# MICROCLIMATE SENSOR READINGS

## Data Dictionary Attachment

## Data Dictionary Field Information

The table below contains general information about the dataset: field names, descriptions, types, size and related notes.

| Field Name | Caption | Data Type | Field Size | Notes |
|---|---|---|---|---|
| Id | Unique id for each record in the dataset | Number | | |
| Site_id | Unique id referring to the location of the sensor device | Text | | Used to link to the spatial locations provided in the Microclimate Sensor Locations dataset. |
| Gateway_hub_id | Unique sensor device id | Text | | One sensor device will contain multiple microclimate sensors. Used in combination with the site_id to link the location of the sensor device provided in the Microclimate Sensors Locations dataset. |
| sensor_id | Unique Sensor ID | Text | 32 | Each sensor device contains many microclimate sensors |
| Local_time | Date/Time of reading in UTC | Text | 24 | ISO 8601 Format: yyyy-mm-ddThh:mm:ss+/-hhmm |
| type | Name of sensor type | Text | 32 | See all data types below table. |
| value | Sensor Value | Text | 10 | See list of types for formats, min and max values in below table. |
| units | Units of measurement | Text | 32 | See all units of measurement in below table. |

# Data Types

The table below shows information about the sensor reading types, units and expected minimum and maximum values.

| Sensor_id | Type | Value Min | Value Max | Sensor Description | Units |
|---|---|---|---|---|---|
| 5a | TPH.TEMP | -40.00 | 85.00 | Ambient Air Temperature | °C |
| 5b | TPH.RH | 0.00 | 100.00 | Relative Humidity | % |
| 5c | TPH.PRESSURE | 10.0 | 2000.0 | Barometric Pressure | hPa |
| 0a | PM2.5 | 0.0 | 999.9 | Mass density of particles in the air smaller than 2.5 micrometers in diameter | µg/m$^3$ |
| 0b | PM10 | 0.0 | 1999.9 | Mass density of particles in the air smaller than 10 micrometers in diameter | µg/m$^3$ |
| 6 | WS | 0.00 | 160.00 | Average Wind Speed | km/h |
| 5a.EPA-1hr | TPH.TEMP-EPA-1h | -40.00 | 85.00 | Ambient Air Temperature, 1 hour averaged | °C |
| 5b.EPA-1hr | TPH.RH-EPA-1h | 0.00 | 100.00 | Relative Humidity, 1 hour averaged | % |
| 0a.EPA-1h | PM2.5-EPA-1h | 0.0 | 999.9 | Mass density of particles in the air smaller than 2.5 micrometers in diameter, 1 hour averaged. | µg/m$^3$ |
| 0a.EPA-24h | PM2.5-EPA-24h | 0.0 | 999.9 | Mass density of particles in the air smaller than 2.5 micrometers in diameter, 24 hour rolling average | µg/m$^3$ |
| 0b.EPA-1h | PM10-EPA-1h | 0.0 | 1999.9 | Mass density of particles in the air smaller than 10 micrometers in diameter, 1 hour averaged | µg/m$^3$ |
| 0b.EPA-24h | PM10-EPA-24h | 0.0 | 1999.9 | Mass density of particles in the air smaller than 10 micrometers in diameter, 24 hour rolling average | µg/m$^3$ |

| Sensor_id | Type | Value Min | Value Max | Sensor Description | Units |
|---|---|---|---|---|---|
| 0a.EPA-1h.PKIND | PM2.5-EPA-1h-PKIND | | | Indicates for type PM2.5-EPA-1h, that one of the readings in this hour was erroneous (0 = erroneous, 1 = good).<br><br>Used to flag where confidence in reading is low, based on moisture in the air can sometimes case the reading to erroneously go high. | 0/1 |
| 0a.EPA-1h.NOPK | PM2.5-EPA-1h-NOPK | 0.0 | 999.9 | Same as type PM2.5-EPA-1h but it ignores the erroneous readings. | µg/m$^3$ |
| 0a.EPA-1h.NOPK.EPA-24h | PM2.5-EPA-1h-NOPK-EPA-24h | 0.0 | 999.9 | Indicates PM2.5 data is 24 hour rolling average of the 1 hour data that excludes erroneous data. | µg/m$^3$ |
| 0b.EPA-1h.PKIND | PM10-EPA-1h-PKIND | | | Indicates for PM10-EPA-1h, that one of the readings in this hour was erroneous (0 = erroneous, 1 = good).<br><br>Used to flag where confidence in reading is low, based on moisture in the air can sometimes case the reading to erroneously go high. | 0/1 |
| 0b. EPA-1h.NOPK | 10-EPA-1h-NOPK | 0.0 | 1999.9 | Same as type PM10-EPA-1h but it ignores the erroneous readings. | µg/m$^3$ |
| 0b.EPA-1h.NOPK.EPA-24h | PM10-EPA-1h-NOPK-EPA-24h | 0.0 | 1999.9 | Indicates PM10 data is 24 hour rolling average of the 1 hour data that excludes erroneous data. | µg/m$^3$ |