

DTT(H)(C)

Temperature, humidity and CO₂ transmitter for duct mounting



0...10 V duct transmitter for temperature, relative humidity and carbon dioxide measurements in air.

- ✓ Installation friendly design
- ✓ High sensor accuracy
- ✓ Very good protection against condensation and pollution
- ✓ Possible to use two cable glands

Application

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 minimise energy costs.

Function

Three different models are available for an optimal adaptation to the application. The transmitters combine temperature, humidity, and CO₂ measurements. One model has all three sensors, a temperature-, a humidity-, and a CO₂ sensor. The two other models have a temperature sensor, and either a CO₂ sensor or a humidity sensor. The CO₂ sensor is long-term stable due to the dual beam technology. The CO₂ sensor is equipped with an automatic self-calibration function to ensure accurate measurements. The algorithm assumes that the monitored space periodically reaches outdoor CO₂ levels and adjusts calibration based on the lowest weekly readings, with safeguards to prevent excessive corrections.

Under normal conditions, calibration is completed within two weeks; however, larger deviations (>60 ppm) may require up to 1–2 months. Calibration compensates for transport-related variations and sensor aging during its lifetime.

Installation

The transmitters have a smart design that makes installation very easy. Cables are simple to connect due to the spacious housing and the lid is mounted with a twist, thus no screws are required.

Exchanging the filter for a more resistant one (see *Accessories for DTTH*) permits DTTH to be mounted in environments with a high degree of pollution, while maintaining the lifespan of the transmitter.

Technical data

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
Max air velocity	20 m/s
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, CO₂	0...2000 ppm
Output signal, CO₂	0...10 V (0 V = 0 ppm, 10 V = 2000 ppm)
Accuracy, CO₂	±(50 ppm + 3 % of the measured value) at 25 °C
Temperature dependency, CO₂	2.5 ppm/K at 0...50 °C
Cable gland	2 x M16
Cable connection	Screw terminals max. 1.5 mm ² (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



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

Material

Material, housing	Polycarbonate (PC)
Material, base	Polycarbonate (PC)
Material, probe	ABS

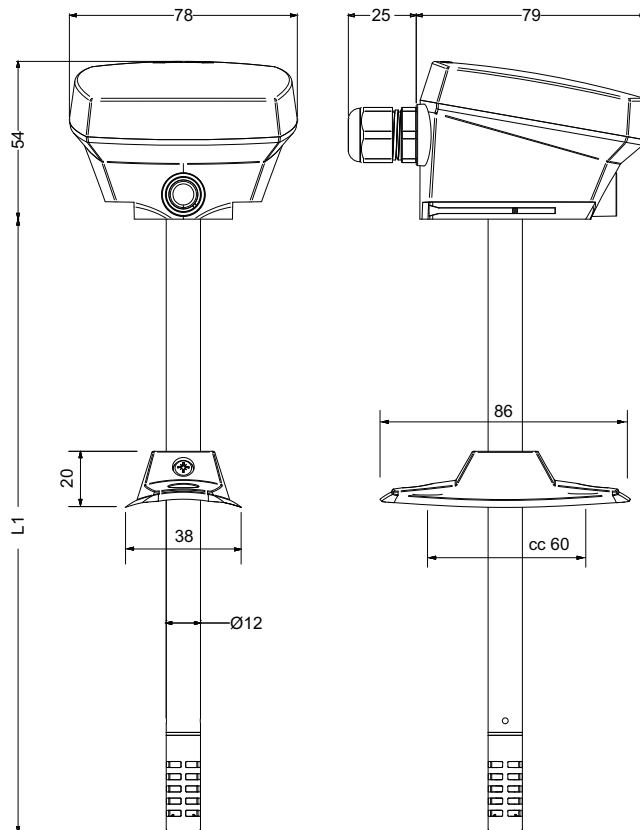
Models

Article	CO ₂ measurement	Sensor element protection	Total number of I/Os	AOa
DTTH	No	Membrane filter, exchangeable	2	2
DTTC	Yes	Membrane filter, unexchangeable	2	2
DTTHC	Yes	Membrane filter, unexchangeable	3	3

Accessories for DTTH

Article	Description
DT-FILTER	Replacement filter, polytetrafluoroethylene (PTFE)
HA010103	Replacement filter, sintered stainless steel
HA010105	Replacement filter, teflon
HA010106	Replacement filter, metal

Dimensions



[mm]

Article	L1 (mm)
DTTH	211
DTTC/DTTHC	212.5

Documentation

All documentation can be downloaded from www.regincontrols.com.