

## WegenerNet Feldbach Region (FBR) Data Fact Sheet

(v18/23Jan2019)

**Table 1: WegenerNet FBR stations and measured parameters**

Station Group	Station Type	Meas. Parameter	Station Number(s)	Count
Base stations (139 stations)	Base stations (B)	Air temperature Air rel. humidity Precipitation	All, except station numbers BS, P, R, and AHYD	128
	Special base stations (BS)*	+Soil parameters (details see table 2)	6, 15, 19, 27, 34, 50, 54, 78, 84, 85, 99	11
Main stations (14 stations)	Primary stations (P)*	+Wind parameters (see table 2)  +Solid precipitation	11, 32, 37, 44, 72, 74, 82, 101, 132, 135, 139, 154, 155  All P except station 154	13
	Reference station (R)*	+Solid precipitation +Wind parameters +Soil parameters +Air pressure +Net radiation	77	1
External stations (2 stations)	AHYD**	Precipitation Precipitation +solid precipitation +Air temperature	152 153	2
<b>Total number of stations: 155</b>				

\* Measurement parameters: In addition to B

\*\* Stations operated by the Austrian Hydrographic Service (AHYD)

**Table 2: Overview of measured parameter groups**

Parameter group	Measured parameters
Soil parameters	All BS: Soil temperature, soil moisture (either derived from pF-Value <sup>1</sup> or measured by TDR-sensor) Some BS: pF-value, soil electric conductivity See Tables 5 and 6 for mount dates of pF and TDR sensors
Wind parameters	Wind speed, Wind direction, Wind gust, Wind gust direction

**Measurement interval** for all parameters is **5-minutes** except for pF-value soil sensors and according soil temperature (30-minutes). Since December 2017 the measurement interval at all main stations changed to 1-minute. Data from these stations are aggregated to 5-minutes in the WegenerNet data processing.

**Table 3: Derived parameters**

Parameter	Derived from	Literature
Soil moisture	pF-Value	WegNet Tech Note No.1/2013 <sup>1</sup>
Heat Index	Temperature and rel. Humidity	Schön, 2005 <sup>2</sup>

<sup>1</sup> Fuchsberger, J. and G. Kirchengast (2013): Deriving Soil Moisture from Matric Potential in the WegenerNet Climate Station Network. WegNet Tech Note No.1/2013. [http://www.wegener.net/misc/WegenerNet\\_TechNote-SoilMoisture.pdf](http://www.wegener.net/misc/WegenerNet_TechNote-SoilMoisture.pdf)

<sup>2</sup> Schoen, C. (2005). A new empirical model of the temperature-humidity index. Journal of applied meteorology, 44(9), 1413-1420.

## WegenerNet publication list

<http://wegcenter.uni-graz.at/en/wegenernet/publications/>

## WegenerNet homepage

<http://www.wegcenter.at/wegenernet>

## WegenerNet data portal

<http://www.wegenernet.org>

### Table 4: Technical equipment – sensor types

A detailed list of all WegenerNet sensors and their specification can be downloaded at the data portal at <http://www.wegenernet.org> under **STATION DATA** → **Download** → **Sensor list CSV file** and **Sensor specs CSV file**. Here a short summary:

Description	Stations	Type	Detailed Info - Manufacturer
Combined sensor for air temperature and relative humidity EE08	B*, BS*, P*, R*	EE08-05	<a href="https://www.epluse.com">https://www.epluse.com</a>
Combined sensor for air temperature and relative humidity GeoPrecision	B*, BS*, P*, R*	Temperature: PT1000 (1/3DIN B) Humidity: Sensirion SHT75	<a href="http://www.geo-precision.com">http://www.geo-precision.com</a> <a href="http://www.sensirion.com">http://www.sensirion.com</a>
Combined sensor for air temperature and relative humidity Rotronic	154*	Rotronic HC2A-S3	<a href="https://www.rotronic.com">https://www.rotronic.com</a>
Air temperature Ott	153	Ott Compact pt100	<a href="http://www.ott.com">http://www.ott.com</a>
Precipitation Meteoservis	B*, BS*, 154	Meteoservis MR3 (unheated)	<a href="http://www.meteoservis.cz/en">http://www.meteoservis.cz/en</a>
Precipitation Meteoservis heated	P*, R	Meteoservis MR3H Heating improved by Kroneis	<a href="http://www.meteoservis.cz/en">http://www.meteoservis.cz/en</a> <a href="http://www.kroneis.at">http://www.kroneis.at</a>
Precipitation Friedrichs	B*, BS*, R	Friedrichs 7041.0000 with Reed contact	<a href="http://www.th-friedrichs.de">http://www.th-friedrichs.de</a>
Precipitation Young	P*, R	Young Model 52202 H 220V	<a href="http://www.youngusa.com">http://www.youngusa.com</a>
Precipitation Ott	152 153	Ott Pluvio2 400 cm <sup>2</sup> unheated Ott Pluvio2 200 cm <sup>2</sup> heated	<a href="http://www.ott.com">http://www.ott.com</a>
pF-Meter: Combined sensor for soil temperature & matrix potential	BS*	pF-value: pF-meter soil temp.: THT-PT100 or SMD-PT1000	<a href="http://www.geo-precision.com">http://www.geo-precision.com</a>
Combined sensor for soil moisture (TDR), soil temperature and soil electric conductivity	BS*	Stevens HydraProbe II	<a href="http://www.stevenswater.com">http://www.stevenswater.com</a>
Wind sensor Gill WindSonic	P, R	Gill WindSonic	<a href="http://www.gill.co.uk">http://www.gill.co.uk</a>
Net radiometer	R	Kipp&Zonen NR Lite	<a href="http://www.kippzonen.com">http://www.kippzonen.com</a>
Air pressure sensor	R	Kroneis Type 315 K	<a href="http://www.kroneis.at">http://www.kroneis.at</a>

