

BSUF-TTHH-S

Portable Ultrasonic Flowmeter and Analyzer



OVERVIEW

Description

The BSUF-TTHH-S high dynamic response portable ultrasonic flowmeter is designed to be compact and lightweight for easy portability. It features a rechargeable battery and universal power supply, allowing you to conduct pipeline measurements anytime, anywhere.

The magnetic clamp-on transducer installation is simple and can be attached to metallic pipes with magnetic properties for measurements. It is particularly suitable for on-site flow detection of toxic, highly corrosive media, overhead pipelines, and various pressure-resistant requirements. The instrument is equipped with a TF card for storage, enabling recording of real-time flow data changes, significantly enhancing the reliability of cumulative flow measurement and the security of data collection.

Features

- Few hardware components, operates at low voltage, multiple pulse transmission, low power consumption, high reliability, strong anti-interference capability, and excellent applicability.
- Optimized intelligent signal adaptive processing, no need for any circuit adjustments, as easy and simple to use as a multimeter.
- The instrument comes with a TF card, capable of storing at least 100.000 files, with data intervals accurate to 1 minute.
- Built-in seven-digit totalizers for positive, negative, and net flow accumulation, operating simultaneously with scaling.



Bass Ölçme Enstrümanları A.Ş.

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PRODUCT CONFIGURATION

The BSUF-TTHH-S is a general-purpose transit-time ultrasonic liquid flowmeter designed with an ARM chip and low-voltage wide-pulse transmission technology. It is suitable for continuous measurement of homogeneous liquids in industrial environments, excluding those with high concentrations of suspended particles or gases. In terms of measurement technology, the flowmeter utilizes a high-resolution, high-linearity, and highly stable time measurement circuit capable of achieving 0.04 ns resolution. Coupled with a 32-bit digital processing program, it ensures the flowmeter has enhanced resolution and a wider measurement range. The BSUF-TTHH-S high dynamic response portable ultrasonic flowmeter is a calibration tool capable of calibrating flowmeters on-site, widely applicable in industries such as petroleum, chemical, metallurgy, power generation, food processing, and dyeing for online flow inspection and periodic measurements of liquid flow.



BSUF-TTHH-S standard configuration as shown in the diagram:

- Transmitter
- Transducer
- Junction box
- Sensor cables
- Charger
- Coupling compounds
- Pipe straps
- Toolbox
- Tape measure
- Card reader

PRODUCT SPECIFICATION

Performance Specifications

Measurable Flow Velocity Range: $\pm 0.01\text{m/s} \sim \pm 12\text{m/s}$
 Accuracy: 0.5% of measured value
 Repeatability: 0.1%
 Pipe Size Range: 25mm~5000mm

Functional Specifications

Analog Output: 4~20mA, maximum load 750Ω
 Pulse Output: 0~9999Hz, OCT output
 Relay Output: Maximum frequency 1Hz
 Power Supply: 10.8V rechargeable lithium battery
 Keyboard: Touch keys
 TF Card: ①Capacity: 16GB (To prevail in kind)
 ②Data Logging Period: 180 days
 Display Screen: ①3.5-inch IPS full-view color screen
 ②Resolution (H*V): 480x640

Performance Specifications

Environmental Humidity: Relative humidity 0~99%
 Measurement Temperature: -40°C~80°C
 Housing Material: Aluminum alloy
 Cable: 05 Special twisted pair cable
 Weight: 1 pair 0.9 Kg

Physical Specifications

Transmitter IP Rating: IP67
 Transducer Encapsulated Designed: IP68
 Transducer Cable Length: 5m
 Transmitter Weight: 1kg

