Agatige YF-S401

Agatige YF-S401 Water Flow Sensor Instruction Manual

Model: YF-S401

1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of your Agatige YF-S401 Water Flow Sensor. Please read this manual thoroughly before using the product to ensure safe and efficient performance.
The Agatige YF-S401 is a compact and reliable Hall effect water flow sensor designed for precise measurement of liquid flow rates in various applications, including water coolers, coffee machines, and water filters.

2. Product Overview

The YF-S401 water flow sensor is engineered for accurate and efficient water flow monitoring. Its design emphasizes stability and ease of integration into existing systems.

Figure 2.1: Agatige YF-S401 Water Flow Sensor. This image shows the compact white sensor unit with its three-wire connector (red, yellow, black) extending from one side.

Key Features:

- **Accurate Measurement:** Provides precise flow detection with an accuracy of 3%.
- **Wide Application Range:** Suitable for chillers, coffee machines, water filters, and other water-related appliances.
- **Compact and Lightweight Design:** Small footprint allows for easy installation in confined spaces.
- **Durable Construction:** Made from high-quality materials for long-term reliability and continuous flow monitoring.
- **Hall Effect Output:** Generates pulse signals corresponding to the water flow rate, which can be read by a controller.
- **Sealed Design:** Features a waterproof rubber ring silicone for effective sealing and prevention of water leakage.
- **Corrosion Resistance:** Internally embedded with stainless steel beads for enhanced wear and corrosion resistance.
- **XH-3P Connection Cable:** Transparent soft PVC cable offering strong compressive strength, safe insulation, and stable conductivity.

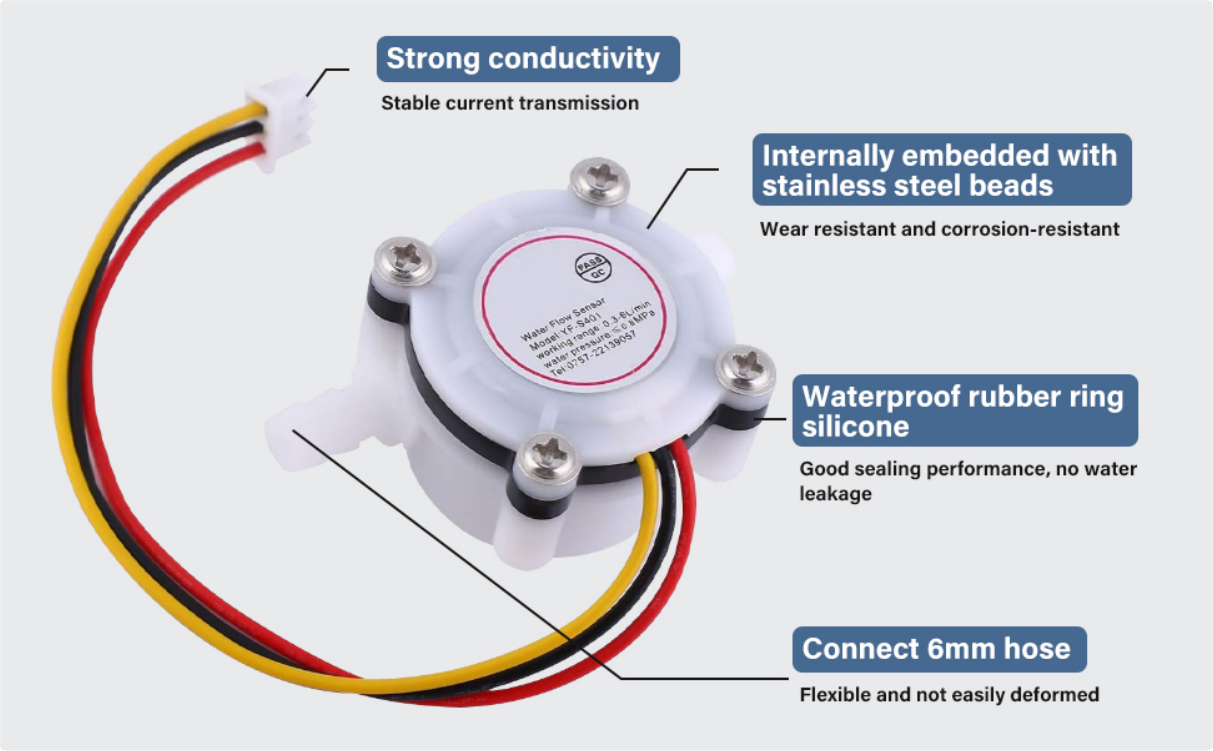


Figure 2.2: Detailed features of the YF-S401 sensor, highlighting strong conductivity, stainless steel beads, waterproof rubber ring, and 6mm hose connection.

