

## SPDV200 Ultrasonic Doppler Velocity Meter

### WORKING PRINCIPLE

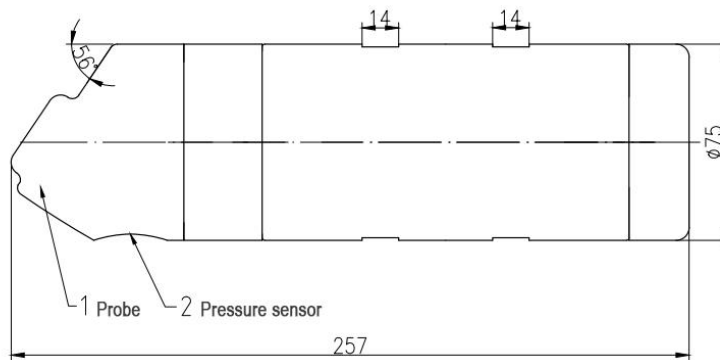
SPDV200 Ultrasonic Doppler flow meter measurement is based on the Doppler effect. The probe emits a beam of ultrasonic waves obliquely upward. The ultrasonic waves propagate in the fluid. The fluid will contain impurities such as bubbles or particles (it can be considered that the impurities in the fluid are at the same speed as the water flow). When ultrasonic waves contact impurities in the fluid, the reflected ultrasonic waves will produce a Doppler frequency shift  $\Delta f$ , and the Doppler frequency shift  $\Delta f$  is proportional to the flow rate. The flow velocity of the fluid can be measured by measuring the Doppler frequency shift  $\Delta f$ .



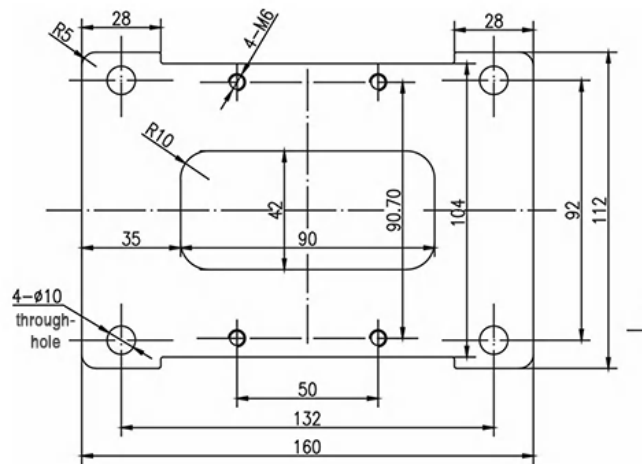
### SPECIFICATION

Measurement type	velocity, water depth, (water temperature measurement is optional function)
Power	Power supply range: 10.8VDC~26.4VDC; 12V power consumption: 45mA±1mA (about 0.54W) 24V power consumption: 26mA±1mA (about 0.62W)
Output characteristics	RS485/ModBus standard protocol
Measure performance	Flow velocity range: ±0.03m/s~±5m/s (±0.03m/s~±10m/s can be customized); Water depth range: 0.02~3m, 0.02~10m (please confirm the maximum water depth before ordering); Flow rate accuracy: ±1% (accuracy submitted for inspection by the Ministry of Water Resources); Flow velocity accuracy: ±1~3% (measurement accuracy may vary due to the on-site working environment); Water depth accuracy: ±3cm; Flow velocity resolution: 1mm/s; Temperature resolution: 0.1°C; Water depth resolution: 1mm.
Physical properties	Material: POM; Mass: 2.6±0.1kg; Protection level: IP68; Cable: 4-core shielded cable with air conduit included, factory default length 10 meters, wire diameter 8mm (other wire lengths need to be customized).
Working environment	Working temperature: 0~60°C (non-freezing state); Storage temperature: -20~80°C; Sand content: <20g/L; pH: The pH value is between 6 and 8.
Application	Pipeline, channel, natural stream, river

STRUCTURAL DIMENSION DRAWINGS



Doppler flow meter structural dimension diagram



Doppler current meter installation base structure diagram

APPLICATION

Ultrasonic Doppler current meter is a device that measures the flow velocity of water in pipes, channels or rivers. It is mainly used in the following ranges:

- \*Flood disaster monitoring
- \*Municipal water supply and drainage
- \*Study of estuaries and tides
- \*Underdrain process monitoring
- \*Sewage discharge
- \*Natural rivers and streams
- \*Water loss/infiltration monitoring
- \*Fisheries/water conservancy
- \*Road drainage monitoring
- \*Irrigation process monitoring
- \*Coastal erosion research
- \*Canal process research

