA-1007-50-T	Titanium 2.0T, DN50
EPDAM1P-MF03650001	EPA-1007-65-T	Titanium 2.0T, DN65
EPDAM1P-MF03800001	EPA-1007-80-T	Titanium 2.0T, DN80
EPDAM1P-MF03A00001	EPA-1007-100-T	Titanium 0.5T, DN100
EPDAM1P-MF03A20001	EPA-1007-125-T	Titanium 0.5T, DN125
EPDAM1P-MF03A50001	EPA-1007-150-T	Titanium 0.5T, DN150
EPDAM1P-MF03B00001	EPA-1007-200-T	Titanium 0.5T, DN200
EPDAM1P-MJ03400001	EPA-1007-40-H	Hastelloy alloy -C276 2.0T, DN40
EPDAM1P-MJ03500001	EPA-1007-50-H	Hastelloy alloy-C276 2.0T, DN50
EPDAM1P-MJ03650001	EPA-1007-65-H	Hastelloy alloy-C276 2.0T, DN65
EPDAM1P-MJ03800001	EPA-1007-80-H	Hastelloy alloy-C276 2.0T, DN80
EPDAM1P-MJ03A00001	EPA-1007-100-H	Hastelloy alloy-C276 0.5T, DN100
EPDAM1P-MJ03A20001	EPA-1007-125-H	Hastelloy alloy-C276 0.5T, DN125
EPDAM1P-MJ03A50001	EPA-1007-150-H	Hastelloy alloy-C276 0.5T, DN150
EPDAM1P-MJ03B00001	EPA-1007-200-H	Hastelloy alloy-C276 0.5T, DN200
EPDAM1P-MJ03B50001	EPA-1007-250-H	Hastelloy alloy-C276 0.5T, DN250
EPDAM1P-MJ03C00001	EPA-1007-300-H	Hastelloy alloy-C276 0.5T, DN300
EPDAM1P-MK03800001	EPA-1007-80-A	Tantalum 2.0T, DN80


DN40~80

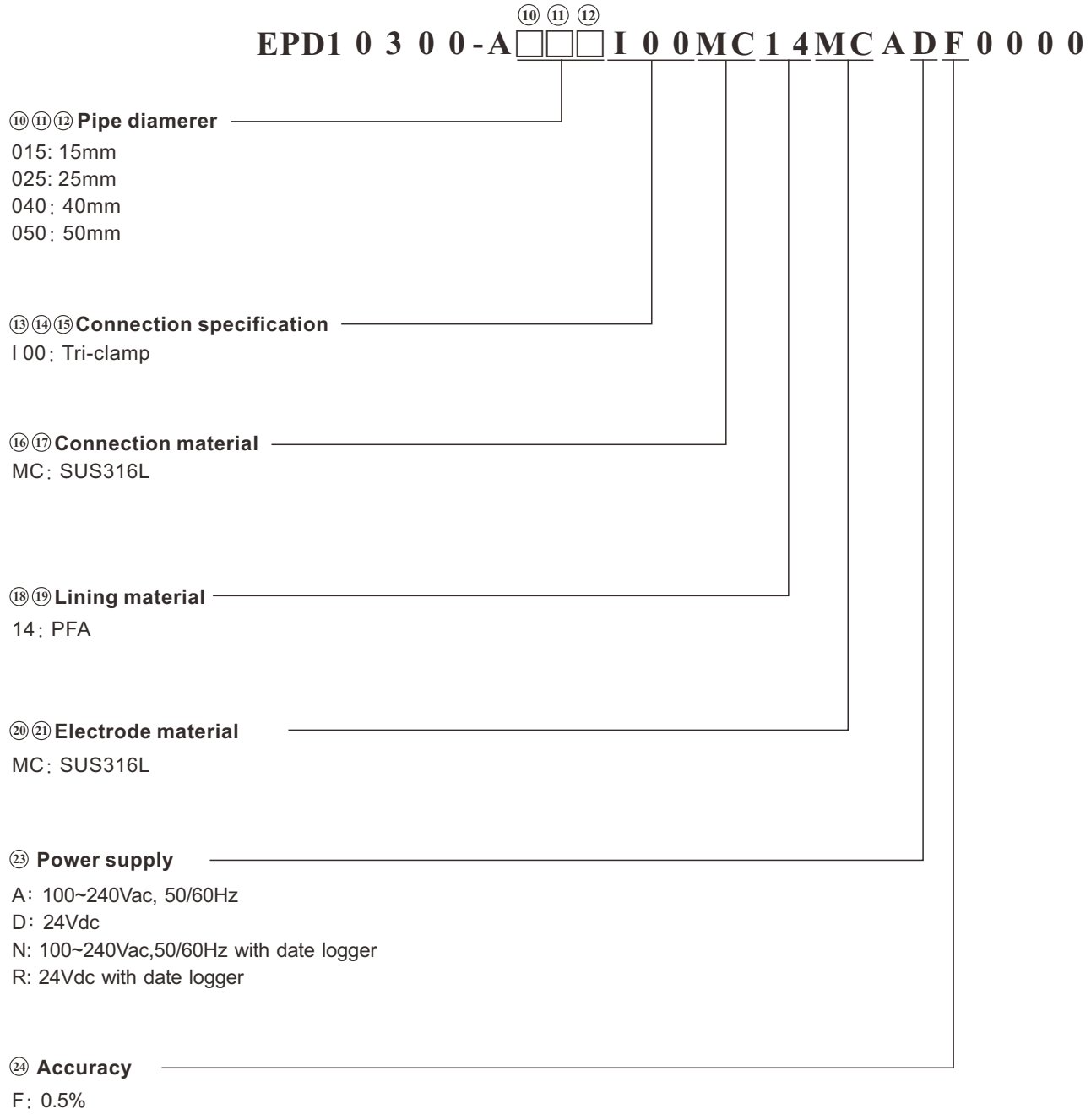

DN100~150


DN200


DN250~300

Model Number / Order Code Comparison Table Ordering Information

Model Number	Order Code
EPD36	EPD10300-A



EPD39 Electromagnetic Flow Meter

Overview

EPD39 electromagnetic flow meter is a multi-function meter, which can monitor the total water amount and pressure, as well as water quality or temperature by another two input interfaces equipped. It is widely used in measurement of the district pipeline network of tapped water, pulp and paper, chemical industry, power industry, metallurgical industry, waste water treatment, pharmaceutical, food, and environmental protection industries for measuring non-magnetic liquids and plasma in enclosed pipe.

Working Principle

The working principle of the electromagnetic flow meter is based on the Faraday law of electromagnetic induction. When the liquid flows in the orthogonal direction of the magnetic line direction, it will cut the magnetic lines and generate induced voltage, which shows linear relationship with the flowing speed. Thus, the fluidic volume flow can be calculated. EPD39 electromagnetic flow meter is mainly composed of sensor and transmitter. The measuring tube of the sensor is equipped with the excitation coils upward and downward. The transmitter supplies the excitation current, which generates the magnetic field which goes through the measuring tube once it is powered on. A pair of induction electrodes installed on the inner side of the measuring tube comes in contact with the liquid to guide the induced voltage to the transmitter.

Application Fields

- Monitoring of the district pipeline network of tapped water
- Waste water treatment
- Tapped water purification
- Sewer Engineering
- Applicable in environments without supply mains

Features

High Reliability

- The measurement results are not affected by the change in liquid density, viscosity, temperature and pressure.
- It can be widely applied in the liquids that may contain fiber, solid granules and suspended matters.
- Housing protection rating: Ip68
- Wire, connection protection rating: Ip68

Wide measurement range & high efficiency

- Measurement turndown ratio: 1: 680 or more.
- Achieve high accuracy for super tiny flow measurement.
- Highly integrated display, double isolation, parameter setting, memory function, small signal elimination, zero correction, wo-way measurement of instantaneous flow and cumulative flow.

