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HZVEKCRI HZVEKCRI RS485

HZVEKCRI RS485 Infrared Ray Temperature Measuring Sensor Probe Module User Manual

Model: HZVEKCRI RS485

1. Introduction

This manual provides comprehensive instructions for the HZVEKCRI RS485 Infrared Ray Temperature Measuring Sensor Probe Module. It covers the product's features, technical specifications, installation procedures, operational guidelines, maintenance tips, and troubleshooting information. Please read this manual thoroughly before using the device to ensure proper operation and safety.

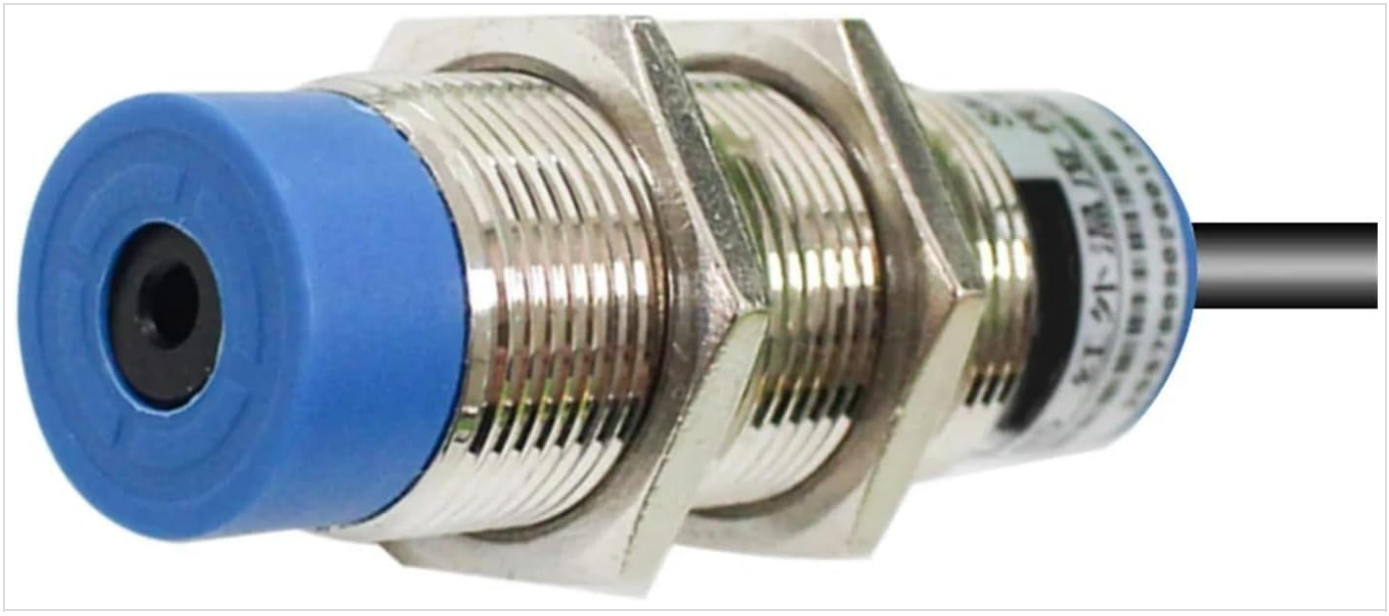


Figure 1: HZVEKCRI RS485 Infrared Temperature Sensor Probe Module. This image displays the HZVEKCRI RS485 infrared temperature sensor probe module, featuring a cylindrical metal body with hexagonal nuts for mounting, a blue cap on the sensing end, and a cable extending from the other end.

2. Key Features

- Non-contact infrared temperature measurement.
- Industrial standard interface (RS485).

- Temperature range: 0°C to 200°C (up to 300°C maximum).
- High precision sensing core for reliable measurements.
- Durable design for industrial environments.

3. Technical Specifications

3.1. General Specifications

Parameter	Value
Brand	HZVEKCRI
Model	HZVEKCRI RS485
Item Weight	1.76 ounces
Package Dimensions	1.18 x 0.79 x 0.39 inches
Assembly Required	No
Number of Pieces	1

3.2. Performance Specifications

Technical Parameter	Parameter Value
Temperature Measuring Range	0°C ~ +200°C (maximum 300°C)
Temperature Measurement Accuracy	1 or 1% (maximum 3°C)
Repetitive Measurement Accuracy	0.5 or 0.5% (take the maximum value of 2°C)
Optical Resolution	1.6:1
Spectral Region	8-14um
Response Time	100ms
Emissivity	0.96
Output Mode	RS485/4-20mA/DC0-5V/DC0-10V
Power Supply	DC12~24V 1A
Outline Dimension	Φ24mm × 80mm

3.3. Product Model Selection

The sensor is available in various output modes. The specific model determines the output type and supply voltage range.

