



Data format description of Official House Coordinates of Germany (HK-DE)

For the data distribution from the data stock of the Central Office for House Coordinates and Building Polygons (ZSHH)

Version 4.1

Updated: 11.12.2017

Valid as of the data distribution from the HK-DE data stock of 2018

1. Description of the data format

To derive the House Coordinates (HK) from ALKIS, only main buildings with house numbers are used. The distinction between main and ancillary/adjoining buildings in ALKIS is made according to the location description and the function of the building. Main buildings are all those buildings that are documented in the real estate cadastre with a location description with house number(s) or a location description with a pseudo number without a consecutive number and with a simultaneous tag as a main building in the list "Gebäudezuordnung" (building classification) (**see appendix**). This list relating to the attribute 'gebäudefunktion' (building function) ensures that buildings of secondary importance (ancillary/adjoining buildings) such as electrical substation buildings and garages are ignored.

The House Coordinates (HK) are made available as text file with latin characters in UNICODE. As the character encoding, UTF-8 is used. In addition to the house coordinates data file, the data distribution includes a decoding file by default and in some cases a recoding file. In these, comment lines are defined by # as the first character of a line.

1.1 Structure of the house coordinates data file

- | | |
|---|--------------------------------------|
| 1. Identification character of the dataset (NBA) | (letter, 1-character) |
| 2. Unique number ¹ of the data set (OI) | (string, alphanumeric, 16-character) |
| 3. Quality of the spatially referenced building address (QUA) | (letter, 1-character) |
| 4. Land key (LAN) | (string, only numeric, 2-character) |
| 5. Administrative region key (RBZ) | (string, only numeric, 1-character) |
| 6. Rural/urban district key (KRS) | (string, only numeric, 2-character) |
| 7. Municipality key (GMD) | (string, only numeric, 3-character) |
| 8. Local district key (OTT) | (string, only numeric, 4-character) |
| 9. Administrative street code (SSS) | (string, alphanumeric, 5-character) |

¹ The unique number is not used again once addresses have been deleted / once a building object is destroyed.



10. House number (HNR)	(string, only numeric, variable length)
11. Addition to house number (ADZ)	(string, alphanumeric, variable length)
12. First coordinate value UTM/ETRS89 with zone identifier Easting of UTM coordinates (ZZEEEEEE,EEE)	(fixed-point number, 8 digits before and 3 after decimal point)
13. Second coordinate value UTM/ETRS89 Northing of UTM coordinates (NNNNNNN,NNN)	(fixed-point number, 7 digits before and 3 after decimal point)
14. (Uncoded) street name (STN)	(string, variable length)
15. Postal code (PLZ) ²	(string, only numeric, 5-character)
16. Town/city name (ONM) ²	(string, variable length)
17. Addition to town/city name ²	(string, variable length)
18. Postal district (POT) ²	(string, variable length)

Notes on the data elements (DaE):

The individual data elements within the datasets are separated by a semicolon. Per dataset the separator occurs n times (n = total number of data elements minus 1; currently n = 17). For this reason, semicolons are not used in the string of a data element.

- DaE 1:
In the yearly data update, the identification character of the dataset differentiates between difference data according to new data (N), data to be erased (L) and altered data (A). Complete updates are marked with a blanket "N".
- DaE 2:
The object identifier (OI) in data element 2 is unique across Germany once ALKIS has been introduced nationwide. The OI comes into existence and ceases to exist with the lifespan of a house coordinate object. If ALKIS has not yet been introduced throughout Germany, recoding files are provided.
- DaE 3:
Data element 3 indicates the quality of the building coordinate as follows:
 - A = Official house number whose coordinate is certainly within the recorded building geometry.
 - B = Official house number whose coordinate is certainly within the area of the land parcel; a building is not certain to exist on the site.
 - C = House number internal to the real estate cadastre whose coordinate is certainly within the recorded building geometry.