Enhanced self-diagnostics

- No moving and baffle parts in the measuring tube to prevent pressure losses and pipe blockage.
- Intelligence self-detection and self-diagnosis function, as well as various alarms.
- Built-in battery forecast, low power consumption.

Data volume available for operation settings and recording

- Up to 1.28 million data can be recorded.
- Various data can be displayed including year, month, day, hour, minute, second, instantaneous flow, forward/reverse cumulative flow, pressure, battery voltage, used power, and RSSI.
- Available for TCP socket and MQTT protocol.
- Available for read and write two-way function.
- Support for setting measurement recording time and signal return interval setting.
- Reading and setting of on-site flow meter can be done through serial interface or Bluetooth wireless communication.

Modular installation

- Available for FOAT (Firmware On the Air) firmware update (Optional).
- IP68 waterproof quick coupling.
- Modular design for facilitating underground operations.

EPD39 Battery-powered Electromagnetic Flow Meter

Wireless Transmission Controller

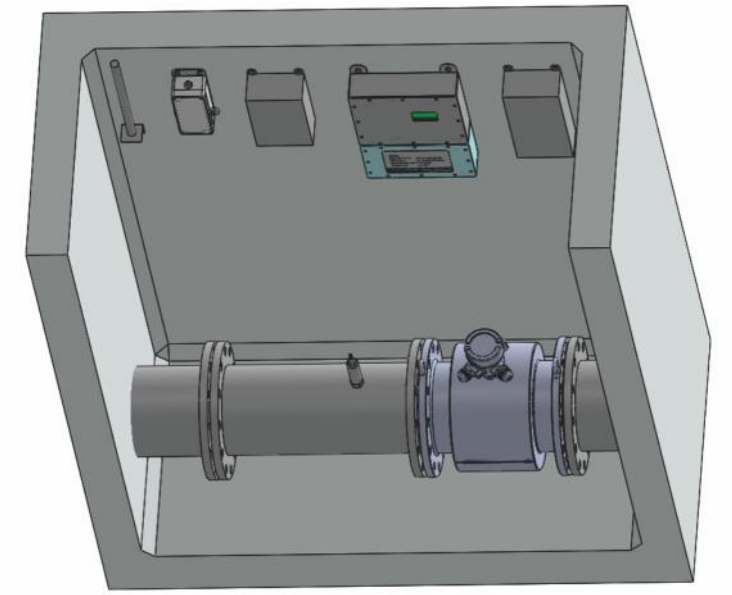
Component I:
Controller Specifications

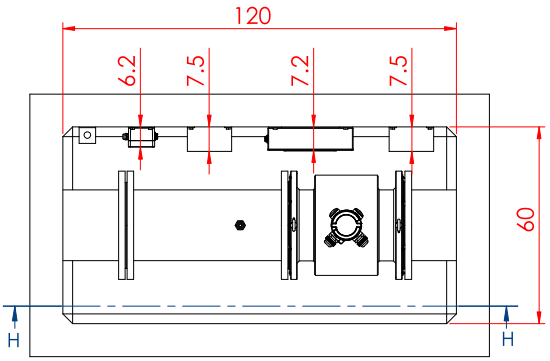
Power Supply	14.4V
Display	LCM 128*64 pixel
Scope of Measurement	0.015 m/s ~ 10 m/s
Analog input 1 (Available for pressure gauge)	0.5~4.5V
Analog input 2 (Reserved for chlorine meter for measuring residual chlorine, etc.)	4~20mA
Remote settings	RS-485
Communication port	RS-422
Power management time	1~1440 mim
Data Volume	1280000
Ambient Temp.	-20 ~ 70 °C
Housing material	Galvanized steel with baking finish
IP rating	IP68
Bluetooth	Available for Bluetooth communication (Optional)

Component II:
4G Module Specifications

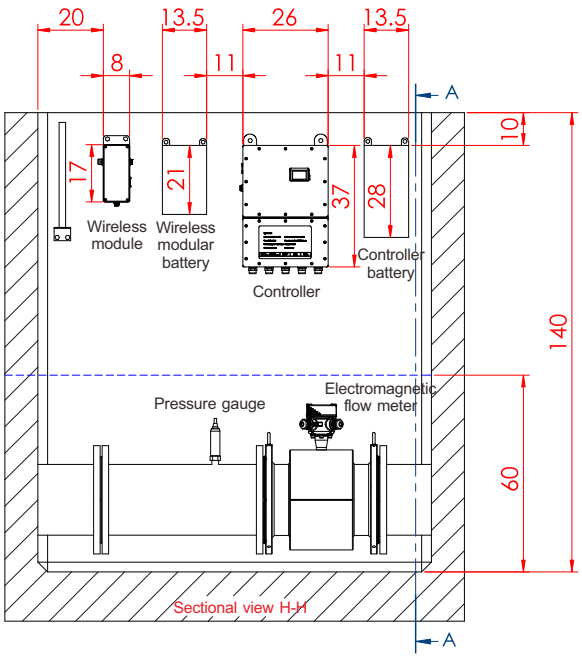
Power Supply	3.6V
Remote settings	RS-485
Communication port	RS-422
Data Volume	>1280000
Wireless connectivity	4G LTE (B3, B8, B28)
Ambient Temp.	-20~70°C
SD card socket	Micro SD
SIM card socket	Nano SIM
Housing material	Aluminum Alloy
Protection Level	IP68
Certification	CCAN204G0050T1

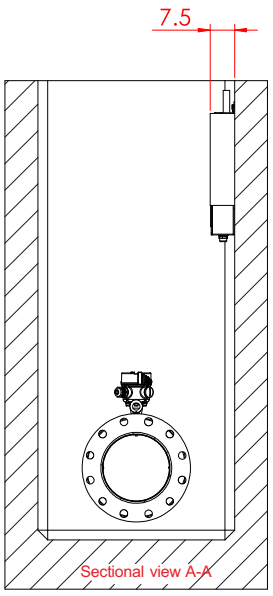
Description Of Manhole Configuration Diagram And Dimensional Drawing





Description of dimensional drawing
1.Dimensions (cm)
2.The size of each part is smaller than the marked size





Optional Battery Module

(Module A type)

Features

- Disposable battery.
- IP rating: IP68.
- It works with flow controller.

Specification

Rated voltage	14.4V
Rated capacity	144AH
Cut-off voltage	8V
Ambient Temp.	-20 ~ 60℃ (*1)
Output current	1A Maximum
Stack-up	4S4P
IP rating	IP68
Battery life	10 Years

(Module B type)

Features

- Disposable battery.
- IP rating: IP68.
- It works with 4G module signal transmission.

Specification

Rated voltage	3.6V(Primary)
Rated capacity	288AH
Cut-off voltage	2V
Ambient Temp.	-20 ~ 60℃ (*1)
Output current	2A Maximum
Stack-up	1S8P
IP rating	IP68
Battery life	10 Years

EPD39 Battery-powered Electromagnetic Flow Meter

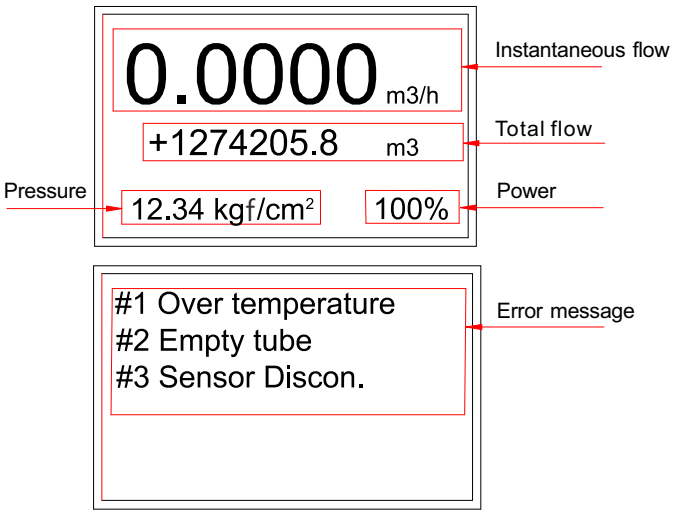
Introduction

This product is a multi-functional wireless signal transmission module available for integrating flow signal, pressure signal, 4G antenna signal, 0-5V / 4-20mA input signal, USB battery input signal, Pulse output signal, etc. It is also equipped with a display interface to facilitate operation by on-site operator.

