

MDS-P2510 Doppler Flow Meter



Application

1. River/channel flow velocity monitoring
2. Urban Water Management and Drainage
3. Measurement of flow velocity in chemical pipelines
4. Ocean and Port Engineering

Overview

In the field of acoustics, when there is relative motion between the sound source and the receiver (probe and reflector), the frequency of the echo will change, and this frequency change is called frequency shift, or Doppler effect. The frequency of sound waves increases when moving towards the observer and decreases when moving away from the observer. Doppler flow meter calculates flow velocity by calculating frequency changes.

Specifications

Power Supply	DC10-15V
Operating Current	160-180mA
Sound Wave Frequency	2MHZ
Blind Spot	10 centimeters
Flow Rate Range	0.021m/s~6.00m/s (customizable 12.00m/s)
Accuracy	1.0% $\pm$ 1cm/s
Water Level	Range: 0.03m~10m (customizable 100m) Accuracy: 0.3% $\pm$ 0.5cm
Water Temperature	-10°C~60°C, Accuracy: $\pm$ 1°C
Instantaneous Flow Range	1L/s~99.99m ³ /s
Cumulative Flow Range	0.1m ³ ~999999m ³
Working Voltage	DC7.2V~24V

Precautions

- Sensors need to avoid mud and collisions with objects such as stones. Grids should be installed in areas with abundant water and grass to prevent entanglement
- Sensor installation direction, the sensor emission surface needs to be installed in the upstream direction
- The narrowest 6 ° antenna beam angle reduces the impact of interference in the installation environment on the instrument, making installation more convenient
- The cable ventilation pipe is not difficult to break, which affects water level measurement
- Try to do a good job in signal and power lightning protection
- If the sensor cable is to be extended, a 485 relay needs to be added. Power supply avoids interference from frequency converters
- The sensor has a blind spot for sound waves, so try to ensure that the sensor is below 20 centimeters underwater (false data may appear when the sensor is partially exposed to water or blocked by sludge, and the probability is very low. Usually, the data will show large values such as 2m/s or more.
It is recommended secondary developers can shield large flow velocity values by water level, or in actual application scenarios where the water flow velocity is not so high, they can directly shield flow velocities greater than 2 meters)