

Outdoor Humidity, Temperature Sensor with weather shield

Active sensor (4...20 mA) for measuring the relative or absolute humidity and temperature in outdoor areas. Instead of the humidity signal, the enthalpy or the dewpoint can be selected as an output signal. NEMA 4X / IP65 rated enclosure.


Type Overview

Type	Output Signal Active Temperature	Output Signal Active Humidity
22UTH-13	4...20 mA	4...20 mA

Technical Data

Electrical data	Power Supply DC	15...24 V, ±10%, 0.5 W			
	Electrical connection	Removable spring loaded terminal block max. 2.5 mm ²			
	Cable entry	Cable gland PG11 Ø6...10 mm, with strain relief Ø6...8 mm			
Functional data	Sensor Technology	Polymer capacitive sensor with stainless steel wire mesh filter			
	Output signal active note	Current output: max. 500 Ω load			
	Media	Air			
Measuring data	Measured values	Temperature Relative humidity Dew point Enthalpies Absolute humidity			
	Measuring range humidity	0...100% rH non-condensing			
	Measuring range temperature	Passive sensor:			
		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...60 °C	-40...160 °F	
	S1	0...50 °C	40...140 °F		
	S2	-15...35 °C	0...100 °F		
	S3	-20...80 °C	0...200 °F	✓	
Measuring range absolute humidity	adjustable at the transducer: 0...50 g/m ³ (default setting) 0...80 g/m ³				
Measuring range enthalpy	0...85 kJ/kg				
Measuring range dew point	adjustable at the transducer: 0...50 °C (default setting) -20...80 °C				
Accuracy humidity	±2% between 10...90% r.H. @ 21 °C				
Accuracy temperature active	±0.5 °C @ 25 °C [±0.9 °F @ 77 °F]				

Materials	Cable gland	PA6, white
	Housing	Cover: Lexan, white Bottom: Lexan, white Seal: 0467 NBR70, black
Safety data	Ambient temperature	-35...50 °C [-30...120 °F]
	Medium temperature	-35...50 °C [-30...120 °F]
	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.

This device has been designed for use in stationary heating, ventilation and air conditioning systems and must not be used outside the specified field of application. Unauthorised modifications are prohibited. The product must not be used in relation with any equipment that in case of a failure may threaten human, 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

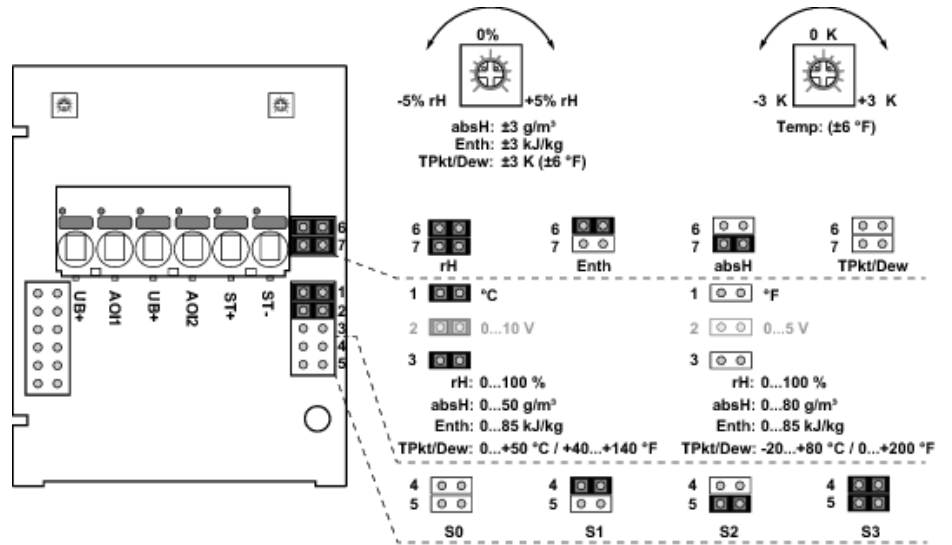
- General remarks concerning sensors** Sensing devices with a transducer should always be operated in the middle of the measuring range to avoid deviations at the measuring end points. The ambient temperature of the transducer electronics should be kept constant. The transducers must be operated at a constant supply voltage (± 0.2 V). When switching the supply voltage on/off, onsite power surges must be avoided.
- Build-up of Self-Heating by Electrical Dissipative Power** Temperature sensors with electronic components always have a dissipative power which affects the temperature measurement of the ambient air. The dissipation in active temperature sensors shows a linear increase with rising operating voltage. This dissipative power should be taken into account when measuring temperature. In case of a fixed operating voltage (± 0.2 V) this is normally done by adding or reducing a constant offset value. As Belimo transducers work with a variable operating voltage, only one operating voltage can be taken into consideration, for reasons of production engineering. Transducers 0...10 V / 4...20 mA have a standard setting at an operating voltage of DC 24 V. That means, that at this voltage, the expected measuring error of the output signal will be the least. For other operating voltages, the offset error will be increased by a changing power loss of the sensor electronics. If a re-calibration should become necessary later directly on the sensor, this can be done by means of a trimming potentiometer on the sensor board.
- 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.

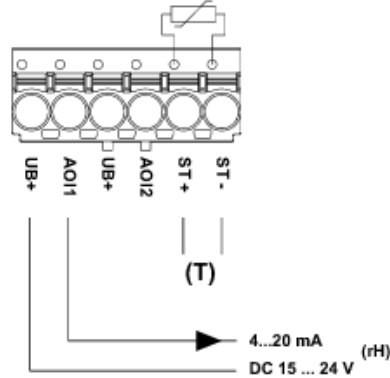
Accessories

Scope of delivery	<p>Mounting plate Dowel Screws Rain cover</p>					
Optional Accessories	<table border="0"> <thead> <tr> <th style="text-align: left;">Description</th> <th style="text-align: left;">Type</th> </tr> </thead> <tbody> <tr> <td>Replacement filter Stainless steel, wire mesh</td> <td>A-22D-A06</td> </tr> </tbody> </table>	Description	Type	Replacement filter Stainless steel, wire mesh	A-22D-A06	
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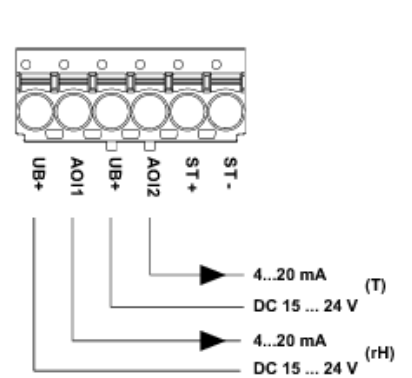
Wiring diagram



**22..TH-..3..
4...20 mA + ST**



**22..TH-..3..
2 x 4...20 mA**



- 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...60 °C	-40...160 °F	
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S2	-15...35 °C	0...100 °F	
S3	-20...80 °C	0...200 °F	✓

Dimensions