² Not part of the official real estate cadaster. Source: Deutsche Post Direkt GmbH



- DaE 4, 6, 7, 8, 9:
Data elements 4, 6, 7, 8 and 9 contain leading zeros (0) if necessary.
- DaE 5, 6, 7, 8, 9:
If certain data elements are empty because of Land-specific peculiarities (e.g. no local district key available) or other circumstances (e.g. if an urban district does not contain any municipalities), the fields are padded with zeros.

This refers in particular to the keys for administrative units:

Data element no.	Number of padding zeros
5. Administrative region key	1 (0)
6. Rural/urban district key	2 (00)
7. Municipality key	3 (000)
8. Local district key	4 (0000)
9. Administrative street code	5 (00000)

- DaE 11:
If no addition to the house number exists, the field remains empty – i.e. the separator (semicolon) to the previous field is directly followed by the separator to the next field.
- DaE 12 and 13:
The coordinates are specified by default in the spatial reference system ETRS89/UTM with zone identifier in metres with a point and three decimal places. The notation of the UTM coordinates is obtained from the descriptions of the currently valid GeoInfoDok on the spatial reference system ETRS89/UTM in the respective zone 32 or 33 (currently chapter 7.1.2, no. 3, of version 6.0.1).
- DaE 14:
The official street name (STN) is specified as a string. The spelling corresponds to that of the uncoded street name in the real estate cadastre.
- DaE 17 and 18:
If for this address Deutsche Post AG has no addition to the postal town/city name or postal district, the field remains empty – i.e. the separator (semicolon) to the previous field is directly followed by the separator to the next field.



The following examples illustrate the structure of the dataset:

Example (general):

NBA;OI;QUA;LAN;RBZ;KRS;GMD;OTT;SSS;HNR;ADZ;ZZEEEEEE,EEE;NNNNNNN,NNN;STN;
PLZ;ONM;ZON;POT

Example (specific):

N;DENW000002005478;A;05;3;15;000;0000;05705;43;;32364664,130;5642408,726;Wikingerstr.;
51107;Köln;;Rath/Heumar

N;DENW000001885656;A;05;3;15;000;0000;00748;18;a;32366661,335;5642916,518;Donarstraße
;51107;Köln;;Rath/Heumar

1.2 Structure of the decoding file

For decoding the municipality indicator contained in data elements 4 to 7 (LAN/RBZ/KRS/GMD) and the local district if applicable (OTT in data element 8), there are Land-specific decoding files. The datasets contained in the decoding files are described by identification characters (e.g. L for “Land”) and defined by the numerical and full text meanings of the keys (e.g. L;05;Nordrhein-Westfalen).

The structure of this decoding file is as follows, although the order of the datasets is arbitrary:

Land data set	L;05;Nordrhein-Westfalen
Administrative region datasets	R;05;1;Düsseldorf (1 dataset per administrative region)
Rural/urban district datasets	K;05;1;66;Viersen (1 dataset per rural/urban district)
Municipality datasets	G;05;1;66;016;Nettetal (1 dataset per municipality)
If applicable:	
Local district datasets	O;05;1;11;000;0001;Düsseldorf-Teil (1 dataset per local district)

The individual data elements within the datasets are separated by a semicolon.



Appendix to the data format description HK-DE version 4.0
Definition of main buildings for which an HK is derived from ALKIS
Updated: 01.04.2015

Buildings with a location description with a house number (all building functions) are always main buildings.

Buildings with a location description with a pseudo number and consecutive number are always ancillary/adjoining buildings.

Buildings that have a location description with a pseudo number without a consecutive number are only main buildings in the cases marked.

