Manual API Meetdata.nl

API version 1

Version	1.2
Date	01-04-2022

Version log

Version log	Date	Comment
1.0	30-8-2018	Manual for the new API of Meetdata.nl.
1.2	01-04-2022	Error handling (par 1.5), object masterData (par 2.2)
		Status and origin (par 3.2), Request invoice values (par 3.2)

Contents

1 Information for API users Meetdata.nl

You can use the API to import your meter list and meter data into your own system. In order to do so, you need a username and password that you can create on the Kenter Client Portal. This document contains the technical information you require to retrieve data and to process data from the API.

The structure or attributes of the objects may be further developed in the future, or will change. We advise you to take this into account when creating your software.

If you have questions or comments with regard to the possibilities for data access or if you have technical questions, please contact Kenter.

1.1 Technical description

You will receive all answers in JSON.

Several requests may be made.

- You can request your list of connections, meters and channels
- For each meter, you can request the meter data per month or per day

There are various urls for this.
The API version is indicated on the first page and in the footnotes of this manual.

1. Retrieving meter list: *https://webapi.meetdata.nl/api/{{API Versie}}/meters*

2. Retrieving meter data: *https://webapi.meetdata.nl/api/{{API Versie}}/measurements/{{connectionId}}/{{meteringPointId}}/{{year}}/{{month}}*
or
https://webapi.meetdata.nl/api/{{API Versie}}/measurements/{{connectionId}}/{{meteringPointId}}/{{year}}/{{month}}/{{day}}

These are described in more detail on the following pages.

1.2 Recommended times

Measurement data is only requested at night. That is why we recommend requesting the data between 9:00 and 12:00 (the later, the greater the chance of complete data from the previous day).

1.3 Fair use policy

In order to be able to provide the API free of charge, a fair use policy applies to its use. In case of excessive use, for example the retrieval of the total history of metering points several times within a short period, Kenter may charge the costs to you.

1.4 Authentication

Before you can use the API, you require authentication. This is done by means of your username and the password that you have created on the Client Portal. You need to enter these for every API call. You are required to convert your username and password to a base64 value with a colon (:) in between.
The header you need to send will look like this:

“Authorization: Basic {{base64(username + ‘:’ + password)}}“

1.5 Error handling

Errors processed by us will be returned to you in the following format:
{
"code": 401,
"message": "Bad login credentials"
}
We know the following error codes:
• 200 OK: With a correct query of the API. The result is an array [..], which can also be empty.
• 401 Unauthorized Username: If the username are the password.
• 404 Not Found: When a measurement point of ean for which the user is not designed is of which does not exist.

2 Retrieving results Meter list

The url for retrieving the meter list via API version 1 is:
https://webapi.meetdata.nl/api/1/meters

2.1 Input

- User credentials as base64 value

2.2 Result

The result of the meter list has the following structure:

	Connection	
field	connectionId	meteringPoints
type of data	*VARCHAR(64)*	*VARCHAR(64)*
output	*(various)*	*(various)*
description	Level of connection based on the EAN code or alternative feature	Metering list

	meteringPoint (meetpunt)						
field	productType	meteringPointType[1]	relatedMetering PointId	meteringPointId	meterNumber	channels	masterData
Type of data	*VARCHAR*	*VARCHAR*	*VARCHAR*	*VARCHAR*	*VARCHAR*	*array*	*array*
output	C = Cooling, E = Electricity, G = Gas, H = Heat, W = Water, X = Combi	OP = Transfer point BP = Gross production TM = Intermediate metering	*(diversen)*	*(diversen)*	*(diversen)*	*(diversen)*	*(diversen)*
description	Producttype	Type of metering. Only for virtual metering point.	Relationship with 'parent' metering point	Physical or virtual meterin point.	Meter number. Only for physical metering point.	List of channels	List of master data

	Channel		
Field	channel	unit[2]	direction
type of data	*VARCHAR(32)*	*VARCHAR(32)*	*VARCHAR(32)*
output	*(various)*	A = ampere KWH = kilowatt hour KW = kilowatt M3 = cubic meter W = watt	LVR = supply TLV = feed-in NET = nett (LVR-TLV) (empty) = other
description	Channel ID	Unit	Phase (for PQ)

