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> LiebeWH Stainless Steel Double Ball Water Level Sensor (200mm) Instruction Manual

LiebeWH LiebeWHgafg7tvsdz2603-03

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Model: LiebeWHgafg7tvsdz2603-03

1. PRODUCT OVERVIEW

The LiebeWH Stainless Steel Double Ball Water Level Sensor is designed for precise liquid level control in various applications such as water tanks, pools, and sumps. This sensor utilizes two float balls and magnetic reed switches to detect liquid levels, enabling automated control of pumps or alarms. Constructed from 304 stainless steel, it offers durability and high sensitivity for reliable operation.



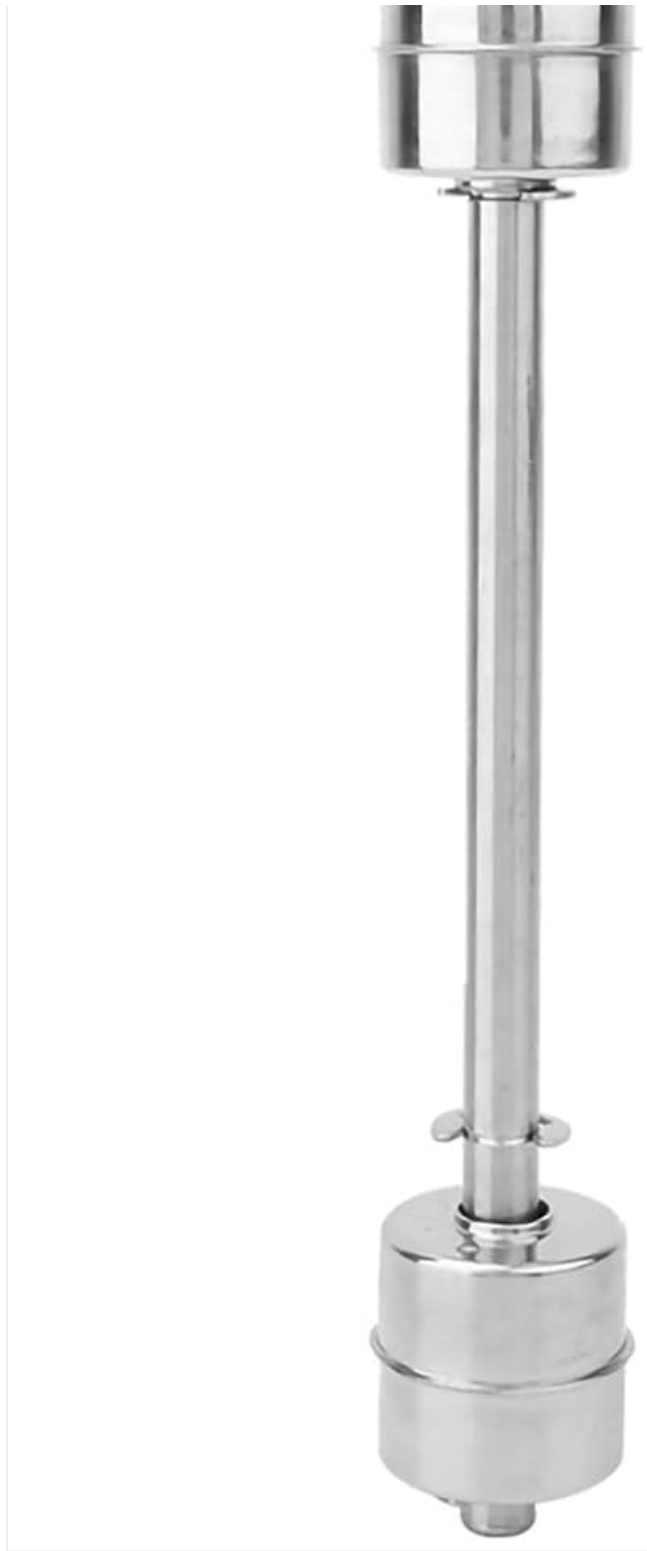


Image 1.1: Overview of the LiebeWH Stainless Steel Double Ball Water Level Sensor.

Key Features:

- **High Sensitivity:** Contacts are made of a reed switch for precise level detection.
- **Double Float Design:** Allows for control of both upper and lower liquid levels.
- **Durable Construction:** Made from 304 Stainless Steel for longevity.
- **Versatile Application:** Suitable for water tanks, pools, sinks, and fish tanks for both draining and water intake control.
- **Adjustable Operation:** Floats can be reversed to change between normally open (N.O.) and normally closed (N.C.) states.

2. INSTALLATION AND SETUP

Proper installation is crucial for the accurate and safe operation of your water level sensor. Please follow these instructions carefully.