3. Specifications

Parameter	Value
Model	YF-S401
Monitoring Range	0.3 - 6 L/min
Accuracy	±3%
Pressure Resistance	0.35 MPa
Working Voltage Range	DC 5V - 24V
Item Weight	1.06 ounces (approx. 30g)
Product Dimensions	1.97 x 1.97 x 1.18 inches (approx. 5 x 5 x 3 cm)
Connection Type	Barb Joint for 6mm hose, XH-3P Connector
Material	High-quality plastic, stainless steel, PVC (cable)
Batteries Required	No

Figure 3.1: Sensor label displaying key specifications such as model number, working range, water pressure, and working voltage.

4. Setup and Installation

Proper installation is crucial for the accurate operation of the water flow sensor. Follow these steps carefully:

1. **Identify Installation Point:** The sensor is designed to be installed at the water inlet of your appliance (e.g., water dispenser, coffee machine, water filter). Ensure the flow direction matches the arrow indicated on the sensor body.
2. **Prepare Connections:** The sensor features barb joints suitable for connecting to a 6mm hose. Ensure the hose is securely attached to prevent leaks.
3. **Electrical Connection:** The sensor uses an XH-3P connector with three wires:
    - **Red Wire:** Connect to DC 5V-24V power supply (VCC).
    - **Black Wire:** Connect to Ground (GND).
    - **Yellow Wire:** Pulse output signal. Connect to the input pin of your microcontroller or control circuit.

    Ensure all electrical connections are secure and insulated.
4. **Mounting:** Secure the sensor in a stable position to prevent movement or vibration during operation.
5. **Leak Check:** After installation, slowly turn on the water supply and carefully check for any leaks at the hose connections.

Figure 4.1: Example installation of the water flow sensor in a system, demonstrating its placement for regulating inflow rate.

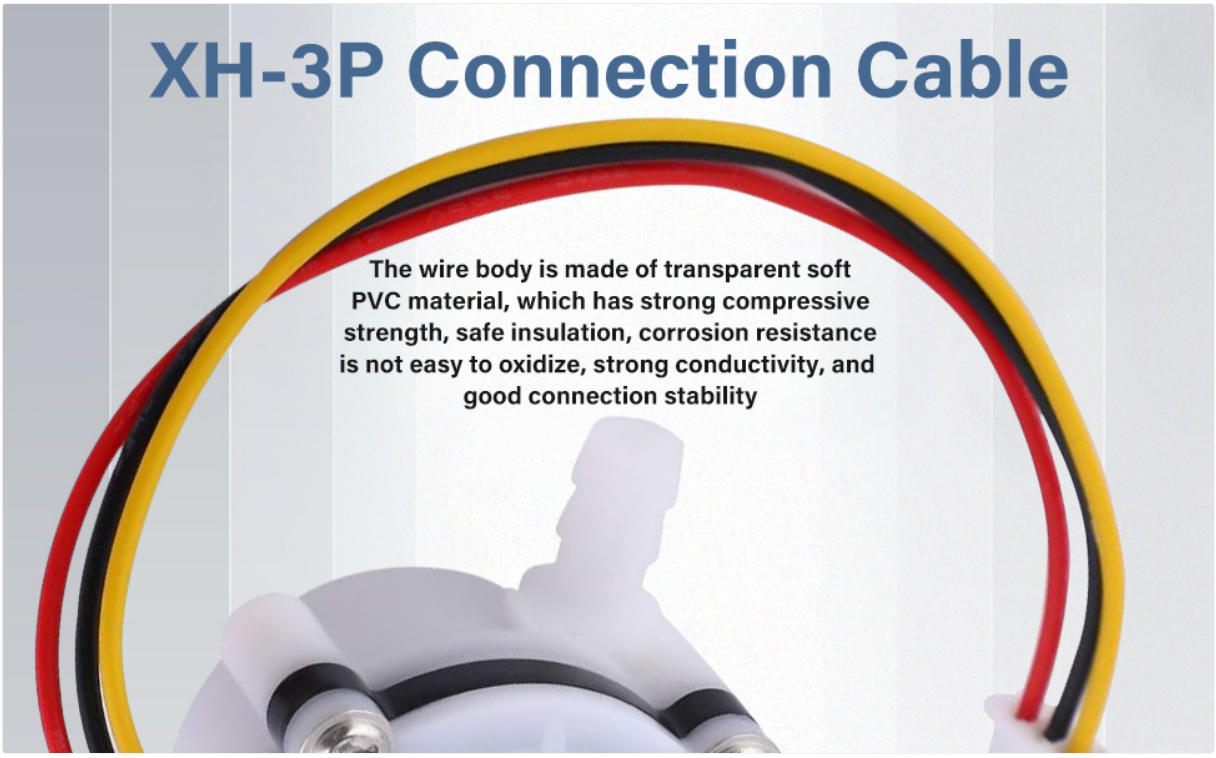


Figure 4.2: The XH-3P connection cable, highlighting its robust PVC material and stable conductivity for reliable signal transmission.

5. Operating Instructions

The Agatige YF-S401 operates based on the Hall effect principle, generating electrical pulses proportional to the water flow rate.

