

EVOTROX

SENSE-TH100

Temperature & RH Transmitter

User Manual



Item	Information
Measured Parameters	Temperature + Relative Humidity (combined T+RH sensor module)
Sensor Code	TRH / as per selected temperature-RH sensor variant
Product Platform	SENSE-TH100
Enclosure Type	WP - Weatherproof industrial enclosure
Document Type	User Manual
Document Revision	Rev. 1.0

Important: Read this complete manual before installation, commissioning, operation, calibration or servicing of the temperature and RH transmitter.

TABLE OF CONTENTS

1. Introduction
2. Product Overview
3. Features
4. Applications
5. Technical Specifications
6. Mechanical Dimensions
7. Installation Guidelines
8. Wiring Connection
9. Output Scaling
10. Filter Information
11. Sensor Performance Characteristics
12. Ordering Information
13. Safety Instructions
14. Maintenance
15. Troubleshooting
16. Warranty & Legal Information
17. Contact Information

1. INTRODUCTION

This manual provides installation, operation, wiring, calibration and maintenance information for the Evotrox SENSE-TH100 Temperature & Humidity Sensor. It is intended for system integrators, maintenance engineers and industrial automation professionals.

The Evotrox SENSE-TH100 is an industrial-grade Temperature and Relative Humidity transmitter designed for environmental monitoring applications. The device provides accurate Temperature and Humidity measurements with independent 4-20 mA analog outputs suitable for PLC, SCADA, BMS and industrial automation systems.

2. PRODUCT OVERVIEW

The SENSE-TH100 is designed with a weatherproof industrial enclosure and integrated sensing architecture suitable for long-term operation in demanding environmental conditions.

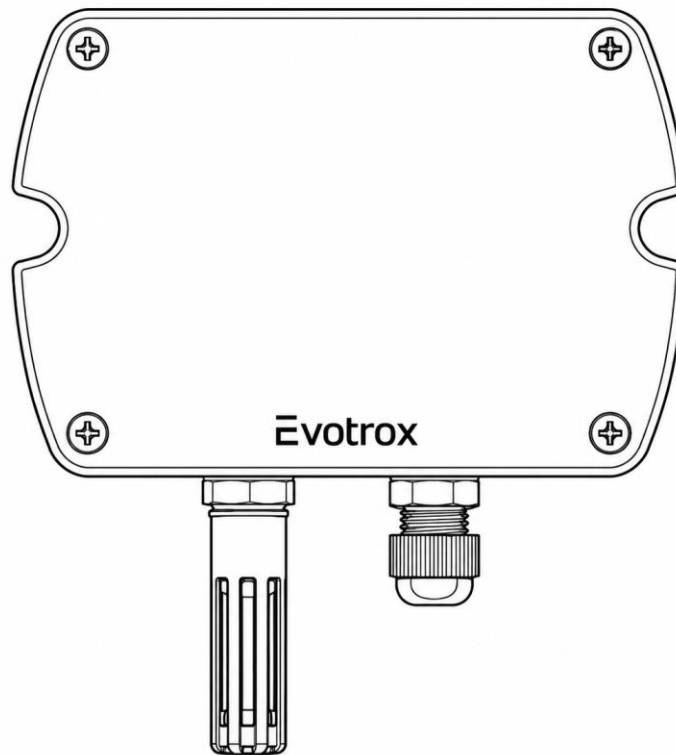


Figure 1: Product Appearance

3. FEATURES

- Dual parameter Temperature & Humidity monitoring
- 2 × 4-20 mA analog outputs
- Integrated condensation prevention support
- Reverse polarity and incorrect wiring protection
- Multiple industrial-grade filter variants available for any weather conditions
- Specially Designed for Rough Environments & high humidity applications
- Wall Mount & Duct both Mount Variants

4. APPLICATIONS

- Cold storage plants, cold rooms and refrigeration utility areas
- Compressor rooms, HVAC rooms and utility areas
- Warehouses, storage areas and process rooms where temperature/RH monitoring is required
- Boiler rooms, AHU rooms and industrial plant rooms
- Ventilation, HVAC and environmental alarm interlock systems
- Food, dairy and beverage processing plants
- Pharmaceutical warehouses and production utilities
- Water and wastewater treatment plants
- Industrial environmental monitoring panels
- SCADA, BMS, PLC and IoT-based environmental monitoring systems

5. TECHNICAL SPECIFICATIONS

The following technical specifications define the electrical, environmental and operational characteristics of the SENSE-TH100 transmitter.

