SEN901-403 Ultrasonic Radar Integrated Flow Meter

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

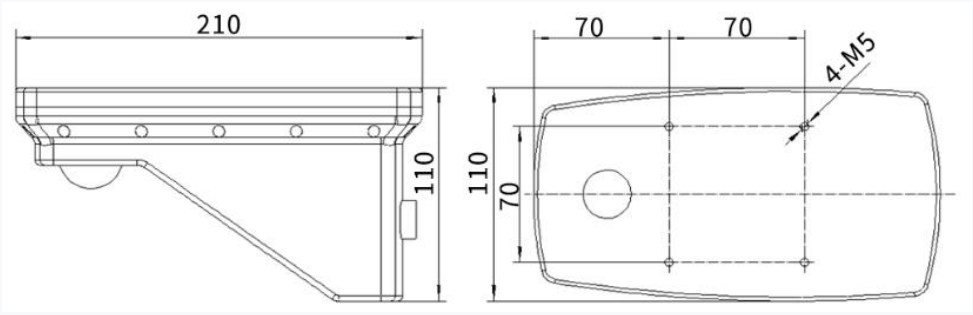
- Wide range of applications, suitable for underground drainage networks, urban water supply and drainage networks, river and sea outlets, and petroleum, chemical, and other liquid pipelines.

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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



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Electrical Connection

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