



Weather sensor for humidity and temperature

- Parameters measured**
 Air temperature and relative air humidity (measured), absolute air humidity, dewpoint and mixing ratio (calculated)
- Measurement range**
 PT1000, capacitive
- Product Highlights**
 Low power draw, long-term stable, suitable for extreme temperatures, protective housing included
- Interface**
 SDI-12 V1.3

The compact, long-term stability weather sensor OTT TRH is responsible for the measurement of relative humidity and temperature. In addition it can calculate the values for absolute humidity, dew point and mixing ratio and output these via the SDI-12 interface. A protective cap prevents dust and dirt from entering the sensor system. The included protective housing provides weather and radiation protection.

Sensor TR20

Sensor output

measured	Temperature in °C or °F, relative humidity in %
calculated	Absolute humidity in g/m ³ , dew point in °C or °F, mixing ratio in g/kg

Relative humidity	
Measuring range	0 ... 100 % RH
Accuracy at 25 °C and 4.5 V DC ...15 V DC* (incl. repeatability, hysteresis and calibration uncertainty)	max. ± 2 % RH (0 ... 90 % RH)**; max. ± 3 % RH (90 ... 100 % RH)** *for supply voltages of >15V DC, other accuracy values apply **temperature dependency: $<\pm 2\%$ at -10°C ... 60°C
Resolution	0.10%
Repeatability	± 0.1 %RH
Hysteresis	<1 % RH
Long-term stability	typ. $< \pm 1.5$ %/year
Response time with protection cap	RH90 typ. <15 s at 0.35 m/s
Temperature	
Sensor	PT1000 DIN A
Measuring range	-40 °C ... +80 °C
Accuracy at 4.5 V DC ...15 V DC*	± 0.1 °C at 20 °C; ± 0.5 °C at -40 °C, 80 °C linearity
Resolution	0.01 °C
Response time with protection cap	T90 <300 s at 1 m/s airflow; T90 <250 s at 2 m/s airflow
Absolute humidity	
Measuring range	0 ... 1000 g/m ³
Resolution	0.1 g/m ³
Dew point	
Measuring range	-40 °C ... +80 °C
Resolution	0.01 °C
Mixing ratio	
Measuring range	0 ... 1000 g/kg
Resolution	0.1 g/kg
Interface	SDI-12 V1.3
Supply voltage	
4.5 V DC ... 28 V DC	
Current consumption	
Quiescent	< 20 μ A at 12 V
Temperature measurement	typ. 550 μ A
Humidity measurement	typ. 260 μ A
Ambient conditions	
Operating temperature	-40 °C ... +80 °C
Storage temperature	-50 °C ... +80 °C
Operating humidity	0 ... 100 % RH
Protection class	
IP65	

Sensor protection	Protection cap with metal grid filter
Material and dimensions	
Housing sensor	Polycarbonate
Dimension sensor	Ø 12 mm x 140 mm
Material cable	PUR (black), moulded/shielded
Available cable lengths	3.5 m and 10 m
Wiring	color code printed on housing
Standards	EG (2004/108/EG), EN 61326-1:2006
OTT RS7 Weather and Radiation Protection	
Number of lamellae	7
Operating temperature	-40 °C ... +80 °C
Material and dimensions	
Lamellae	2 components (PS, PA)
Bracket	stainless steel
Height incl. mount	230 mm
Weight (without sensor)	700 g
Pole/pipe diameter for	
horizontal (pipe)	3/4 ... 5/4 inch (27 mm ... 43 mm)
vertikal (pole/pipe)	1 ... 2 inch (27 mm ... 60 mm)