Parameter	Specification
Power Supply	24 VDC
Power Supply Range	12 VDC to 30 VDC
Power Consumption	<1W
Temperature Range	0°C to 100°C
Humidity Range	0% to 100% RH
Temperature Accuracy	±0.3°C Typical
Humidity Accuracy	±2% RH Typical
Output Type	2 × 4-20 mA Signals
Protection Class	IP65

6. MECHANICAL DIMENSIONS

The following dimensional drawing provides the mechanical dimensions required for mounting and installation planning.

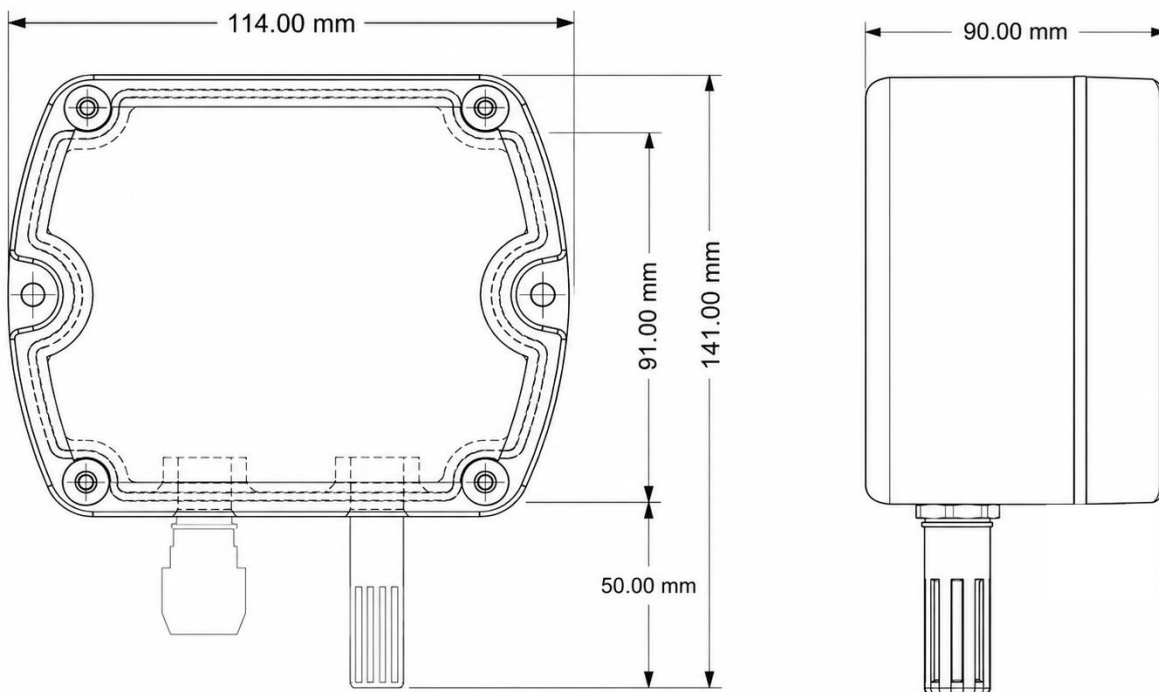


Figure 2: Mechanical Dimension Drawing

7. INSTALLATION GUIDELINES

Proper installation is important for achieving accurate measurement performance and long-term sensor reliability.

- Install in ventilated and clean locations.
- Avoid direct sunlight and excessive moisture.
- Maintain airflow around sensing filter.
- Use shielded cables in noisy environments.
- Mount vertically for best sensing performance.