2.1 Safety Precautions

- Ensure power is disconnected before installation or maintenance.
- The water level switch cannot directly control high-power devices such as solenoid valves, high-power relays, or AC contactors. A small relay (e.g., HH54P) is required for intermediate control.
- Handle the sensor carefully to avoid damage to the float balls or internal components.

2.2 Mounting the Sensor

The sensor is designed for vertical mounting. Secure the threaded end of the sensor to the desired location in your tank or reservoir. Ensure the float balls can move freely without obstruction.



Image 2.1: The sensor showing its threaded mounting end and electrical wires.

2.3 Electrical Wiring

The sensor has two sets of wires, typically red and black, corresponding to the two float switches. Use a multimeter to identify which pair corresponds to the upper and lower sensors if not clearly marked.

WIRING METHOD

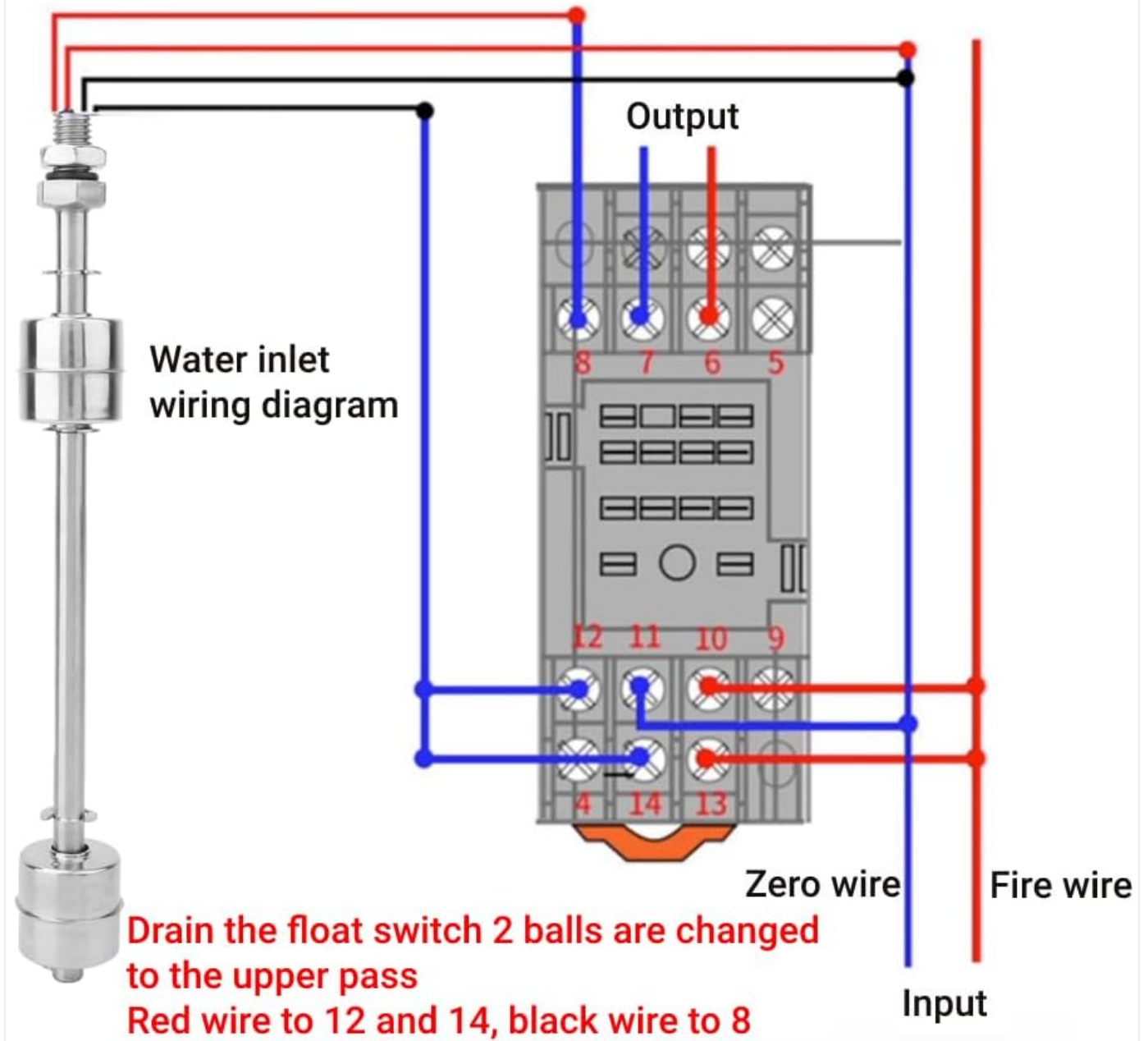


Image 2.2: Example wiring diagram showing connection to a relay for water inlet control. Red wires connect to terminals 12 and 14, black wire to terminal 8 for drain control.

