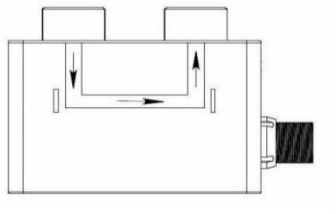
GF-TGU Ultrasonic Flow Sensor

Internal flow ultrasonic flow sensors are compact in size and can output results without external circuitry. These sensors can be integrated into liquid flow paths to measure very low flow rates with high accuracy. The sensors are based on the ultrasonic time-difference method technology and can be configured as flow switches or for bubble detection and liquid filling processes

Features

- ✓ High accuracy and stability
- ✓ Bi-directional measurement with fluid volume calculation and bubble detection function
- ✓ Circuitry is integrated within the sensor, no external circuitry is required
- ✓ Standardized output methods are available for seamless integration into customer systems.
- ✓ Fluid color or conductivity does not affect the measurement results.

Application

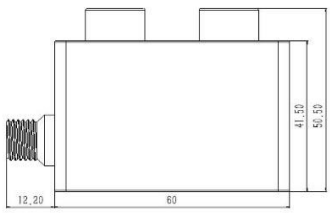


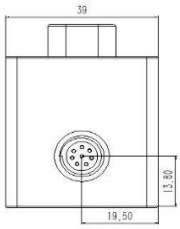
- ✓ Medical devices
- ✓ Biopharmaceutical industry
- ✓ Pan-Semiconductor Manufacturing
- ✓ Food and beverage processing
- ✓ Filling equipment
- ✓ Spraying equipment, cooling systems, lubrication systems
- ✓ Scientific laboratory systems

Type	Range	Accuracy
GF-TGU-012	0-1000 mL/min	0-10mL/min:±0.1mL/min 10-1000mL/min: ±0.5%
GF-TGU-016	0-2000 mL/min	0-20mL/min:±0.2mL/min 20-2000mL/min: ±0.5%
GF-TGU-024	0-3000 mL/min	0-50mL/min:±0.5mL/min 50-3000mL/min: ±0.5%

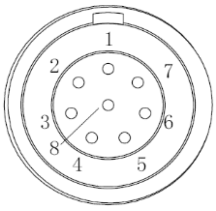
Specification

Item	Parameter
Applicable Liquid	Water, brine, buffers, beverages, oil, etc., with no or a few solid particles
Calibration	22±3°C, water
Connect Port	1/8-inch NPT, female
Tube Type	PEEK, PFA (Option) Seals: Viton
Shell Material	Aluminum alloy
Power Supply	12-30VDC
Current Consumption	< 20mA
Signal Connect	8 pin Plug
Liquid Temperature	0℃-150℃
Storage Temperature	-20℃-80℃
Protection	IP65
Output	1. RS485 2. 4-20mA, 0-20mA, 0-24mA 3. 0-5V, 0-10V 4. 0-20KHz 5. NPN, PNP, PUSH-PULL

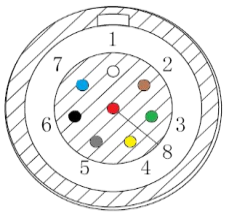


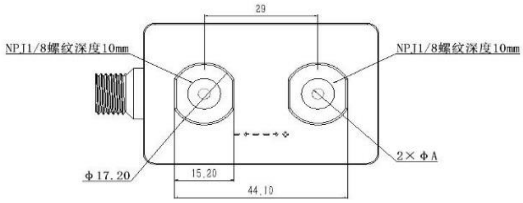


Male (Sensor)



Female (Calbe)

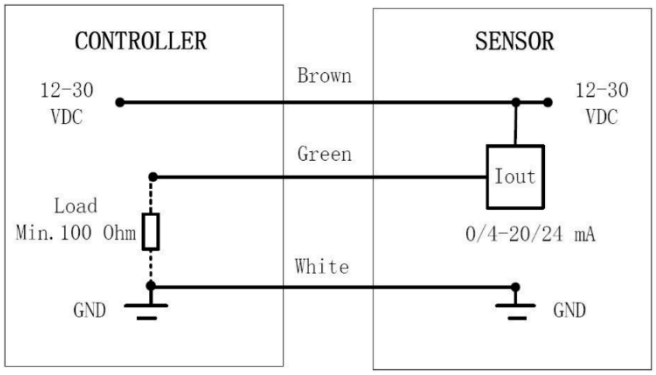
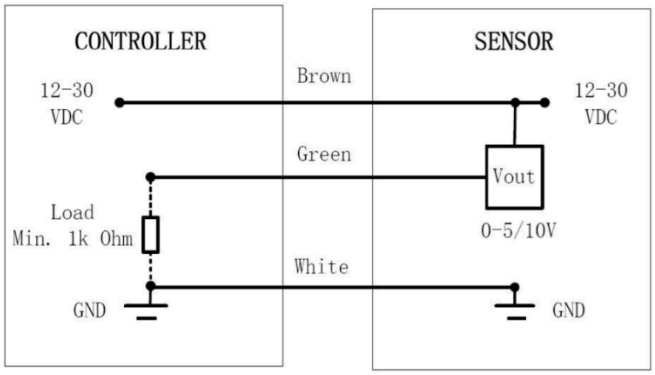


