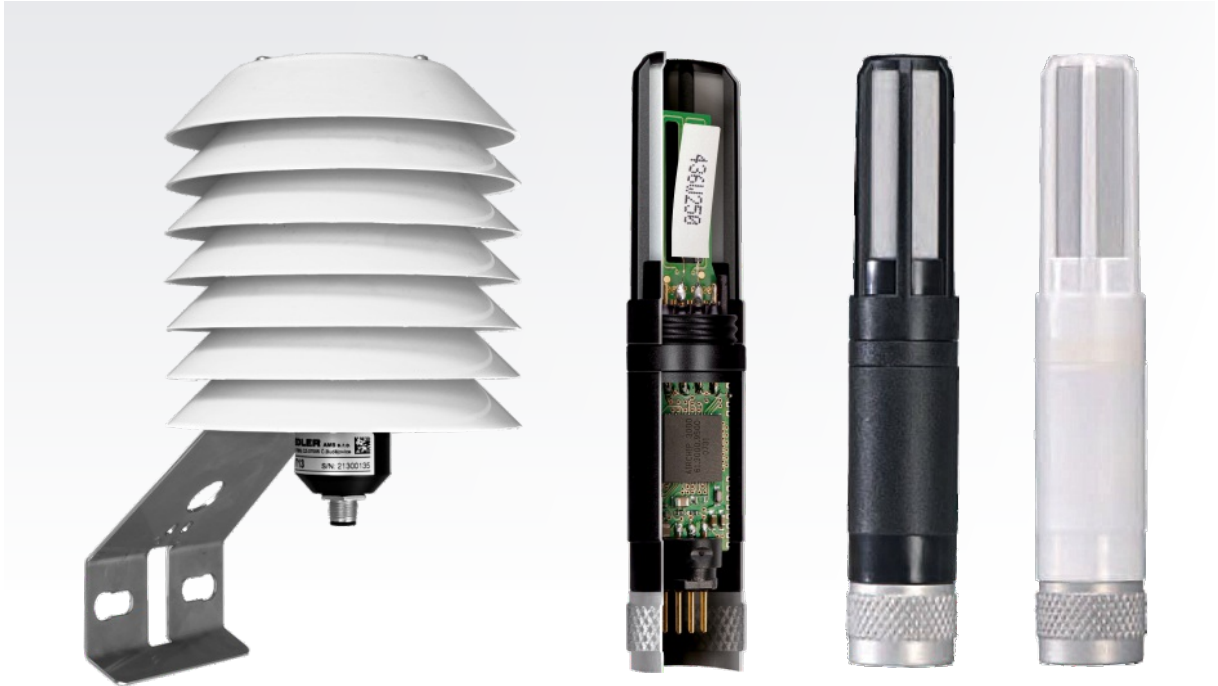


# RVT12/RK7, RVT13/RK7

## Precise sensor relative humidity and air temperature



Řez sondou  
HC2-S

HC2-S

HC2-S3

### Basic description

The RVT12 / RK7 and RVT13 / RK7 sensors are designed for accurate measurement of relative humidity and air temperature. Both sensors contain a highly reliable, accurate and stable HydroClip2 probe from the Swiss company ROTRONIC.

The sophisticated electronics contained in the probe are based on AirChip 3000 technology and in combination with modern sensor technology and high integration, these probes achieve excellent accuracy and long-term stability (it does not exceed 1% RH / year).

The RK7 radiation cover is included in the delivery of the sensor, which prevents the HydroClip2 measuring probe from direct exposure to rain and sunlight.

**The RVT12/RK5** sensor has a dual analog voltage output of 0 to 1 VDC (0..100% RH; -40 ... + 60 ° C) and requires an external supply voltage of 3.3 V ± 0.1 V for proper operation. The measurement is provided by the Hygro-Clip2 probe type HC2-S3.

**The RVT13 / RK** sensor contains the same type of probe (HC2-S3) and is intended for connection to telemetry and recording units via the RS485 digital interface under the Modbus RTU or FINET protocol. From the recording unit, the sensor is also supplied with voltage in the range of 5 to 14 VDC.

The RS485 interface allows you to connect multiple sensors to one recording station, even at a distance of up to 500m. The sensors **are** equipped with an M12 industrial connector

### Characteristic properties

- **The sensors contain unique HygroClip2 measuring probes with a ROTRONIC HYGROMER IN-1® sensor**
- **Exceptional and unrivaled accuracy over the entire measuring range 0 ... 100% RH, -40 ... 60 ° C**
- **Accuracy: ± 0.8% RH (± 0.5% RH)**
- **Temperature measurement error ± 0.1 ° C**
- **Reproducibility <0.02% RH**
- **Unique AirChip 3000 technology, internal electronic compensation at up to 30,000 points**
- **Humidity sensor self-diagnostics and automatic deviation correction**
- **Repeatability and long-term stability better than 1% RH / year**
- **Two standard voltage outputs 0..1 V for relative humidity and air temperature (RVT12 sensors) or RS485 (RVT13)**
- **The calibration coefficients stored in the probe and the connector connection allow easy interchangeability of the probes in the sensor**
- **Separately replaceable polyethylene probe filter**

