REGIN
DTTH Temperature and Humidity Transmitter

REGIN DTTH Temperature and Humidity Transmitter Instructions

Contents

REGIN

REGIN DTTH Temperature and Humidity Transmitter

- **Caution!** Read and understand the instruction before using the product.
- **Caution!** Ensure that the installation complies with local safety regulations.
- **Caution!** Before installation or maintenance, the power supply should first be disconnected. Installation or maintenance of this unit should only be carried out by qualified personnel. The manufacturer is not responsible for any eventual damage or injury caused by inadequate skills during installation, or through removal of or deactivation of any safety devices.

Function

The measurements received from DTT(H)(C) can be used to control ventilation with high precision and improve the air quality in for example residential and office areas. By increasing the air exchange only when it is necessary, it is possible to minimize energy costs.

Technical Data

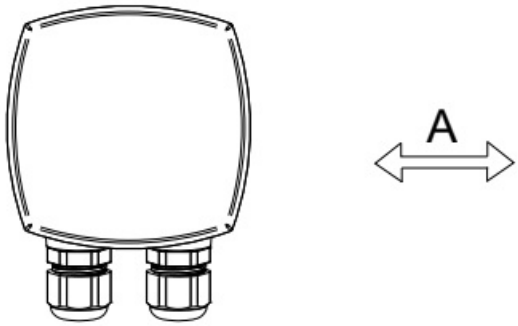
Table 1 Response times

Installation

1. Find a location in the duct where the transmitter can be expected to give a representative reading. It should be placed at least 4 duct diameters from a bend or other obstacle, e.g. a damper, for minimal turbulence.
2. Use a 13 mm drill bit to make a hole in the duct
3. Twist the cover to access the terminals
4. Place the DTTC/DTTHC transmitter in the duct with the cable glands perpendicular to the airflow direction. See Figure 1.
5. Connect the wires to the terminals according to the wiring diagram in Figure 3
   Note! Make sure to use a round cable and ensure that the cable gland makes a tight seal around the cable. You should also consider possible leakage inside a short cable (such as, air in between conductors). Otherwise, you can have incorrect measurement values due to intruding air.
6. After applying power to the transmitter, the time it takes to show correct values is specified under Warm-up time in the technical data table. A green LED, located under the cover, indicates when the transmitter is ready to use

(see Table 2).

7. Screw the cover back on and ensure that the cover is properly fastened and that the cable gland makes a tight seal around the cable



Caution! If there is a risk of condensation in the probe, mount the transmitter upright.

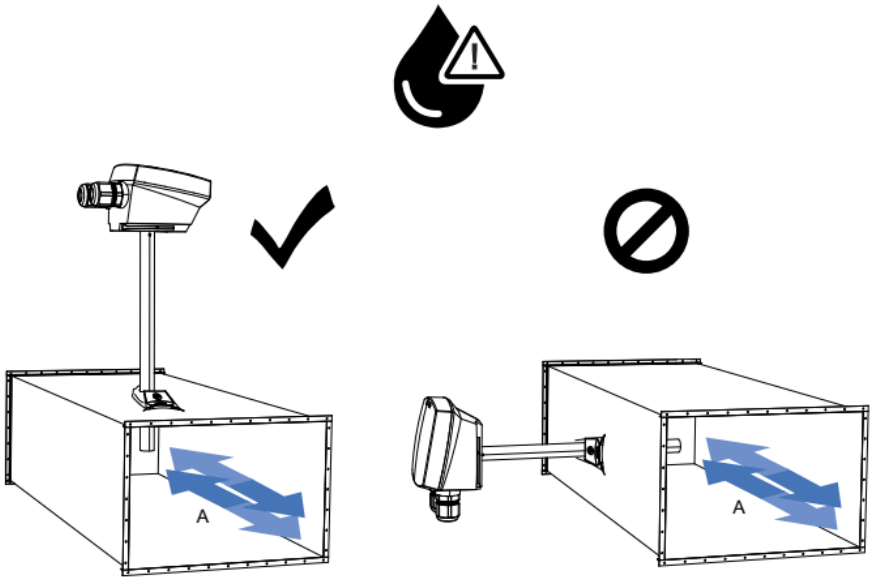


Figure 2 Mounting at condensation risk

LED indications

A LED light under the lid indicates the status of the transmitter, as shown in Table 2.

