Tbest TL-136

Tbest TL-136 Submersible Liquid Level Sensor Instruction Manual

Model: TL-136

Brand: Tbest

1. Introduction

Welcome and thank you for choosing the Tbest TL-136 Submersible Liquid Level Sensor. This manual provides essential information for the safe and efficient installation, operation, and maintenance of your device. Please read this manual thoroughly before use to ensure proper functionality and to prevent potential damage or injury.

2. Product Overview and Features

The Tbest TL-136 is a high-precision submersible liquid level transmitter designed for accurate and reliable water level monitoring in various industrial and commercial applications. Its robust construction and advanced technology ensure consistent performance in challenging environments.

- **High-Precision Water Level Monitoring:** Equipped with a high-precision diffusion silicon sensor for accurate water level measurements.
- **Stable Output:** Features an advanced all-digital conditioning circuit with a stable 4-20mA output, providing consistent and dependable performance.
- **IP68 Protection:** Built with IP68 multi-layer protection, making it suitable for use in harsh or wet environments, ensuring durability and longevity.
- **Anti-Shock & Anti-Blocking Design:** Designed with a 45-degree oblique angle for shock resistance and a detachable anti-blocking feature, preventing damage and ensuring smooth operation.
- **Versatile Liquid Measurement:** Suitable for measuring water and other non-corrosive liquids, making it ideal for a wide range of industrial and commercial applications.

A close-up view of the Tbest TL-136 submersible liquid level sensor, showing its stainless steel body, black cable, and exposed red and black wires.

3. Safety Information

Please observe the following safety precautions to prevent injury or damage to the device:

- Ensure power is disconnected before installation or maintenance.
- Do not exceed the specified voltage (24VDC).
- Avoid using the sensor with corrosive liquids unless explicitly stated as compatible.
- Handle the sensor and cable with care to prevent physical damage.
- Installation should be performed by qualified personnel in accordance with local electrical codes and safety standards.

4. Specifications

Parameter	Value
Output Signal	4-20mA

Parameter	Value
Power Supply	24VDC
Protection Rating	IP68
Measurement Range	0-1 Meter (for this variant)
Material	Stainless Steel
Package Dimensions	9.49 x 9.37 x 1.89 inches
Item Weight	1.06 Pounds
Manufacturer	Tbest

An image highlighting the key features of the sensor, including IP68 multilayer waterproof protection, 45-degree bevel protection, removable anti-blocking design, and stable 4-20mA signal output.

5. Setup and Installation

5.1 Unpacking

Carefully remove the sensor from its packaging. Inspect the device and cable for any visible damage that may have occurred during transit. If any damage is found, do not proceed with installation and contact customer support.

5.2 Wiring Diagram

The Tbest TL-136 sensor is a 2-wire loop-powered device, operating on a 24VDC power supply and providing a 4-20mA current output. Connect the wires as follows:

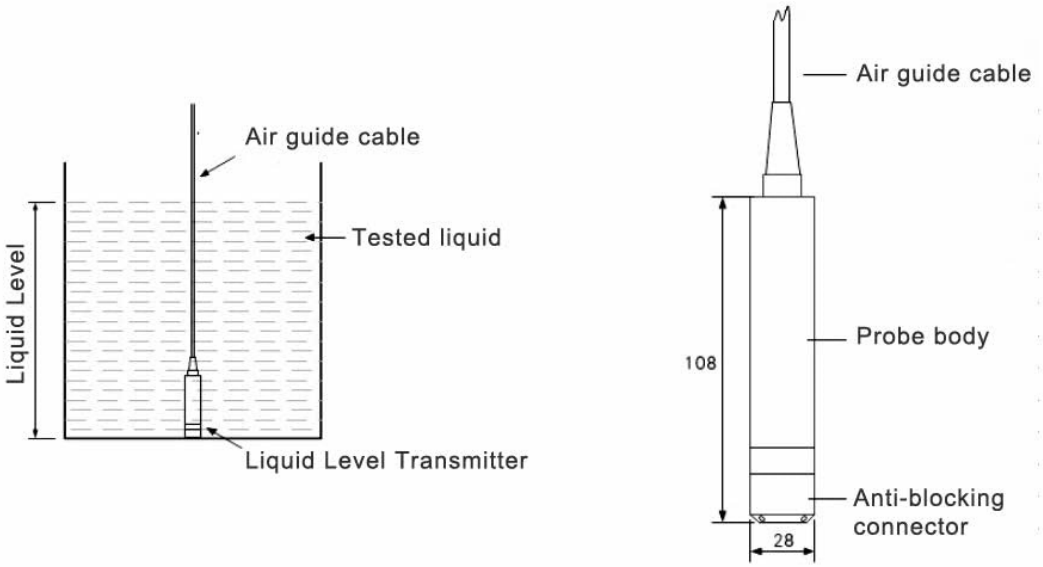
- **Red Wire:** Connect to the positive (+) terminal of the 24VDC power supply.
- **Black Wire:** Connect to the negative (-) terminal of the 24VDC power supply and the signal input of your receiving device (e.g., PLC, display). This wire serves as both power return and signal output.

Ensure proper polarity to prevent damage to the sensor or connected equipment. Refer to the documentation of your receiving device for its specific wiring requirements for 4-20mA inputs.