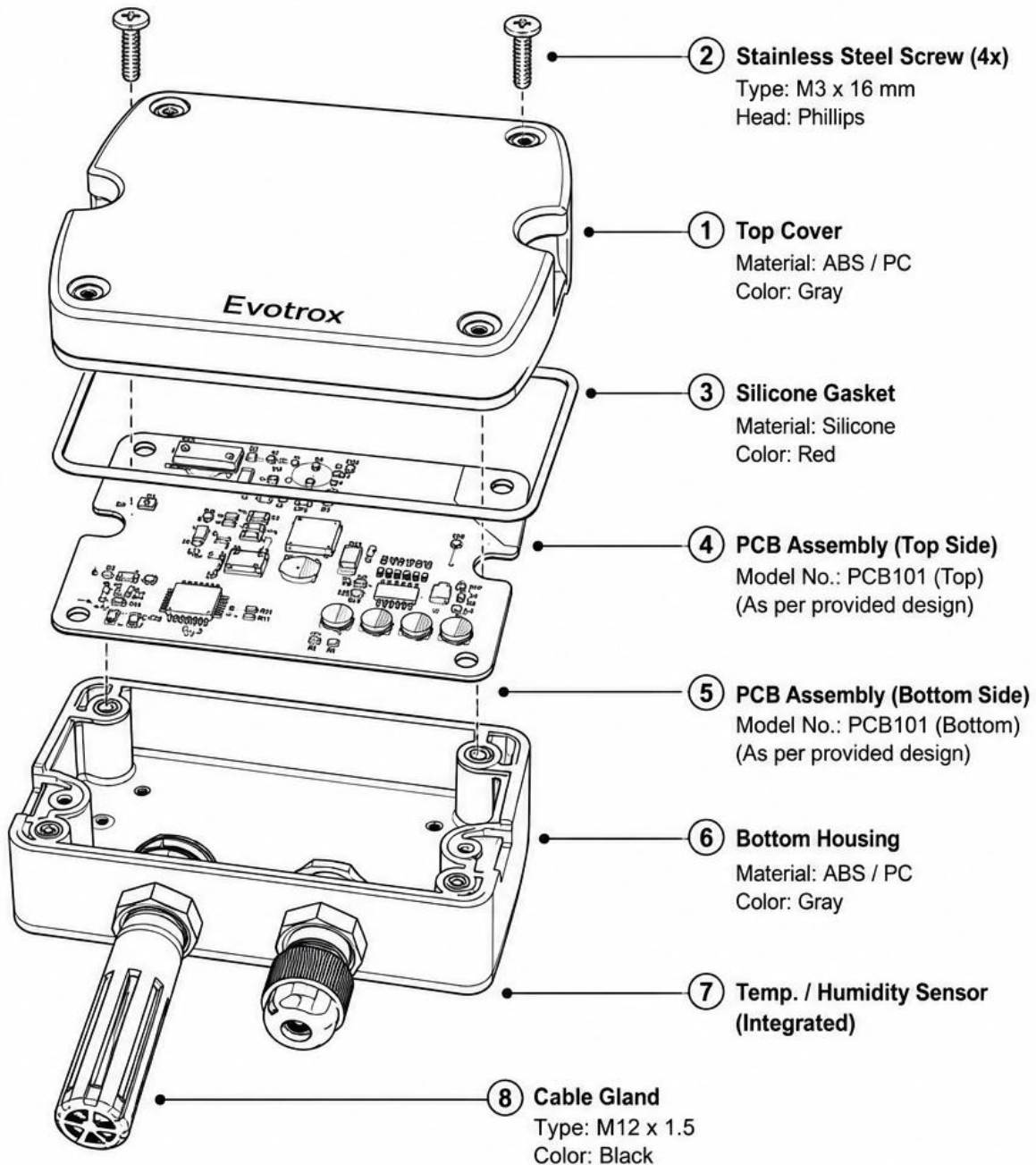


Figure 3: Exploded Assembly View

8. WIRING CONNECTION

All electrical connections should be completed according to the following terminal configuration. Disconnect power before wiring.

