

Model: SHTx-RTU

Type: STH3x Sensor for Temperature and Relative Humidity

Communication Protocol: Modbus RTU

Protection: Mesh Protection

FEATURES

- **Temperature and Humidity Measurement:** Accurate readings for a wide range of environmental conditions.
- **Modbus RTU Communication:** Seamless integration with Modbus RTU networks, enabling easy data access.
- **Configurable Sensor ID:** Settable via a 4-position DIP switch, allowing ID selection between 1-15.
- **Robust Design:** Mesh protection ensures durability and longevity in various environments.
- **Accurate Response:** Provides reliable data with correct CRC and format for all master requests.

TECHNICAL SPECIFICATIONS

- **MEASUREMENT RANGES**
 - **Temperature:** -40°C to +125°C
 - **Humidity:** 0% to 100% RH
- **ACCURACY**
 - **Temperature:** ±0.3°C
 - **Humidity:** ±2% RH

COMMUNICATION

- **Protocol:** Modbus RTU
- **Baud Rate:** Configurable (9600, 19200, 38400, 57600, 115200)
- **Data Format:** 8 data bits, no parity, 1 stop bit (8N1)
- **CRC:** 16-bit CRC for error checking

CONFIGURATION

- **Sensor ID Range:** 1-15 (set via 4-position DIP switch)

POWER REQUIREMENTS

- **Voltage:** 3.3V to 18V DC
- **Current Consumption:** <10mA

PHYSICAL CHARACTERISTICS

- **Dimensions:** 50mm x 35mm x 150mm
- **Weight:** 100g
- **Protection:** Mesh protection for sensor elements

OPERATION INSTRUCTIONS

- **Power Supply:** Connect the sensor to a stable 3.3V to 18V DC power supply.
- **Setting Sensor ID:** Use the 4-position DIP switch to set the sensor ID between 1 and 15.
- **Connecting to Modbus Network:** Connect the sensor to the Modbus RTU network using the designated terminals.
- **Master Request:** Send a request from the master device. The sensor will respond with the measured temperature and humidity values, formatted correctly and with the appropriate CRC.

EXAMPLE COMMANDS AND RESPONSES

REQUEST FORMAT

- **Function Code:** 0x03 (Read Holding Registers)
- **Register Address:** 0x0000 (Temperature), 0x0001 (Humidity)
- **Number of Registers:** 0x0002

EXAMPLE REQUEST

- **Master Request:** 01 03 00 00 00 02 0B C4 (for sensor ID 1, requesting temperature and humidity)

EXAMPLE RESPONSE

- **Sensor Response:** 01 03 04 02 58 01 2C 7A 15 (sensor ID 1, temperature: 60.0°C, humidity: 30.0%)



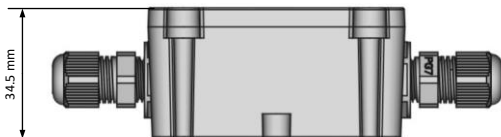
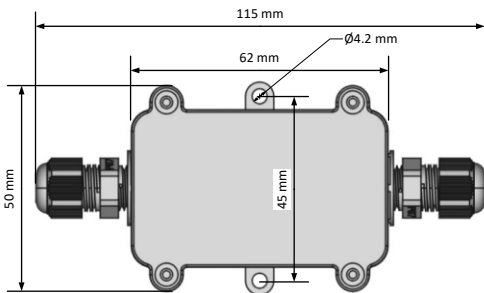
COMPLIANCE AND CERTIFICATIONS

- **EMC:** EMC directive 2014/30/EU
- **RoHS:** Compliant with RoHS directives
- CE conformity

Intended area to use

- Industry
- Home
- Office
- Lab

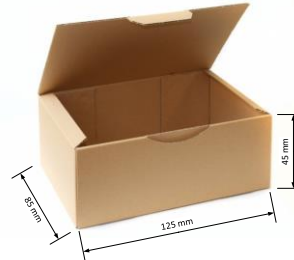
Mounting Installation



Wiring Diagram



Packaging





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