Product Description

The Doppler flow meter measures flow velocity based on the Doppler effect. The flow sensor emits ultrasonic waves at an upward angle. These waves propagate through the fluid, which may contain impurities such as air bubbles or particles (the velocity of these impurities can be considered the same as the water flow). When the ultrasonic waves encounter these impurities, the reflected waves generate a Doppler frequency shift Δf. This Doppler frequency shift Δf is proportional to the flow velocity. By measuring the Doppler frequency shift Δf, the flow velocity V (m/s) can be determined.Water level measurement utilizes a built-in pressure sensor to measure the distance between the Doppler flow meter and the water surface. A built-in temperature sensor measures the water temperature to correct for the water level.Channel parameters are then input. Using these parameters and the collected water level H (m), the flow area S (m^2) is calculated. The instantaneous flow rate (Q=V*S) is calculated by multiplying the flow area by the flow velocity V (m/s). The cumulative flow rate is then calculated by multiplying the flow rate by the cumulative time.The product housing is made of a single ABS shell, providing effective waterproof sealing. Especially suitable for low water levels; measurements can be taken normally when the water level exceeds 5 cm.



Features

- Employs Modbus communication protocol and RS485 for communication.
- Doppler flow meter is easy to install, with a metal base for fixation.
- All equipment is electronically designed, with wide voltage power supply, low power consumption, and no mechanical parts.
- Accurate, stable, and highly reliable measurement with strong anti-interference capabilities.

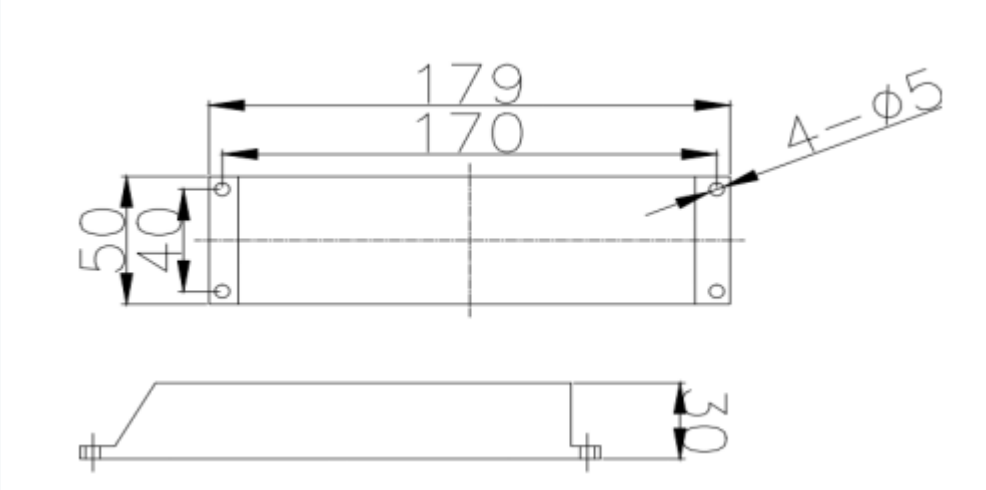
Applications

- Suitable for metering and monitoring of non-full pipes, sewage outlets, culverts, box culverts, manholes, and open channels.

Specifications

Flow velocity parameters	Speed measurement range: 0.021m/s~10.00m/s	Temperature range	0~60°C
	Measurement accuracy: ±1.0%FS	Power supply voltage	7.5~15V DC
	Resolution: 0.001m/s	Total power consumption	⩽20mA/12V
Water level parameters	Water level measurement range: 0.02~10m	Data acquisition cycle	Settable (factory specified)
	Measurement accuracy: 0.5%FS	Interface type	RS485 (Modbus-RTU)
	Resolution: 0.001m	Storage temperature	-20~80°C
Flow rate parameters	Instantaneous flow rate: 0.001m^3/s ~999.99m^3/s	Protection rating	IP68
	Measurement accuracy: ±2%	Casing material	ABS material
	Resolution: 0.001m^3/s	Installation method	Base mounting
	Cumulative flow rate: 0.01m^3 to 999999999999999999m^3		
Dimensions (mm)	Dimensions: (179×50×30); Mounting hole spacing: (170×40)ϕ5		

Dimensions



Electrical Connection

Colors	Definitions
Red	Positive power supply terminal
Black	Negative power supply terminal
Green	RS485-A
Yellow	RS485-B

