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YOUR SOURCE FOR PROCESS MEASUREMENT & CONTROL

DOPPLER ULTRASONIC FLOWMETER

HIGHLIGHTS

- Contact Doppler Ultrasonic Velocity and Flow Measurement Technology
- Excellent measurement accuracy and data stability
- Wide flow rate range: 0.02m/s to 5m/s
- Linearity measurement, factory calibrated, no need for calibration for long-term use
- Measures the flow of artificial or natural channels, rivers, and pipelines
- RS485 (Modbus), 4-20mA output
- No mechanical rotating parts, there is no problem such as mud plug or water grass, sundries, etc.
- Velocity area method flow measurement, free to set cross-section water level relationship
- Industrial design of fluid mechanics has little effect on the water body shape and does not affect the measurement accuracy
- IP68 waterproof case, able to work long hours in harsh environments
- Provides computer configuration and data real-time observation software
- Easy docking of existing hydrological telemetry systems
- Easy to install without fixing section
- Open channel and closed pipe special flow algorithm

PRODUCTDESCRITION

TRX-LSX-1 Doppler Ultrasonic Flow Meter is based on Doppler ultrasonic speed measurement. It adopts DSP technology and advanced spectrum analysis algorithm. It is designed for water flow rate and flow measurement.

It does not have rotating parts such as rotating pulp and bearings. It uses Doppler technology to detect flow velocity, no friction, no inertia, measuring point in front of the body, does not destroy the flow field, has high measurement accuracy, wide range, sensitive sensing, linear flow measurement, Not afraid of sediment, floating debris, intuitive readings, easy operation, not easy to damage and so on.

TRX-LSX-1 Doppler ultrasonic flow meter supports RS485 (Modbus), 4-20mA output, and can customize the communication protocol according to customer's requirements. The advanced spectrum analysis algorithm can perform statistical analysis on the flow velocity of the water to be measured, and can provide accurate data statistics of the measurement target, such as instantaneous flow velocity, average flow velocity, real-time water level, instantaneous flow, and cumulative flow. Doppler ultrasonic flow meter casing is made of PVC material, equipment protection grade IP68, can easily deal with various harsh environments.

TheTRX-LSX-1 Doppler Ultrasonic Flowmeter can be used to monitor the level, velocity, and flow of artificial or natural channels, rivers, hydroelectric plants, and urban underground pipe networks. It is only necessary to fix the device to the bottom of the section to be measured, and extremely high measurement accuracy can be obtained whether it is a full pipe or a non-full pipe.

MEASURINGPRINCIPLE

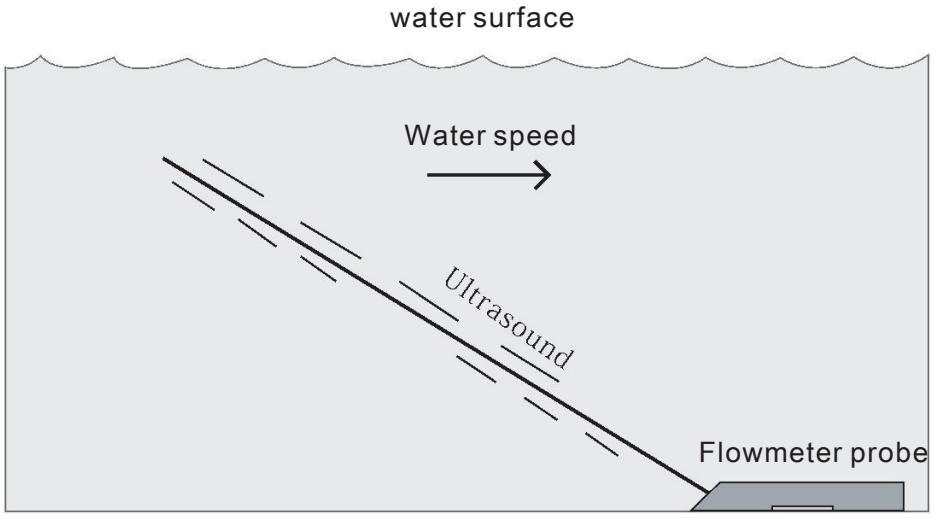
TRX-LSX-1 Doppler Ultrasonic Flowmeter uses velocity area method to measure flow, ultrasonic flow sensor to measure flow rate V, and pressure type water level meter to measure water level H. The channel parameters preset in the controller can be auto matically converted by the controller using the water level. Out of the flow area S, the fluid flow formula is:

$$Q=V\times S$$

among them V----Velocity S----Flow area Q---Instantaneous flow

Due to the velocity area method for flow measurement, it can be applied to any shape of section.

VELOCITYMEASUREMENTPRINCIPLE



TRX-LSX-1 Doppler Ultrasonic Flowmeter Velocity Measurement Based on the Doppler effect, the probe emits a beam of ultrasonic waves diagonally upwards. The ultrasonic waves propagate in the fluid and the fluid contains impurities such as air bubbles or particles (the impurities in the fluid can be considered as The velocity of the water flow is uniform.) When the ultrasonic waves come in contact with the impurities in the fluid, the reflected ultrasonic waves will produce a Doppler shift Δf. The Doppler shift Δf is proportional to the flow velocity. The flow rate of the fluid can be measured by measuring the Doppler shift Δf.

