

Temperature and humidity sensor

Instrument name: Humicap-02

Instrument type: HMP45C

Manufacturer: Vaisala

Location: Institute for Geoscience, Section Meteorology, Bonn

Coordinates: Lat: 50.73052° N, Lon: 7.071663° E, Alt: 94 m asl

The Vaisala humicap detects humidity and temperature with platinum resistance temperature detector (PRT) and a capacitive relative humidity sensor.

Humicap-02 is one of two humicaps on the top roof a high rise building next to the Section Meteorology, Institute for Geoscience, University of Bonn. Humicap-01 is located at the east side of the building. Humicap-02 is located at the West side of the building. Both instrument have been installed in 2009 and operate until now.

Instrument specifications

Parameter	Specification
Operating temperature	-40 °C - +60 °C
Storage temperature	-40 °C - +80 °C
Probe length	25.4 cm
Probe body diameter	2.5 cm
Filter	0.2 µm Teflon membrane
Filter diameter	1.9 cm
Power consumption	< 4 mA at 12 V
Supply voltage	7 to 35 VDC
Settling time	0.15 s
Temperature Sensor:	
Sensor	1000 Ω PRT, IEC 751 1/3 Class B
Measurement range	-40 °C - +60 °C
Signal output range	0.008 – 1.0 V
Accuracy	±0.2 °C at 20 °C Temperature
Humidity Sensor:	
Sensor	HUMICAP 180
Measurement range	0 – 100% non-condensing
Signal output range	0.008 – 1 VDC
Accuracy	±2% relative humidity at 20 °C

Instrument time-line

02/04/2009 – today top roof of high rise building next to Section Meteorology,
Institute for Geoscience, University of Bonn, Bonn

Available measurement modes

- 1 min measurement at fixed location
- Additional temperature sensors or measurements can be requested

JOYCE-CF Standard Operation Procedures

- Continuous operation in 1 min interval at fixed location in Bonn

Data quality assurance procedures

- Raw data provided by the instrument. Quality control by operator.

Available datasets

Data can be requested via the 'Messdatenportal' (<https://www.ifgeo.uni-bonn.de/abteilungen/meteorologie/messdaten/messdatenportal>).

Additional data, measurement time, or instrumentation can be requested via the JOYCE-CF request sheets.

Level 1

- Available Data:
 - Temperature T in °C
 - Relative humidity RH in %
- Data format:
 - Temporal resolution: 1 min
 - CSV download as requested
 - File size approx. 50 kB per day

Contact

Josephin Beer
University of Bonn
Institute for Geoscience
Section Meteorology
Auf dem Hügel 20
53121 Bonn, Germany
Tel.: +49 (0)228 73-3152
E-mail: jbeer@uni-bonn.de