Table 2 LED status indications

Supply voltage	24 V ~ (20…28 V ~ 50…60 Hz, 2 VA) / 15…35 V DC
Power consumption	< 1.5 W
Load impedance, 0…10 V	Min. 10 kΩ

Protection class	IP65 (housing)
Ambient humidity	0…90 % RH, non-condensing
Ambient temperature	-40…+60 °C
Storage temperature	-40…+80 °C
Max overvoltage	+10 V (referenced to GND)
Mounting	Duct
Insertion length	37…195 mm
Media	Air, non-combustible and non-aggressive gases
Measuring range, temperature	-40…+60 °C
Output signal, temperature	0…10 V (0 V = -40 °C, 10 V = 60 °C)
Accuracy, temperature	±0.2 K at 0…60 °C
Measuring range, humidity	0…100 % RH
Output signal, humidity	0…10 V (0 V = 0 % RH, 10 V = 100 % RH)
Accuracy, humidity	±2 % RH at 25 °C, 10...90 % RH
Measuring range, CO_2	0…2000 ppm
Output signal, CO_2	0…10 V (0 V = 0 ppm, 10 V = 2000 ppm)
Accuracy, CO_2	±(50 ppm + 3 % of the measured value) at 25 °C
Temperature dependency, CO_2	2.5 ppm/K at 0…50 °C
Cable gland	2 x M16
Cable connection	Screw terminals max. 1.5 mm² (AWG 16)
Warmup time	4 min
Diameter, probe	12 mm
Dimensions, external (WxHxD)	104 x 211/212.5 x 79 mm
Weight (incl. packaging)	0.23 kg (DTTH) / 0.25 kg (DTTC/DTTHC)

Table 1 Response times

Article	Response time, temp	Response time, humidity	Response time, CO_2
DTTH	<50 s [1]	<50 s [1]	-
DTTC	<50 s [1]	-	<100 s [1]
DTTHC	<50 s [1]	<50 s [1]	<100 s [1]

1. At 3 m/s air speed

Installation

1. Find a location in the duct where the transmitter can be expected to give a representative reading. It should be placed at least 4 duct diameters from a bend or other obstacle, e.g. a damper, for minimal turbulence.
2. Use a 13 mm drill bit to make a hole in duct

3. Twist the cover to access the terminals
4. Place the DTTC/DTTHC transmitter in the duct with the cable glands perpendicular to the air flow direction. See Figure 1.
5. Connect the wires to the terminals according to the wiring diagram in Figure 3
   Note! Make sure to use a round cable and ensure that the cable gland makes a tight seal around the cable. You should also consider possible leakage inside a short cable (such as, air in between conductors). Otherwise you can have incorrect measurement values due to intruding air.
6. After applying power to the transmitter, the time it takes to show correct values is specified under Warm-up time in the technical data table. A green LED, located under the cover, indicates when the transmitter is ready to use (see Table 2).
7. Screw the cover back on and ensure that the cover is properly fastened, and that the cable gland makes a tight seal around the cable Figure 1 Installation direction in duct (A = air flow direction) Caution! If there is a risk for condensation in the probe, mount the transmitter upright.

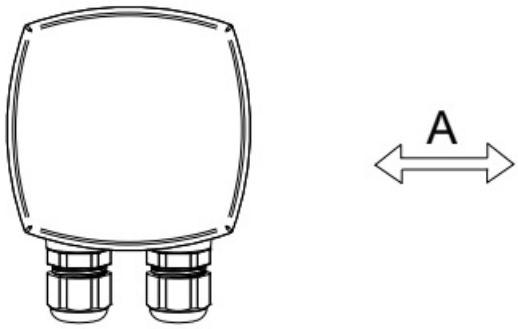


Figure 1 Installation direction in duct (A = air flow direction)

Caution! If there is a risk for condensation in the probe, mount the transmitter upright.