Important: Always use an intermediate relay for controlling pumps or valves. Connect the sensor wires to the control inputs of your relay system.

2.4 Adjusting Float Orientation (N.O./N.C.)

The float balls can be reversed to change the switch's behavior between Normally Open (N.O.) and Normally Closed (N.C.) states.

1. The factory default float orientation typically has the concave point facing up, resulting in a Normally Closed (N.C.) state when the liquid level is low.
2. To change the state, carefully remove the C-clips securing the float.
3. Remove the float ball.

4. Flip the float ball so the concave point faces down.
5. Reinstall the float ball and secure it with the C-clips.

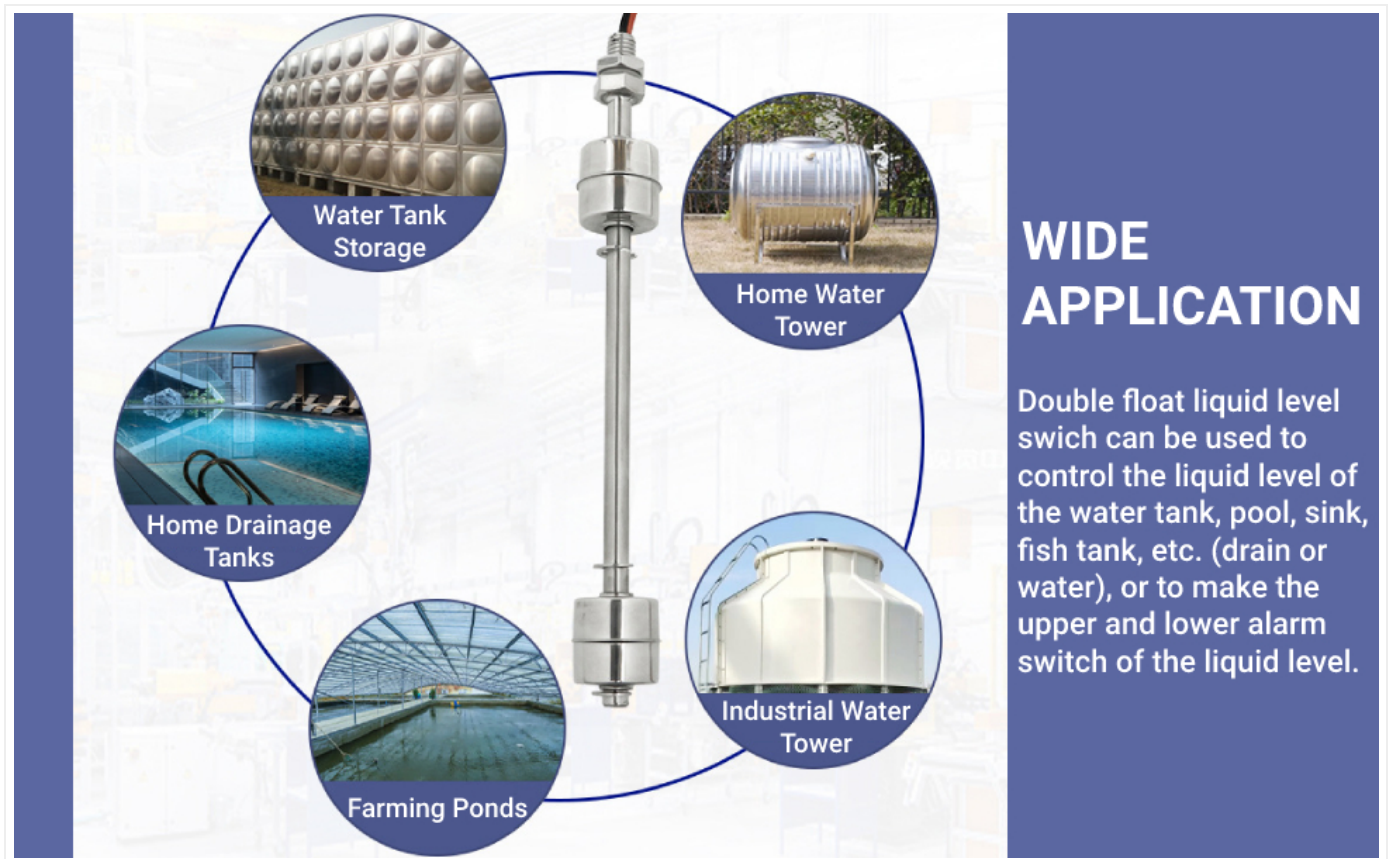


Image 2.3: Instructions for reversing the float to switch between Normally Open and Normally Closed configurations.

3. OPERATING PRINCIPLE

The LiebeWH water level sensor operates based on the movement of two float balls, each containing a magnet, which activate or deactivate a magnetic reed switch inside the sensor stem.