Building function	Value type	H = main building	N = ancillary/ adjoining building
Residential building	1000	H	
Residential house	1010	H	
Hostel, residential accommodation	1020	H	
Children's home	1021	H	
Retirement home	1022	H	
Nurses' home	1023	H	
Hall of residence, student hostel, school boarding house	1024	H	
Rural centre for residential school trips	1025	H	
Mixed-use building with residential part	1100	H	
Residential building with public facilities	1110	H	
Residential building with commerce and services	1120	H	
Residential and administrative building	1121	H	
Residential and office building	1122	H	
Residential and business building	1123	H	
Residential building with trade and industry	1130	H	
Residential and company building	1131	H	
Agricultural and forestry residential building	1210	H	
Agricultural and forestry residential and company building	1220	H	
Farmhouse	1221	H	
Residential and farm building	1222	H	
Forester's house	1223	H	
Building for leisure activities	1310	H	
Holiday home	1311	H	
Weekend home	1312	H	
Summer house	1313		N
Building for industry or trade	2000	H	
Building for commerce and services	2010	H	
Office building	2020	H	
Bank	2030	H	
Insurance	2040	H	
Business building	2050	H	
Department store	2051	H	
Shopping centre	2052	H	
Indoor market	2053	H	
Shop	2054	H	



Kiosk	2055	H	
Pharmacy	2056	H	
Exhibition hall	2060	H	
Building for accommodation	2070	H	
Hotel, motel, guesthouse	2071	H	
Youth hostel	2072	H	
Hut (with overnight accommodation)	2073	H	
Campsite building	2074	H	
Building for the provision of food and drink	2080	H	
Pub, restaurant	2081	H	
Hut (without overnight accommodation)	2082	H	
Canteen	2083	H	
Place of leisure and entertainment	2090	H	
Ballroom	2091	H	
Cinema	2092	H	
Skittle alley, bowling alley	2093	H	
Casino	2094	H	
Building for trade and industry	2100	H	
Production building	2110	H	
Factory	2111	H	
Company building	2112	H	
Brewery	2113	H	
Distillery	2114	H	
Workshop	2120	H	
Sawmill	2121	H	
Petrol station	2130	H	
Car wash, wash bay, vehicle washing facility	2131	H	
Building for storing supplies	2140	H	
Cold storage building	2141	H	
Storage building	2142	H	
Warehouse, storage shed, storage depot	2143	H	
Haulage building	2150	H	
Building for research purposes	2160	H	
Building for raw material extraction	2170	H	
Mine	2171	H	
Salt works	2172		N
Building for company social/welfare facilities	2180	H	
Other building for trade and industry	2200	H	
Mill	2210	H	
Windmill	2211	H	
Watermill	2212	H	
Pumping station for drainage	2213	H	
Weather station	2220		N
Building for commerce and services with residential part	2310	H	
Building for trade and industry with residential part	2320	H	
Company building for transport facilities (general)	2400	H	
Company building for road traffic	2410	H	
Road maintenance depot	2411	H	
Waiting room	2412	H	
Company building for rail transport	2420	H	
Railway gatekeeper's cabin	2421	H	



Engine shed, carriage depot	2422	H	
Signal box, block post	2423		N
Company building of a goods station	2424	H	
Company building for air traffic	2430	H	
Hangar	2431	H	
Company building for shipping traffic	2440	H	
Shipyard (hall)	2441	H	
Dock (hall)	2442	H	
Company building for a lock	2443	H	
Boathouse	2444		N
Company building for a cable car or funicular	2450	H	
Engine house for a cable car or funicular	2451	H	
Building for parking	2460		N
Multistorey car park	2461	H	
Parking deck	2462		N
Garage	2463		N
Vehicle depot	2464	H	
Underground car park	2465	H	
Building for supply	2500	H	
Building for energy supply	2501	H	
Building for water supply	2510	H	
Waterworks	2511	H	
Pumping station	2512	H	
Water tank	2513		N
Building for electricity supply	2520	H	
Electric power station	2521	H	
Transformer station	2522	H	
Converter	2523		N
Reactor building	2527	H	
Turbine house	2528	H	
Boiler house	2529	H	
Building for telecommunications	2540	H	
Building by underground cables	2560	H	
Building for gas supply	2570	H	
Gas works	2571	H	
Heating plant	2580	H	
Building for supply system	2590	H	
Pumping station (not for water supply)	2591	H	
Building for waste disposal	2600	H	
Building for sewage disposal	2610	H	
Building of sewage plant	2611	H	
Toilet	2612		N
Building for waste management	2620	H	
Waste bunker	2621		N
Building for waste incineration	2622	H	
Building of waste disposal site	2623	H	
Building for agriculture and forestry	2700	H	
Agricultural and forestry company building	2720		N
Barn	2721		N
Shed	2723		N
Building for livestock	2724		N
Barn and building for livestock	2726		N