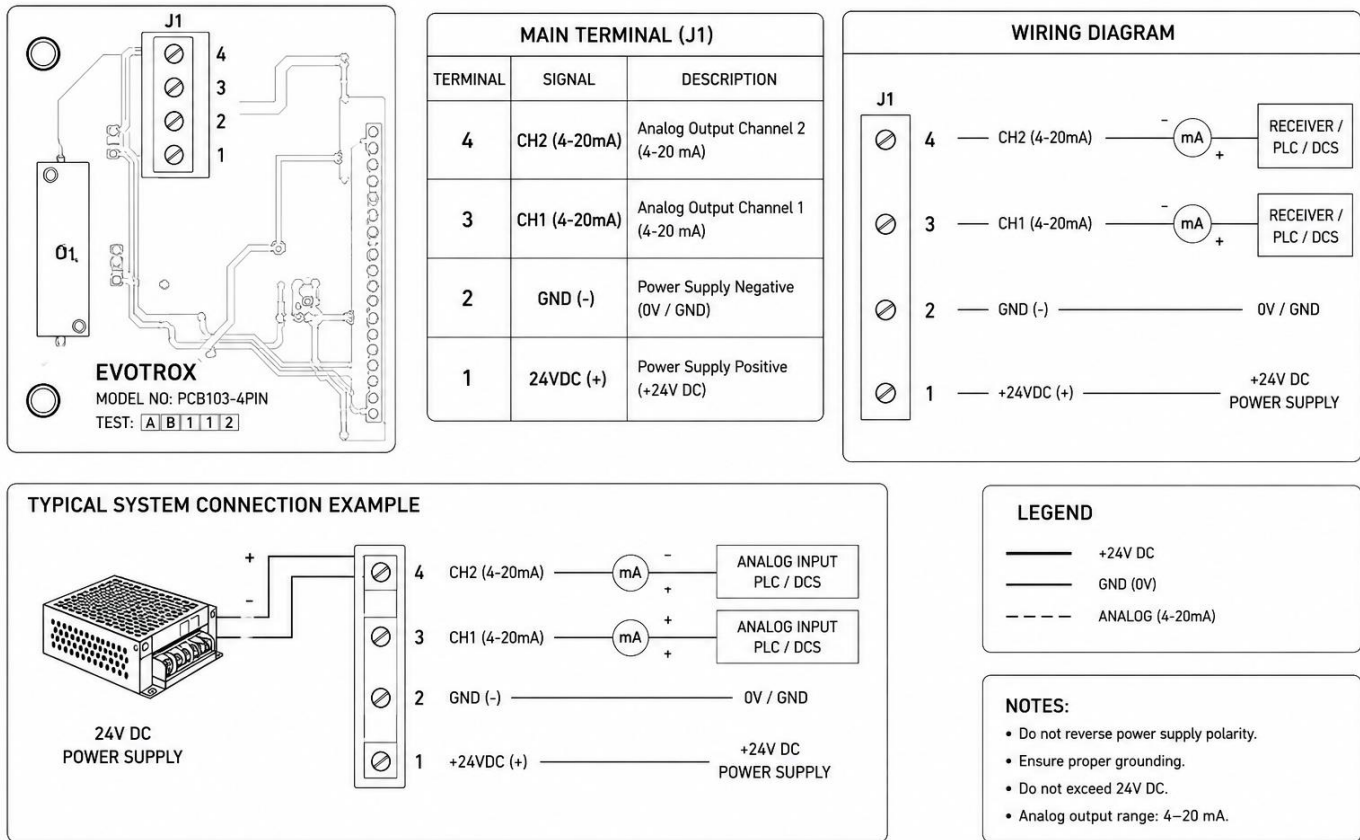


Figure 4: Internal Connector Layout and Wiring Reference

Pin	Signal	Description	Type
1	+24VDC	Power Input Positive	Power
2	GND	Power Ground	Power
3	CH-1 RH Output	Humidity Output	Analog
4	CH-2 TEMP Output	Temperature Output	Analog

9. OUTPUT SCALING

The analog output signals are linearly scaled according to the following measurement ranges.

Output	Low Scale	High Scale
Temperature Output	4 mA = 0°C	20 mA = 100°C
Humidity Output	4 mA = 0% RH	20 mA = 100% RH

10. FILTER INFORMATION

Different filter variants are available depending on the environmental and application requirements.

Code	Filter Type	Working Area	Protection
F1	SS Mesh	Normal factory air	Dust protection, fast response
F2	SS Sintered	Dusty industrial areas	Strong dust protection
F3	PTFE Membrane	Outdoor / condensation	Blocks liquid water
F4	PTFE + AC Membrane	Chemical vapours	Protects from chemicals

11. SENSOR PERFORMANCE CHARACTERISTICS

The following graphs represent the typical and maximum tolerance behaviour of the sensing element across the specified operating Temperature and Relative Humidity ranges. These characteristics help evaluate sensor stability and expected performance under varying environmental conditions.

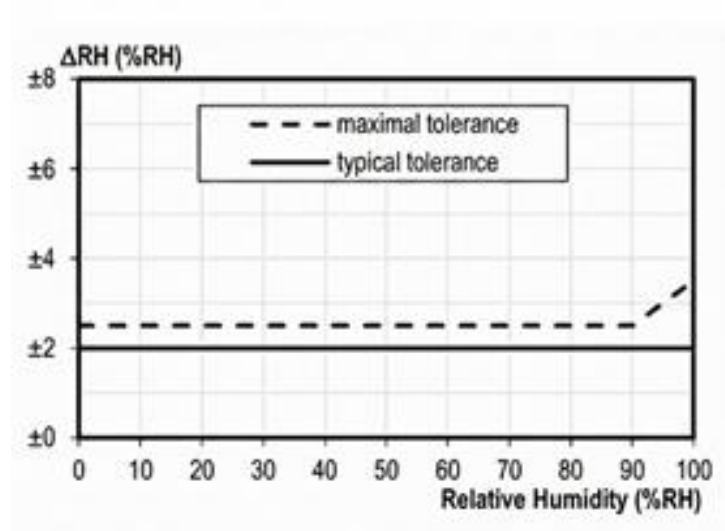


Figure 5: Relative Humidity Tolerance Characteristics

The humidity tolerance graph illustrates the expected sensor deviation across the full Relative Humidity operating range. Typical tolerance remains stable through most of the operating region, while maximum tolerance may increase slightly under extremely high humidity conditions.

