

KTC-500mm

Linear Displacement Sensor KTC-500mm User Manual

Model: KTC-500mm

1. INTRODUCTION

This manual provides essential information for the safe and effective operation, installation, and maintenance of the KTC-500mm Linear Displacement Sensor. Please read this manual thoroughly before using the device to ensure proper functionality and to prevent damage or injury.

The KTC-500mm is a precision linear displacement sensor designed for industrial applications, particularly in injection molding machines.

2. PRODUCT OVERVIEW



Figure 2.1: KTC-500mm Linear Displacement Sensor. This image shows the main body of the linear displacement sensor, including the measurement rod and the electrical connector housing. The sensor is designed for precise linear position feedback.

The KTC-500mm Linear Displacement Sensor is an electronic scale transducer. It is engineered to provide highly accurate linear position feedback in various industrial environments. Its robust design makes it suitable for demanding applications such as those found in injection molding machines.

Key Features:

- Precise linear position measurement.
- Durable construction for industrial use.
- Push-Pull output type for reliable signal transmission.
- Measurement accuracy of $\pm 0.5\%$.
- Sensing distance of 500mm.

3. SETUP AND INSTALLATION

Proper installation is crucial for the accurate and reliable operation of the KTC-500mm sensor. Follow these steps carefully:

1. **Mounting:** Securely mount the sensor body to a stable, vibration-free surface using appropriate fasteners. Ensure the sensor's measurement axis is perfectly aligned with the direction of motion to be measured.
2. **Rod Connection:** Connect the sensor's measurement rod to the moving part of the machinery. Ensure the connection allows for smooth, unrestricted movement of the rod throughout the entire range of displacement. Avoid any lateral forces on the rod.
3. **Electrical Connection:** Connect the sensor to the control system according to the wiring diagram provided with your specific system. Pay close attention to polarity and voltage requirements. The sensor features a Push-Pull output type.
4. **Cable Management:** Route all cables away from moving parts, heat sources, and electromagnetic interference. Use cable ties or conduits to secure wiring.
5. **Initial Check:** After installation, manually move the connected part through its full range of motion to verify that the sensor rod moves freely and without binding.



Figure 3.1: Example of sensor packaging and storage. While not directly an installation image, this illustrates the typical packaging and quantity in which these industrial sensors might be handled, emphasizing their robust nature for industrial environments.

4. OPERATING INSTRUCTIONS

Once installed and connected, the KTC-500mm sensor operates by providing a continuous electrical signal proportional to the linear displacement of its rod. This signal is then interpreted by your control system (e.g., PLC, CNC controller) to determine the exact position.

- **Power On:** Ensure the control system is powered on and the sensor receives the correct operating voltage.
- **Calibration (if applicable):** Refer to your control system's manual for any necessary calibration procedures to match the sensor's output range to the desired measurement units or machine coordinates. The sensor has a measurement accuracy of $\pm 0.5\%$.
- **Monitoring:** Monitor the sensor's output through your control system's interface. Verify that the position readings are stable and accurately reflect the physical movement.
- **Operational Range:** Ensure that the mechanical movement does not exceed the sensor's specified sensing distance of 500mm. Operating beyond this range can damage the sensor.

5. MAINTENANCE

The KTC-500mm sensor is designed for low maintenance. However, regular checks can extend its lifespan and ensure continued accuracy.

- **Cleaning:** Periodically clean the sensor body and rod with a soft, dry cloth. Avoid using abrasive cleaners or solvents that could damage the housing or seals.
- **Inspection:** Regularly inspect the sensor for any signs of physical damage, loose connections, or wear on the measurement rod. Check cables for fraying or damage.
- **Alignment Check:** Verify that the sensor remains properly aligned with the moving part. Misalignment can lead to inaccurate readings or premature wear.
- **Environmental Conditions:** Ensure the sensor operates within its specified environmental conditions (temperature, humidity, vibration) to prevent malfunction.

6. TROUBLESHOOTING

This section provides guidance for common issues you might encounter with the KTC-500mm sensor.

Problem	Possible Cause	Solution
No output or incorrect readings	Loose or incorrect wiring Incorrect power supply voltage Sensor rod binding or obstructed Sensor damage	Check all electrical connections and ensure correct polarity. Verify power supply voltage matches sensor requirements. Inspect the sensor rod for obstructions or misalignment; ensure free movement. If physical damage is evident, replace the sensor.
Unstable or noisy readings	Electromagnetic interference (EMI) Vibration Loose mounting	Ensure proper grounding and shielding of cables. Route cables away from power lines or motors. Check for excessive vibration in the mounting area. Tighten mounting screws.

If the problem persists after attempting these solutions, contact technical support.

7. SPECIFICATIONS

Parameter	Value
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Parameter	Value
Model Number	KTC-500mm
Sensing Distance	500 mm
Measurement Accuracy	±0.5%
Output Type	Push-Pull
Specific Uses	Industrial, Injection Molding Machine
Manufacturer	Generic

8. WARRANTY AND SUPPORT

Warranty Information:

This product is typically covered by a manufacturer's warranty against defects in materials and workmanship. For specific warranty terms and duration, please refer to the documentation provided at the time of purchase or contact your supplier. Keep your proof of purchase for warranty claims.

Technical Support:

For technical assistance, troubleshooting beyond this manual, or inquiries regarding parts and service, please contact your product supplier or the manufacturer. When contacting support, please have your product model number (KTC-500mm) and a detailed description of the issue ready.

Note: As this product is listed under a 'Generic' brand, direct manufacturer contact information may vary. Please refer to your purchase invoice or the seller's information for support contacts.

