

Duct Sensor Humidity / Temperature

Duct mounted combined humidity (mA) and temperature sensor. 2% accurate RH, available with dual active outputs or passive for temperature. Nema 4X / IP65 rated enclosure. Field selectable output for RH, absolute humidity, enthalpy and dew point.



Type Overview

| Type | Output Signal Active Temperature | Output Signal Active Humidity | Output Signal Passive Temperature |
|------------|----------------------------------|-------------------------------|-----------------------------------|
| 22DTH-53M | 4...20 mA | 4...20 mA | - |
| 22DTH-53MB | - | 4...20 mA | PT1000 |
| 22DTH-53ME | - | 4...20 mA | Ni1000 (JCI) |
| 22DTH-53ML | - | 4...20 mA | NTC10k2 |
| 22DTH-53MM | - | 4...20 mA | NTC10k3 |
| 22DTH-53MQ | - | 4...20 mA | NTC20k |

Technical Data

| | | |
|------------------------|-----------------------------------|--|
| Electrical Data | Power Supply DC | 15...24 V, ±10%, 0.5 W |
| | Electrical Connection | removable spring loaded terminal block max. 11 GA [2.5 mm ²] |
| | 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 |
| | Multirange | 4 fields selectable |
| | Output Signal Passive Temperature | PT1000 Ni1000 (JCI) NTC10k2 NTC10k3 NTC20k |
| | Output Signal Active Note | current outout: max. 500 Ω 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 | passiv sensor: -30°F to 160°F [-35°C to 70°C] Activ 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 | ±0.9°F @ 77°F [±0.5°C @ 25°C] |
| | Accuracy Temperature | passive sensors depending on used type PT.. = ±0.5°F @ 32°F [±0.3°C @ 0°C] Ni.. = ±0.7°F @ 32°F [±0.4°C @ 0°C] NTC.. = ±0.3°F @ 77°F [±0.2°C @ 25°C] |
| | Materials | Operating Condition Air Flow |
| Cable Gland | | PA6, black |
| Housing | | cover: lexan, Belimo orange NCS S0580-Y6OR base: lexan, Belimo orange NCS S0580-Y6OR seal: 0467 NBR70, black |
| Safety Data | Ambient Temperature | -30°F to 120°F [-35°C to 50°C] |
| | Medium Temperature | -30°F to 160°F [-35°C to 70°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 | 0.12 lbs | |

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 flange
cable gland nut conduit 1/2" NPT

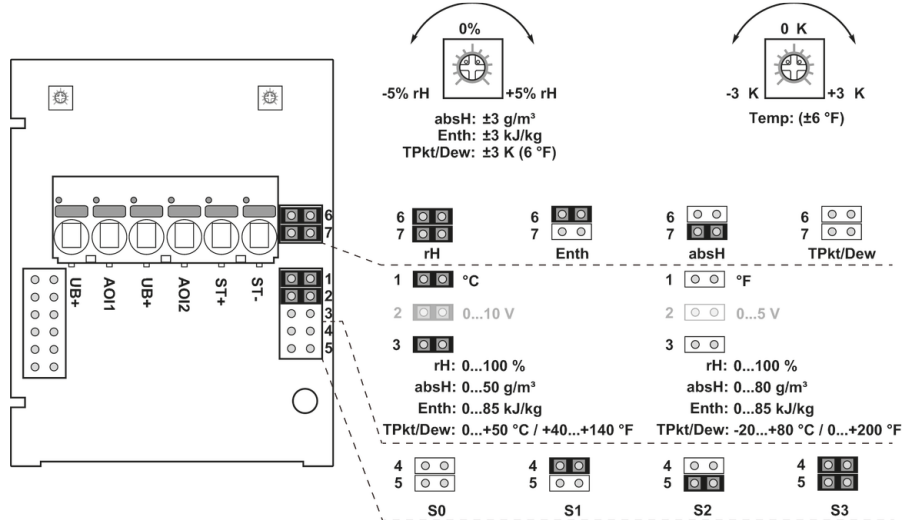
Optional Accessories **Description**

mounting flange for duct humidity and CO₂ sensor

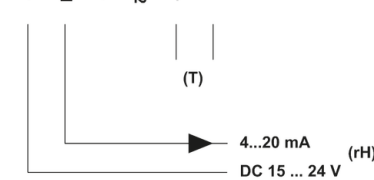
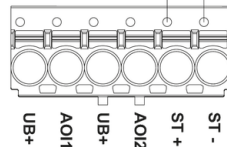
Type

A-22D-A34

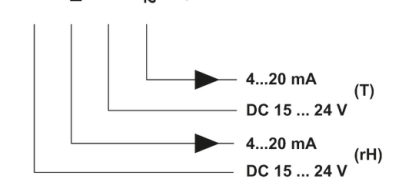
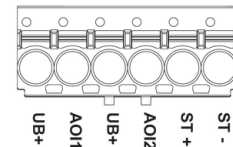
Wiring Diagram



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°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