5.3 Physical Installation

The sensor is designed for submersible applications. Follow these steps for physical installation:

1. Lower the sensor into the liquid to the desired measurement depth. Ensure the entire probe body, including the anti-blocking connector, is fully submerged.
2. Securely route the cable to prevent abrasion, kinking, or damage from external factors. Use appropriate cable glands and strain relief.
3. Avoid placing the sensor in areas with excessive turbulence, strong currents, or air bubbles, as these conditions can affect measurement accuracy.
4. Ensure the sensor is mounted vertically for optimal performance.



A technical diagram illustrating the installation of the liquid level transmitter in a tank, showing the air guide cable and the probe body with its dimensions (108mm length, 28mm diameter) and anti-blocking connector.

6. Operating Instructions

Once properly installed and powered, the Tbest TL-136 sensor will continuously measure the liquid level and output a corresponding 4-20mA current signal. This signal is proportional to the liquid level within the sensor's specified measurement range.

- **4mA Output:** Corresponds to the minimum measured level (e.g., 0 meters).
- **20mA Output:** Corresponds to the maximum measured level (e.g., 1 meter for this specific variant).
- Intermediate current values represent proportional liquid levels between the minimum and maximum range.

Connect the 4-20mA output to a compatible PLC, data logger, display unit, or other control system for real-time monitoring, data acquisition, or automated control based on the liquid level.

The Tbest TL-136 Submersible Liquid Level Sensor submerged in water, illustrating its operational environment.

7. Maintenance

Regular maintenance ensures optimal performance and extends the lifespan of your Tbest TL-136 sensor.

- **Cleaning:** Periodically inspect the sensor probe for any buildup of debris, sediment, or biological growth. Gently clean the probe with a soft brush and water if necessary. Avoid using abrasive materials or harsh chemicals.
- **Cable Inspection:** Regularly check the sensor cable for any signs of wear, cuts, kinks, or other physical damage. Replace the cable or sensor if the cable insulation is compromised.
- **Connection Check:** Ensure all electrical connections remain secure and free from corrosion. Loose or corroded connections can lead to inaccurate readings or intermittent operation.
- **Calibration Check:** If accuracy issues arise or after prolonged use, verify the sensor's output against known liquid levels. Recalibration may be required by a qualified technician if significant drift is observed.

8. Troubleshooting

This section provides solutions to common issues you might encounter with your liquid level sensor.

Problem	Possible Cause	Solution
No Output / Incorrect Output	No power, incorrect wiring, sensor damage, debris on sensor	Check 24VDC power supply, verify wiring polarity, inspect sensor for physical damage or debris, clean sensor if necessary.
Unstable Readings	Air bubbles, turbulence, electrical interference, sensor movement	Relocate sensor to a calmer area, ensure secure mounting, check for external electrical noise sources.
Output Stuck at 4mA	Sensor not submerged, open circuit in wiring, sensor fault	Ensure sensor is fully submerged, check wiring continuity, test sensor with a known good power supply.
Output Stuck at 20mA	Sensor fully submerged beyond range, short circuit in wiring, sensor fault	Verify liquid level is within the sensor's specified range, check for wiring shorts, test sensor.

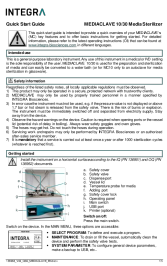
If problems persist after attempting these solutions, please contact Tbest customer support for further assistance.

9. Warranty and Support

Tbest products are manufactured to high-quality standards and undergo rigorous testing. For specific warranty information, technical support, or service inquiries, please refer to the documentation provided with your purchase or visit the official Tbest website. When contacting support, please have your model number (TL-136) and purchase details readily available to expedite assistance.

Related Documents - TL-136

	TP-Link Wall Mounting Guide for Wall Mountable Switches A comprehensive guide detailing the wall mounting preparation, procedure, and specifications for various TP-Link wall mountable network switches.
	TP-Link Powerline Adapters: Utility Guide for Power Saving, LEDs, Network Setup, and QoS Comprehensive guide to using the TP-Link tpPLC Utility for managing powerline adapters, including enabling/disabling power saving mode, controlling LEDs, setting network names, configuring QoS, and adding devices. Learn about network capacity and troubleshooting tips.

	[TP-Link Unmanaged/Easy Smart Rackmountable Switches Installation Guide] This guide provides detailed instructions for the installation of TP-Link Unmanaged and Easy Smart Rackmountable Switches, covering hardware characteristics, installation methods, and connection procedures. It includes information on front and rear panel components, LED indicators, switch functions, safety precautions, site requirements, and troubleshooting.
	[TP-Link Unmanaged/Easy Smart Rackmountable Switches Installation Guide] This guide provides comprehensive instructions for installing TP-Link's Unmanaged and Easy Smart Rackmountable Switches, covering product overview, appearance, installation procedures, connection methods, troubleshooting, and technical specifications.
	[INTEGRA MEDIACLAVE 10/30 Media Sterilizer Quick Start Guide] Quick start guide for the INTEGRA MEDIACLAVE 10/30 Media Sterilizer, covering setup, operation modes (standard, chocolate agar, autoclave, water bath), dispensing, maintenance, and safety information. Includes manufacturer details and declaration of conformity.
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