Features

- RS-485/4-20mA included.
- Standard memory capacity > 1,280,000.
- It can collect and upload the flow and pressure data, and is equipped with two reserved channels for another two detectors, one for the pressure gauge and one for the temperature or chlorine meter for measuring residual chlorine.
- Available for Bluetooth communication (Optional).
- Protection rating: Ip68.

Display Interface Diagram



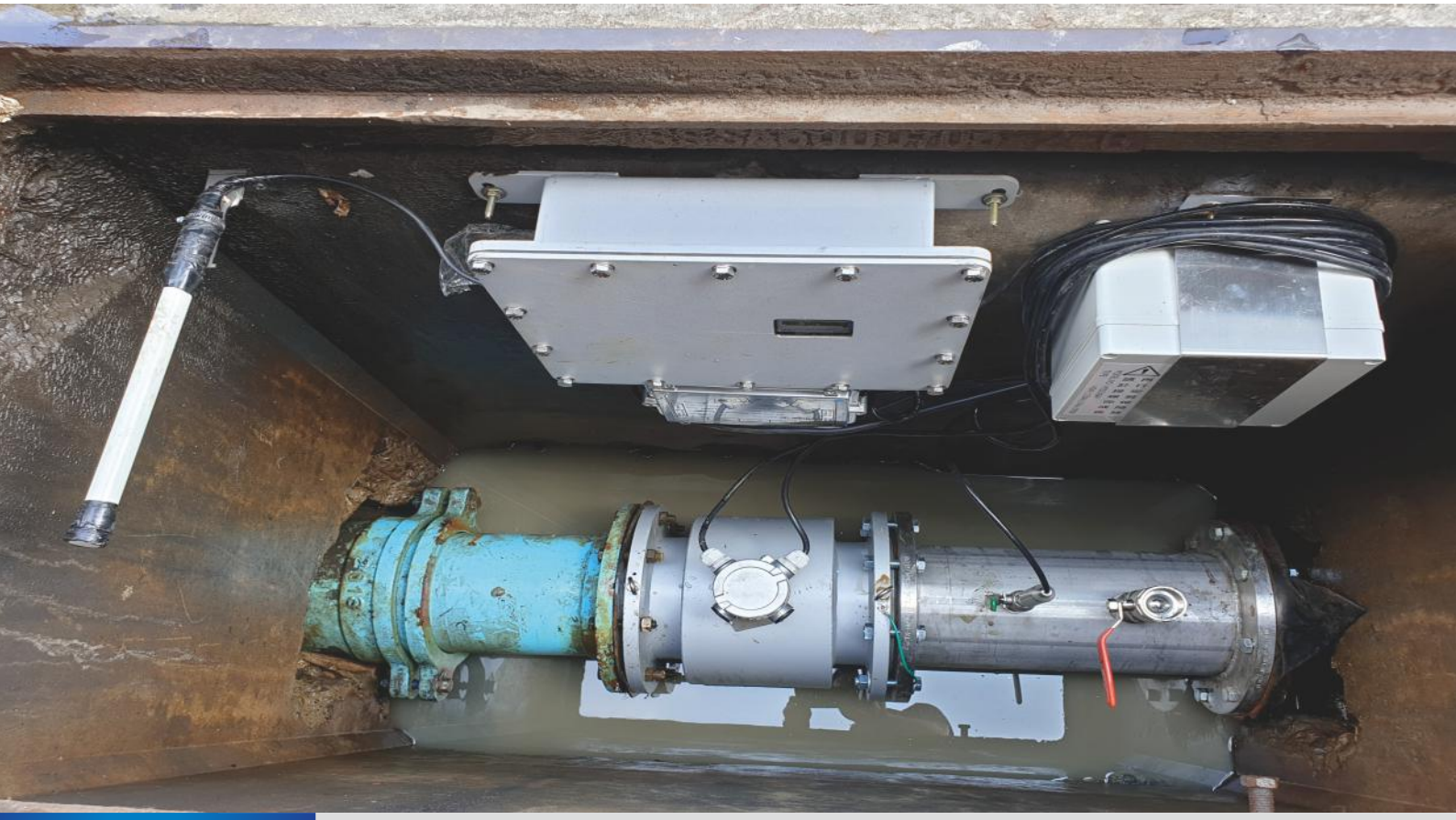
Flow Transducer Specification

Accuracy class	OIML R49: Class I ISO 4064: Class I
Level of pressure loss	△p 10(low head, 0.1bar)
Fluid temperature	-20 ~ 80°C(Standard type) Neoprene Lining Synthetic Rubber Lining
	-20 ~ 150°C PTFE Lining
Ambient temp.	-40 ~ 85°C
Fluid conductivity	>5 uS/cm
Scope of measurement	0.015m/s ~ 10m/s
Pressure resistance	16kg/cm^2(Please contact FineTek if pressure requested more than16 Kg/cm^2)
IP rating	IP68
Housing material	Aluminum Alloy
Inlet Specification	M20 x 1.5*2

Pressure Gauge Specifications

Pressure range	0~10kgf/cm^2
Precision	±0.25% F.S.
Safety factor	2X
Temperature resistance (max. 105°C for cable)	-40~150°C
Liquid receiving mterial	SUS316L

Application Demo



Public authority - District pipeline network of Taipei Water Department

Public authority - Flow monitoring of water purification plant

Beverage - Flow detection for wastewater discharge

Electronics - Flow detection for process wastewater

Electroplating - Wastewater discharge system

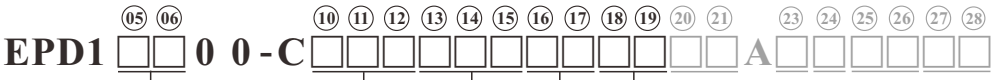
Pharmaceutical - Flow detection for wastewater discharge

Mining - Flow detection for process water

Plastics - Flow detection for process water

Model Number / Order Code Comparison Table Ordering Information

Model Number	Order Code
EPD39	EPD1□□00-C



⑤⑥ **Model**

50: Battery-powered
51: Battery-powered + Bluetooth communicatio

⑩⑪⑫ **Pipe diameter**

040：40mm	125：125mm
050：50mm	150：150mm
065：65mm	200：200mm
080：80mm	250：250mm
100：100mm	300：300mm

(Next page)

⑬⑭⑮ **Connection specification**

C48：ANSI B16.5 Class 150
C49：ANSI B16.5 Class 300
A41：JIS B2220 7.5K
A42：JIS B2220 10K
A45：JIS B2220 20K
D57：DIN 2501 PN10
D58：DIN 2501 PN16
D60：DIN 2501 PN40

⑯⑰ **Connection material**

MD：Carbon steel + cold galvanized steel with baking finish
MA：SUS304
MC：SUS316L

⑱⑲ **Lining material**

08：Neoprene
21：PTFE
37：Synthetic Rubber

EPD1 ⑤⑥ □□ 0 0 - A ⑩⑪⑫⑬⑭⑮⑯⑰⑱⑲⑳㉑ □□ A ㉓㉔㉕㉖㉗㉘ □□□□□□

⑳㉑ Electrode materialn

MC：SUS316L
MF：Titanium
MK：Tantalum
MJ：Hastelloy Alloy (C-276)

㉓ Power supply

A：100~240Vac, 50/60Hz
D：24Vdc

㉔ Precision

F：0.5%
G：0.3%
H：0.2%

㉕㉖ Grounding material

00 ：None
MA：SUS304
MC：SUS316L
MF：Titanium
MK：Tantalum
MJ：Hastelloy Alloy (C-276)

㉗㉘ Cable length (When it is standard type without cable, please choose "00")

000: None (Only available for standard type)
03: 3meters (remote type standard)
05：5meters
10：10meters
15：15meters
20：20meters
：
：
95：95meters
A0：100meters

EPR Paddle Wheel Flow Meter

Working Principle

The Paddle Wheel Flow Meter measures the flow velocity by using the fluidic to drive the blade rotation, and calculates the flow rate based on the flow velocity. ERP1 series flow meter consists of flow transmitter and pipe fitting. The light and compact design allows the user to carry, install and operate it conveniently. The product is calibrated by professional flow test device, with the accuracy of K value reaching±3%. The measuring range is 0.3 ~10m/s, with high linearity. Display and non-display type are both available. The display type is built-in with accumulated flow storage device.

