

SHHJCO QFA2000

SHHJCO Room Temperature and Humidity Sensor QFA2000 User Manual

Model: QFA2000

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the SHHJCO QFA2000 Room Temperature and Humidity Sensor. The QFA2000 is designed for accurate measurement of room temperature and relative humidity, providing a 0-10V output signal for integration into building management systems or control applications.

The sensor features industrial-grade protection, ensuring long-term stability and reliable performance. Its compact structure and convenient design facilitate easy installation and removal.

2. SAFETY INFORMATION

- **Electrical Safety:** Installation and wiring must be performed by qualified personnel in accordance with local electrical codes and regulations. Ensure power is disconnected before performing any wiring or maintenance.
- **Handling:** Avoid dropping or subjecting the sensor to strong impacts. Do not expose the sensor to corrosive gases or liquids.
- **Intended Use:** Use the device only for its intended purpose as a room temperature and humidity sensor. Any other use may result in damage or hazardous conditions.

3. PRODUCT OVERVIEW

The SHHJCO QFA2000 sensor utilizes high-precision digital sensors and advanced master control technology to deliver stable output, fast response speed, and high efficiency. It is designed for reliable environmental monitoring in various indoor settings.



Figure 1: SHHJCO QFA2000 sensor as received in its packaging. The packaging includes some technical drawings and dimensions, indicating a compact design.

Key Features:

- Industrial-grade protection for long-term stability.
- Compact structure for convenient installation and dismantling.
- High-precision digital sensors for accurate measurements.
- Stable 0-10V output for both temperature and humidity.

4. SETUP

4.1. Installation Location

Select a suitable indoor location for mounting the sensor. Ensure the location is representative of the room's average temperature and humidity. Avoid:

- Direct sunlight or heat sources.
- Areas near windows or doors with frequent drafts.

- Locations with high air velocity from ventilation outlets.
- Areas where the sensor might be exposed to moisture or condensation.

Mount the sensor at a height typically between 1.2 to 1.5 meters (4 to 5 feet) from the floor for optimal room air sensing.

4.2. Wiring

The QFA2000 sensor provides 0-10V analog outputs for both temperature and humidity. Refer to the internal view of the sensor for terminal identification.



Figure 2: Internal view of the SHHJCO QFA2000 sensor, displaying the terminal block for electrical connections and the main circuit board. The terminals are labeled G, G0, U1, U2.

Wiring Terminals:

- **G:** Power Supply (AC 24V / DC 13.5...35V)
- **G0:** Ground / Common
- **U1:** Humidity Output (0-10V DC, 0...100% r.h.)
- **U2:** Temperature Output (0-10V DC, corresponding to a specific temperature range, e.g., -35...+35°C or 0...+50°C depending on configuration)

Connection Procedure:

1. Ensure all power is disconnected at the main supply before beginning wiring.
2. Open the sensor casing carefully to access the terminal block.
3. Connect the power supply wires to terminals **G** (Live/Positive) and **G0** (Neutral/Ground).
4. Connect the humidity signal wire to terminal **U1** and its corresponding ground to **G0**.
5. Connect the temperature signal wire to terminal **U2** and its corresponding ground to **G0**.
6. Secure all connections firmly.
7. Close the sensor casing.
8. Restore power to the circuit.

5. OPERATING INSTRUCTIONS

Once properly installed and powered, the SHHJCO QFA2000 sensor operates continuously, measuring room temperature and humidity. It provides real-time analog output signals (0-10V) for both parameters.

- The 0-10V output for humidity corresponds to 0-100% relative humidity.
- The 0-10V output for temperature corresponds to a specific temperature range, which may vary based on the sensor's internal configuration (e.g., -35...+35°C or 0...+50°C). Refer to the product specifications or markings on the device for the exact range.

The output signals can be connected to a compatible Building Management System (BMS), PLC, or other control devices that accept 0-10V analog inputs for monitoring and control purposes.

6. MAINTENANCE

The SHHJCO QFA2000 sensor is designed for low maintenance. Follow these guidelines to ensure optimal performance:

- **Cleaning:** Periodically clean the exterior of the sensor with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure the sensing elements are free from dust and debris.
- **No User-Serviceable Parts:** The sensor contains no user-serviceable parts. Do not attempt to open or repair the device beyond accessing the wiring terminals. Unauthorized opening will void the warranty.
- **Calibration:** The sensor is factory-calibrated. If recalibration is suspected to be necessary due to prolonged use or environmental changes, contact a qualified service technician or the manufacturer.

7. TROUBLESHOOTING

If you encounter issues with your SHHJCO QFA2000 sensor, consider the following:

- **No Output / Incorrect Readings:**
 - Check power supply connections (G and G0) to ensure they are secure and providing the correct voltage (AC 24V / DC 13.5...35V).
 - Verify signal wiring (U1, U2, G0) for proper connection to the receiving device.
 - Ensure the receiving device (BMS, PLC) is correctly configured to read 0-10V analog inputs.
 - Check for any physical damage to the sensor or its wiring.
 - Confirm the sensor is installed in an appropriate location, away from direct heat, cold, or drafts that could cause inaccurate readings.
- **Fluctuating Readings:**
 - Ensure the sensor is not exposed to rapid changes in airflow or temperature/humidity.
 - Check for electromagnetic interference (EMI) from nearby electrical equipment.

If problems persist after performing these checks, contact SHHJCO customer support or a qualified technician.

8. SPECIFICATIONS

Parameter	Value
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Model Number	QFA2000
Power Supply	AC 24V / DC 13.5...35V
Humidity Output	0-10V DC (0...100% r.h.)
Temperature Output	0-10V DC (Range depends on configuration, e.g., -35...+35°C or 0...+50°C)
Item Weight	1.65 pounds (approx. 0.75 kg)
Package Dimensions	1.18 x 0.79 x 0.39 inches (approx. 3 x 2 x 1 cm)
Protection Class	IP30 (from internal image)
Operating Temperature Range	-40...+70°C (from internal image)

9. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries regarding your SHHJCO QFA2000 Room Temperature and Humidity Sensor, please contact the seller or manufacturer directly. Keep your purchase receipt as proof of purchase.