RHT175

Relative Humidity and Temperature Probe

The new generation of Relative Humidity and Temperature Probes RHT175 developed and manufactured by MicroStep-MIS, provides reliable and accurate relative humidity and temperature measurement.

RHT175 is designed for meteorological and airport weather stations, and any applications where continuous data monitoring is required.

Features

- Accuracy typical 1 % RH
- Long-term stability < 1 % RH/year
- Humidity sensor 0 to 100 % RH
- Digital and analog interface
- Optional passive thermometer probe

Relative Humidity Measurement

Measurement range	0 to 100 % RH
Accuracy (@ 25 °C)	±1 % RH
Short term hysteresis	< 0.6 % RH
Accuracy over temperature range	1 + |t - 25| *(0.008 + 0.00052 *RH)
Typical long-term stability	±1.0* % per year
Calibration traceability	MBW Calibration
Response time at +25 °C in still air with a sintered filter	63 % ... < 40 s
Sensor type	capacitive
Upgrade to ISO17025 accredited calibration	Optional

*Dependent on operating environment.

Temperature Measurement

Measurement range	–65 °C to +70 °C
Accuracy	±0.2 (-40 to +60) °C

General

Operating temp. range	–65 °C to +70 °C
Storage temp. range	–65 °C to +70 °C
Cable coating	PUR
Housing material	POM-C
Housing classification	IP65 (except sensors)
Sensor protection	HDPE sintered filter 10 µm
EMC compliance	tested and conforms to IEC61326:2002
Connector	M12 5-pin male (optional)
Power consumption (1 measurement per 10 s, analog output ON)	2 mW
Power consumption (1 measurement per 10 s, analog output OFF)	1.2 mW

Inputs and Outputs

Settling time at power-up	< 3 s
Communication standard	• SDI-12 V1.3 • analog out (0 V to 1 V) • RS-485 (optional) • 3.3 V UART (optional)
Output resolution	0.05 % RH, 0.01 °C
Measurement period	from 1 s
Supply voltage	5 to 30 V DC

Optional PT100 Thermometer (cable version only)

Accuracy classes according to DIN EN 60751	PT100 1/5 (-20 °C to 70 °C) PT100 1/3 F0.1 (class B) (-65 °C to +70 °C) optional
Operating temp. range	–65 °C to +70 °C
Recommended current	2 mA max.
Resolution	depends on Data Logger
Measurement period	depends on Data Logger

Optional Continuous Heating

Heating power	≤ 250 mW (adjustable)
Output value	Dew point [°C]

Factory Calibration

Relative Humidity	Expanded Uncertainty (k=2)
10 %RH	0.60 %RH
30 %RH	0.60 %RH
50 %RH	1.0 %RH
70 %RH	1.0 %RH
95 %RH	1.2 %RH