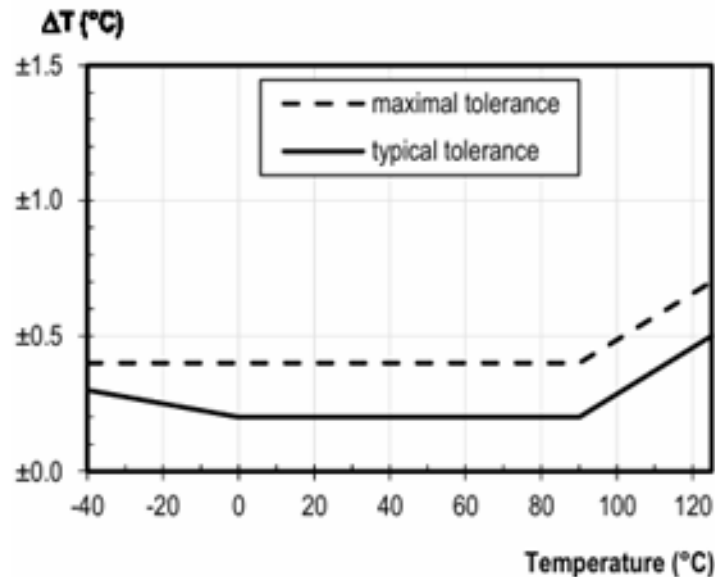


Figure 6: Temperature Tolerance Characteristics

The temperature tolerance graph represents the typical and maximum sensor deviation across the specified temperature range. Sensor stability is maintained through standard operating conditions, with slight tolerance variation possible at extreme temperature limits.

12. ORDERING INFORMATION

The following ordering structure should be used while selecting the appropriate product and filter configuration.

Model	Filter	Description
SENSE-TH100-F1	SS Mesh	Standard industrial application
SENSE-TH100-F2	SS Sintered	Dusty industrial application
SENSE-TH100-F3	PTFE Membrane	Outdoor / condensation application
SENSE-TH100-F4	PTFE + AC Membrane	Chemical vapor application

Note: If no filter option is specified during ordering, standard F1 filter variant will be supplied by default.

13. SAFETY INSTRUCTIONS

Follow the safety instructions below before installing, wiring, operating or servicing the product.

- Disconnect power before wiring or maintenance.
- Installation should be performed by qualified personnel only.
- Avoid corrosive gases and excessive steam exposure.
- Avoid touching PCB components without ESD protection.
- Ensure correct power polarity during installation.
- Do not paint, cover or block the sensing filter area.

14. MAINTENANCE

Routine inspection and periodic cleaning are recommended to ensure stable sensing performance and long operational life.

- Clean enclosure using dry soft cloth only.
- Do not use chemical solvents.
- Inspect cable glands and wiring periodically.
- Ensure sensing filter remains unobstructed.

15. TROUBLESHOOTING

The following table provides guidance for identifying and resolving common operational conditions.

Problem	Possible Cause	Solution
No Output	Power issue	Check supply polarity
Unstable Reading	Poor airflow	Improve ventilation
Incorrect Reading	Calibration drift	Recalibrate sensor

16. WARRANTY & LEGAL INFORMATION

Specifications are subject to change without prior notice. The user is responsible for ensuring proper installation, commissioning, operation and maintenance according to local industrial safety regulations, electrical codes and site safety procedures.

This product is intended to assist in temperature and relative humidity monitoring and alarm generation. It does not replace statutory process safety systems, validated environmental monitoring procedures, emergency response procedures or operator training where such systems are required by applicable regulation or site policy.

Sensor performance depends on installation location, airflow, calibration condition, sensor age, condensation exposure, dust/chemical exposure and maintenance practices. Periodic functional testing and calibration are essential for reliable operation.

SENSE-TH100 is a weatherproof product. It is not a flameproof, explosion-proof or intrinsically safe product. Any hazardous area or safety-critical usage shall be verified against site classification, product certification and applicable local regulations before installation.

17. CONTACT INFORMATION

Company	Details
Brand	EVOTROX
Location	Ahmedabad, Gujarat, India
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