Features

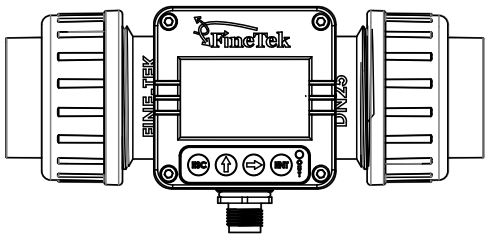
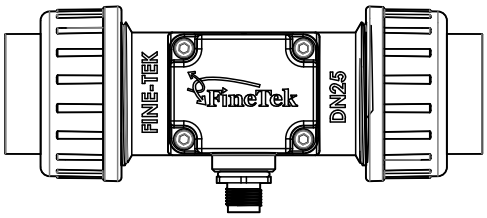
- Controlled by a microprocessor, with convenient operation and comprehensive functions.
- Power supply: 12-36 Vdc.
- Analog output: 4-20mA with 10% higher range as 4-21.6mA
- Simulated test output: 0-24 mA.
- Pulse output: Optical-coupling transistor output.
- Simulated frequency output: 0-300Hz
- Pure sensing non-display type is for convenient system integration
- LCM (Graphic 128x64 Dots) display type
- Built-in FRAM (Ferroelectric Random Access Memory) flash memory
- Easily separated from the sensor.
- LED indicator displays the alarm status.
- Upper limit settings of the analog output.
- Analog output flow rate and velocity filter settings: 0-40 segments.
- LED shows three back-lit modes, ON/OFF/In Operation.
- With RS485 communication.
- Parameter settings (K factor, pipe diameter, device ID, baudrate).
- Supports Traditional Chinese, Simplified Chinese, English, etc.

Applications

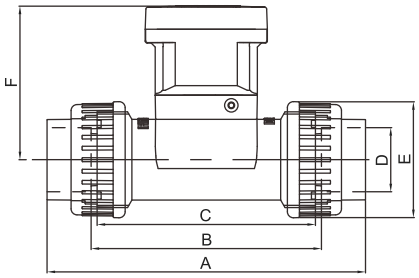
The Paddle Wheel Flow Meter is applicable to neutral or corrosive liquids that are non-granular or non-viscous. It connects with an analog output and pulse output signal to form a monitoring system, which can display instantaneous flow and accumulated flow. Moreover, it can form a control circuit to adjust the valve or operate the switch.
※ The detected medium must not contain any iron filings, particles which will attached the rotary paddle wheel and affect the accuracy and also cause damage. If there is possibility to have iron filings, particles in the process or pump operation, please install the magnet screen filters (please consider the Pressure loss) on upstream side for the minimum distance 15 times of pipe diameter.

- Food industry
- Beverage industry
- Water treatment industry
- Pharmaceutical industry
- Dyeing industry
- Chemical industry
- Semi-conductor industry
- PCB wet process control

Specifications Comparison For Paddle Wheel Flow Meters

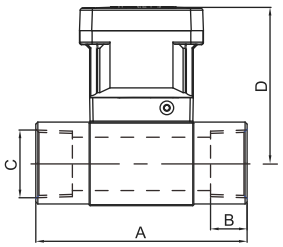
Model Type		
Specification	EPR intelligent All-in-one Model	EPR Flow transmitter model / EPR Pulse output model
Advantages	■ Controlled by a microprocessor, with convenient operation and comprehensive functions. ■ Built-in FRAM (Ferroelectric Random Access Memory) flash memory. ■ Easily separated from the sensor. ■ Supports Traditional Chinese, Simplified Chinese, English, etc. ■ LED shows three back-lit modes, ON/OFF/In Operation.	■ Controlled by a microprocessor, with convenient operation and comprehensive functions. ■ Pulse output: Optical-coupling transistor output. ■ Pure sensing non-display type is for convenient system integration.
Power supply voltage	12~36Vdc,±10%	
Process temp.	Material: PP=60°C, PVDF=100°C	
Product pressure resistance	10kg/cm²	
Process connection	T-fitting (DIN/ISO, ASTM, JIS) / SUS Threads (PF, PT, NPT)	
Materials	PVC	
Pulse output	4~20mA , RS485, Modbus NPN, PNP 200mA overcurrent protection	
Output Signal	±3% under standard K value	
Housing material	PC engineering plastic	
IP rating	IP66	
Range of flow rate	0.3m/s ~ 10ms	
Product Applications	■ Suitable for water or wastewater treatment equipment ■ Chemical pipeline flow in the semi-conductor industry ■ PCB wet process control	

Intelligent All-in-one Model (engineering Plastics)



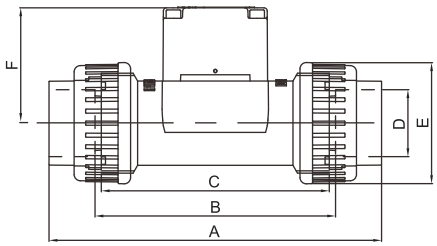
Diameter-DN (mm)	Pipe standards	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
15	DIN/ISO ASTM JIS	128	96	90	20 21.3 18.4	43	84.5
20	DIN/ISO ASTM JIS CNS 4053-1	144	106	100	25 26.7 26.45 26	53	76.3
25	DIN/ISO ASTM JIS	159	115	109	32 33.4 32.55	58	76.7
40	DIN/ISO ASTM JIS	189	125	119	50 48.3 48.7	83	83.3
50	DIN/ISO ASTM JIS CNS 4053-1	216	140	130	63 60.3 60.8 60	103	90

Intelligent All-in-one Model (stainless Steel)



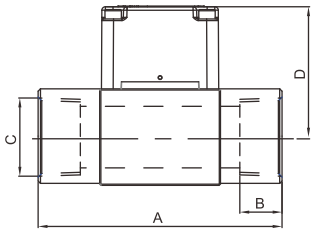
Diameter-DN (mm)	A (mm)	B (mm)	C (mm)	D (mm)
20	94	17 18.3 18.3	PF 3/4” PT 3/4” NPT 3/4”	77
25	104	23 18 18	PF 1” PT 1” NPT 1”	77
40	129	23 22 22	PF 1-1/2” PT 1-1/2” NPT 1-1/2”	83.4
50	148.5	27.5 24 24	PF 2” PT 2” NPT 2”	90

Flow Transmitter Model & Pulse Output Model (engineering Plastics)



