HMP-X Pro Humidity and Temperature Transmitter

User Guide & Technical Specifications

Version 2.4

1. Product Overview

The HMP-X Pro is an industrial-grade transmitter designed for demanding humidity and temperature measurements in HVAC, meteorology, and drying processes. It features the latest HUMICAP® R2 sensor technology, ensuring excellent stability and chemical resistance. The probe is interchangeable and can be removed without disconnecting the transmitter body.

2. Important Safety Information

> **WARNING:**
>
> Read these instructions carefully before installation. Failure to follow safety guidelines may result in equipment damage or personal injury.

- **Electrical Shock Hazard:** Ensure the power supply is disconnected before connecting the wires. The device must be installed by a qualified electrician.
- **Sensor Protection:** Do not touch the sensor element with bare hands or tools. Mechanical stress or oil from skin will permanently degrade measurement accuracy.
- **Grounding:** The transmitter must be properly grounded using the dedicated grounding terminal to prevent ground loops and ensure EMC compliance.

3. Installation Guidelines

3.1 Mounting

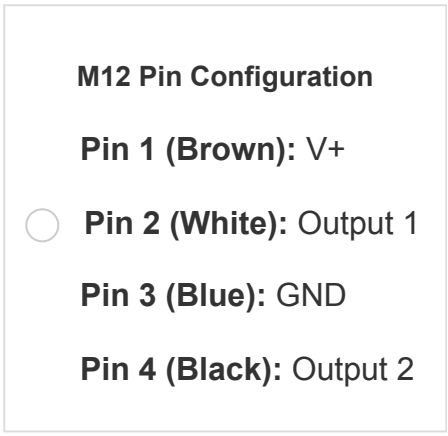
The probe should be mounted in a location with representative air conditions. Avoid placing the sensor near heat sources (such as radiators or direct sunlight) or in dead zones where airflow is restricted.

- **Duct Mounting:** Insert the probe at least 200 mm (7.9 inches) into the duct. Use the mounting flange (part no. 2345) to secure the probe.
- **Wall Mounting:** Mount the transmitter body with the cable glands pointing downwards to prevent water from entering the housing.

3.2 Wiring

The HMP-X Pro uses a standard M12 connector.

- **Pin 1 (Brown):** Power Supply (V+)
- **Pin 2 (White):** Output 1 (Humidity 4...20 mA)
- **Pin 3 (Blue):** Ground (GND)
- **Pin 4 (Black):** Output 2 (Temperature 4...20 mA)



> **Note:**
>
> Use a shielded cable to minimize electromagnetic interference. The shield should be connected to the ground at the power supply end only.

4. Technical Specifications

Performance

Parameter	Specification
Relative Humidity Measurement Range	0 ... 100 %RH
Accuracy (at +20 °C)	±0.8 %RH (0...90 %RH)
Temperature Measurement Range	-40 ... +80 °C (-40 ... +176 °F)
Response Time	< 10 seconds (for 63% step change)

Operating Environment

Parameter	Specification
Operating Temperature (Electronics)	-40 ... +60 °C
Operating Pressure	0 ... 10 bar
IP Rating	IP67 (Dust tight, immersion up to 1m)

Inputs and Outputs

Parameter	Specification
Operating Voltage	15 ... 30 VDC
Current Consumption	10 mA typical, 30 mA max
Analogue Outputs	Two channels, 4...20 mA (loop powered)
Digital Interface	RS-485 (Modbus RTU)

5. Maintenance

The HMP-X Pro requires minimal maintenance. However, the filter cap should be inspected every 6 months. If the filter is clogged with dust or grease, it must be replaced (Part No. DRW-990). Do not attempt to clean the sensor element with compressed air.