TRH

Applications

Flooding
Meteo Observation
Frost Warning

OTT TRH Temperature and Humidity Sensor

Digital humidity & temperature sensor with protective housing

Long-term stable, can be used in extreme temperatures (– 40 °C to +80 °C)
Very low power consumption
Easy conntection to SDI-12 data logger, e.g. OTT netDL via digital interface SDI-12 (protocol V1.3)
Naturally vented protective housing fitted with 7 lamellae
White outside coating and black inside coating for optimum protection against radiant heat
Sensor is easily installed – simply insert it and tighten screw

Versatile in use

The OTT TRH unit reliably measures the relative humidity and temperature in a large variety of applications. It is used e.g. in automatic weather stations, often together with the OTT Pluvio series precipitation gauges. Other applications include environmental monitoring, hydro-meteorological applications, agricultural weather stations, and many more.

With SDI-12 interface

The compact, long-term stability sensor has an SDI-12 digital interface through which the unit may output up to five values. In addition to the measured values for relative humidity and temperature, the sensor provides the calculated values for absolute humidity, dew point, and mixing ratio.

Well-protected

A protective cap prevents dirt, dust, and insects from entering the sensor system, avoiding inaccurate measuring results to be created. The weather and radiation protection included is UV and weather resistant and may easily be installed to vertical poles or horizontal pipes. It protects the sensor from solar radiation, pre-cipitation, and wind thus ensuring precise measuring results.

Technical Specifications

OTT TR2O SENSOR	Feature	Value
INTERFACES	Interface	SDI-12 V1.3
SENSOR OUTPUT	Temperature	In °C or °F (measured)
	Humidity	Relative humidity in % (measured) Absolute humidity in g/m³
	Dew point	In °C or °F (calculated)
	Mixing ratio	In g/kg (calculated)
SUPPLY VOLTAGE	Supply voltage	4.5 V DC ... 28 V DC
CURRENT CONSUMPTION	Quiescent	< 20 µA @ 12 V
	Temperature measurement	Typ. 550 µA
	Humidity measurement	Typ. 260 µA
RELATIVE HUMIDITY	Measuring range	0 ... 100 % RH
	Accuracy @ 25 °C and 4.5 V DC ...15 V DC*:	Max. ±2 % RH (0 ... 90% RH)**, Max. ±3 % RH (90 ...100 % RH)** (including repeatability, hysteresis and calibration uncertainty)
	Resolution	0.1 %
	Repeatability	±0.1 % RH
	Hysteresis	<1 % RH
	Long-term stability	typ. < ±1.5 %/year
	Response time with protection cap	RH90 typ. <15 s @ 0.35 m/s
TEMPERATURE	Sensor	PT1000 DIN A
	Measuring range	– 40 ... +80 °C
	Accuracy @ 4.5 V DC ...15 V DC*	±0.1 °C @ 20 °C ±0.5 °C @ – 40 °C, 80 °C linearity
	Resolution	0.01 °C
	Response time with protection cap	T90 <300 s @ 1 m/s T90 <250 s @ 2m/s
ABSOLUTE HUMIDITY	Measuring range	0 ... 1000 g/m³
	Resolution	0.1 g/m³
DEW POINT	Measuring range	– 40 ... +80 °C
	Resolution	0.01 °C
MIXING RATIO	Measuring range	0 ...1000 g/kg
	Resolution	0.1 g/kg
OPERATING CONDITIONS	Operating temperature	-40 ... +80 °C
	Storage temperature	-50 ... +80 °C
	Operating humidity	0 ... 100 % RH
PHYSICAL FEATURES	Protection class	IP65
	Dimension sensor	Ø 12 mm x 140 mm
	Housing sensor	Polycarbonate
	Sensor protection	Protection cap with metal grid filter
CABLE	Features	Molded/shielded, PUR (black)
	Lengths	3.5m and 10 m available
	Wiring	Color code printed on housing
STANDARDS	Electromagnetic Compatibility (EMC)	EG (2004/108/EG); EN 61326-1:2006

**For supply voltages of >15 V DC, other accuracy values apply;* ***Temperature dependency: < ±2 % @ –10 °C ... 60 °C*

OTT RS7 WEATHER AND RADIATION PROTECTION	Feature	Value
OPERATING CONDITIONS	Interface	SDI-12 V1.3
MATERIAL	Lamellae	2 components (PS, PA)
	Bracket	Stainless steel
PHYSICAL FEATURES	Weight	700 g
	Height incl. mount	230 mm
	Number of lamellae	7
POLE/PIPE DIAMETER FOR INSTALLATION	Horizontal (pipe)	3/4" ... 5/4"
	Vertical (pole/pipe):	1" ... 2"

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