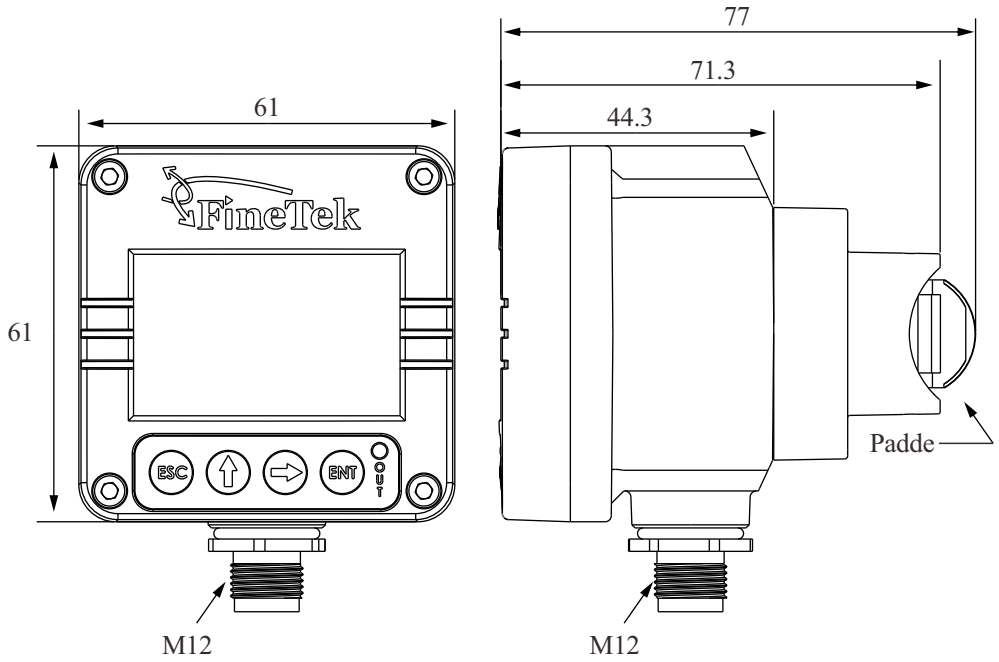
Diameter-DN (mm)	Pipe standards	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
15	DIN/ISO ASTM JIS	128	96	90	20 21.3 18.4	43	48.4
20	DIN/ISO ASTM JIS CNS 4053-1	144	106	100	25 26.7 26.45 26	53	54.8
25	DIN/ISO ASTM JIS	159	115	109	32 33.4 32.55	58	55.2
40	DIN/ISO ASTM JIS	189	125	119	50 48.3 48.7	83	62
50	DIN/ISO ASTM JIS CNS 4053-1	216	140	130	63 60.3 60.8 60	103	68.5

Flow Transmitter Model & Pulse Output Model (stainless Steel)

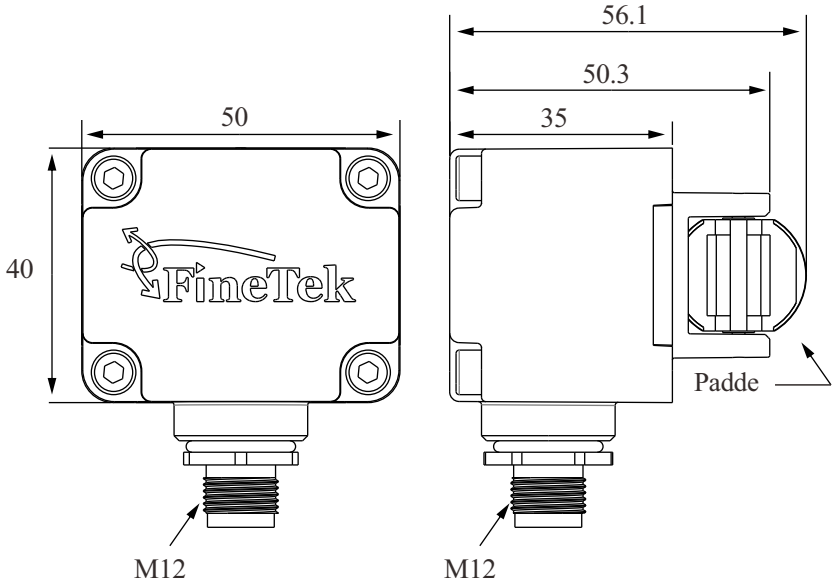


Diameter-DN (mm)	A (mm)	B (mm)	C (mm)	D (mm)
20	94	17 18.3 18.3	PF 3/4” PT 3/4” NPT 3/4”	55
25	104	23 18 18	PF 1” PT 1” NPT 1”	55.6
40	129	23 22 22	PF 1-1/2” PT 1-1/2” NPT 1-1/2”	62
50	148.5	27.5 24 24	PF 2” PT 2” NPT 2”	69

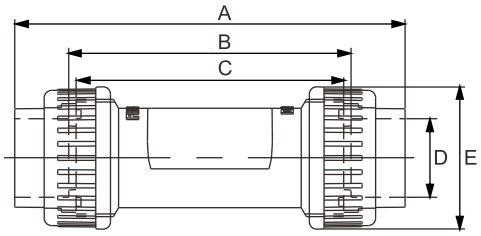
Intelligent All-in-one Model



Flow Transmitter Model & Pulse Output Model

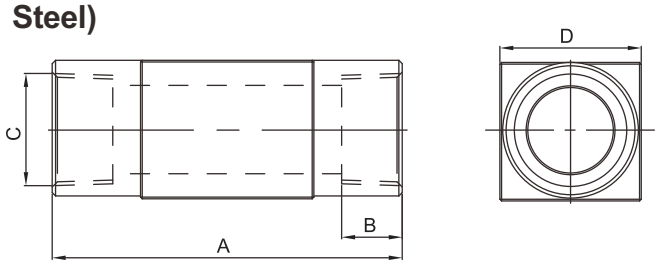


T-fitting(engineering Plastics)



Diameter-DN (mm)	Pipe standards	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
15	DIN/ISO ASTM JIS	128	96	90	20 21.3 18.4	43
20	DIN/ISO ASTM JIS CNS 4053-1	144	106	100	25 26.7 26.45 26	53
25	DIN/ISO ASTM JIS	159	115	109	32 33.4 32.55	58
40	DIN/ISO ASTM JIS	189	125	119	50 48.3 48.7	83
50	DIN/ISO ASTM JIS CNS 4053-1	216	140	130	63 60.3 60.8 60	103

T-fitting (stainless Steel)



Diameter-DN (mm)	A (mm)	B (mm)	C (mm)	D (mm)
20	94	17 18.3 18.3	PF 3/4” PT 3/4” NPT 3/4”	42
25	104	23 18 18	PF 1” PT 1” NPT 1”	55.6
40	129	23 22 22	PF 1-1/2” PT 1-1/2” NPT 1-1/2”	62
50	148.5	27.5 24 24	PF 2” PT 2” NPT 2”	72

Selecting Flow And Pipe Diameter

Plastic Blade

Material	Pipe diameter (mm)	Flow Range (m^3/h)	
		Flow velocity 0.3m/s (min)	Flow velocity 10m/s (max)
PVC Pipe material & PP Blade	15	0.19	6.36
	20	0.34	11.31
	25	0.53	17.67
	40	1.35	45.23
	50	2.12	70.68
SUS Pipe material & PVDF Blade	20	0.34	11.31
	25	0.53	17.67
	40	1.35	45.23
	50	2.12	70.68

Stainless Blade

Material	Pipe diameter (mm)	Flow Range (m^3/h)	
		Flow velocity 0.5m/s (min)	Flow velocity 8m/s (max)
SUS Pipe material & SUS316 Blade	25	0.89	14.13
	40	2.27	36.18

Relationship Between K Value And Fitting Diameter :

Intelligent All-in-One Model

Material	Connection & Standard Type	K Factor (Pulse/Liter)				
		DN15	DN20	DN25	DN40	DN50
PVC Pipe material & PP Blade	DIN/ISO	114.8	70	49	17	9.2
	ASTM	114.8	70	49	17	9.2
	JIS	114.8	70	49	17	9.2
	CNS 4053-1	— — —	70	— — —	— — —	9.2
SUS Pipe material & PVDF Blade	Thread PF	— — —	70	49	17	9.2
	Thread PT	— — —	70	49	17	9.2
	Thread NPT	— — —	70	49	17	9.2
SUS Pipe material & SUS316 Blade	Thread PF	— — —	— — —	58	16.25	8.8
	Thread PT	— — —	— — —	58	16.25	8.8
	Thread NPT	— — —	— — —	58	16.25	8.8

