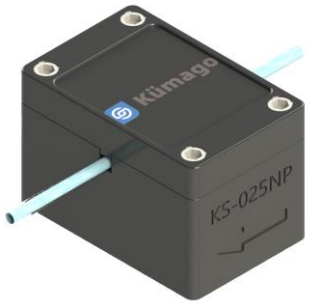
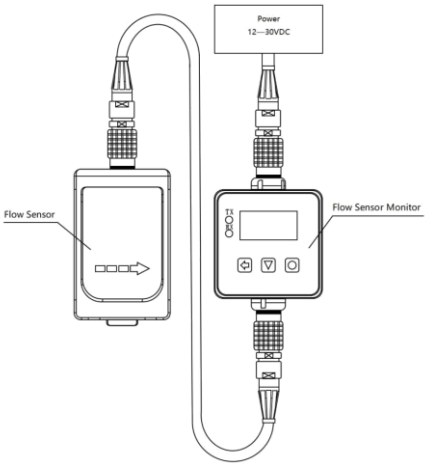
GF-KS Clamp-on Ultrasonic Flow Sensor



Introduction

The GF-KS series of clamp-on ultrasonic flow sensors are compact in size and do not require an external circuit system for measurement and output. The sensor can be clamped directly to the outside of the rigid plastic pipe, the liquid flow rate in the pipe for accurate measurement, accuracy of up to ± 1.0%, and can detect air bubbles and large solid particles in the liquid impurities. The sensor does not come into direct contact with the liquid in the pipeline and does not contaminate the liquid, making it particularly suitable for applications requiring high hygienic cleanliness, such as liquid flow monitoring in biopharmaceutical processes, semiconductor equipment and medical devices.



Application

- ✓ Common applications
- ✓ High accuracy and stability.
- ✓ Non-invasive measurement, no direct contact with the fluid, hygienic and safe.
- ✓ Bi-directional measurement, calculation of fluid volume, combined with bubble detection.
- ✓ Circuitry integrated inside the sensor, no external calculation and processing system required, compact dimensions.
- ✓ No blockage, no steering, no dead space, low fluid pressure loss.
- ✓ offers standard outputs for seamless integration with customer systems.
- ✓ Custom calibrations are available by specifying plastic hard tube material, size, temperature and fluid type.
- ✓ Fluid monitoring in semiconductor manufacturing and processing, such as high purity water and high purity chemical reagent transfer lines.
- ✓ Medical devices such as blood dialyzers, artificial hearts, organ transplant systems, artificial heart-lung machines, blood pumps.
- ✓ Biopharmaceutical processes and equipment, such as disposable reaction vessels, fermenters, cell culture equipment, vaccine production, tangential flow filtration systems, liquid chromatographs, chromatographs.
- ✓ Food, beverage processing, e.g. milk, juice, beer production processes.
- ✓ Filling equipment, coating equipment, cooling systems, lubrication systems, scientific laboratory systems.

- ✓ Chips, PCB circuit boards, lithium batteries, boiler equipment, etc.
- ✓ Water and wastewater treatment systems.

