

Outdoor Humidity, Temperature Sensor

±2% accurate humidity and temperature sensor for outdoor applications. Temperature is available with dual active 4 to 20 mA outputs or passive only for temperature. NEMA 4X /IP65 rated enclosure standard. Field selectable output for RH, absolute humidity, dew point or enthalpy.



Type Overview

Type	Output Signal Active Humidity	Output Signal Active Temperature	Output Signal Passive Temperature
22UTH-51	DC 0...5 V, DC 0...10 V	DC 0...5 V, DC 0...10 V	-
22UTH-510B	DC 0...5 V, DC 0...10 V	-	PT1000
22UTH-510E	DC 0...5 V, DC 0...10 V	-	Ni1000 (JCI)
22UTH-510L	DC 0...5 V, DC 0...10 V	-	NTC10k2
22UTH-510M	DC 0...5 V, DC 0...10 V	-	NTC10k3
22UTH-510Q	DC 0...5 V, DC 0...10 V	-	NTC20k

Technical Data

Electrical Data	Power Supply DC	15...24 V, ±10%, 0.3 W
	Power Supply AC	24 V, ±10%, 0.5 VA
	Cable Entry	cable gland PG11 Ø6 to 10 mm, with strain relief Ø6 to 8 mm, 1/2" conduit adapter included
Functional Data	Sensor Technology	polymer capacitive sensor with stainless steel wire mesh
	Output Signal Passive Temperature	PT1000 Ni1000 (JCI) NTC10k2 NTC10k3 NTC20k
	Output Signal Active Note	output DC 0 to 5/10 V with jumper adjustable voltage output: min. 10 kΩ load
	Media	air

Measuring Data	Measured Values	temperature relative humidity dew point enthalpy absolute humidity
	Measuring Range Humidity	0 to 100% RH non-condensing
	Measuring range temperature	passive sensor: -30°F to 120°F [-35°C to 50°C] Active sensor: range selectable Attention: max. measuring temperature is restricted by max. medium temperature (see Safety data) Setting range [°C] range [°F] Factory setting
		S0 -40°C to 60°C -40°F to 160°F
		S1 0°C to 50°C 40°F to 140°F
		S2 -15°C to 35°C 0°F to 100°F
		S3 -20°C to 80°C 0°F to 200°F ✓
	Measuring Range Absolute Humidity	adjustable at the transducer: 0 to 50 g/m ³ (default setting) 0 to 80 g/m ³
	Measuring Range Enthalpy	0 to 85 kJ/kg
	Measuring Range Dew Point	adjustable at the transducer: 40°F to 140°F [0°C to 50°C] (default setting) 0°F to 200°F [-20°C to 80°C]
Accuracy Humidity	±2% between 10 to 90% RH @ 70°F [21°C]	
Accuracy temperature active	±0.9°F @ 77°F [±0.5°C @ 25°C]	
Accuracy temperature passive	passive sensors depending on used type Ni.. = ±0.7°F @ 32°F [±0.4°C @ 0°C] NTC.. = ±0.3°F @ 77°F [±0.2°C @ 25°C]	
Materials	Cable Gland	PA6, black
	Housing	cover: lexan, gray base: lexan, gray seal: 0467 NBR70, black
Safety Data	Ambient Temperature	-30°F to 120°F [-35°C to 50°C]
	Medium Temperature	-30°F to 120°F [-35°C to 50°C]
	Protection Class IEC/EN	III safety extra-low voltage (selv)
	Protection Class UL	UL Class 2 Supply
	EU Conformity	CE Marking
	Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-13
	Certification UL	cULus acc. to UL60730-1A/-2-9/-2-13, CAN/CSA E60730-1:02/-2-9, CE acc. to 2004/108/EC and 2006/95/EC, NEMA 4X, IP65, UL Enclosure Type 4X
	Degree of Protection IEC/EN	IP65
	Degree of Protection NEMA/ UL	NEMA 4X
	Quality Standard	ISO 9001
Weight	0.21 lbs	

Safety Notes

The installation and assembly of electrical equipment should only be performed by authorized personnel.