Building for large-scale livestock farming	2727		N
Indoor riding arena	2728		N
Farm building	2729		N
Chalet	2732		N
Hunting lodge, hunting cabin	2735		N
Hothouse, greenhouse	2740		N
Hothouse	2741		N
Greenhouse, moveable	2742		N
Building for public purposes	3000	H	
Administrative building	3010	H	
Parliament building	3011	H	
Town hall	3012	H	
Post office	3013	H	
Customs office	3014	H	
Court	3015	H	
Embassy, consulate	3016	H	
Rural/urban district administration	3017	H	
Regional government	3018	H	
Tax office	3019	H	
Building for education and research	3020	H	
General education school	3021	H	
Vocational school	3022	H	
Building for higher education (university, college, university of applied sciences)	3023	H	
Research institute	3024	H	
Building for cultural purposes	3030	H	
Mansion, palace	3031	H	
Theatre, opera house	3032	H	
Concert building	3033	H	
Museum	3034	H	
Radio broadcasting, television broadcasting	3035	H	
Event building	3036	H	
Library	3037	H	
(Fortified) castle, fortress	3038	H	
Building for religious purposes	3040	H	
Church	3041	H	
Synagogue	3042	H	
Chapel	3043	H	
Parish hall	3044	H	
Place of worship	3045	H	
Mosque	3046	H	
Temple	3047	H	
Monastery, convent, abbey	3048	H	
Building for health services	3050	H	
Hospital	3051	H	
Medical institution, psychiatric hospital, nursing home, nursing ward	3052	H	
Doctor's surgery, health centre, outpatients' clinic	3053	H	
Building for social purposes	3060	H	
Youth leisure centre	3061	H	
Youth leisure hostel, club house, village hall, community centre	3062	H	



Recreation centre for senior citizens	3063	H	
Hostel for the homeless	3064	H	
Crèche, nursery, day-care centre for children	3065	H	
Home for asylum seekers	3066	H	
Building for security and order	3070	H	
Police	3071	H	
Fire service	3072	H	
Barracks	3073	H	
Protective bunker	3074	H	
Place of detention	3075	H	
Cemetery building	3080	H	
Funeral hall	3081	H	
Crematorium	3082	H	
Passenger reception building	3090	H	
Station building	3091	H	
Airport building	3092	H	
Building for underground station	3094	H	
Building for suburban train station	3095	H	
Building for bus station	3097	H	
Passenger reception building for travel by ship	3098	H	
Building for public purposes with residential part	3100	H	
Building for recreational purposes	3200	H	
Building for sports purposes	3210	H	
Sports hall, gymnasium	3211	H	
Building for sports ground	3212	H	
Swimming pool building	3220	H	
Indoor swimming pool	3221	H	
Building in open air swimming pool complex	3222	H	
Building in stadium	3230	H	
Building for the health spa business	3240	H	
Swimming pool building for medical purposes	3241	H	
Sanatorium	3242	H	
Building in zoo	3260		N
Reception building of a zoo	3261	H	
Aquarium, terrarium, aviary	3262		N
Menagerie building, animal show building	3263		N
Animal house in zoo	3264		N
Building in botanical garden	3270		N
Reception building of botanical garden	3271	H	
Greenhouse (botany)	3272		N
Plant exhibition building	3273		N
Building for other recreational institution	3280	H	
Emergency (mountain) shelter	3281		N
Tourist information centre	3290	H	
Not specifiable from existing sources	9998		N