RDF18+ Temp_rH

Room sensor temperature and humidity, flush mounting at ceiling

thermokon®
HOME OF SENSOR TECHNOLOGY

Datasheet

Subject to technical alteration
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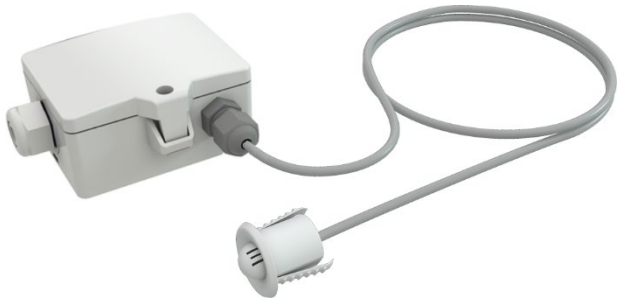


» APPLICATION

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-M.

» TYPES AVAILABLE

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

- RDF18+ Temp_rH VV
- RDF18+ Temp_rH 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

» PRODUCT TESTING AND CERTIFICATION

CE

Declaration of conformity
The declaration of conformity of the products are available on our website
https://www.thermokon.de/direct/en-gb/categories/rdf18plus

»BUILD-UP OF SELF-HEATING BY ELECTRICAL DISSIPATIVE POWER

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.

Thermokon transducers can be operated with variable operating voltages. The transducers are set at the factory with a reference operating voltage of 24 V =.

At this voltage, the expected measuring error of the output signal will be the least. Other operating voltages, can cause a measurement deviation changing power loss of the sensor electronics.

A recalibration can be carried out directly on the unit or via a software variable (app or bus).

Remark: Occurring draught 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

At regular environmental condition, it is recommended to calibrate the sensor annually to check the compliance with the accuracy required in the application. The following conditions can damage the sensor element or lead in long therm to loss of the specified accuracy:

- Mechanical stress
- Contamination (e.g. dust / fingerprints)
- Aggressive chemicals
- Ambient conditions (e.g. condensation on measuring element)

Do not touch the sensor elements!

Re-calibration or exchange of the sensor element are not subject of the general warranty.

»TECHNICAL DATA

Measuring values	temperature, humidity (humidity output configurable)	
Output voltage	**VV** 2x 0..10 V or 0..5 V, configurable via Jumper, min. load 5 kΩ	
Output ampere	**AA** 2x 4..20 mA, max. load 500 Ω	
Power supply	**VV** 15..24 V = (±10%) or 24 V ~ (±10%) SELV	**AA** 15..24 V = (±10%) SELV
Power consumption	**VV** typ. 0,4 W (24 V =) | 0,8 VA (24 V ~)	**AA** typ. 1 W (24 V =)
Measuring range temp.	adjustable at the transducer: -20..+80 | 0..+50 | -40..+60 | -15..+35 °C default setting: -20..+80 °C	
Measuring range humidity	0..100% rH non-condensing	
Measuring range abs. hum.	adjustable at the transducer: 0..50 | 0..80 g/m³, 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, default setting: 0..50 °C	
Accuracy temperature	±0,3 K (typ. at 21 °C within default measuring range)	
Accuracy humidity	±2% between 10..90% rH (typ. at 21 °C)	
Enclosure	enclosure USE-M, PC, pure white	
Protection	**enclosure** IP65 according to EN 60529	**sensor head** IP30 according to EN 60529
Cable entry	Flextherm M20, for wire Ø=4,5..9 mm, removable	
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	

» NOTES ON DISPOSAL

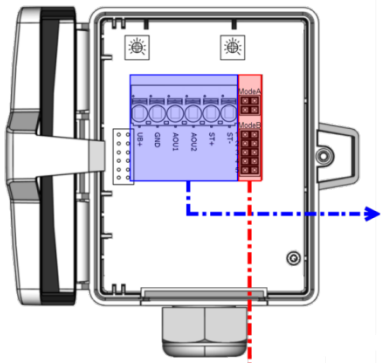
The crossed-out wheelie bin symbol indicates that the product or removable batteries must not be disposed of with household or commercial waste. Within the EU, you are legally obliged to dispose of the product separately and appropriately in accordance with the national laws of your country. Alternatively, please contact your supplier or Thermokon Sensortechnik GmbH. Further information can be found at: www.thermokon.com

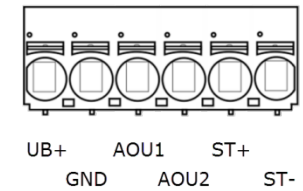
» CONNECTION PLAN AND CONFIGURATION

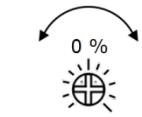
Note *(type RDF18+ Temp_rH AA)*
When only using the temperature output, the humidity output must always be connected to mass/GND of the analog input module.
fig. (Measuring range and offset adjustment, default settings: -20 °C..+80 °C | 0 K)