Dexi Technology has conducted experiments on a large number of hydraulic models and concluded a set of advanced spectrum analysis algorithms. Its flow rate measurement accuracy

can reach 1%±1cm/s of the measured flow rate.

DETAILED

SPECIFICATIONS

Velocity

Range：0. 02m/s-5m/s

Accuracy：±1%±1cm/s

Resolution：1mm/s

Depth

Range：0-5m

Accuracy：±1cm

Resolution：1mm

Flow

Range：0. 001m3/h-999999999m3/h

Accuracy：±3%

Resolution：0. 001m3/h

Temperature

Range：-10℃-65℃

Accuracy：±0. 5℃

Resolution：0. 1℃

General

Power Input：9-24VDC

Power Usage：1W

Interface：Rs485 Modbus/4-20mA

IP Rating：IP68

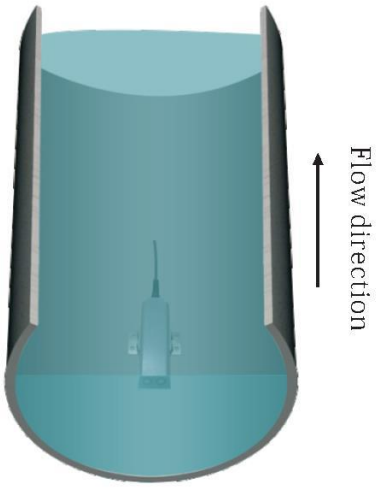
Operating Temp：-10℃-60℃

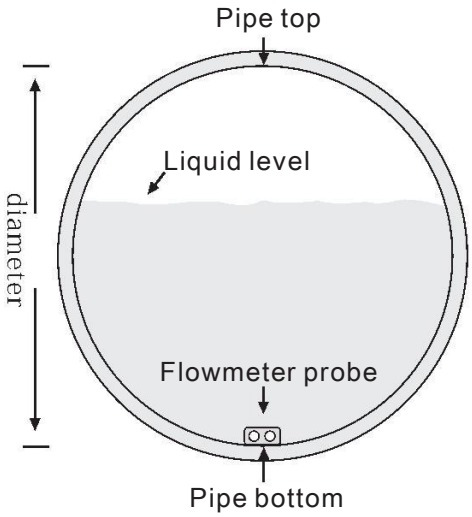
Material：PVC

Dimensions：220mm x 70mm x 33mm (LxWxH)

Cable：4-core cable+1-core airway （20m）

INSTALLATION DIAGRAM





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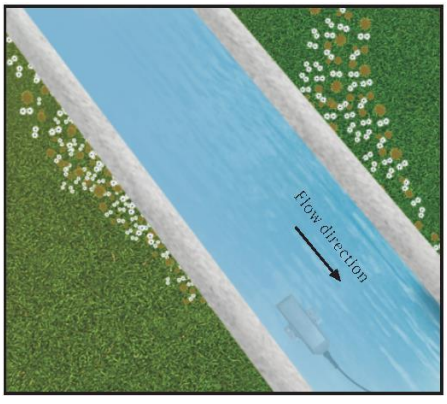
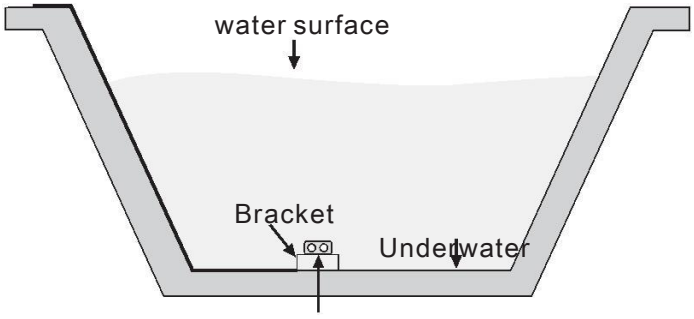
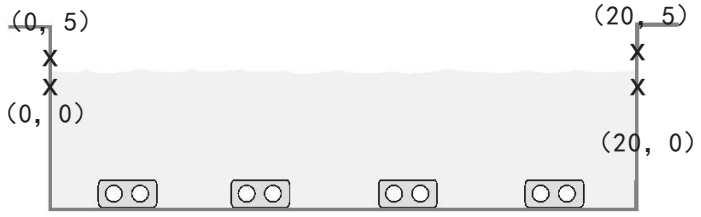




Flowmeter probe

Channel installation diagram



Wide channel installation diagram

CONTROLLERSELECTION

GPRS remote transmission version

Local display version

Portable version

Doppler ultrasonic flow meter probes can be equipped with TRX-LSX-1 telemetering terminal. GPRS remote transmission system is suitable for unattended applications where data needs to be transmitted remotely. It can also be used with TX100C universal digital controller for local display or data. Local output into the PLC; can also be equipped with TX200S handheld controller for applications that require portable flow rate measurement.

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