# FT-RDF18+

Room sensor temperature and humidity, flush mounting at ceiling

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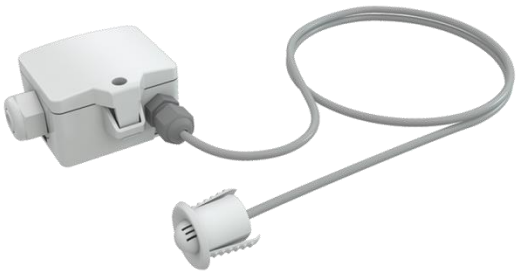
HOME OF SENSOR TECHNOLOGY

## Datasheet

Subject to technical alteration
Issue date: 06.06.2017



## Application

Ceiling sensor for unobtrusive humidity and temperature measurement in the ceiling area of room and office spaces. Designed for control and monitoring applications. Replaces FT-RDF18 with the newly developed enclosure USE-S.

## Types Available

**Ceiling sensor temperature + humidity – active VV 2x 0..10 V | AA 2x 4..20 mA**

FT-RDF18+ VV
FT-RDF18+ AA

## Security Advice – Caution

The installation and assembly of electrical equipment should only be performed by authorized personnel.

The product should only be used for the intended application. Unauthorised modifications are prohibited! The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, 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

## Notes on Disposal

As a component of a large-scale fixed installation, Thermokon products are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location, hence the Waste Electrical and Electronic Act (WEEE) is not applicable. However, most of the products may contain valuable materials that should be recycled and not disposed of as domestic waste. Please note the relevant regulations for local disposal.

## 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 has to be considered 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 Thermokon 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 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.

**Remark: Occurring draft leads to a better carrying-off of dissipative power at the sensor. Thus temporally limited fluctuations might occur upon temperature measurement.**

## Application Notice for Humidity Sensors

**Refrain from touching the sensitive humidity sensor/element. Touching the sensitive surface will void warranty.**

For standard environmental conditions re-calibration is recommended once a year to maintain the specified accuracy.

When exposed to 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 re-calibration may be required sooner than specified. Re-calibration and deterioration of the humidity sensor due to environmental conditions are not subject of the general warranty.

## Technical Data

| | | |
|---|---|---|
| Measuring values | | temperature, humidity (humidity output configurable) |
| Output voltage | VV | 2x 0..10 V, min. load 5 kΩ |
| Output Amp | AA | 2x 4..20 mA, max. Bürde 500 Ω |
| Power supply | VV | 24 V = or 24 V ~ (±20%) |
| | AA | 15..24 V = (±10%) |
| Power consumption | VV | max. 0,45 W (24 V =) \| 0,8 VA (24 V ~) |
| | AA | max. 1 W (24 V =) |
| Measuring range temperature | | adjustable at the transducer: -20..+80 \| 0..+50 \| -40..+60 \| -15..+35 °C<br>default setting: -20..+80 °C |
| Measuring range humidity | | 0..100% rH non-condensing |
| Measuring range absolute humidity | | adjustable at the transducer: 0..50 \| 0..80 g/m³<br>default setting: 0..50 g/m³ |
| Measuring range enthalpy | | 0..85 kJ/kg |
| Measuring range dew point | | adjustable at the transducer: 0..50 \| -20..+80 °C<br>default setting: 0..50 °C |
| Accuracy temperature | | ±0,5 °C (typ. at 25 °C) |
| Accuracy humidity | | ±2% between 10..90% rH (typ. at 21 °C) |
| Enclosure | | enclosure USE-S, PC, pure white, with removeable cable entry |
| Protection | | IP65 according to EN 60529, |
| | Sensor head | IP30 according to EN 60529 |
| Cable entry | | M16 for cable max. Ø=8 mm |
| Connection electrical | | removable plug-in terminal, max. 2,5 mm², connection wire sensor head to plug RJ12: PVC 0,15 m, connection wire bush RJ12 to enclosure: PVC 3 m |
| Sensor head | | ABS, white, Ø=30 mm |
| Ambient condition | | -35..+70 °C, max. 85% rH short term condensation |
| Delivery content | | incl. mounting base enclosure USE-S pure white |

## Connection Plan and Configuration

**Note** *(type FT-RDF18+ AA)*
When only using the temperature output, the humidity output must always be connected to mass/GND of the analog input module.

