VOLTCRAFT TP-202

VOLTCRAFT TP-202 Type K Air Sensor Instruction Manual

Model: TP-202 (VC-8307380)

1. INTRODUCTION

The VOLTCRAFT TP-202 is a Type K thermocouple air sensor designed for accurate temperature measurement in various applications. This sensor is capable of measuring temperatures ranging from 0 to 250 °C and features a standard thermocouple connector for compatibility with a wide range of measurement devices. This manual provides essential information for the safe and effective use of your TP-202 sensor.

2. SAFETY INFORMATION

Please read and understand all safety instructions before using the VOLTCRAFT TP-202 sensor. Failure to follow these instructions may result in injury or damage to the product.

- **Temperature Limits:** Do not expose the sensor to temperatures outside its specified range of 0 to 250 °C. Exceeding these limits can damage the sensor and lead to inaccurate readings.
- **Electrical Safety:** While the sensor itself is passive, ensure that any connected measurement device is properly grounded and used according to its own safety guidelines. Avoid contact with live electrical circuits.
- **Physical Damage:** Handle the sensor and its cable with care. Do not bend the cable sharply or apply excessive force to the connector or probe tip.
- **Intended Use:** This sensor is designed for air temperature measurement. Do not use it for measuring corrosive liquids or in environments where it may be exposed to physical stress beyond its design.

3. PRODUCT OVERVIEW

The VOLTCRAFT TP-202 Type K Air Sensor consists of a sensing element at the end of a flexible blue cable, terminated with a standard Type K thermocouple connector. This connector ensures compatibility with a wide range of digital thermometers and multimeters that support Type K thermocouples.
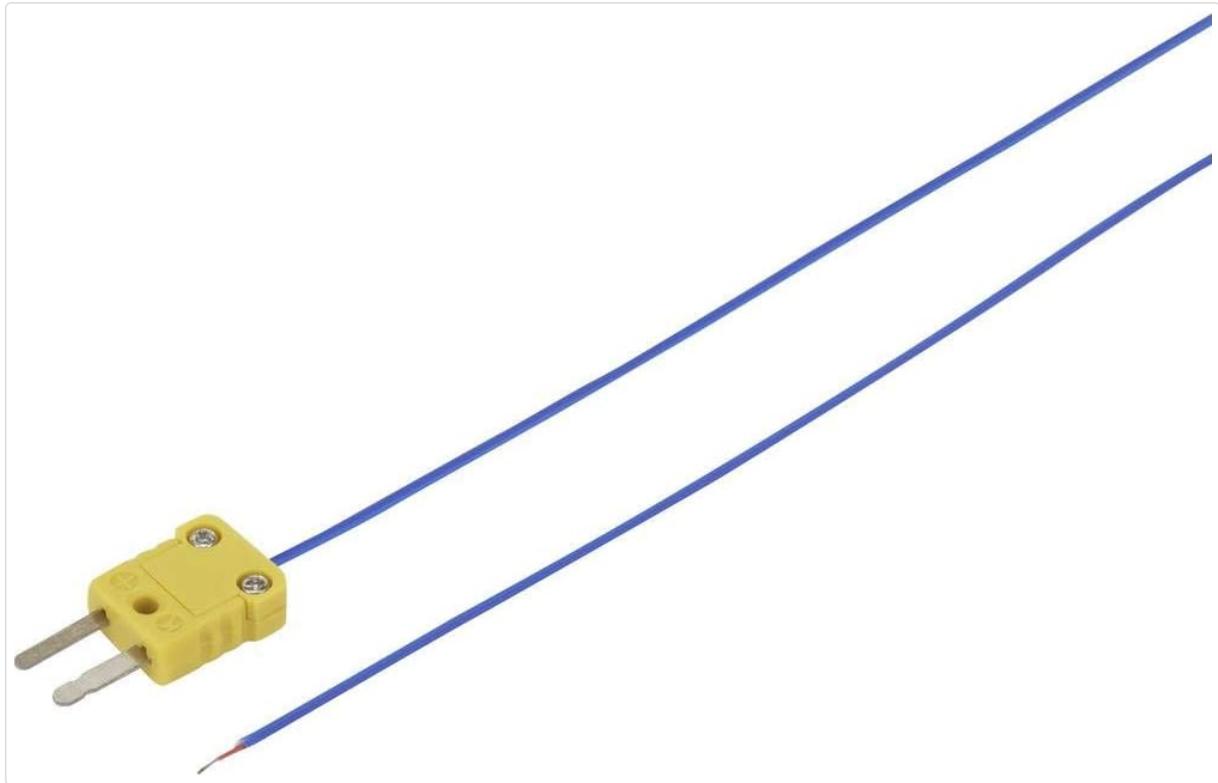
Figure 3.1: The VOLTCRAFT TP-202 Type K Air Sensor features a standard thermocouple connector and a blue cable leading to the sensing element.