\* Sensors have been changed, details see Tables 5 and 6

### Table 5: Sensor exchange dates - overview

Overview of replacement dates for sensors that have been replaced by another type.

Sensor	Replacement Sensor	Stations	Period of replacement
Combined sensor for air temperature and relative humidity GeoPrecision and Rotronic	Combined sensor for air temperature and relative humidity EE08	All Stations	2017-12-01 – 2018-08-22
Precipitation Young	Precipitation Meteoservis heated	P	2013-10-07 – 2013-10-16
Precipitation Friedrichs	Precipitation Meteoservis unheated	B except 151, BS	2016-07-04 – 2016-08-29

No precipitation sensor	Precipitation Meteoservis unheated	151	2016-07-04
pF-meter	TDR sensor Stevens HydraProbe II	34, 50, 84, 85, 99 19 78 15	2013-10-23 2014-06-11 2016-11-16 2017-09-14

**Table 6: Sensor mount dates**

Mount dates for sensors that have been added to stations in addition to existing sensors.

Added Sensor	Stations	Mount date
TDR sensor Stevens HydraProbe II	27	2013-10-23
	77	2013-11-29
	54	2017-03-10

**Table 7: Exchange dates of precipitation sensors at Primary Stations**

Station No.	Date of change Young > Meteoservis MR3H
11	2013-10-07
32	2013-10-07
37	2013-10-08
44	2013-10-08
72	2013-10-15
74	2013-10-15
82	2013-10-08
101	2013-10-16
132	2013-10-15
135	2013-10-16
139	2013-10-16

**Table 8: Exchange dates of precipitation sensors at Base Stations and Special Base Stations**

Station No.	Date of change Friedrichs > Meteoservis MR3
1, 14, 18, 27, 151	2016-07-04
2, 3, 9, 10, 24, 25, 39, 40, 48, 54, 63, 64	2016-07-05
4, 5, 12, 13, 26, 41, 42, 43, 55, 56, 57	2016-07-06
6, 7, 8, 15, 16	2016-07-08
17, 19, 28, 29, 30, 31, 33, 34	2016-07-09
20, 35, 122, 129	2016-08-08
21, 22, 23, 36, 38, 51, 52, 53, 67, 68, 69, 84	2016-08-09
83, 99	2016-08-10
58, 59, 70, 71, 73, 85, 87, 88	2016-08-22
86, 98, 100, 113, 114, 115, 116, 126, 127, 128	2016-08-23
75, 89, 102, 103, 104, 110, 125, 138, 140, 148, 149, 150	2016-08-24
117, 121, 130, 131, 133, 134, 141, 142, 143	2016-08-25
111, 112, 124, 136, 137, 144, 145, 146, 147	2016-08-26
45, 60, 62, 65, 78, 80, 96, 97	2016-08-27
61, 76, 79, 90, 91, 92, 105, 106, 107, 118, 119, 120	2016-08-28
46, 47, 49, 50, 66, 81, 93, 94, 95, 108, 109, 123	2016-08-29

**Table 9: Periods of data availability**

Station Type	Data Availability
B (127 stations)	since 1 Jan 2007 (5-min-interval)
BS (12 stations)	since 1 Jan 2007 (5-min-interval, soil measurements 30-min-interval, since November 2013 5-min-interval at stations 27, 34, 50, 77, 84, 85 and 99) Soil measurement stations 50, 84, 99 since 10 Jul 2007
P (11 stations)	since 1 Jan 2007 (5-min-interval)
R (1 station)	since Sept. 2007 (5-min-interval)

	soil measurements 30-min-interval, since November 2013 5-min-interval
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**Table 10: Status of the measurement network**

<b>Meas. Parameter</b>	<b>Status</b>
Air Temperature	ok
Air Rel. Humidity	ok; defunct sensors have been replaced
Precipitation	ok
Wind parameters	ok
Soil parameters	ok; Defunct pF-Meters have been replaced by Stevens Hydraprobe
Air Pressure	Known temperature dependence; compensate by subtracting $(0.1 * T [^{\circ}\text{C}] - 2.98)$ from pressure value in hPa. With T being the 2 m air temperature at the station.
Net Radiation	ok