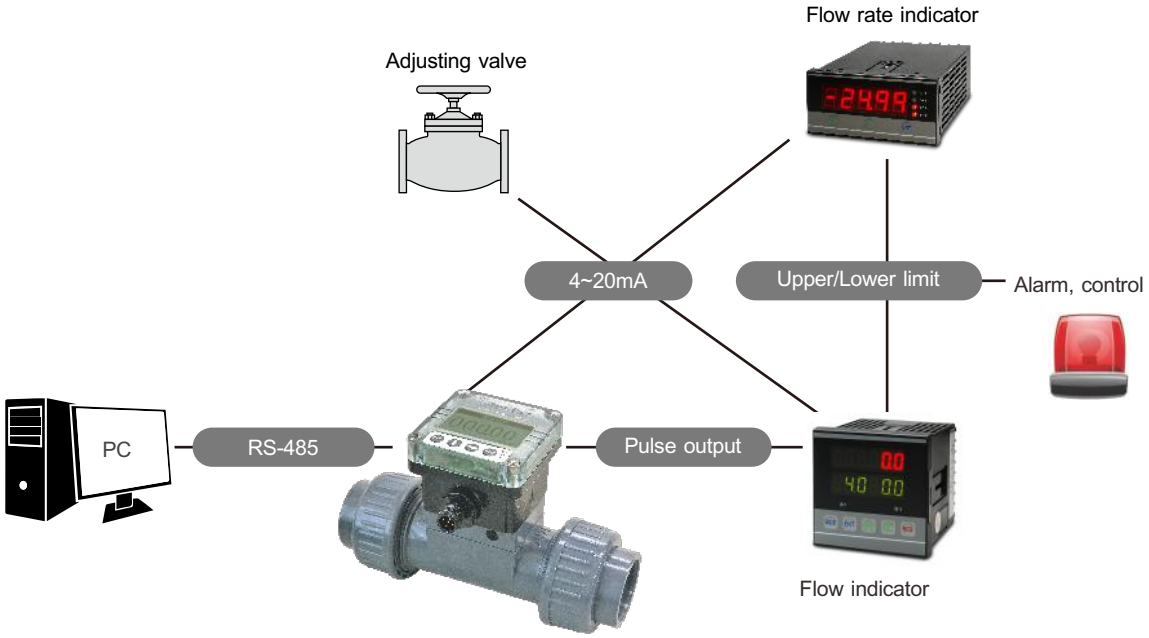
※ US: GL (Gallon) K factor = Pulse/Liter × 3.785; UK: GL (Gallon) K factor = Pulse/Liter × 4.546.

Flow transmitter type & Pulse Output type

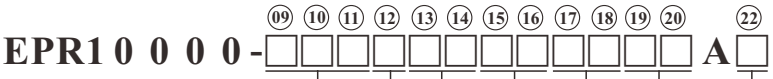
Material	Connection & Standard Type	K Factor (Pulse/Liter)				
		DN15	DN20	DN25	DN40	DN50
PVC Pipe material & PP Blade	DIN/ISO	105.8	56.5	30	8.3	5.92
	ASTM	105.8	56.5	30	8.3	5.92
	JIS	105.8	56.5	30	8.3	5.92
	CNS 4053-1	— — —	56.5	— — —	— — —	5.92
SUS Pipe material & PVDF Blade	Thread PF	— — —	56.5	30	8.3	5.92
	Thread PT	— — —	56.5	30	8.3	5.92
	Thread NPT	— — —	56.5	30	8.3	5.92

※ US: GL (Gallon) K factor = Pulse/Liter × 3.785; UK: GL (Gallon) K factor = Pulse/Liter × 4.546.

Control System Diagram



Order Information



⑨⑩⑪ Pipe diameter

015: DN15(1/2")
020: DN20(3/4")
025: DN25(1")
040: DN40(1-1/2")
050: DN50(2")

⑫ Display model

A: Without display (Flow transmitter model & pulse output model)
B: LCM display (Intelligent all-in-one model)

⑬⑭ Pipe material

MA: SUS 304
MB: SUS 316
MC: SUS 316L
23: PVC

⑮⑯ T-fitting standard

(When the pipe material is SUS, please choose "00")

00: None
AA: JIS
AB: ISO
AC: ASTM
AD: DIN
BA:CNS(Pipe diameter 020, 040 only)

} (Only available for PVC)(Pipe material)

⑰⑱ T-fitting standard connection type

(When the pipe material is PVC, please choose "00")

00: None
02: PT female
04: PF female
08: NPT female

} (Only available for SUS)(Pipe material)

⑲⑳ Blade material

18: PP (60°C)
24: PVDF (100°C)
MB: SUS 316 (100℃)

㉒ Output

A: 4~20mA, RS-485, PNP NPN 200mA(Intelligent all-in-one model & Flow transmitter model)
B: PNP NPN 200mA (Pulse output model)

EPU Clamp-On Ultrasonic Flowmeter

Working Principle

EPU Clamp-on ultrasonic flowmeters measure by using ultrasonic pulse waves to pass through the probe and strike the liquid material. While the pulse waves rapidly disperse through the liquid, the liquid flow will cause a small change in the rate at which the pulse waves are spread. This change in time at which the pulse waves are dispersed is proportional to the flow rate of the liquid. Hence, the flow rate of the liquid is derived.

As show in the figure below: A pair of ultrasonic sensors are installed opposite each other on the flow pipe in specific positions using the “Z” method and “V” method. One of the sensors is electrically charged and emits ultrasonic pulse waves, which passes through the tube wall > liquid > tube wall and is received by the other sensor. According to the upstream and reverse flow direction, the ultrasonic pulse wave dispersion time from start to end is:

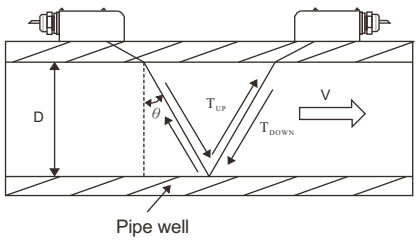
$$T_{UP}=\frac{M\times D/\cos\theta}{C_0+V\sin\theta}$$

$$T_{DOWN}=\frac{M\times D/\cos\theta}{C_0+V\sin\theta}$$

$$DT=T_{DOWN}-T_{UP}$$

According to the formula, the liquid's average flow rate in a straight line is calculated as:

$$V=\frac{M\times D}{\sin 2\theta}\cdot\frac{DT}{T_{UP}\cdot T_{DOWN}}$$



Features

- No intrusion in the pipeline during measurement of flow rate, hence no adverse effects will be caused on the pipeline or process liquid.
- LCM display of instantaneous flow rate and cumulative amount.
- Standard 4-20mA, pulse wave output, RS485 Modbus communication.
- High-quality, durable, and reliable.
- Applicable to all types of liquids that without air, sediment or sludge.
- Able to measure both volume and flow rate of liquid.
- Languages on operation interface: traditional Chinese, simplified Chinese, and English.
- IP67 protection level, with waterproof transducer.

Specifications

Display size	LCM 128*64 pixels, back light
Buttons	3 control buttons
Communication Interface	RS-485(Modbus)
Measurement system	Measurement using time difference
Analog output	4~20mA
Pulse width	Automatic(pulse width 50%)
Pulse mode	NPN transistor output 32VDC/200mA
Pipe diameter size	DN32~DN200/DN200 ~ DN800
Measurement range	Flow rate 0~15m/s
Accuracy	20%~100% of F.S., ±1% O.R.(Note1) 4%~20% of F.S., ±0.2% of F.S.(Note1)
Repetition rate	0.5%
Ambient temperature	-20~60°C
Power Supply	DC 18~32 VDC/100~240 VAC
Input port specification	10 VA
Power consumption	M20 x 1.5
Protection level	IP67
EMC	IEC 61326

Note 1:
FineTek actual flow testing equipment.
Liquid temperature: 20±10°C/Ambient temperature: 20±5°C
Length of straight pipe section: Upstream side 15 D or more; downstream side 5 D or more.
When in a fixed environment, take note of the linearity value + error range + repeatability value.
The measured result may produce errors due to the type/state of the pipeline, the type of fluid being measured, the temperature of the fluid, etc.