Hunan Firstrate Sensor Co.,Ltd

A：Intelligent Manufacturing Industrial Park, Yuhua District,
Changsha City, Hunan Province, China
T ：+86-731-86171990
E ：sales@firstratesensor.com
W：www.firstratesensor.com

WhatsApp

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Product Description

Radar flow meters integrate liquid level measurement and flow velocity measurement based on microwave technology. They are primarily used for measuring flow velocity, water level, or flow rate in rivers, lakes, tides, reservoir gates, underground water pipe networks, and irrigation canals; they also assist in water treatment operations such as urban water supply, sewage monitoring, flow calculation, and influent/outfluent flow monitoring for non-contact flow measurement. This product calculates flow rate based on cross-sectional parameters and is unaffected by wind, temperature, fog, sediment, or floating debris, making it suitable for various measurement conditions. It can output real-time data on flow velocity, water level, and flow rate. The product features low power consumption, compact size, high reliability, and easy maintenance.



Specifications

General parameters

	Minimum	Typical	Maximum	Units	Test conditions
Operating voltage	9	12	24	V	
Operating current	100	140	160	mA	12V
Operating temperature	-45		85	℃	
Baud rate		115200		bps	Adjustable
Communication transmission method	RS485				

Flow radar sensor

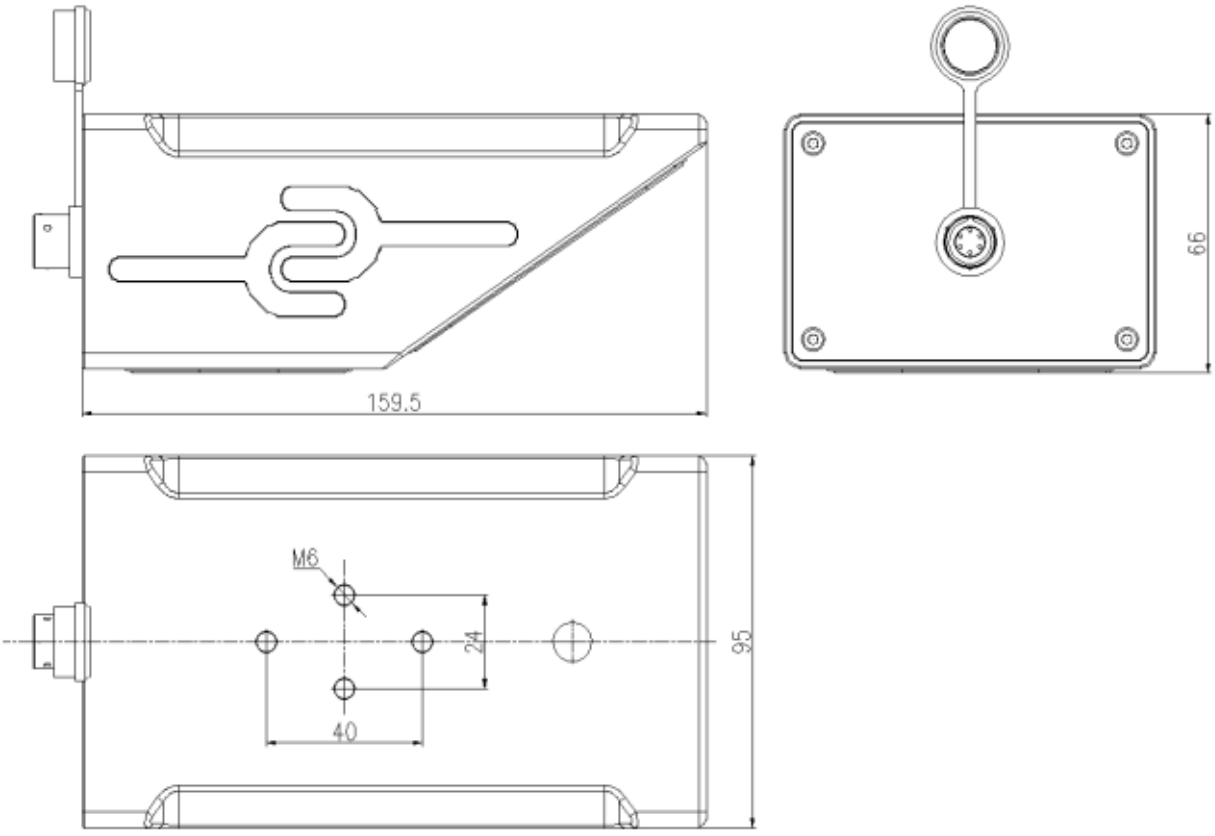
Measurement range	0.05-20	m/s	
Measurement accuracy	±0.01	m/s	
Resolution	0.01	m/s	
Antenna angle	12	deg	
Transmission frequency	24	GHz	
Flow velocity direction recognition	24 Bidirectional automatic recognition		Configurable filtering