# RVT12/RK7, RVT13/RK7

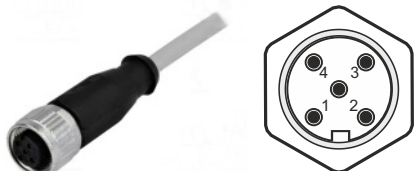
Precise sensors relative humidity and air temperature

## Measuring channels, connections RVT13/RK7

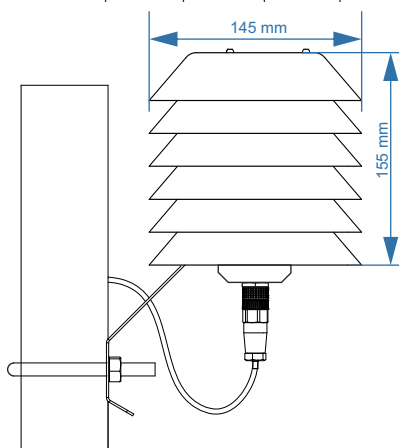
The RVT13/RK7 sensor contains 3 measuring channels. The first channel contains the relative humidity, the second channel the air temperature and the third channel the calculated dew point.

The sensors are connected to the RS485 bus via a standard industrial 4-pin M12 connector. On request, a suitable cable with an M12 connector on one side can be supplied with the sensor. The cable length can be 2 m, 5 m or 10 m. The other end of the cable has loose wires.

## Connecting connector / cable



Connector	1	2	3	4	5	
Signal	+Unap	GND	485-A	485-B	SV	
Cable	PUR - black	brown	green	yellow	white	gray
	PVC - gray	brown	white	blue	black	gr/yel

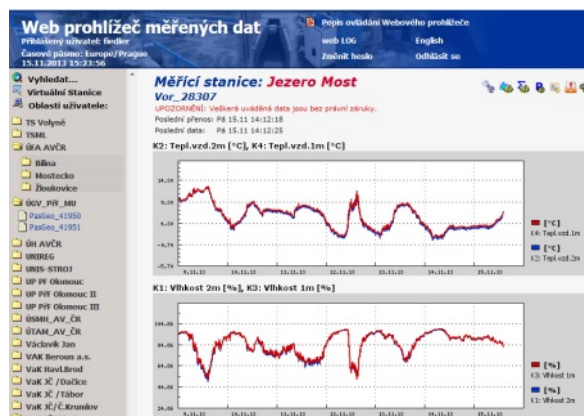


## Examples of use

Relative humidity and air temperature sensors RVT12 and RVT13 have a wide application:

- Meteorological stations, monitoring of biosystems
- Process monitoring in laboratories
- Reference sensor for verification of other sensors
- Climatic chambers and drying plants
- Sterilization processes
- Universities, development and research workplaces
- Chemical, pharmaceutical and food industries
- Intelligent building management
- Museums, depositories, warehouses,...

Sensors of the RVT13/RK series with digital RS485 output are designed mainly for meteorological stations equipped with FIEDLERAMS telemetry units. Measured data from these stations are automatically transferred via GSM/GRS network to a database on the Internet and accessible to an authorized user via a standard web browser (graphs, tabular overviews, data exports to the client's PC, prints of reports and graphical overviews, ...).



## Technical parameters:

	RVT12/RK7	RVT13/RK7
Measuring probe:	HygroClip2 type HC2-S3	
Sensor type:	ROTRONIC HYGROMER® IN-1, Pt100 class A	
Humidity measuring range:	0... 100% RH	
Measuring temperature range:	-50 ..... 100 °C	
Long-term temperature stability:	better than 1% RH; 0.1 °C / year	
Standard accuracy:	± 0.8% RH / ± 0.1 °C; 23 °C ± 5 K	
Increased accuracy (HS2-S3H probe):	± 0.5% RH / ± 0.1 °C; 23 °C ± 5 K	
Measurement reproducibility:	0.02% RH / 0.01 °C	
Response time:	<15 sec (without filter)	
Replacement probe filter:	filter with polyethylene insert, 40 µm	
Working temperature of the probe electronics:	-50... 100 °C, 0... 100% RH	
Probe dimensions:	probe diameter 15 mm, probe length 92 mm	
Sensor size ../RK:	5 shielding lamellas, diameter 145 mm, height 110 mm	
Output signal:	2 x output 0..1 V	RS485 (FINET, Modbus RTU)
Cable connection:	cable 2m (5m) connector M12, cable 5m	
Sensor supply:	3.3 VDC / 5 mA	4.5 .. 24 VDC / 8 mA