How it Works:

- As water flows through the sensor, it rotates an internal turbine.
- A Hall effect sensor detects the rotation of the turbine and outputs a series of electrical pulses.
- The frequency of these pulses is directly proportional to the water flow rate.
- Your external microcontroller or control system reads these pulse signals to calculate and monitor the real-time water flow.

For accurate flow rate calculation, refer to the sensor's pulse output characteristics (often provided in the product datasheet or can be calibrated). A common formula involves converting pulse frequency (Hz) to liters per minute (L/min).

Figure 5.1: Illustration of the Hall sensor outputting pulse signals to a controller, which then regulates the water flow rate based on these signals.

6. Maintenance

The Agatige YF-S401 Water Flow Sensor is designed for low maintenance. However, periodic checks can help ensure its longevity and accurate performance.

- **Regular Inspection:** Periodically inspect the sensor and its connections for any signs of wear, damage, or leaks.
- **Cleaning:** If the sensor is used in environments with potential for sediment or mineral buildup, occasional cleaning of the internal turbine may be necessary. Disconnect power and water supply before attempting any cleaning. Use mild soap and water, avoiding harsh chemicals.
- **Hose Integrity:** Ensure the connected hoses remain flexible and free from kinks or cracks. Replace

damaged hoses promptly.

- **Electrical Connections:** Verify that the electrical connections remain secure and free from corrosion.

7. Troubleshooting

If you encounter issues with your water flow sensor, consider the following common troubleshooting steps:

Problem	Possible Cause	Solution
No flow reading or incorrect reading	• Incorrect wiring • No power supply • Blocked sensor/turbine • Incorrect flow direction • Faulty sensor	• Check red (VCC), black (GND), and yellow (Signal) wire connections. • Verify power supply (DC 5-24V) is connected and active. • Inspect sensor for debris; clean if necessary (disconnect power/water first). • Ensure water flows in the direction indicated by the arrow on the sensor. • Test with a known good sensor if possible.
Water leakage at connections	• Loose hose connection • Damaged hose or barb joint	• Ensure hoses are firmly seated on the barb joints. • Check hoses and barb joints for cracks or damage; replace if necessary.
Intermittent readings	• Unstable power supply • Loose electrical connection • Air bubbles in the water line	• Ensure a stable power source. • Check all electrical connections for tightness. • Bleed air from the water line if present.

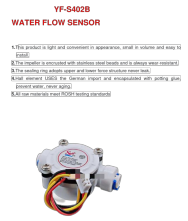
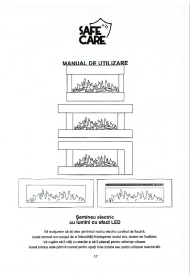
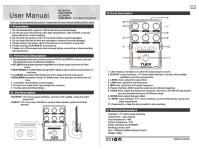
8. Safety Information

- Always disconnect power before making or breaking electrical connections.
- Ensure the working voltage (DC 5-24V) is strictly adhered to. Exceeding this range can damage the sensor.
- Do not exceed the maximum pressure resistance of 0.35 MPa. High pressure can cause leaks or sensor damage.
- Install the sensor in a location where it is protected from physical impact and extreme temperatures.
- This product is not intended for use with flammable or corrosive liquids.
- Keep out of reach of children.

9. Warranty and Support

Specific warranty information for the Agatige YF-S401 Water Flow Sensor is not provided in this manual. Please refer to the retailer or manufacturer's website for details regarding warranty coverage and customer support. For technical assistance or inquiries, please contact Agatige customer service through their official channels.

Related Documents - YF-S401

	[YF-S402B Water Flow Sensor Technical Specifications and Overview] Detailed information on the YF-S402B water flow sensor, including its features, technical parameters, application, and installation guidelines. This sensor is designed for use in water heaters and other water water flow monitoring systems.
	[Manual de Utilizare Șemineu Electric SAFE CARE] Ghid complet de utilizare, instalare și întreținere pentru șemineele electrice SAFE CARE, inclusiv instrucțiuni pentru controlul prin Wi-Fi și aplicație mobilă. Detalii tehnice și modele incluse.
	[Deli S401 Thermal Label Printer User Manual] User manual for the Deli S401 thermal label printer, providing setup instructions, troubleshooting tips, warranty information, and technical specifications.
	[YF-S201 Hall Effect Water Sensor: Pinout, Features, and Arduino Interfacing Guide] Comprehensive guide to the YF-S201 Hall Effect Water Sensor, detailing its pinout, technical specifications, features, and providing step-by-step instructions for interfacing with an Arduino microcontroller for water flow measurement.
	[Electric Water Heater User Manual: Features, Troubleshooting, and Installation] Comprehensive user manual for the electric water heater series, covering features, multiple security protections, self-diagnosis, troubleshooting, specifications, installation steps, working status, temperature changes, applicable places, and product size.
	[YUER Atlantis Soundbox Simulation User Manual - Guitar Effects Pedal] Comprehensive user manual for the YUER Atlantis Soundbox Simulation guitar effect pedal. Learn about its features, controls, technical specifications, and usage for achieving various amplifier tones.