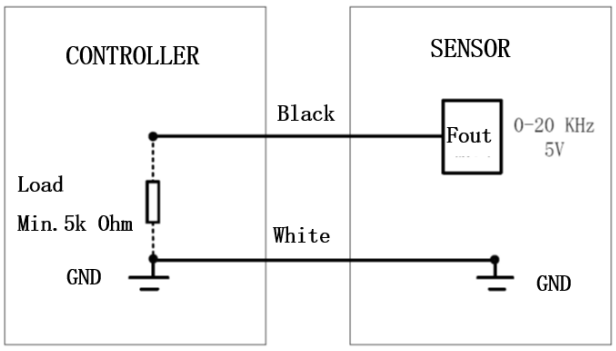


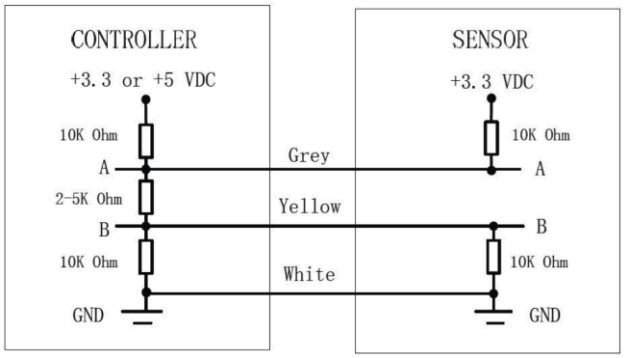
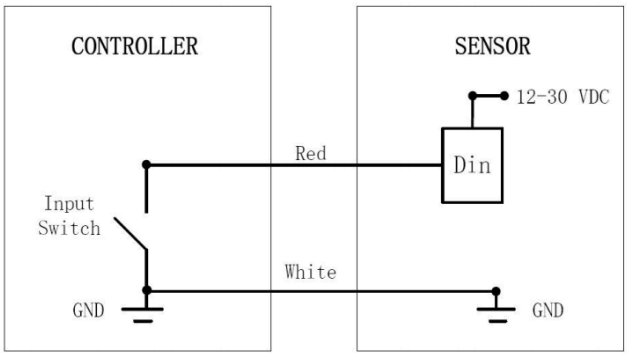
A	Type
3mm	GF-TGU-012
4mm	GF-TGU-016
6mm	GF-TGU-024

Pin	Wire Color	Definition
1	White	GND
2	Brown	Power
3	Green	Output
4	Yellow	RS485B
5	Gray	RS485A
6	Black	Frequency Output
7	Blue	Digital Output
8	Red	Digital Input

Electrical Connection

Current Output	Load resistance >100 Ohm. maximum load related to operating voltage 12V-250 Ohm, 15V-500 Ohm, 24V-1000 Ohm, 30V-1200 Ohm
	
Voltage Output	5V and 10V settable, load resistance not less than 1000 Ohm.
	
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.
	

<table>
<tr><td rowspan="2">RS485 Interface</td><td>Bus operation supports up to 12 sensors. The default address is #4</td></tr>
<tr><td> 
</td></tr>
<tr><td rowspan="2">Digital Input</td><td>Configurable for zero calibration, volume zeroing, start filling, etc. Grounding time must be greater than 20ms</td></tr>
<tr><td> 
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Accessary

8-pin shielded cable with a default length of 1.5m.

Optional Accessary

1. USB data converter to connect one sensor to a computer.
2. A flow indicator to connect one transducer with the transducer cable adapter leading out.
3. Data cable, 3 meters, with push-pull plugs on both ends, to connect the flow display to the sensor.