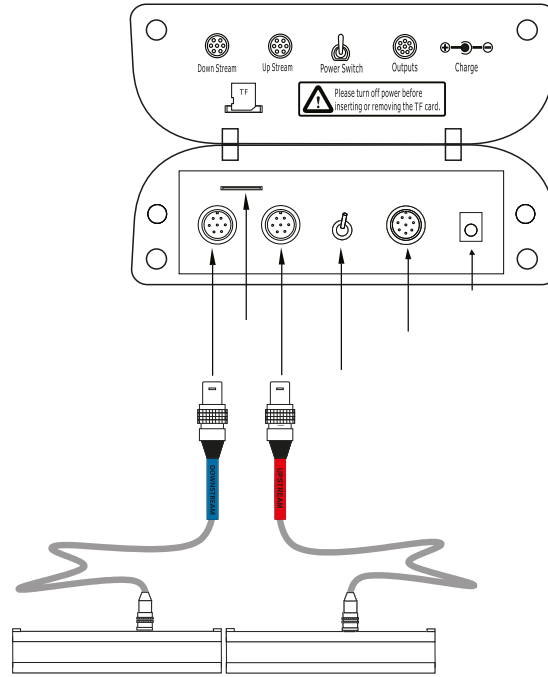


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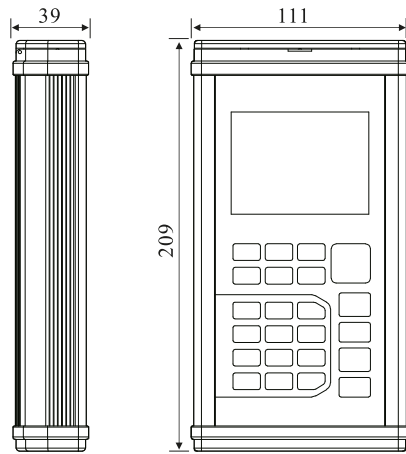
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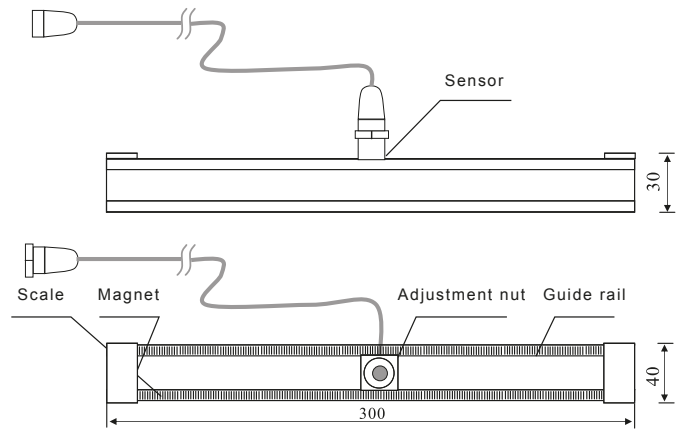
PRODUCT WIRING



SPECIFICATIONS AND DIMENSIONS



Transmitter Dimensions (Unit: mm)



Transducer Dimensions (Unit: mm)



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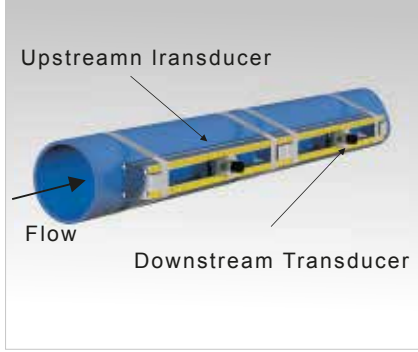
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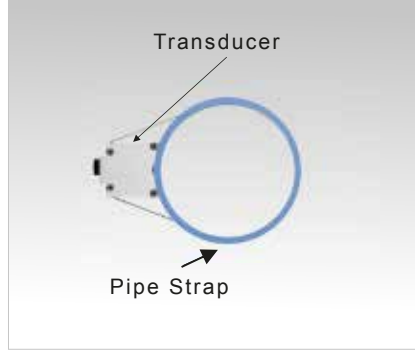
TRANSDUCER INSTALLATION METHOD

V-Type Installation Method Applicable Pipe Diameter Range: 25mm~400mm (same side, ensure both sensors are horizontally aligned, with their centerlines parallel to the axis of the pipe) (recommended)

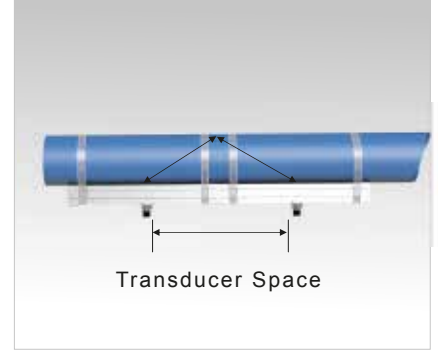
Principles should be followed:



Side View



Section

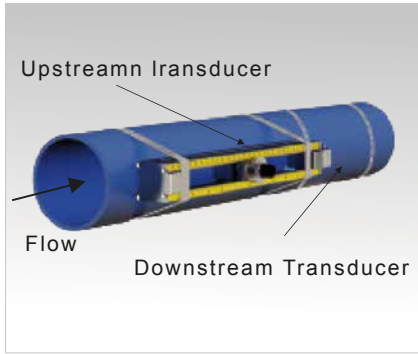


Top View

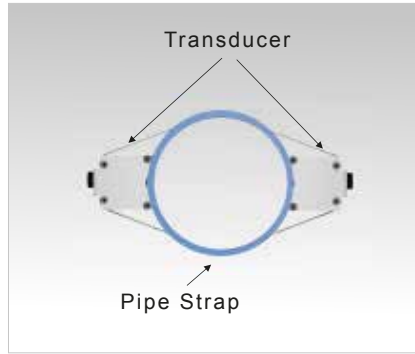
Z-Type Installation Method Applicable Pipe Diameter Range: 100mm~5000mm (opposite sides, avoid installing at the top or bottom of the pipe)

When installing the flowmeter, it is recommended to use the Z-type installation method for pipe sections of 300mm and above.