AOI1 | AOU1 = humidity
AOI2 | AOU2 = temperature

VV
2x 0..10 V | 0..5 V



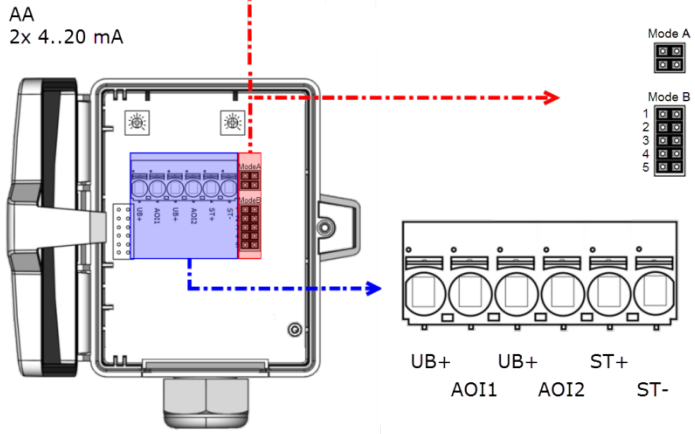


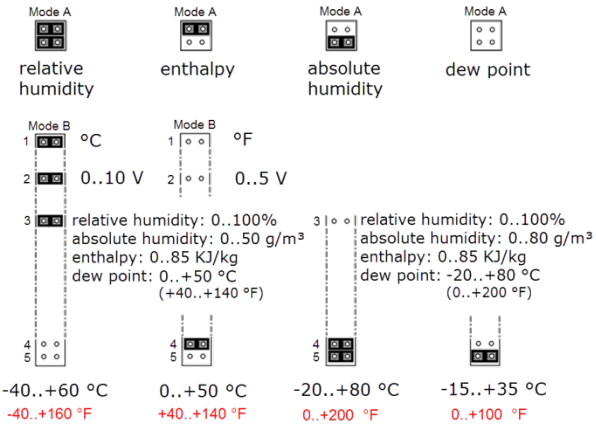


absolute humidity: ±3 g/m³
enthalpy: ±3 kJ/kg
dew point: ±3 K

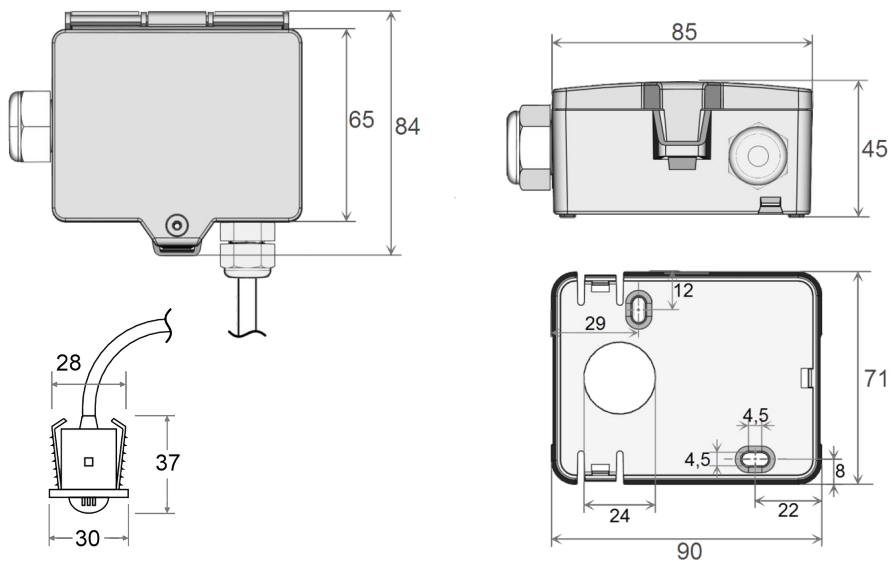
temperature: (±6°F)

AA
2x 4..20 mA





» DIMENSIONS (MM)



» ACCESSORIES (INCLUDED IN DELIVERY)

Mounting base enclosure USE pure white	Item No. 631228
Mounting kit universal	Item No. 698511

• Cover screw + screw cover• 2 Rawlplugs • 2 Screws (countersunk head) • 2 Screws (rounded head)

» ACCESSORIES (OPTIONAL)

Sealing insert M20 USE white, 2x Ø=7 mm (for 2 wire; PU 10 pieces)	Item No. 641333