

DATA SET DESCRIPTION

Selected 81 stations, distributed over Germany, in the traditional KL-standard format

Version recent

Cite data set as: DWD Climate Data Center (CDC): Selected 81 stations, distributed over Germany, in the traditional KL-standard format, version recent, recent date.

INTENT OF THE DATASET

This document describes 81 stations of the freely available station data of the DWD Climate Data Center (CDC), given in the traditional standard format (KL) which had been used since the early years of data processing for climate data exchange. The intent is to serve users who depend on this special format, which will be replaced by more modern variants in the years to come. The measurements and observations given here are derived from DWD stations and legally and qualitatively equivalent partner stations operated for climatological and climate related applications. These 81 stations are selected for high quality and a rather evenly spread over Germany. The measurements were performed at the fixed observation times, the definition of which were changed several times over the years. Derived daily (mean, min, max) values are also given. In total, 36 parameters are given related to pressure, temperature, precipitation, snow cover, cloud cover, sunshine, moisture and wind.

POINT OF CONTACT

Deutscher Wetterdienst
CDC - Vertrieb Klima und Umwelt
Frankfurter Straße 135
63067 Offenbach
Tel.: + 49 (0) 69 8062-4400
Fax.: + 49 (0) 69 8062-4499
Mail: klima.vertrieb@dwd.de

DATA DESCRIPTION

Spatial coverage Germany

Temporal coverage 01.01.1876 - until yesterday

Temporal resolution hourly, subdaily, daily

Format(s) Each file corresponds to a single station. An overview over all stations and their current coordinates is given here [Stationsliste](#). Each station has two files: one with data up to 1999, and the second file with data from 2000 onwards. This split is for convenient data handling of our customers. Each line corresponds to a single time of observation. The first two letters denotes the applied format, e.g., 'KL' indicates the traditional 'kl-format' (see [formate_kl.html](#)). This 'KL' format comes with flavor 'kl90' (used up to 03/2001) and 'kl2000' (used after 04/2001), the difference of which is in the observation times and arithmetic averaging procedures as explained in [download_legende_klformat.pdf](#). Older flavors like 'kx-format' (see [formate_kx.html](#)), 'kg-format' (see [formate_kg.html](#)) and 'kf-format' (see [formate_kf.html](#)) are applied for older data. For all of these formats, allowed range is given in column 'Erlaubt', missing value codes are given in column 'Fehl' for each parameter. Parameters are described in column 'Beschreibung', the abbreviation of which is in column 'Kennung' and 'Label'. Note especially the column 'Zusatzinfo' which tells about the observation times and averaging procedures. Column 'Pos' tells the position of the parameter in each line. To decode the information, refer to [code_kl.pdf](#).

Parameters Parameters include measurements on defined hours ('Terminwerte') and daily values: pressure, air temperature at 2m above ground (mean, min, max), minimum temperature at ground level, snow cover, ice cover, wet-bulb temperature, water vapour, relative humidity, wind direction, wind speed, cloud

cover, weather phenomena, sunshine duration, visibility, soil condition, precipitation type, precipitation amount, snow cover and more snow parameters, water equivalent. For detailed definitions (in German) see here: https://opendata.dwd.de/climate_environment/CDC/observations_germany/climate/subdaily/standard_format/download_legende_klkxformat.pdf. The observations are coded as described in [code_kl.pdf](#). Measurement units are given in [formate_*.html](#).

Uncertainties The stations are a high quality subset of the full DWD station portfolio operated according to WMO guidelines. Though these guidelines aim at minimizing possible local effects, still some applications of certain parameters may require the consideration of local and regional effects.

Quality information Each value is followed by a quality byte ('Qualitäts-Byte'):

- ' ' - no quality control
- 0 - no quality control
- 1- quality controlled, confirmed, unchanged
- 2- corrected after flagged suspicious by quality control
- 3- value confirmed after flagged suspicious by quality control
- 4- value inserted from calculations (value was not provided in the original data)
- 5- flagged as suspicious in quality control, but value unchanged
- 6- formal quality control passed, not fully quality controlled
- 7- flagged as suspicious in formal quality control, full quality control not possible
- 8- missing value, not allowed in archive
- 9- missing value

DATA ORIGIN

These climate data are regularly observed with the station networks of Deutscher Wetterdienst (DWD). They are collected in the central MIRAKEL data base and archived, see Behrendt et al., 2011, und Kaspar et al., 2013. For details on the operational measurement and observation procedures see VuB 3 Beobachterhandbuch (DWD, 2014a), VuB 3 Technikerhandbuch (DWD, 2014b) and VuB 2 Wetterschlüsselhandbuch (DWD, 2013). Details on measurement procedures, averaging algorithms, observation interval definitions and time units can be found in [Beschreibung*Element*.html](#) in the column Datenquelle(Strukturversion).

VALIDATION AND UNCERTAINTY ESTIMATE

Quality control procedures completed depend on age of data. Automatic tests include tests for completeness, temporal and internal consistency, and against statistical thresholds (based on the software QualiMet, Spengler, 2002).

CONSIDERATIONS FOR APPLICATIONS

The data given here are data base extracts, which can change according to updates. Some (not all) of these parameters are available as versioned data sets from the subdirectories [historical/](https://opendata.dwd.de/climate_environment/CDC/observations_germany/climate/daily/kl/) under https://opendata.dwd.de/climate_environment/CDC/observations_germany/climate/daily/kl/ or [hourly/](https://opendata.dwd.de/climate_environment/CDC/observations_germany/climate/hourly/). In these directories, there is full access to all stations (several hundreds or thousands, depending on parameter) together with their station histories (e.g., change of coordinates) and metadata (e.g., change in measurement procedures or instruments) which have to be taken into account for studies at climate time scales.

REFERENCES

DWD Vorschriften und Betriebsunterlagen Nr. 3 (VuB 3), Beobachterhandbuch (BHB) für Wettermeldestellen des synoptisch-klimatologischen Mess- und Beobachtungsnetzes, März 2014a .

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Behrendt, J., E. Penda, A. Finkler, U. Heil, C. Polte-Rudolf: Beschreibung der Datenbasis des NKDZ. Version 3.5, Offenbach, 15.02.2011.

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Spengler, R.: The new Quality Control- and Monitoring System of the Deutscher Wetterdienst. Proceedings of the WMO Technical Conference on Meteorological and Environmental Instruments and Methods of Observation, Bratislava, 2002.

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REVISION HISTORY

This document is maintained by the National Climate Data Centre (NKDZ) of DWD, last edited 19.12.2018.