Product Model	Output Mode and Supply Voltage Range
SM8700B	RS485 bus
SM8700M	4-20mA

SM8700V5	DC0-5V
SM8700V10	DC0-10V

4. Setup and Installation

This section outlines the steps for properly setting up and installing your HZVEKCRI RS485 Infrared Temperature Sensor.

4.1. Safety Precautions

- Ensure the power supply is disconnected before installation or wiring.
- Verify that the power supply voltage matches the sensor's requirements (DC12-24V).
- Avoid exposing the sensor to extreme physical shock or corrosive environments.
- Do not attempt to disassemble the sensor, as this may void the warranty and cause damage.

4.2. Mounting the Sensor

1. Select a suitable location for mounting the sensor, ensuring a clear line of sight to the target object for temperature measurement.
2. Use the hexagonal nuts on the sensor body to securely fasten it to a mounting bracket or panel. Ensure the sensor is stable and does not vibrate.
3. Position the sensor so that its optical lens is unobstructed and pointed directly at the area where temperature needs to be measured.

4.3. Wiring Instructions (RS485 Model)

For the RS485 output model (SM8700B), connect the sensor to your control system as follows:

- **Power Supply:** Connect the positive (+) terminal of the DC12-24V power supply to the sensor's power input, and the negative (-) terminal to the sensor's ground.
- **RS485 A:** Connect the RS485 A line from the sensor to the A terminal of your RS485 communication interface (e.g., PLC, DCS).
- **RS485 B:** Connect the RS485 B line from the sensor to the B terminal of your RS485 communication interface.
- Ensure proper polarity for all connections to prevent damage to the sensor or connected equipment.

Note: For 4-20mA, DC0-5V, or DC0-10V models, refer to the specific wiring diagrams provided with those variants.

5. Operation

Once the sensor is properly installed and wired, follow these steps for operation:

1. **Power On:** Apply power to the sensor (DC12-24V). The sensor will typically begin taking measurements immediately.
2. **Data Acquisition (RS485):** For the RS485 model, configure your PLC, DCS, or other control system to communicate with the sensor using the RS485 protocol. Refer to your system's documentation for specific communication settings (e.g., baud rate, data bits, stop bits, parity). The sensor will transmit temperature data via the RS485 bus.
3. **Monitoring:** Monitor the temperature readings on your connected display or control interface. The sensor provides continuous, non-contact temperature measurements.
4. **Emissivity Setting:** The sensor has a fixed emissivity of 0.96. For accurate measurements on surfaces with different emissivities, external compensation or calibration may be required in your control system.

6. Maintenance

Regular maintenance ensures the longevity and accuracy of your infrared temperature sensor.

- **Cleaning the Lens:** Periodically inspect the sensor's optical lens for dust, dirt, or debris. Gently clean the lens with a soft, lint-free cloth and a mild lens cleaning solution. Avoid abrasive materials or harsh chemicals.
- **Cable Inspection:** Check the sensor cable for any signs of damage, fraying, or wear. Replace damaged cables immediately to prevent electrical issues or signal loss.
- **Mounting Security:** Ensure the sensor remains securely mounted. Tighten any loose nuts or bolts as needed.
- **Environmental Conditions:** Operate the sensor within its specified environmental limits. Protect it from excessive moisture, dust, and extreme temperatures beyond its operating range.

7. Troubleshooting

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

Problem	Possible Cause	Solution
No temperature reading or incorrect data.	◦ Incorrect wiring. ◦ No power supply. ◦ Obstructed or dirty lens. ◦ Incorrect RS485 communication settings. ◦ Sensor malfunction.	◦ Verify all wiring connections and polarity. ◦ Check power supply voltage (DC12-24V). ◦ Clean the sensor lens. ◦ Confirm RS485 baud rate, data bits, stop bits, and parity. ◦ Contact technical support if the issue persists after checking other points.
Inaccurate temperature readings.	◦ Dirty lens. ◦ Target object emissivity mismatch. ◦ Sensor not properly aimed. ◦ Ambient temperature fluctuations affecting sensor.	◦ Clean the sensor lens. ◦ Consider external compensation for target emissivity. ◦ Re-aim the sensor to ensure a clear view of the target. ◦ Ensure sensor is not directly exposed to rapid ambient temperature changes.
Intermittent communication.	◦ Loose wiring connections. ◦ Electrical interference. ◦ Faulty cable.	◦ Check and secure all wiring connections. ◦ Ensure proper grounding and shielding for cables in noisy environments. ◦ Replace the sensor cable if damaged.

8. Warranty Information

Specific warranty details for the HZVEKCRI RS485 Infrared Ray Temperature Measuring Sensor Probe Module are not provided in this document. Please refer to the product packaging or contact your point of purchase for warranty terms and conditions.

9. Customer Support

For technical assistance, troubleshooting beyond this manual, or inquiries regarding your HZVEKCRI product, please contact the manufacturer or your authorized distributor. Contact information may be available on the product packaging or the manufacturer's official website.

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