Specification

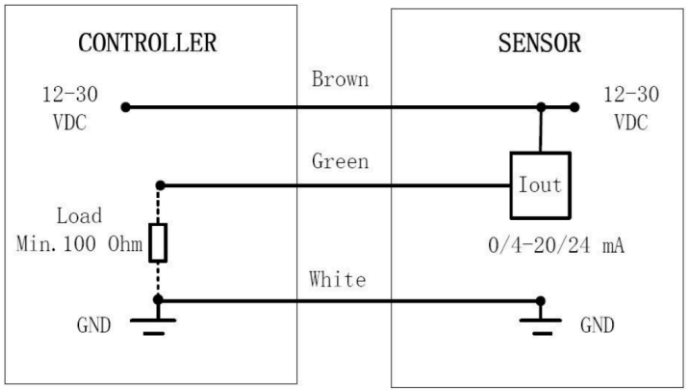
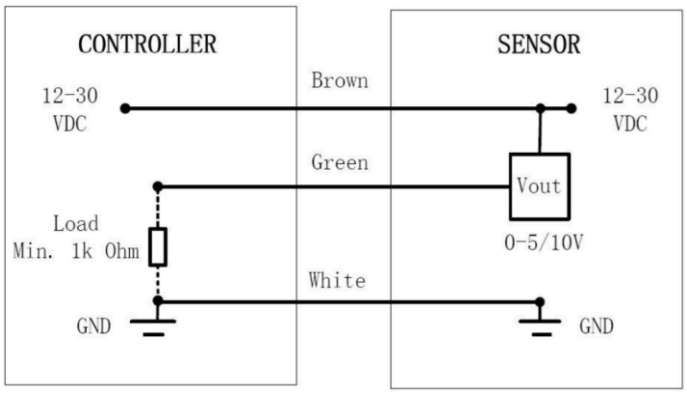
Item	Parameter
Applicable Liquid	Water, blood, beverages, gasoline, abrasives, paints, etc., contain no or few solid particles
Accuracy	1.5%
Calibration	Default @22±3℃, water
Pipe Type	PFA, PTFE, Teflon, PP, PVDF, Nylon, etc. Hard and smooth pipe
Case Material	Plastic, aluminum or stainless steel
Input Voltage	12~30 VDC
Current Consumption	<20mA
Interface	8 pin Plug
Operating Temperature	0°C~60°C
Storage Temperature	-20°C~70°C
Output	1. RS485 2. 4-20mA，0-20mA，0-24mA 3. 0-5V，0-10V 4. 0-20KHz 5. NPN，PNP，PUSH-PULL

Tube Size

Type	Range	Accuracy	OD	ID
KS-016N-S	500 mL Max. 2000 mL	0-200mL/ min:±4mL/min 200-2000mL/min:±2%	5/32" 4mm	1/16" 2mm
KS-019N-S	800 mL Max. 2000 mL	0-300mL/min:±4mL/min 300-2000mL/min:±2%	3/16" 5mm	1/16" 3mm
KS-025N-S	1000 mL Max. 3000 mL	0-200mL/min:±6mL/min 200-3000mL/min:±3%	1/4" 7mm	1/8" 4mm
KS-032N-S	2000 mL Max. 6000 mL	0-300mL/min:±9mL/min 300-6000mL/min:±3%	5/16" 8mm	3/16" 5mm
KS-038N-S	3000 mL Max. 8000 mL	0-500mL/min:±15mL/min 500-8000mL/min:±3%	3/8" 9mm	1/4" 6mm
KS-044N-S	4000 mL Max. 9000 mL	0-600mL/min:±18mL/min 600-9000mL/min:±3%	7/16" 11mm	5/16" 8mm
KS-050N-S	5000 mL Max. 10000 mL	0-700mL/min:±21mL/min 700-10000mL/min:±3%	1/2" 13mm	3/8" 6mm

KS-056N-S	6000 mL Max. 12000 mL	0-800mL/min:±24mL/min 800-12000mL/min:±3%	9/16" 14mm	3/8" 10mm
KS-063N-S	8000 mL Max.14000 mL	0-900mL/min:±27mL/min 900-14000mL/min:±3%	5/8" 16mm	3/8" 10mm
KS-075N-S	10000 mL Max. 20000 mL	0-1200mL/min:±36mL/min 1200-20000mL/min:±3%	3/4" 19mm	1/2" 14mm
KS-100N-S	25000 mL Max. 50000 mL	0-2000mL/min:±60mL/min 2000-50000mL/min: ±3%	1" 1"	3/4" 5/8"
KS-125N-S	50000 mL Max. 100000 mL	0-8000mL/min:±240mL/min 8000-100000mL/min:±3%	11/4" 11/4"	3/4" 1"
KS-138N-S	50000 mL Max. 100000 mL	0-9000mL/min:±300mL/min 9000-100000mL/min:±3%	13/8" 13/8"	7/8" 1"