4. SPECIFICATIONS

Specification	Value
Manufacturer	VOLTCRAFT
Model Number	VC-8307380
Sensor Type	Type K Thermocouple
Temperature Range	0 to 250 °C
Cable Length	1 meter
Connector Type	Standard Thermocouple (Plug-in)
Product Dimensions (L x W x H)	14 x 11 x 3 cm
Weight	20 grams
Power Source	Requires external measurement device
Components Included	1 piece
Batteries Required	No (for sensor)
Country of Origin	Germany

2.4

3

12.2

19.2

1.7

16.4

0.7

1

7.3

TC-11插头

浅蓝色电线外露1米（总长1.05米）

东莞腾乔电子塑胶制品有限公司

产品型号
零件名称
设计
审核
批准

总装图
曹存红

版本号

修改内容

修改原因

修改人 时间
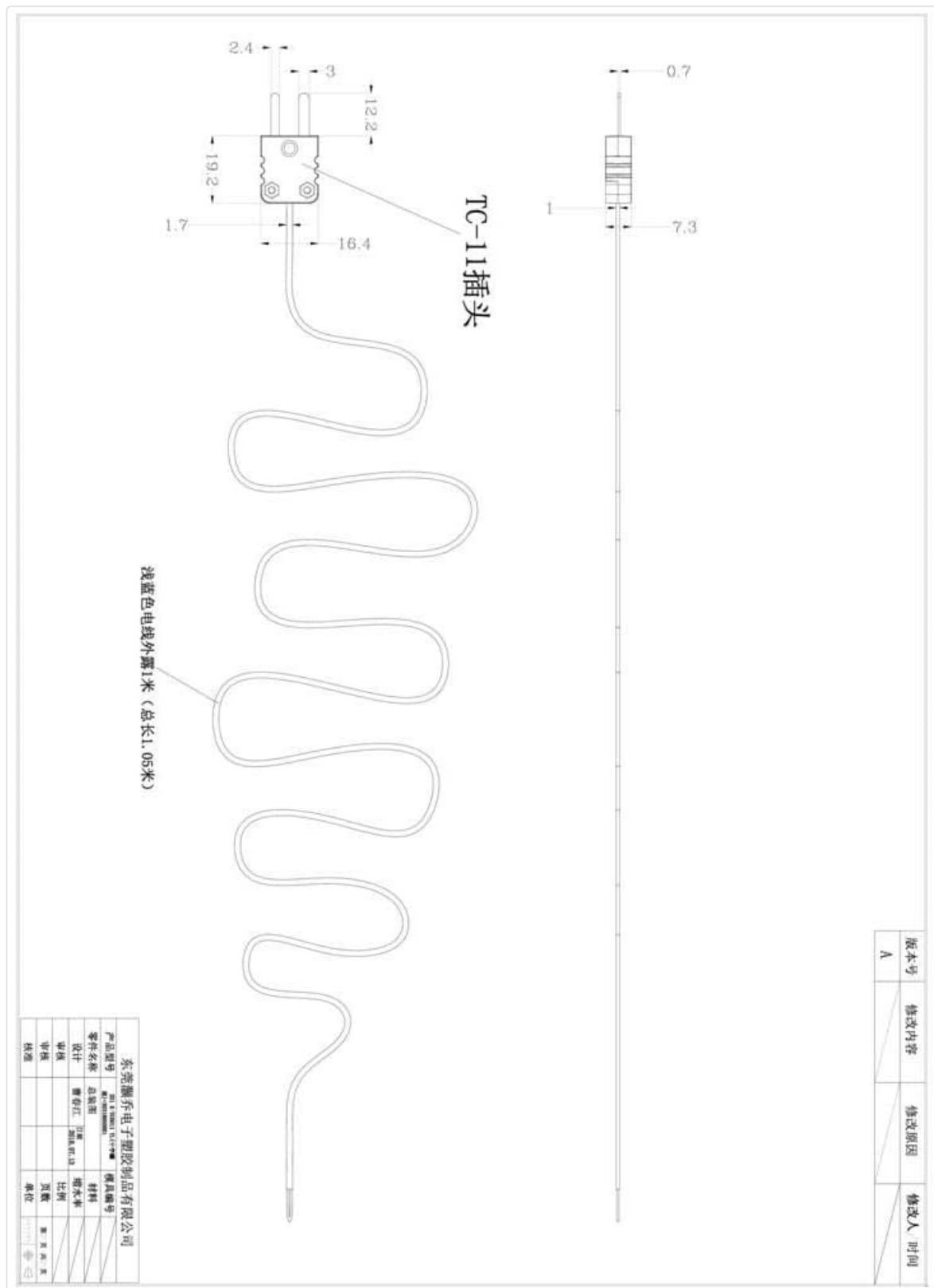
Figure 4.1: Technical diagram illustrating the dimensions and structure of the VOLTCRAFT TP-202 sensor.