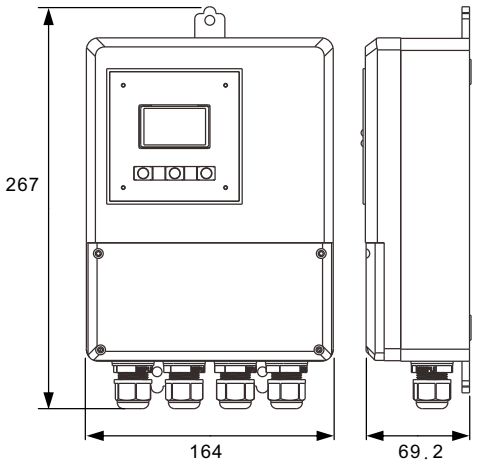
Applications

- Food manufacturing industry
- Beverage manufacturing industry
- Water treatment industryPharmaceutical industry
- Chemical industry
- Semiconductor industry

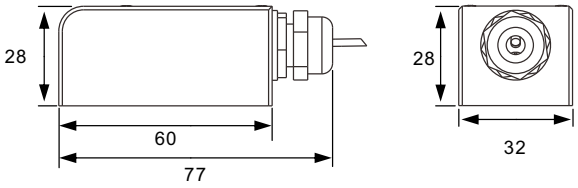
Dimensions Drawing

(Unit:mm)

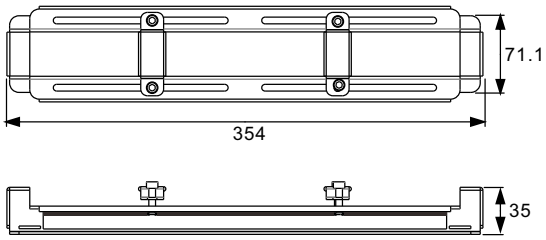
EPU Meter



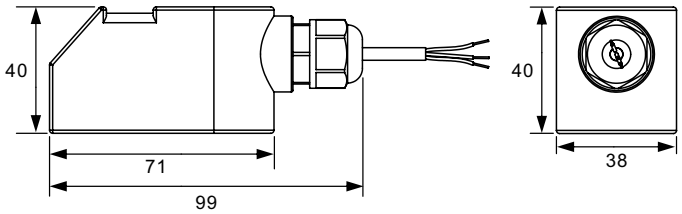
S200 EPU Transducer (DN32~DN200)



Bracket



S800 EPU Transducer (DN200~DN800)



Order Information

EPU 1 ⑤⑥ 0 0 - ⑨⑩⑪⑫⑬⑭ 1 ⑯⑰⑱ 0 0

⑤⑥ Display code

04: Separate type

⑨ Operating principle

0：Time difference type

⑩ Power supply

D: 24VDC
A: 100~240VAC

⑪⑫⑬⑭ Transducer

S200: Separate type DN32~DN200
S800: Separate type DN200~DN800

⑯⑰ Cable length

03: 3M
05: 5M
10: 10M
20: 20M

*DN32~DN200 is suitable with 3M、5M、10M Cable length
*DN200~DN800 is suitable with 5M、10M、20M Cable length

⑱ Output method

0: Standard

EPH Multi Jet Digital Water Meter

Introduction

Water flows past and rotates an impeller; the impeller's movement speed is then recorded by an indicator through an electronic sensing and metering device which then displays the water flow rate.

Applications

Suitable for installation in residential buildings, campuses, dormitories and rentals houses to measure tap water, manage energy-saving and detect water leakage.

Features

- Water meters are certified and compliant with technical specifications CNPA49 and C-level measurement grade. Accurate measurement with high sensitivity. DN20 and DN25 have passed certification requirements.
- Compared with B-level meters, C-level meters can measure a lower minimum flow rate. With increased sensitivity, errors are reduced.
- LCD electronic display, able to intuitively measure water cumulative flow rate, has multiple smart management alarm functions, can be connected to an external transmitter to obtain various information such as water analysis data, water leakage etc.
- Uses non-magnetic transmission, therefore will not be affected by external magnetic fields.
- LCD display module displays information such as total cumulative amount, instantaneous flow and operating days.
- With RS485 communication interface. To be connected to Chunghwa Telecom's wireless transmitter.
- Built in lithium battery with high efficiency and lifespan of more than 8 years.

Specification

Screen Size	LCD 420*130 mm
Applicable diameter	DN13 – DN40
Straight pipe requirements	Front 10D, back 5D
Ambient temp.	-25°C~70°C
Input power	Built-in 3.6VDC high-efficiency lithium battery.
Power consumption	<132mW
Cable connector	M12 Cable (Optional)
IP rating	IP68
EMC specification	IEC 61326
Digital communication	It is required to work with a transmission interface device to convert RS-485, NB-IOT and other signal outputs
Certification number	FD111004(DN13) FD111002(DN20) FD111003(DN25)

Panel

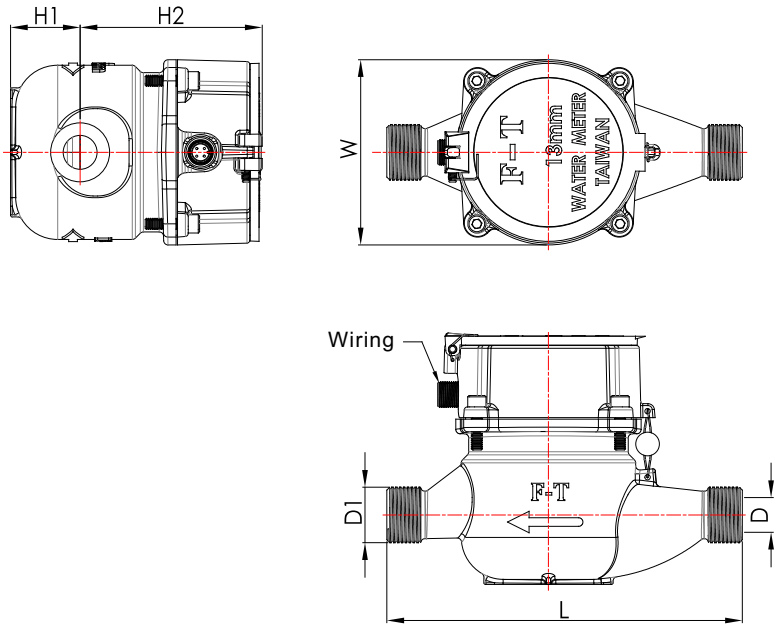
Measurement range

Classification	Diameter mm \ m³/hr	Minimum Flow qmin	Maximum Flow qmin
C	13(15)	0.015	3
	20	0.025	5
	25	0.035	7
	40	0.1	20

Measurement accuracy range

Minimum diameter(mm)	13(15)	20	25	40
Flow range ±2%	0.0225 ~ 3	0.0375 ~ 5	0.0525 ~ 7	0.15 ~ 20
Flow range ±5%	0.015 ~ 0.0225	0.025 ~ 0.0375	0.035 ~ 0.0525	0.1 ~ 0.15

Appearance Dimensions/diameter



Minimum Diameter (D)	Full Width (L±5)	Total Width (W±2)	Bottom to Cener Radius (H1±2)	Top to Center Radius (H2±2)	Outer Diameter Thread (D1±0.3)	Groove Distance (grooves / inch)
15	165	Ø86	32.3	84.5	Ø25.8	14
20	190	Ø86	35.5	84.7	Ø33	14
25	210	Ø89	38.6	84.7	Ø39	14
40	245	Ø108	46	92.7	Ø56	11