3.1 Basic Functionality

- When the liquid level rises, the float ball moves upwards.
- When the liquid level falls, the float ball moves downwards.
- The magnetic field from the float ball activates the reed switch at specific positions along the sensor stem.

Working Principle

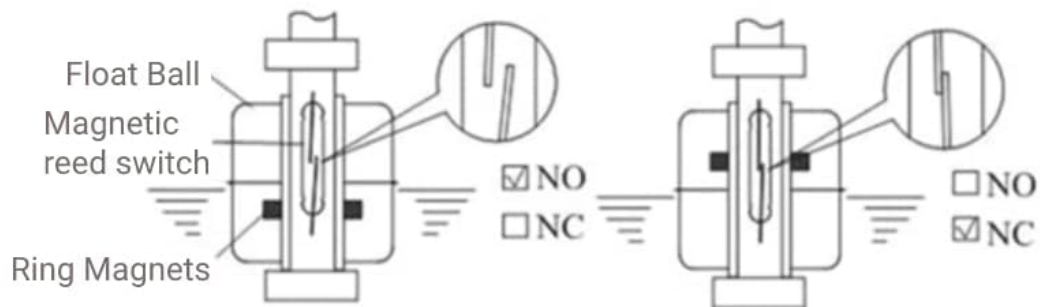


Image 3.1: Illustration of the float ball and reed switch interaction for Normally Open (N.O.) and Normally Closed (N.C.) states.

3.2 Water Intake and Drain Control

- **Water Intake:** Typically, the lower switch activates the water intake process. When the water level rises and reaches the upper switch, the intake process stops.
- **Drain Control:** The upper switch activates the drain process. When the water level falls and reaches the lower switch, the drain process stops.

The action range between the two floats is approximately 10 mm. For applications requiring a larger control range, two separate sensors can be used in combination to prevent frequent pump cycling.



Image 3.2: The sensor operating in a liquid environment.

4. MAINTENANCE

Regular maintenance ensures the longevity and accurate performance of your LiebeWH water level sensor.

4.1 Cleaning

- Periodically inspect the sensor for any buildup of mineral deposits, algae, or other debris, especially in hard water environments.
- Gently clean the float balls and the sensor stem using a soft cloth and mild detergent or a descaling solution if necessary.
- Ensure no residue remains that could impede float movement.

4.2 Inspection

- Check the electrical wiring for any signs of wear, corrosion, or loose connections.
- Verify that the float balls move freely along the stem and are not stuck.
- Ensure the C-clips are securely in place.

Note: Disconnect power before performing any cleaning or inspection.

5. TROUBLESHOOTING

If you encounter issues with your water level sensor, refer to the following troubleshooting guide.

Problem	Possible Cause	Solution
Sensor not activating/deactivating	<ul style="list-style-type: none">• Incorrect wiring.• Float balls stuck due to debris or mineral buildup.• Damaged reed switch.• Incorrect float orientation (N.O./N.C.).	<ul style="list-style-type: none">• Verify wiring against the diagram (Image 2.2). Use a multimeter to check continuity.• Clean the float balls and sensor stem (refer to Section 4.1).• Check float movement. If a switch is unresponsive, the sensor may need replacement.• Confirm float orientation matches desired N.O./N.C. operation (refer to Section 2.4).
Pump/valve cycles too frequently	<ul style="list-style-type: none">• Small distance between activation points.• Rapid water level fluctuations.	<ul style="list-style-type: none">• Consider using two separate sensors for a wider control range if the 10mm float action range is insufficient.• Implement a time delay relay in your control circuit to prevent rapid cycling.
Sensor appears to be faulty (e.g., always on/off)	<ul style="list-style-type: none">• Internal damage to reed switch or magnet.• Wiring short circuit or open circuit.	<ul style="list-style-type: none">• Test continuity of each switch with a multimeter while manually moving the floats.• Inspect wiring for damage. If the sensor itself is confirmed faulty, it may require replacement.

6. SPECIFICATIONS

Feature	Detail
Model	LiebeWHgafg7tvsdz2603-03
Material	304 Stainless Steel
Size (Length)	200mm / 7.87in
Voltage	110 Volts (Note: Requires relay for high power)
Item Weight	2.59 ounces
Product Dimensions	9.84 x 3.94 x 1.97 inches (packaging dimensions)
Float Action Range	Approximately 10 mm between two floats

7. WARRANTY INFORMATION

Specific warranty details for this product are not provided in the available information. Please refer to the retailer or manufacturer's official website for current warranty terms and conditions.

8. CUSTOMER SUPPORT

For further assistance, technical support, or inquiries regarding your LiebeWH Stainless Steel Double Ball Water Level Sensor, please contact LiebeWH customer service through their official channels.

You can often find contact information on the product packaging or by visiting the [LiebeWH Store on Amazon](#).

