

Station description and history

Name of station: Hurbanovo (from 1948)

Stará Ďala (1920 – 1947)

Ógyalla (1872 – 1919)

WIGOS Station Identifier: 0-20000-0-11858,

Station Identifier in the SHMI climatological database: 11858,

Station Identifier in the SHMI precipitation database: 19040

Station coordinates:

Latitude: 47°52'21''

Longitude: 18°11'37''

Altitude: 115 m a. s. l. (terrain below the temperature screen)

Time zone: CET

Observation times: 6:47, 13:47, 20:47 CET

Hydrological basin: Danube river

Land cover: short grass in the meteorological garden. Park and buildings in surrounding area

Roughness classification: 6

Soil type: sandy loam

Beginning of observation: 1.1.1872

Position of the Hurbanovo city (formerly Stará Ďala, Ógyalla in Hungarian) is in the southern part of the Podunajská nížina lowland, about 20 km north of Komárno. The meteorological station is located on flat terrain inside the city near the park. The station was situated to the south of the astronomical observatory until April 1876. Later, until October 1880, it was on the north side and finally on the west side of the observatory. Since September 1900, the station is located about 300 m east in a new garden reserved for meteorological observations. In the period after 1890, the Hurbanovo meteorological station became the Central meteorological observatory for Hungary. A new two-storeyed building with a 20-meter-high observation tower was built for the observatory. In the top of the tower the instruments for measuring wind, sunlight and radiation were installed. Dr. Nicholas Konkoly-Thege started his meteorological observations in Hurbanovo already in the year 1867 using his own instruments, but the records of observations have not been preserved.

Until 1893 the observation schedule were changed several times in Hurbanovo. In the period January to May 1874 were terms of observation at 6, 14, and 22 hour, from June 1886 to the end of 1893 at 7, 13 and 21 hour. In recent years at 7, 14 and 21 hour.

Thermometer bulbs were from the beginning of observation to 1880 at a height of 1.3 m above the ground, rain gauges 2.1 m, from 1881 to 1900 were thermometers at a height of 1.1 m, rain gauges 2.0 m and since 1901 are thermometers in height 1.65 m, rain gauges 2.2 m. From 1945 is a rain gauge rim at a height of 1.0 m. The barometer is located in the observatory building at an altitude of 119.35 m above sea level. From 1.3.2006 air pressure is measured by the air pressure sensor of the automatic weather station. Wind is measured at a height of 23 m above the terrain on the tower of the observatory, where a sunshine recorder is located (22 m above the ground) as well. Sunshine duration was observed from 1.4.1893, the complete

data are available from 1912. Measurement of total snow cover is available from 1.5.1919, the depth of new snow from 1.5.1931.

Air temperature measurements at scheduled observation times were performed by a mercury thermometer. The maximum and minimum air temperatures were measured from 1.1.1877, first by Six's extreme thermometer, later the daily minimum was determined by the alcohol-in-glass minimum thermometer, the daily maximum by the mercury-in-glass maximum thermometer. Daily extremes of air temperature are read off at 9 pm CET (for the period 21-21). From 1.7.1925 was measured minimum grass temperature. Data on corrections or possible changes of devices are only sporadic in historical records. The first mention on the thermometer correction is from 1876. In January 1891 the thermometers were compared with a normal thermometer and the corrected values were recorded. The second detailed record of thermometer corrections is from February 1923. Instrument corrections have been regularly recorded since October 1977.

The original data of average daily temperatures were calculated according to the following formula $(t_7 + t_{14} + t_{21})/3$. Since 1920, daily temperature averages have been calculated using the relationship currently used $(t_7 + t_{14} + 2t_{21})/4$.

Normal observations were discontinued on 29.2.1888. From 1.3.1888 to 31.12.1888 were observed precipitation (amount, type) and air temperature at 20:00 only. Complete observation was resumed again from 1.1.1889. Other interruptions or gaps of observations are sporadic.

The first automatic weather station type ESC8800 was installed on 19.8.1992.

Until 31.12.1999, 24-hourly observations were carried out, later observations were performed only from 06:30 to 21:00 CET.

At present, measurements are carried out manually and also using the automatic weather station in parallel regime.

The instruments from Hurbanovo station are calibrated in accredited calibration laboratory according to technical standard EN ISO / IEC 17025:2005.

Electronic database of SHMI (KMIS) contains climatological data since 1961. The digital form of the time series from Hurbanovo was additionally prolonged since 1951. Data Rescue activities, focused on historical data from this station were carried out in the years 2015 – 2019. Data from Hurbanovo station were digitized for period of 1.1.1872 - 31.12.1950 obtaining data for all the term measurements and observations and after QC process were stored in the electronic database KMIS.

SHMI has a certified quality management system according to ISO 9001:2015 for monitoring of indicators characterizing the state of air and water in the territory of the Slovak Republic; evaluation, archiving and interpretation of data and information on air and water status and regime; provision of data and information on air and water status and regime.