Water level radar sensor

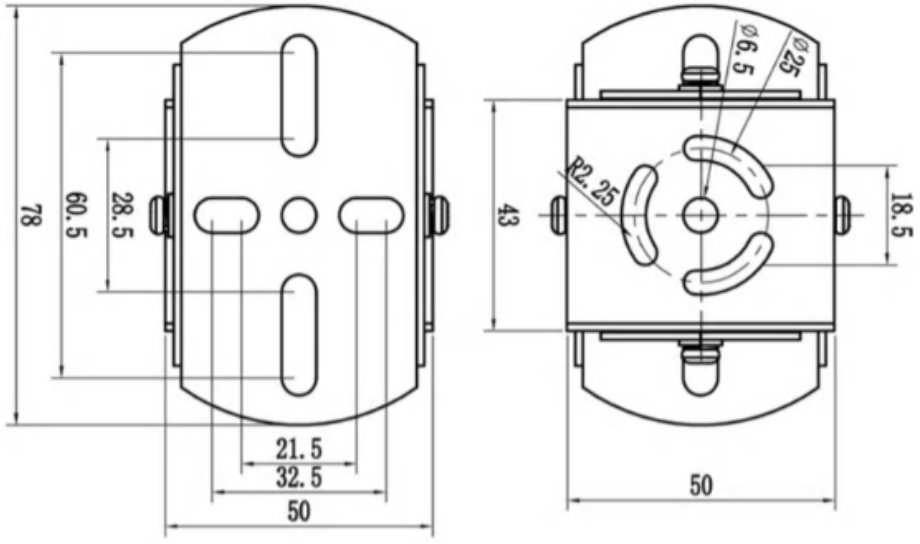
Measurement range	0.15-40	m
Measurement accuracy	±5	mm
Resolution	1	mm
Antenna angle	14	deg
Transmission frequency	80	GHz
Overall weight	0.8	kg

