

Psychrometer for temperature and humidity

Instrument name: Psychro

Instrument type: 2015.0000

Manufacturer: Theodor Friedrichs

Location: Institute for Geoscience, Section Meteorology, Bonn

Coordinates: Lat: 50.731233° N, Lon: 7.070733° E, Alt: 66 m asl

The Theodor Friedrichs psychrometer measures the dry bulb temperature and the wet bulb temperature for insights and calculations of the atmospheric state in temperature and humidity. The dry bulb thermometer measures the temperature by being exposed to the air, whereas the wet bulb thermometer measures the temperature of a wet bulb dipped into distilled water. For optimal observation the sensors are radiation shielded and permanently ventilated.

The psychrometer is mounted in the back yard of the Section Meteorology, Institute for Geoscience, University of Bonn, Bonn, on an instrument mast, 2 m above the surface since 2007.

Instrument specifications

Parameter	Specification
Sensor	Pt 100 (DIN 60751 B)
Nominal resistance	100 Ω at 0 °C
Setting time in air $v = 1$ m/s	T 0.5: 23 s T 0.9: 80 s
Internal heating in air ($v = 1$ m/s)	0.13 K/mW
Dimension	190 mm x \varnothing 25 mm
Weight	0.4 kg

Instrument time-line

01/12/2006 – today 2 m above surface at backyard of 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
 - Standard deviation of T in 1 min interval
 - Wet bulb temperature T_F in °C
 - Standard deviation of T_F in 1 min interval
- Data format:
 - Temporal resolution: 1 min
 - CSV download as requested
 - File size approx. 240 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