BELIMO®

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.

5 YEAR WARRANTY

Type Overview

Type	Output Signal Active Temperature	Output Signal Active Humidity
22UTH-510X	DC 0...5 V, DC 0...10 V	DC 0...5 V, DC 0...10 V

Technical Data
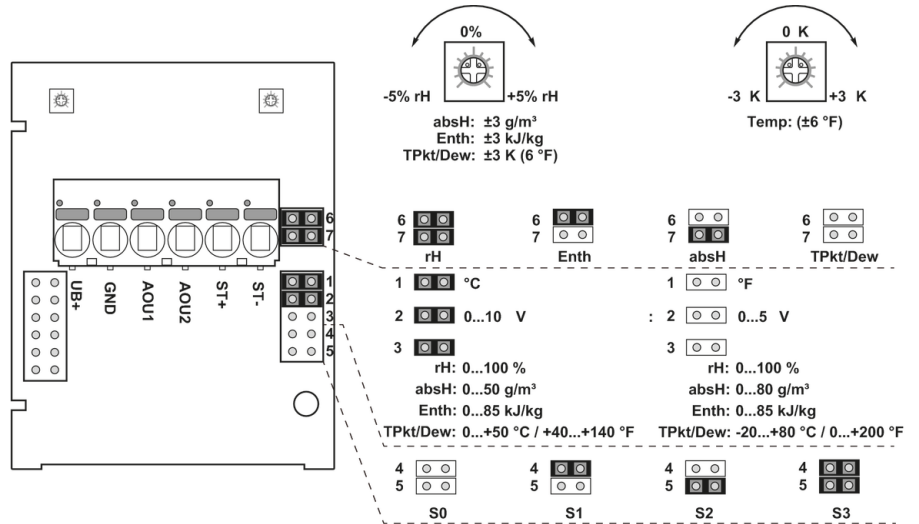
Electrical Data	Power Supply DC	15...24 V, ±10%, 0.4 W
	Power Supply AC	24 V, ±10%, 0.8 VA
	Electrical Connection	removable spring loaded terminal block max. 11 GA [2.5 mm²]
	Cable Entry	cable gland PG11 Ø6 to 10 mm, with strain relief Ø6 to 8 mm, 1/2" conduit adapter included
Functional Data	Multirange	4 fields selectable
	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 Settings	Activ sensor: range selectable Attention: max. measuring temperature is restricted by max. medium temperature (see Safety data)

Measuring Range Temperature Settings:

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/m³ (default setting) 0 to 80 g/m³
	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	±0.9°F @ 77°F [±0.5°C @ 25°C]
	Operating Condition Air Flow	max. 40 ft/s [12 m/s]

Materials	Cable Gland	PA6, black
	Housing	cover: lexan, gray base: lexan, gray seal: 0467 NBR70, black
Safety Data	Ambient Humidity	85% RH non-condensing
	Ambient Temperature	-30°F to 120°F [-35°C to 50°C]
	Medium Temperature	-30°F to 120°F [-35°C to 50°C]
	Operating Condition Air Flow	max. 40 ft/s [12 m/s]
	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	pending
	Degree of Protection IEC/EN	IP65
	Degree of Protection NEMA/ UL	NEMA 4X
	Quality Standard	ISO 9001
	Weight	0.24 lbs

Accessories

Scope of Delivery

dowel
screws
cable gland nut PG11, Ø6 to 10 mm

Wiring Diagram

0%
-5% rH   +5% rH

absH: ±3 g/m³
Enth: ±3 kJ/kg
TPkt/Dew: ±3 K (6 °F)

0 K
-3 K   +3 K
Temp: (±6 °F)

| | 6 7 rH | 6 7 Enth | 6 7 absH | 6 7 TPkt/Dew |

1 °C	1 °F
2 0...10 V	: 2 0...5 V
3	3

rH: 0...100 %
absH: 0...50 g/m³
Enth: 0...85 kJ/kg
TPkt/Dew: 0...+50 °C / +40...+140 °F

rH: 0...100 %
absH: 0...80 g/m³
Enth: 0...85 kJ/kg
TPkt/Dew: -20...+80 °C / 0...+200 °F

| 4 5 S0 | 4 5 S1 | 4 5 S2 | 4 5 S3 |

UB+ GND AOU1 AOU2 ST+ ST-

1 2 3 4 5

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

UB+ GND AOU1 AOU2 ST + ST -

(T)

DC 0 ... 5/10 V (rH)

⊥ −
~ + AC/DC 24 V

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

UB+ GND AOU1 AOU2 ST + ST -

DC 0 ... 5/10 V (T)
DC 0 ... 5/10 V (rH)

⊥ −
~ + AC/DC 24 V

rH Relative humidity
absH Absolute humidity
EntH Enthalpy
TPkt/Dew Dew point
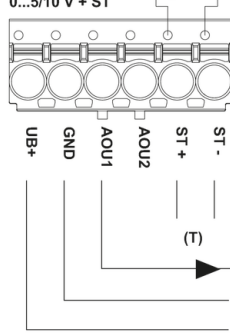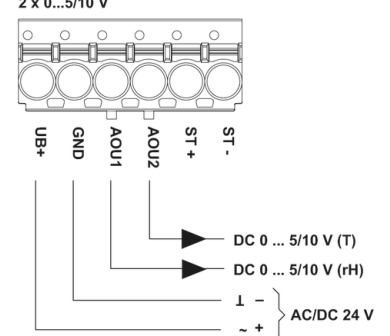
the adjustment of the measuring ranges is made by changing the bonding jumpers
the output value in the new measuring range is available after 2 seconds

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

7.1" [180.2 mm]

2.13" [54 mm]

2.99" [76 mm]

5.06" [128.5 mm]

8.03" [203.9 mm]

1.16" [29.4 mm]