Dimensions

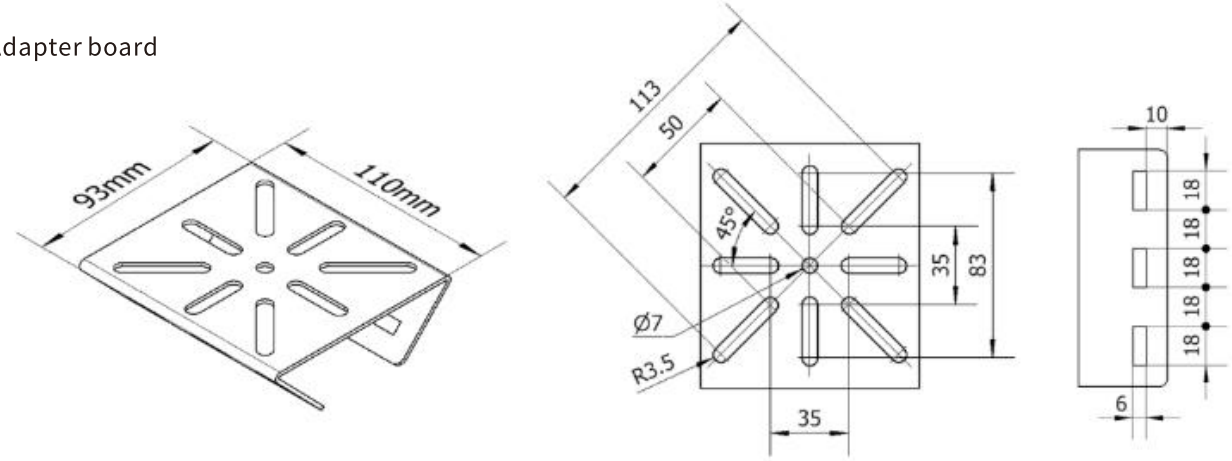
Flowmeter complete machine



Duckbill bracket



Adapter board



Clamping hoop



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Wechat

Product Description

This radar flow meter utilizes microwave technology to integrate liquid level and flow velocity measurements into a single device. It is primarily used to measure flow velocity, water level, or discharge in rivers, lakes, tidal waters, reservoir sluice gates, underground pipe networks, and irrigation channels. It also supports water treatment operations—such as municipal water supply, sewage monitoring, and inflow/outflow tracking—by providing non-contact flow measurement. The device calculates flow rate based on cross-sectional area and operates independently of factors such as wind, temperature, haze, sediment, or floating debris, making it suitable for diverse measurement conditions. It outputs real-time data on flow velocity, water level, and discharge. Key features include low power consumption, a compact design, high reliability, and ease of maintenance. The unit is housed in a single-piece ABS casing that ensures an effective, watertight seal.



Features

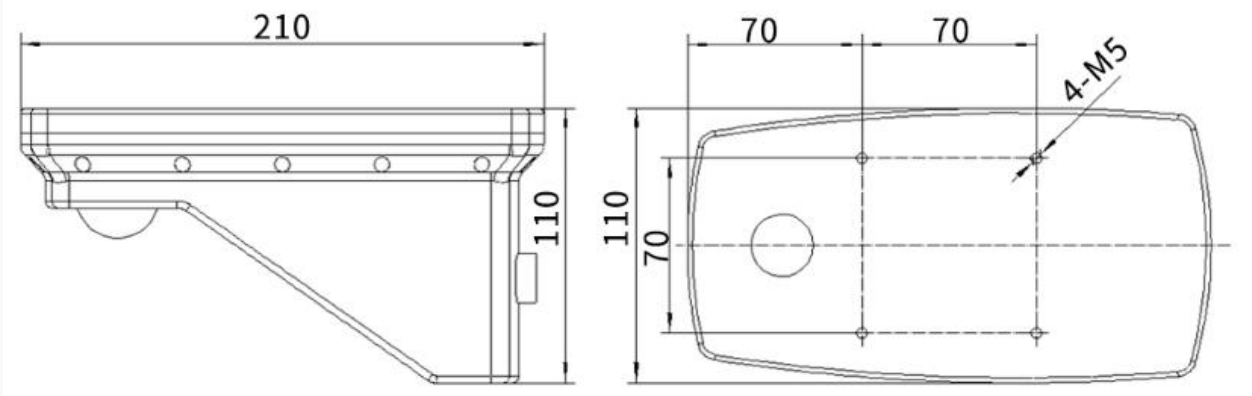
- Utilizes the Modbus communication protocol via RS485;
- Features an intelligent flow algorithm that supports various channel and pipe network configurations, calculating real-time flow based on actual water levels;
- Employs an all-electronic design with wide-voltage power supply, low power consumption, and no mechanical parts;
- Delivers accurate, stable, and highly reliable measurements with strong interference resistance;
- Offers configurable mounting brackets to suit diverse installation scenarios.

Specifications

Radar flow velocity	Velocity measurement range: -20 m/s to +20 m/s	Radar water level	Water level range: 0.1–20 m
	Measurement accuracy: ±0.01 m/s		Measurement accuracy: ±0.005 m
	Resolution: 0.01 m/s		Resolution: 0.001 m
Flow rate parameters	Instantaneous flow rate: 0.001 m^3/s to 999.99 m^3/s		
	Measurement accuracy: ±2%		
	Resolution: 0.001 m^3/s		
	Accumulated flow: 0.01 m^3 to 99,999,999 m^3		

Operating temperature	-20 to 80°C	Storage temperature	-20 to 80°C
Supply voltage	12–24V DC	Protection rating	IP68
Total power consumption	⩽160mA/12V	Housing material	ABS material
Interface type	RS485 (Modbus-RTU)	Mounting method	Base mounting
Dimensions (mm)	Dimensions (210 × 110 × 110); Mounting hole spacing (70 × 70) M5		

Dimensions



Electrical Connection

Colors	Definitions
Red	Positive power supply terminal
Black	Negative power supply terminal
Blue (Green)	RS485-A
Yellow (White)	RS485-B

