aobo instrument

2024
PRODUCT
INTRODUCTION

Portable Velocity Meter

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Company Profile

Weifang AOBO Instrument Technology Development Co., Ltd., founded in 2002, with registration capital of 10 million RMB, is a "High-Tech" and "Double-Software Certification" enterprise specialized in "flow measurement and intelligent measurement & control" industry, integrating R&D, production, sales and service.

The company has a core R&D team for computer software and technology, automatic intelligent control, HVAC engineering design and flow measurement. It has the ability to provide customers with specific solutions and complete sets of products according to their different needs, based on years of practical experience. Especially in the heating industry, by the customer's recognition, has a high reputation in the industry.

The products are mainly used in the measurement and control of "steam, liquid, gas, sewage and tap water"; and especially suitable for energy monitoring and energy-saving control in many industries, such as thermal power plants, thermal companies, residential heating, petroleum, chemical industry, papermaking, food, coating, printing & dyeing and HVAC.

Since its foundation, based on self-developed and leading technology, reliable quality, high-quality service and good reputation, our company has been warmly accepted by customers, and become a designated supplier for many central enterprises and listed companies.

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All of the catalogue and company information can be found at:

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I. Product Overview

The ABDT-LI120A-type portable flow velocity meter (portable velocity meter for short) is specially developed for open channel velocity and flow measurement in the field by hydrological stations, factories and mines, environmental protection monitoring stations, farmland drainage and irrigation, rivers, currents, channels, lakes, hydrogeological surveys and other departments.

Portable velocity meter is mainly composed of LI120A-type propeller flow speed sensor and LS-A flow rate meter and measuring rod. The full set of instruments is placed in the advanced aluminum alloy password box. When using, assemble the assembly as shown in Figure 1, connect the signal line, and measure the flow rate in each open channel, and automatically display the flow rate.

Fig.1 the installation diagram of the portable velocity meter

The instrument has simple structure, light and convenient, low power consumption, complete functions, high degree of automation, stability and reliability. It meets the national open channel flow measurement standard and is equipped with 60 degree high temperature propeller. It is a new portable flow velocity measurement instrument in China.

II. Technical Requirements

Formula： $V = \frac{KN}{T} + C$（m/s） (automatically calculate)

No.: _____, K: _____ ,C: _____

Paddle structure: spiral curved double blade, left spin, PC plastic;

Rotating diameter of propeller D: 120mm

propeller hydraulic pitch B: 200-250mm

starting speed of instrument v0: ⩽ 0.03m/s

critical speed of verification curve Vk: about 0.13m/s (starting point of linear formula)

flow rate measurement range V: 0.03 ~ 10m/s

signal component structure: magnetic steel reed electronic switch

each signal Revolution: 20 revolutions

relative error of verification curve E: when v ⩾ Vk, E＜ 1.5; When V < Vk, E< ± 3%

switch contact capacity: current ⩽ 50mA, voltage ⩽ 6V

dry reed working life: 70million times

instrument continuous working time: 40 hours (suspended sediment concentration ⩽ 50kg/m^3, flow rate ⩽ 5m/s, water depth ⩽ 10m)

instrument working flow conditions water depth range: 0.2~50m

water temperature: 0~40 ℃

suspended sediment concentration: ⩽ 100kg/m^3 salinity: ⩽ 2g/l

display screen: 4 × 16 bit LCD

measurement mode: pole positioning measurement (also cable suspension positioning measurement)

power supply: DC8.4V (rechargeable battery), which can work continuously for more than 40 hours after full charge .

III. Measuring Principle

This instrument is designed according to the principle of velocity area method of open channel flow measurement. The measured velocity can obtain the flow Q = V ·S (S is the cross-sectional area)

3.1 Flow rate measurement

When measuring the flow rate, the propeller rotor current meter is driven by water to rotate, and the built-in signal device generates the revolution signal. The flow rate is calculated by the following formula:

$$V = \frac{KN}{T} + C \ (\mathrm{m/s})$$

Where:

V: Average flow rate during flow measurement period (m/s)

K: Hydraulic pitch of blade

C: Current meter constant

T: Flow measurement duration (unit: s)

N: Number of signals in T period

When this instrument is used, K and C are constants. When measuring flow, as long as T and N are measured, the flow rate can be calculated.

3.2 Calculation of flow

Flow measurement according to the velocity area method of open channel flow measurement, the flow is obtained by measuring the velocity and multiplying it by the cross-sectional area.

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