[1] Other options: KP (Coupling point), NP (Nett production), TB (Permissible business consumption)
[2] In addition, the following occurs sporadically: %, GJ, KVARH, PF, V

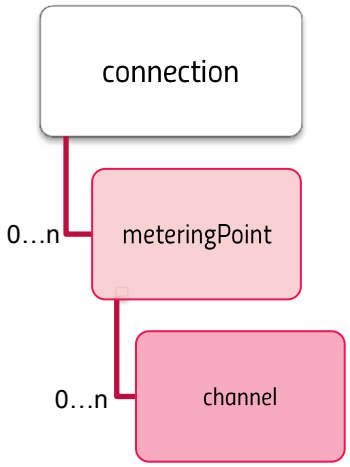
	masterData						
field	customName	Status	contractCapacity	Adress & city	bpCode & bpName	Authorizedfrom & authorizeduntil	source
Type of data	*VARCHAR*	*VARCHAR*	*VARCHAR*	*VARCHAR*	*VARCHAR*	*VARCHAR*	*VARCHAR*
output	Self-chosen name in Meetdata.nl portal.	active, in malfunction, In treatment	*(diversen)*	*(diversen)*	*(diversen)*	*(diversen)*	contract_ meetdata_nl, authorization
description		Connection status	Contracted Transport Capacity	Street name and place name	Customer number and name of the contracted party	Start and end date of the period over which the contract or authorization runs	Basis for requesting the data. Other output may be ignored

The meter list consists of an array of objects. This array can contain 0-n objects.

A meteringPoint may cover both an individual meter and an aggregated set of meters, depending on the situation at the specific location. See chapter 5. The field RelatedMeteringPointId is filled when, at physical metering points, another metering point (often virtually) is hierarchically above the requested metering point. In this way you gain an insight into the structure of the metering points.

The result of a correctly executed request for the meter list will look as follows:


```
[
{
    "connectionId": "871690910000005949H",
    "meteringPoints": [
       {
          "meteringPointId": "8009759102",
          "productType": "E",
          "meteringPointType": "",
          "meterNumber": "90RU002702188108",
          "relatedMeteringPointId": "6500034816 ",
          "channels": [
              {
                  "channel": "11180",
                  "unit": "KWH",
                  "direction": "LVR"
              },
              {
                  "channel": "10180",
                  "unit": "KWH",
                  "direction": "LVR"
              },
              {
                  "channel": "11160",
                  "unit": "KW",
                  "direction": "LV"
```

```
            },
            {
                  "channel": "11181",
                "unit": "KWH",
                  "direction": "LVR"
            },
            {
                  "channel": "11182",
                "unit": "KWH",
                  "direction": "LVR"
            }
         ]
      }
   ]
}]
```


3 Result retrieving meter data

You can retrieve the meter data per month or per day.

The url for retrieving the meter data per month via API version 1 is:
https://webapi.meetdata.nl/api/1/measurements/{{connectionId}}/{{meteringPointId}}/{{year}}/{{month}}

The url for retrieving the meter data per day via API version 1 is:
https://webapi.meetdata.nl/api/1/measurements/{{connectionId}}/{{meteringPointId}}/{{year}}/{{month}}/{{day}}

In approximately 1% of the cases, meter data is still being repaired (and therefore adjusted) after initial registration. With regard to electricity, repair can take place up to about 14 days back and for gas this is up to about 50 days back. In addition, meter data can sometimes come in with a day's delay, for example in case of a malfunction.
For this reason, you have the option to view meter data of longer ago, to verify that the data is complete and up-to-date.
For example, you can, as a standard, request the data of up to 3 days ago for the daily request, and once a week you can request a complete current + last month overview and have your previous data overwritten.

