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Model: Atmospheric Barometric Air Pressure Sensor Transmitter (0-5V Output)

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of the Taidacent Atmospheric Barometric Air Pressure Sensor Transmitter with 0-5V output. This industrial-grade sensor is designed for accurate measurement of atmospheric pressure and temperature in various environments.

2. PRODUCT OVERVIEW

The Taidacent Atmospheric Barometric Air Pressure Sensor Transmitter is a robust device engineered for precise environmental monitoring. It features imported sensors for stable and accurate data collection, offering a 0-5V analog output for seamless integration into control systems. The sensor is capable of measuring atmospheric pressure and temperature simultaneously.



Figure 1: Taidacent Atmospheric Barometric Air Pressure Sensor Transmitter. This image shows the white rectangular sensor unit with a blue label indicating "Atmospheric Pressure Sensor" in English and Chinese. A black cable gland is visible on the left, and a white vented probe for temperature/humidity is on the right, extending downwards from the main unit.

3. KEY FEATURES

- **High Accuracy:** Utilizes imported sensors for stable measurement data and strong anti-interference capabilities.
- **Wide Measurement Range:** 0-120Kpa air pressure measurement, suitable for various altitudes.
- **Simultaneous Measurement:** Supports simultaneous measurement of atmospheric pressure and temperature.
- **Wide Voltage Power Supply:** Operates with a 10-30V DC power supply.
- **0-5V Analog Output:** Provides a standard 0-5V analog signal for pressure readings.
- **Robust Design:** Suitable for industrial applications and diverse environmental monitoring scenarios.

4. TECHNICAL SPECIFICATIONS

Parameter	Value
Equipment Power Supply	10~30V DC
Air Pressure Accuracy	±0.15Kpa at 25°C, 75Kpa
Temperature Accuracy	±0.5°C (at 25°C)
Working Temperature	-40°C ~ +60°C

Parameter	Value
Working Humidity	0%RH ~ 80%RH
Measuring Medium	Air
Air Pressure Range	0~120Kpa
Temperature Range	-40~80°C (customizable)
Output Signal	0-5V (for this model)
Load Capacity	Output resistance <250Ω (voltage output)
Power Consumption	≤0.5W
Package Dimensions	8 x 6 x 0.5 inches
Item Weight	3.2 ounces

5. SETUP AND INSTALLATION

5.1 Mounting

The sensor is designed for wall mounting. Select a location that accurately represents the atmospheric conditions to be measured, away from direct sunlight, heat sources, or strong air currents that could affect readings. Use appropriate screws to secure the sensor through the mounting holes provided on the casing.

5.2 Wiring (0-5V Output Model)

Ensure the power supply is disconnected before performing any wiring. The 0-5V output model typically uses a three-wire connection. Refer to the following common wiring scheme:

- **VCC (Power+):** Connect to the positive terminal of a 10-30V DC power supply.
- **GND (Power-):** Connect to the negative terminal of the DC power supply and the ground of your measurement device.
- **Vout (Signal Output):** Connect to the analog input of your data acquisition system or controller. This output will provide a voltage signal proportional to the measured atmospheric pressure (0-5V corresponding to 0-120Kpa).

Note: Always verify the pinout diagram provided with your specific sensor unit, as wiring configurations can vary.

6. OPERATION

6.1 Powering On

After completing the wiring, connect the 10-30V DC power supply. The sensor will power on and begin taking measurements immediately.

6.2 Reading Data (0-5V Output)

The sensor provides an analog voltage output (0-5V) that corresponds to the atmospheric pressure range of 0-120Kpa. To convert the measured voltage to pressure, use the following linear relationship:

$$\text{Pressure (Kpa)} = (\text{Measured Voltage} / 5\text{V}) * 120\text{Kpa}$$

For example, if the measured voltage is 2.5V, the atmospheric pressure would be $(2.5\text{V} / 5\text{V}) * 120\text{Kpa} = 60\text{Kpa}$. The sensor also measures temperature. While the primary output for this model is 0-5V for pressure, temperature data might be available through other means if the sensor supports it internally (e.g., via a separate digital interface not specified for this 0-5V model). For this 0-5V output model, focus on the pressure reading.

7. MAINTENANCE

- **Cleaning:** Periodically clean the exterior of the sensor with a soft, damp cloth. Do not use abrasive cleaners or solvents. Ensure the vented probe for temperature/humidity is free from dust and debris.
- **Inspection:** Regularly inspect the wiring for any signs of damage, corrosion, or loose connections.
- **Calibration:** While the sensor is factory-calibrated, long-term drift can occur. If precise measurements are critical, periodic recalibration by a qualified technician is recommended.
- **Environmental Protection:** Ensure the sensor remains within its specified operating temperature and humidity ranges to prolong its lifespan.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
No output voltage / Incorrect readings	◦ No power or incorrect power supply voltage. ◦ Incorrect wiring connections (VCC, GND, Vout). ◦ Faulty cable or connection. ◦ Measurement device not configured correctly.	◦ Verify power supply is within 10-30V DC and connected correctly. ◦ Check all wiring against the diagram in Section 5.2. ◦ Inspect cables for damage and ensure secure connections. ◦ Confirm your data acquisition system is set to read analog 0-5V signals.
Unstable or fluctuating readings	◦ Electrical interference. ◦ Sensor exposed to rapid environmental changes. ◦ Loose connections.	◦ Ensure proper grounding and shielding of cables. ◦ Relocate the sensor to a more stable environment. ◦ Check and tighten all wiring connections.
Sensor not responding	◦ Complete power failure. ◦ Internal sensor fault.	◦ Verify power supply and all connections. ◦ If all checks fail, the sensor may be faulty. Contact support.

9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided at the time of purchase or contact Taidacent customer service. Keep your purchase receipt for warranty claims.

Manufacturer: Taidacent

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