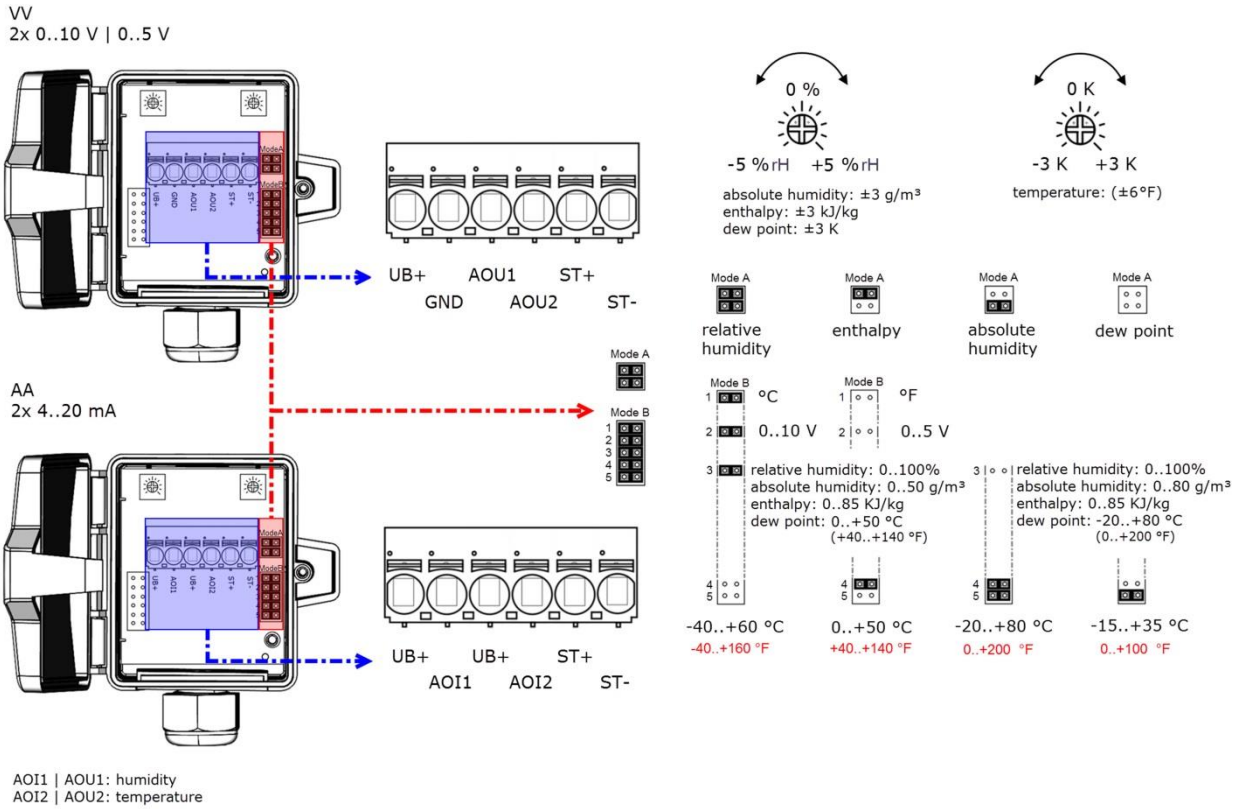
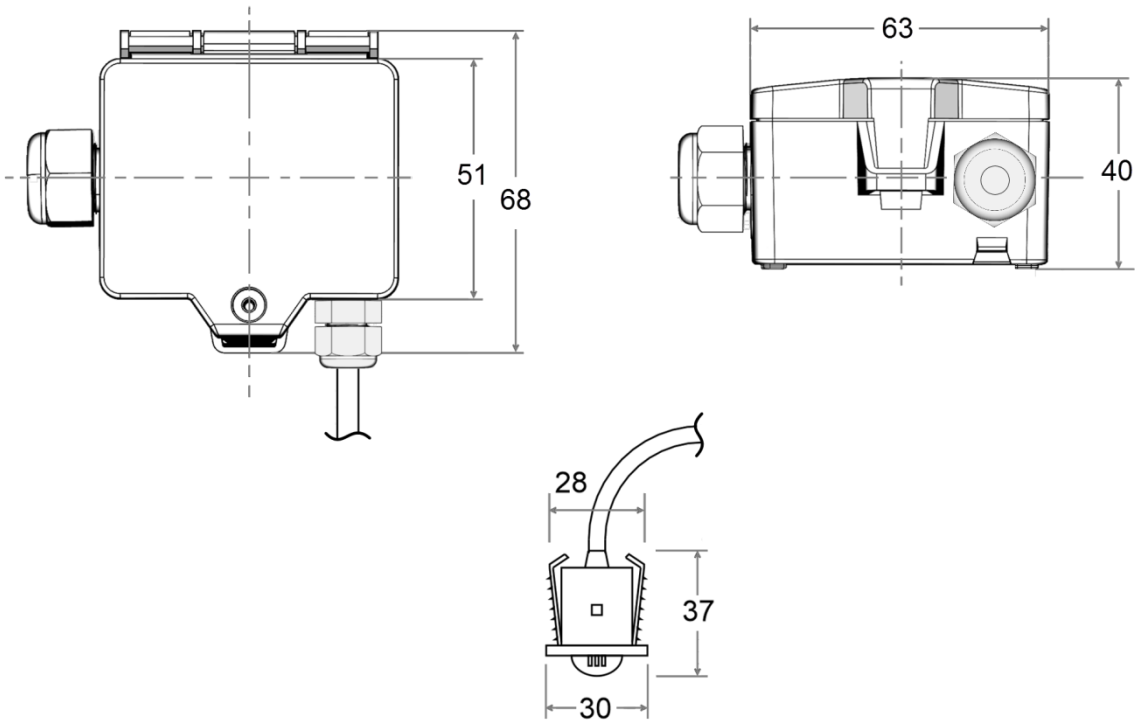



*fig. (Measuring range and offset adjustment, default settings: -20 °C..+80 °C | 0 K)*

## Dimensions (mm)




## Accessories (optional)

Mounting base enclosure USE pure white — Item No. 616430

**Sealing inserts cable entry (packaging unit 10 pcs.)** — available on request

| Ø | 3 mm | 5 mm | 7 mm | 8 mm |
|---|---|---|---|---|
| **Item No** | 641036 | 641012 | 639248 | 641340 |