5. SETUP

To set up your VOLTCRAFT TP-202 Type K Air Sensor:

1. **Prepare Measurement Device:** Ensure your digital thermometer or multimeter is compatible with Type K thermocouples and is set to the appropriate measurement mode (e.g., °C or °F).

2. **Connect Sensor:** Carefully insert the yellow Type K thermocouple connector of the TP-202 sensor into the corresponding Type K input jacks on your measurement device. Ensure the polarity is correct (the wider pin typically connects to the negative terminal, and the narrower pin to the positive, though Type K connectors

are usually keyed to prevent incorrect insertion).

3. **Secure Connection:** Ensure the connection is firm and stable to prevent intermittent readings.

6. OPERATION

Once the sensor is connected to a compatible measurement device:

1. **Power On:** Turn on your measurement device.

2. **Position Sensor:** Place the sensing element of the TP-202 in the air environment where you wish to measure the temperature. Ensure the probe is not in direct contact with surfaces that might skew the air temperature reading.

3. **Read Measurement:** Allow a few moments for the reading to stabilize on your measurement device's display. The displayed value is the current air temperature at the sensor's location.

4. **Avoid Interference:** Keep the sensor and cable away from strong electromagnetic fields or heat sources that are not the target of measurement, as these can affect accuracy.

Figure 6.1: The VOLTCRAFT TP-202 Type K Air Sensor connected to a compatible handheld thermometer, measuring the temperature of an air conditioning unit.

7. MAINTENANCE

Proper maintenance ensures the longevity and accuracy of your sensor:

- **Cleaning:** Gently wipe the sensor probe and cable with a soft, dry cloth. If necessary, use a slightly damp cloth with mild soap, then dry thoroughly. Do not use abrasive cleaners or solvents.

- **Storage:** Store the sensor in a clean, dry environment, away from extreme temperatures and direct sunlight. Coil the cable loosely to prevent kinks or damage.

- **Inspection:** Periodically inspect the cable and connector for any signs of wear, cuts, or damage. Damaged sensors should be replaced to ensure accurate and safe operation.

8. TROUBLESHOOTING

If you encounter issues with your VOLTCRAFT TP-202 sensor, consider the following:

- **No Reading or Erratic Readings:**
  - Check if the sensor is securely connected to the measurement device.
  - Ensure the measurement device is set to the correct Type K thermocouple mode.
  - Inspect the sensor cable and connector for any visible damage.
  - Verify that the measurement device itself is functioning correctly by testing with another known good sensor if available.

- **Inaccurate Readings:**
  - Ensure the sensor is placed correctly in the air environment and not influenced by other heat sources or drafts.
  - Allow sufficient time for the reading to stabilize.
  - Confirm the sensor is within its specified operating temperature range.
  - Consider if the measurement device requires calibration.

9. WARRANTY AND SUPPORT

The VOLTCRAFT TP-202 Type K Air Sensor comes with a **1-year spare parts availability**. For technical support, warranty claims, or further assistance, please contact VOLTCRAFT customer service or refer to the support information provided with your measurement device.

For more information about VOLTCRAFT products, please visit the official VOLTCRAFT website.