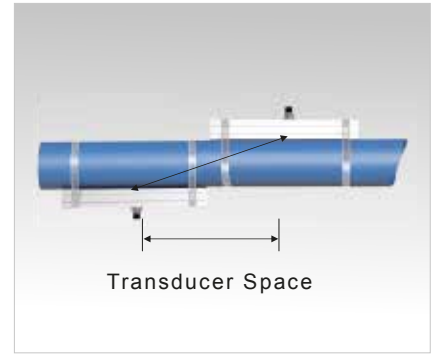
Z-Type Installation Method:



Side View



Section



Top View



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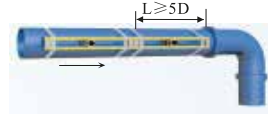
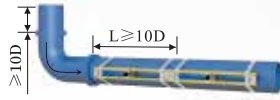
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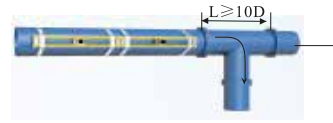
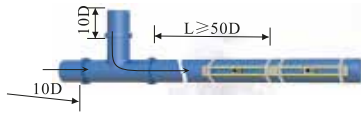
MEASUREMENT SITE SELECTION

Ultrasonic flowmeters are the simplest and most convenient among all flowmeters to install. Just choose a suitable measurement point, input the pipe parameters at the measurement point into the flowmeter, and install the sensor on the pipe for measurement. When installing, the following principles should be followed:

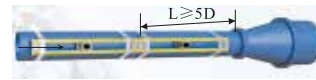
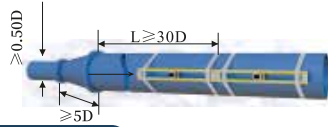
90° bend



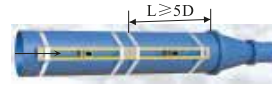
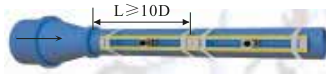
Tee



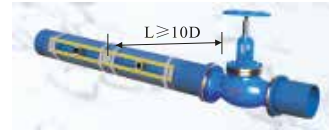
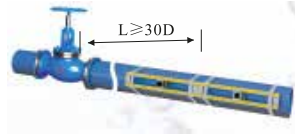
Diffuser



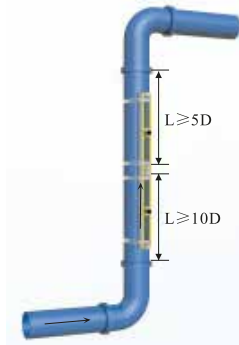
Reduce



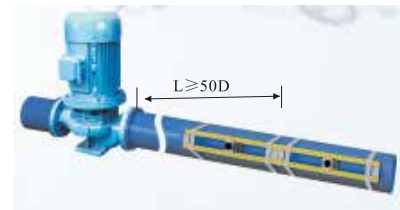
Valve



vertical installation



Pump



Principles of Point Selection :

Avoid positions at 6 o'clock and 12 o'clock to prevent signal attenuation caused by sediment at the bottom of the pipe or bubbles and cavities at the top of the pipe. Fully consider the scaling condition on the inner wall of the pipe and try to select pipe sections without scaling for measurement. If scaling cannot be avoided, consider it as a lining to achieve better measurement accuracy.



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PRODUCT MODEL

Model	Transmitter Description
BSUF-TTHH-S	Name: Portable Ultrasonic Flowmeter and Analyzer
	Flow Velocity Range: $\pm 0.01\text{m/s} \sim \pm 12\text{m/s}$
	Accuracy: $\pm 0.5\%$ of measured value.
	Repeatability: 0.1%
	Storage: Storage: Equipped with TF card for extensive data storage. Data Logging Period: 180 days
	Outputs: 4-20mA output, OCT frequency output, relay output
	Communication: RS485 communication interface
	Display: 3.5" IPS full-viewing color screen
	Power Supply: 10.8V rechargeable lithium battery(continuous operation for 10 hours after full charge)
A	Transducer Description
	Magnetic Clamp-on Transducer
	Installation Method: Magnetic, clamp on type
	Measurable Pipe Size Range: 25mm~5000mm
	Standard Cable Length: 5m
	Sensor Casing: Stainless Steel
	Operating Temperature: $-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$
	Aluminum Alloy Guide Rail
B	Transducer Cable Length
	Standard Cable Length: 5m
	Transducer Cable Length: Each extension unit is 5 meters, extendable up to a maximum of 305m.

Portable Ultrasonic Flowmeter and Analyzer, Magnetic Clamp-on Transducer, Standard Cable Length: 5m