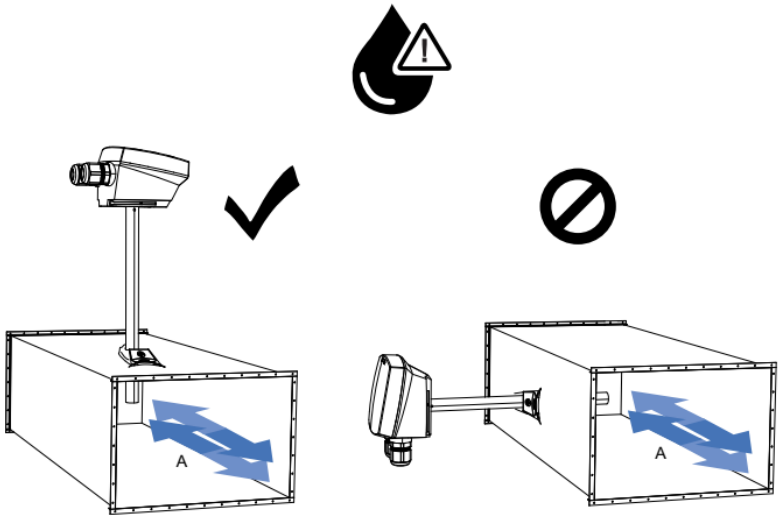


Figure 2 Mounting at condensation risk

LED indications
A LED light under the lid indicates the status of the transmitter, as shown in Table 2.

Table 2 LED status indications

LED indications	Description
Green, solid	The power is on. All is OK.
Red, solid	Sensor problem.

Wiring

The terminals are accessed by twisting the cover. Connect the cables according to the Figure 3 Wiring diagram below.

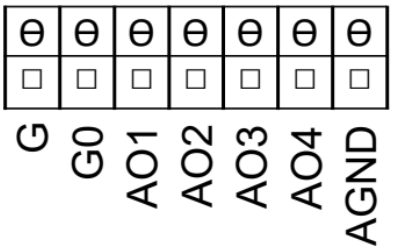


Figure 3 Wiring diagram

Table 3 Terminal list

Terminal	Description
G	Supply voltage
G0	System neutral
AO1	Temperature output
AO2	Humidity output (only for DTTH/DTTHC)
AO3	CO2 output (DTTC/DTTHC)
AO4	*Not used*
AGND	Signal neutral

Handling

The sensor elements for temperature and humidity are placed in the probe. DTTC/DTTHC have a probe with two air channels. See Figure 4. The air in the ventilation duct is transported to the CO2 sensor element, which is located in the housing, through one half of the probe and then back to the duct through the other half.

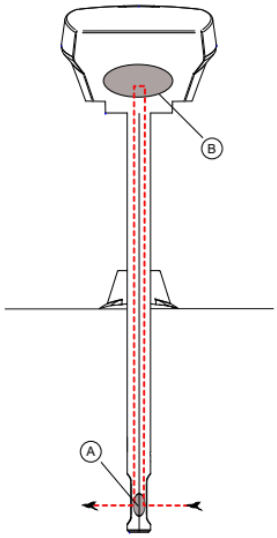


Figure 4 A= Temperature and humidity sensor elements B= CO_2 sensor element

Figure 4 A= Temperature and humidity sensor elements B= CO2 sensor element

This product carries the CE mark. More information is available at **www.regincontrols.com**.

Contact
AB Regin, Box 116, 428 22 Kållered, Sweden Tel: +46 31 720 02 00, Fax: +46 31 720 02 50
www.regincontrols.com, **info@regincontrols.com**

Frequently Asked Questions

Q: What should I do if the product shows inaccurate measurements?
A: Check if the product is properly calibrated and positioned according to the manual. Recalibrate if necessary.

Q: Can I use this product in outdoor environments?
A: The product is designed for indoor use with specified environmental conditions. Outdoor use may affect performance.

Documents / Resources

	**REGIN DTTH Temperature and Humidity Transmitter** [pdf] Instructions DTTH, DTTC, DTTHC, DTTH Temperature and Humidity Transmitter, DTTH, Temperature and H umidity Transmitter, and Humidity Transmitter, Humidity Transmitter, Transmitter

References

- **Professionelle Gebäudeautomation von DEOS AG**
- **User Manual**