The product should only be used for the intended application. Unauthorized modifications are prohibited! The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or assets. Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Please comply with

- Local laws, health & safety regulations, technical standards and regulations
- Condition of the device at the time of installation, to ensure safe installation
- This data sheet and installation manual

Remarks**Application Notice for Humidity Sensors**

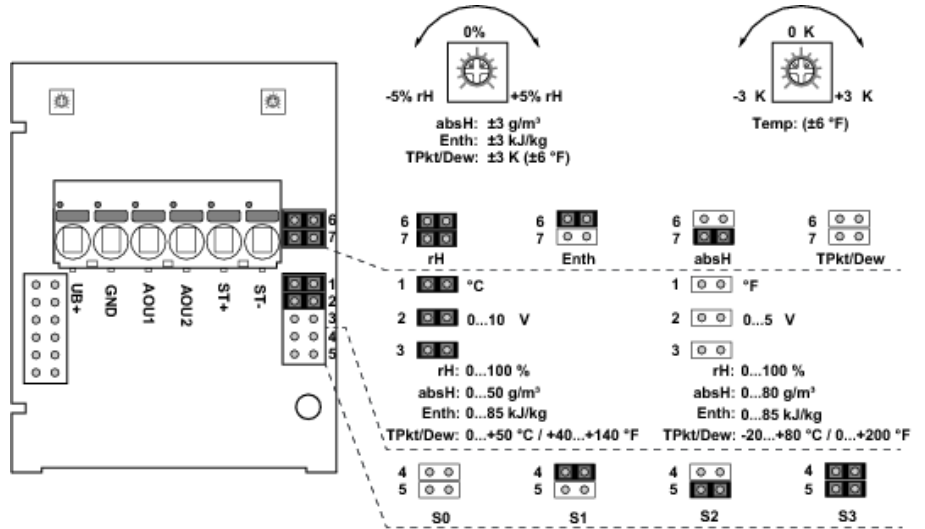
Refrain from touching the sensitive humidity sensor/element. Touching the sensitive surface will void warranty.

For standard environmental conditions the manufacturing accuracy specified in the datasheet will be covered by the calibration warranty for two years. When exposed to harsh environmental conditions such as; high ambient temperature and/or high levels of humidity or presence of aggressive gases (i.e. chlorine, ozone, ammonia) the sensor element may be affected and readings may be outside specified accuracy. Replacement of deteriorated humidity sensor due to harsh environmental conditions are not subject of the general warranty.

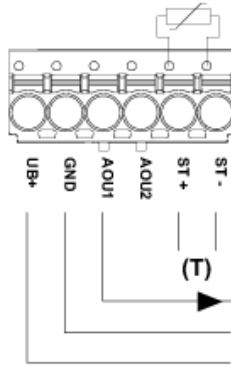
Accessories

Scope of Delivery mounting plate
dowel
screws
Rain cover
cable gland nut conduit 1/2" NPT

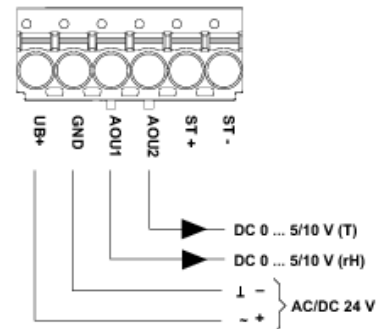
Wiring Diagram



**22..TH-..1..
0...5/10 V + ST**



**22..TH-..1..
2 x 0...5/10 V**



rH Relative humidity
 absH Absolute humidity
 Enth Enthalpy
 TPkt/Dew Dew point

the adjustment of the measuring ranges is made by changing the bonding jumpers
 the output value in the new measuring range is available after 2 seconds

Setting	range [°C]	range [°F]	Factory setting
S0	-40°C to 60°C	-40°F to 160°F	✓
S1	0°C to 50°C	40°F to 140°F	
S2	-15°C to 35°C	0°F to 100°F	
S3	-20°C to 80°C	0°F to 200°F	

Dimensions