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Product Description

This integrated ultrasonic radar flow meter combines multiple measurement technologies, including a liquid level sensor (pressure sensor), a water immersion sensor, radar liquid level measurement, Doppler ultrasonic flow meter, and Doppler radar flow meter. It can adapt to both full and partial pipe conditions, solving the measurement challenges of traditional flow meters in complex media and harsh environments. The flow meter uses a water immersion sensor to identify the full and partial pipe states in real time. When the water immersion sensor detects a partial pipe state, the system automatically switches to the Doppler radar flow meter and radar liquid level mode; while in a full pipe state, the system switches to the Doppler ultrasonic flow meter and liquid level sensor (pressure) mode. Through this intelligent switching, the flow meter can accurately measure key parameters such as flow velocity, flow rate, and water level. The product housing uses a one-piece ABS shell, which effectively provides a waterproof seal.



Features

- Employs Modbus communication protocol and RS485 for communication;
- Can measure both full and partially full pipes, using a dual-wavelength flow measurement mode of radar + ultrasonic;
- Intelligent flow algorithm supports various channels and pipe network configurations, calculating real-time flow based on actual water level;
- All equipment is electronically designed, with wide voltage power supply, low power consumption, and no mechanical parts;
- Accurate, stable, and highly reliable measurement with strong anti-interference capabilities;
- Top-mounted installation effectively reduces the impact of siltation and debris on the equipment;
- Configurable mounting brackets to meet various installation scenarios.

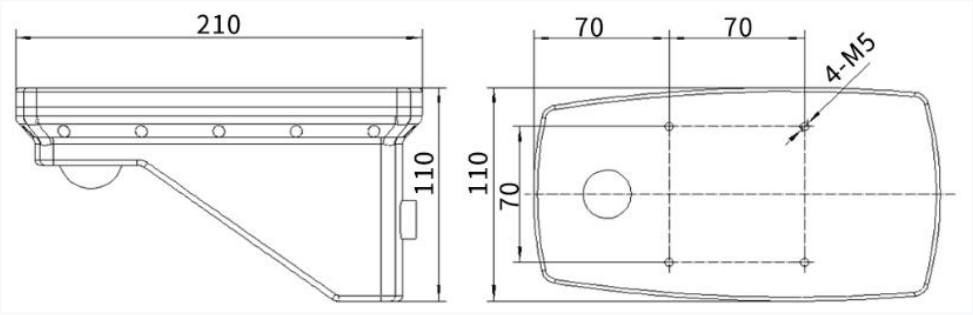
Applications

- Wide range of applications, suitable for underground drainage networks, urban water supply and drainage networks, river and sea outlets, and petroleum, chemical, and other liquid pipelines.

Specifications

Ultrasonic Flow Velocity	Velocity Measurement Range: -10 m/s to +10 m/s	Radar Flow Velocity	Velocity Measurement Range: -20 m/s to +20 m/s
	Measurement Accuracy: ±1.0% FS		Measurement Accuracy: ±0.01 m/s
	Resolution: 0.001 m/s		Resolution: 0.01 m/s
Pressure Water Level	Water Level Range: 0.02 to 10 m	Radar Water Level	Water Level Range: 0.1 to 20 m
	Measurement Accuracy: 0.5% FS		Measurement Accuracy: ±0.005 m
	Resolution: 0.001 m		Resolution: 0.001 m
Flow Parameters	Instantaneous Flow Rate: 0.001 m^3/s to 999.99 m^3/s		
	Measurement Accuracy: ±2%		
	Resolution: 0.001 m^3/s		
	Accumulated Flow Volume: 0.01 m^3 to 99,999,999 m^3		
Temperature Range	0~60°C	Storage Temperature	Storage Temperature: -20–80°C
Supply Voltage	12~24V DC	Protection Class	IP Rating: IP68
Total Power Consumption	⩽165mA/12V	Housing Material	Material: ABS
Interface Type	RS485 (Modbus-RTU)	Mounting Method	Mounting Type: Base-mounted
Dimensions (mm)	Dimensions: 210 × 110 × 110 mm; Mounting Hole Spacing: 70 × 70 mm (M5)		

Dimensions



Electrical Connection

Colors	Definitions
Red	Positive power supply terminal
Black	Negative power supply terminal
Blue (Green)	RS485-A
Yellow (White)	RS485-B

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