Order Code Comparison

Model Number	Order Number
EPH015	EPH100M0-015XAA1X0350MGM
EPH020	EPH100M0-020XAA2E0350MGM
EPH025	EPH100M0-025XAA2L0350MGM
EPH040	EPH100M0-040XAA3D0350MGM

Order Information

EPH1 00M0-⑨⑩⑪XAA⑮⑯0350㉑㉒M

⑨⑩⑪ **Diameter**

015: 15mm
020: 20mm
025: 25mm
040: 40mm

⑮⑯ **Size**

1X: 25.1~26.0 (Estimated 15mm)
2E: 32.1~33.0 (Estimated 20mm)
2L: 38.1~39.0 (Estimated 25mm)
3D: 55.1~56.0 (Estimated 40mm)

㉑㉒ **Material**

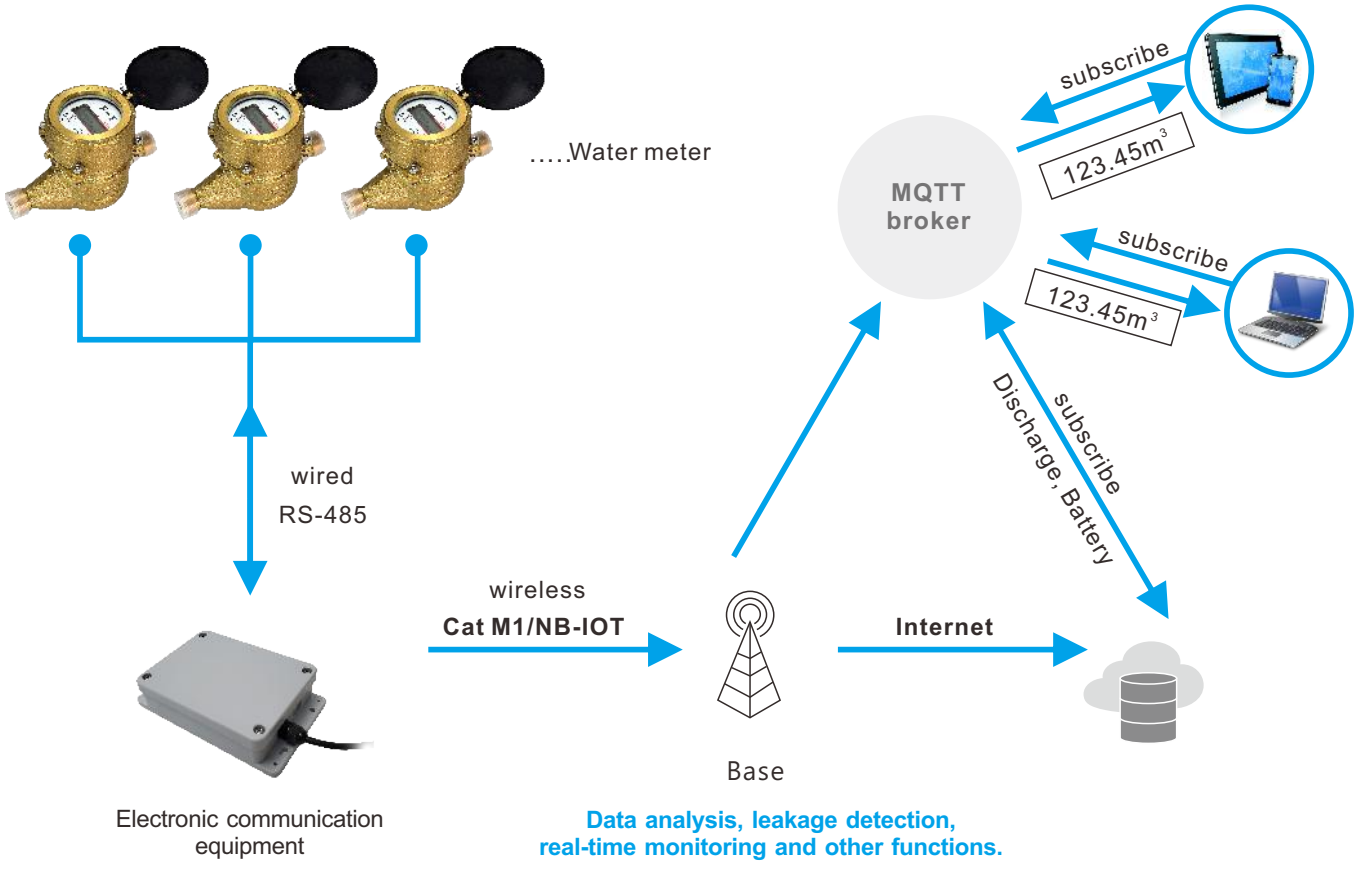
MG: Copper Alloy

Accessories – cable connector (optional)

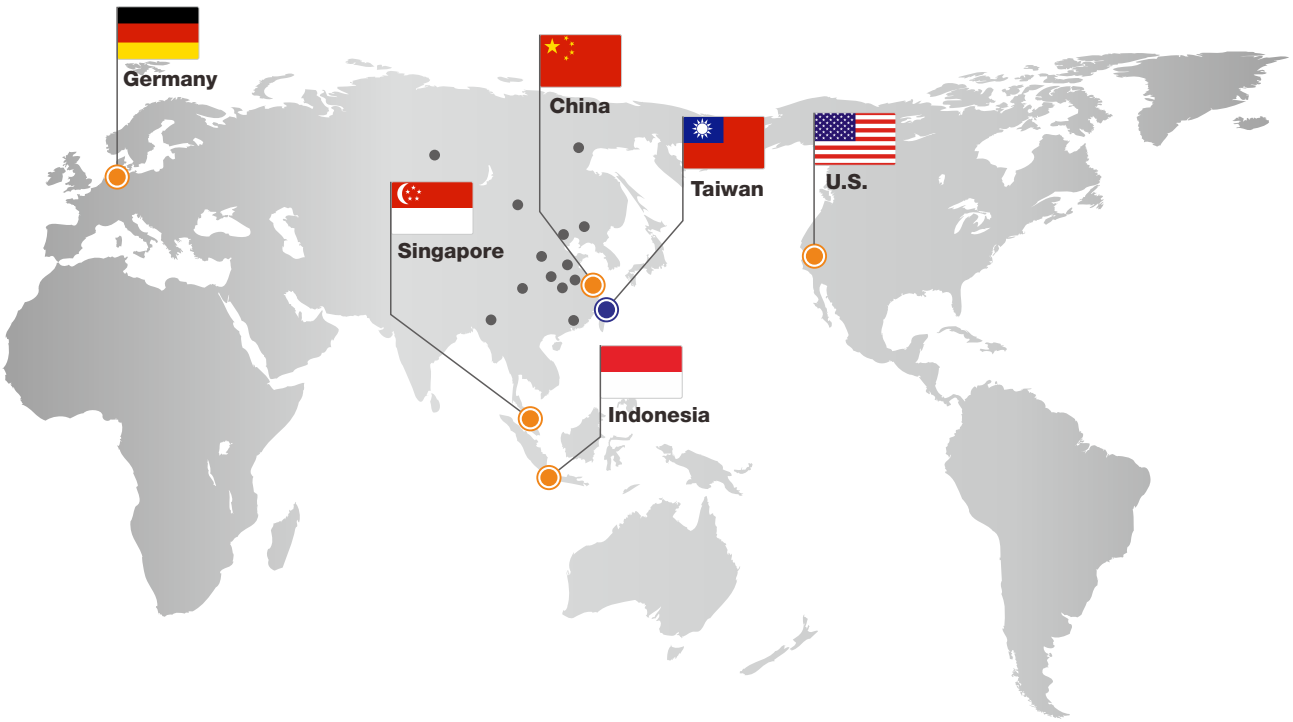
Part Number: PC312-2101422M01

Application of Smart Meter in Homes

Data communication: Cat M1/NB-IOT dual mode communiction



Global Network



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