Electrical Connect

<table>
<tr><td rowspan="2">Current Output</td><td>Load resistance >100 Ohm. maximum load related to operating voltage
12V-250 Ohm, 15V-500 Ohm, 24V-1000 Ohm, 30V-1200 Ohm</td></tr>
<tr><td> 
</td></tr>
<tr><td rowspan="2">Voltage Output</td><td>5V and 10V settable, load resistance not less than 1000 Ohm.</td></tr>
<tr><td> 
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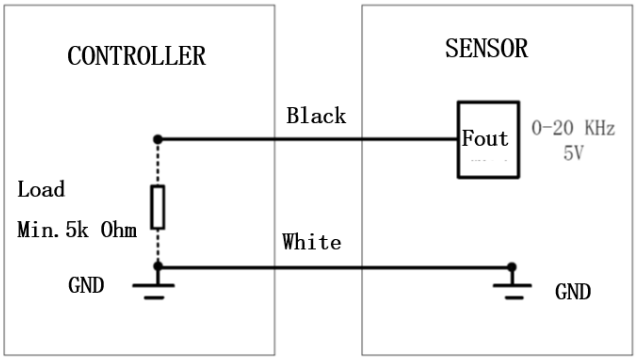
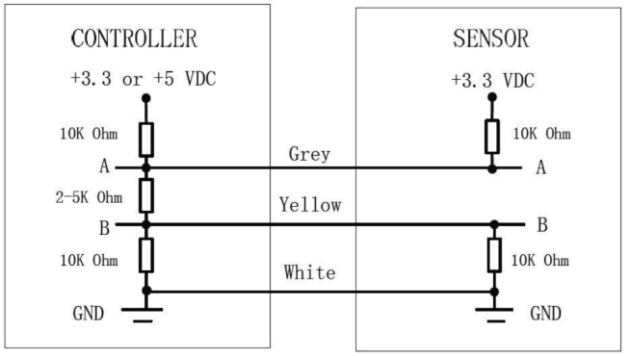
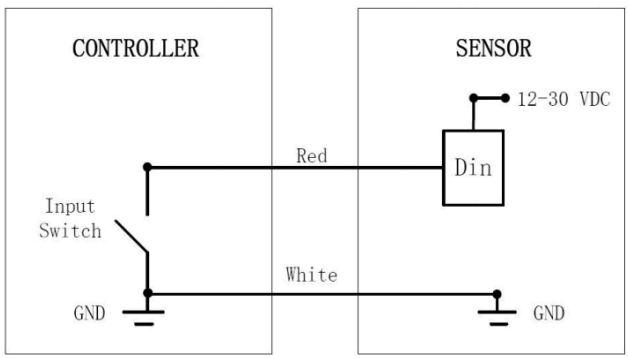
Digital Output	NPN, PNP, PUSH-PULL, configurable as flow switch, bubble detection, filling or pulse outputs Maximum current 100mA

Frequency Output	Output voltage default 5V (12-30V optional, contact manufacturer in advance), load resistance not less than 5000 Ohm.
	

RS485 Interface	Bus operation supports up to 12 sensors. The default address is #4
	
Digital Input	Configurable for zero calibration, volume zeroing, start filling, etc. Grounding time must be greater than 20ms
	

Accessory

Accessory 8-conductor shielded cable, default length 1.5 meters.

Optional accessories

1. USB data converter for connecting one sensor to a PC; 2.
2. flow sensor kit with display, allowing up to 3 sensors to be connected to the PC at the same time; 3. flow display, connecting one sensor and adapting the sensor cables to the PC
3. flow display for connecting one sensor and adapting the sensor cable to the PC; 4. data cable 3 meters, two pairs
4. 3 m data cable with push-pull plugs on both ends to connect the flow display to the sensor.