National Centers for Environmental Information (NCEI)
DATA DOCUMENTATION FOR DATA SET 6405 (DSI-6405)
ASOS SURFACE 1-MINUTE, PAGE 1 DATA

November 8, 2022

National Centers for Environmental Information
151 Patton Ave.
Asheville, NC 28801-5001 USA

Table of Contents

Topic Page Number

1. Abstract..... 2
2. Element Names and Definitions: 2
3. Start Date..... 3
4. Stop Date..... 3
5. Coverage..... 3
6. How to obtain data..... 3
7. Known Uncorrected Problems..... 4
8. Quality Statement..... 4
9. References..... 4

1. Abstract: ASOS Surface 1-Minute Page 1 Data is digital data set DSI-6405, archived at the National Centers for Environmental Information (NCEI). This dataset includes observations for visibility extinction coefficient, 2-minute average and 5-second peak wind speed and direction, and runway visual range for approximately 900 ASOS stations in the U.S., Puerto Rico, the U.S. Virgin Islands and some Pacific island territories.

The Automated Surface Observing Systems (ASOS) program is a joint effort of the National Weather Service (NWS), the Federal Aviation Administration (FAA), and the Department of Defense (DOD). ASOS is designed to support weather forecast activities and aviation operations and, at the same time, support the needs of the meteorological, hydrological, and climatological research communities. ASOS works non-stop, updating observations every minute, 24 hours a day, every day of the year. A basic strength of ASOS is that critical aviation weather parameters are measured where they are needed most: airport runway touchdown zone(s). One-minute observations are available for some stations as early as the year 2000.

2. Element Names and Definitions:

General Information: Each data file contains data for one station-month. The filenames contain the 4-character call letter identifier (e.g. KNYC = New York Central Park, NY), the 4-digit year and two-digit month. The file extensions are ".dat".

Each element is classified as numeric [N] or alphanumeric [A] as indicated after each element name. Values recorded in numeric elements are right justified with unused positions zero-filled; signed numbers always begin with a "+" or a "-" in the left-most position. Recorded values in alphanumeric elements are left justified and unused positions are filled with blanks.

Missing and unknown values of numeric elements are generally indicated by all spaces or occasionally "[M]".

WBAN NUMBER [N]
The WBAN (Weather Bureau, Army, Navy) number is a five-digit number unique to the station.

ICAO CALL SIGN [A]
The ICAO Call Sign is a location identifier, four characters in length, and may consist of letters and numbers. Authority for assignment of numbers is coordinated with the FAA, Dept. of the Navy, Transport Canada, FCC and NWS. Call signs are left justified in the field.

STATION CALL SIGN [A]
The Call sign is a location identifier, three or four characters in length, and may consist of letters and numbers. Authority for assignment of numbers is coordinated with the FAA, Dept. of the Navy, Transport Canada, FCC and NWS. Call signs are left justified in the field.

YEAR [N]

The four-digit year of the observation with reference to Local Standard Time (LST).

MONTH [N]
The month of the observation (LST). The values may be 01 - 12.

DAY [N]
The day of the observation (LST). The values may be 01 - 31.

HOUR/Local [N]
The hour of the observation (LST). The hour is recorded on the 24-hour clock system (e.g. 3 am is 03, 3 pm is 15, midnight is 00). The hours are whole numbers and range from 00 to 23.

MINUTE/Local [N]
The minute of the observation. Observations are recorded on one-minute increments. The values may be 00, 01, 02, 03,...,58, 59.

HOUR/UTC [N]
The hour of the observation (UTC). The hour is recorded on the 24-hour clock system (e.g. 3 am is 03, 3 pm is 15, midnight is 00). The hours are whole numbers and range from 00 to 23.

MINUTE/UTC [N]
The minute of the observation. Observations are recorded on one-minute increments. The values may be 00, 01, 02, 03,...,58, 59.

DATA [A]
The meteorological data is reproduced as received from the station. In the case of truncated records, the records are buffered with spaces (" ") to maintain the 99 character fixed length format.

Sample and explanation of ASOS 1-min DSI-6405 (page1).

Example:
94789KJFK JFK2021060207401240 0.074 D 0.110 D 227 2 211 2 04R60+

WBAN #	(94789)
ICAO	(KJFK)
Call Sign	(JFK)
Year	(2021)
Month	(06)
Day	(02)
Time-Local	(0740)
Time-UTC	(1240)
Visibility Extinction Coefficient, 1st sensor	(0.074)
N = night D = day	(D)
Visibility Extinction Coeffient, 2nd sensor	(0.110)
N = night D = day	(D)
Direction of 2-minute average wind	(227)
Speed of 2-minute average wind (knots)	(2)
Direction of Maximum 5-second wind	(211)
Speed of Maximum 5-second wind (knots)	(2)
Runway	(04R)

Runway Visual Range (60+)

3. Start Date: Data begin in January 2000 for some stations.

4. Stop Date: Ongoing.

5. Coverage: Stations are located in the contiguous United States, Alaska, Hawaii, Puerto Rico, and some Pacific islands.

6. How to Obtain Data:

Recent data can be downloaded from https://www.ncei.noaa.gov/data/automated-surface-observing-system-one-minute-pg1/access/

Historical data back to the year 2000 can be downloaded from https://www.ncei.noaa.gov/pub/data/asos-onemin/ within the ./6405-*YEAR*/ subdirectories, where *YEAR* is a 4-digit year.

Customers can also contact NCEI's Customer Engagement Branch.
Phone: 828-271-4800
FAX: 828-271-4876
E-mail: NCEI.Orders@noaa.gov

7. Known Uncorrected Problems: None.

8. Quality Statement: This data set receives limited quality control at the station. A discussion of quality control procedures for sensors may be found in the ASOS User's Guide. No attempt to edit data or correct transmission errors has been made at the NCEI.

9. References: The ASOS User's guide gives specifics about the observations, instruments, etc. The guide is available at https://www.weather.gov/media/asos/aum-toc.pdf.