3.1 Input

- connectionId (e.g. 8716909100000059XXX)
- meteringPointId (e.g. 8009759XXX)
- year (e.g. 2018)
- month (1 up to and including 12 for the corresponding month)
- day (1 up to and including 31 for the corresponding day)

3.2 Result

The measurement data also consists of a list of 0 to n channels. Within each channel, an array of measurement data is returned. It has the following structure:

	masterData			
field	origin	Status	timestamp	value
Type of data	*VARCHAR*	*VARCHAR*	*BIGINT*	*Decimal*
output	m = measured, e = estimated, c = calculated u = unknown	v = valid, i = not valid, m = manually approved	*(diversen)*	*(diversen)*
description			Timestamp in Unix Time Stamp format in UTC time zone. Consumption refers to the end of the period. Does not include summer/winter time.	Consumption

In chapter 4 you can find an overview of the possible channels mentioned herein.

When you request a day, you get the available interval data for the requested period. Monthly values work slightly differently, because in most cases these will be recorded with a timestamp on the 1st of the new month, where the value relates to the consumption of the previous month.

Example: If you request January 1, 2022, you will get the monthly values back with a timestamp of February 1, 2022. The measured values you get back relate to the month of January.

Note: you will not receive a result of measurement data for all channels every day. This partly depends on the frequency of reading. See also the frequency column in the overview table in chapter 4.

Since May 2019, the measurement data in Meetdata.nl has also been enriched with information about the origin and validation status. This allows you to recognize from these characteristics which data has an increased chance of being corrected again at a later time. This way you can more selectively request the data that you know needs to be adjusted again.

4 Channel list

Below you will find an explanation of the possible channels that you can find at the API of Meetdata.nl.

It is possible that the above list with channels will be expanded in the future. We advise you to take this into account when creating your software.

Terms:

E	Electricity
G	Gas
OP	Transfer point metering (Main metering)
BP	Gross production metering
TM	Intermediate metering
G2C	Connection ≥ 40 m3 / hour, annual consumption ≤ 170.000 m3
GXX	Connection ≥ 40 m3 / hour, annual consumption > 170.000 and ≤ 1.000.000 m3
GGV	Connection ≥ 40 m3 / hour, annual consumption > 1.000.000 m3 over the previous 36 months

4.1 Most common channels

The table below lists the most common channels for Electricity and Gas:

Channel number	Description	Energy type	Unit	Interval	Only occurs at	Metering field / Metering location	Note
10180	Supply	E	KWH	5/15 min	OP, BP, TM	Metering field	Consumption from meter
10280	Feed-in	E	KWH	5/15 min	OP, BP, TM	Metering field	Consumption from meter
10380	Supply reactive power	E	KVARH	5/15 min	OP	Metering field	Consumption from meter
10480	Feed-in reactive power	E	KVARH	5/15 min	OP	Metering field	Consumption from meter
11160	Peak capacity supply	E	KW	15 min	OP	Metering field	Max. quarter-hourly demand from meter
11180	Meter reading total supply	E	KWH	month	BP	Metering field	Reading from meter
11181	Meter reading low rate supply	E	KWH	month	OP	Metering field	Reading from meter
11182	Meter reading high rate supply	E	KWH	month	OP	Metering field	Reading from meter
11260	Peak capacity feed-in	E	KW	15 min	OP	Metering field	Max. quarter-hourly demand from meter
11280	Meter reading feed-in total	E	KWH	month	BP	Metering field	Reading from meter
11281	Meter reading feed-in low rate	E	KWH	month	OP	Metering field	Reading from meter
11282	Meter reading feed-in high rate	E	KWH	month	OP	Metering field	Reading from meter
11381	Meter reading feed-in reactive power low rate	E	KVARH	month	OP	Metering field	Reading from meter
11382	Meter reading feed-in reactive power high rate	E	KVARH	month	OP	Metering field	Reading from meter
16080	Nett consumption for allocation	E	KWH	15 min	OP > 100kW	Metering location	Nett = supply (16180) – feed-in (16280)

16180	Supply for allocation	E	KWH	15 min	OP > 100kW	Metering location	Consumption with transformer correction factor
16280	Feed-in for allocation	E	KWH	15 min	OP > 100kW	Metering location	Consumption with transformer correction factor
18160	Peak power supply for invoicing	E	KW	15 min	OP	Metering location	Max. quarter-hourly demand with transformer correction factor
18180	Supply for invoicing	E	KWH	month	BP	Metering location	Consumption with transformer correction factor
18181	Low rate supply for invoicing	E	KWH	month	OP	Metering location	Consumption with transformer correction factor
18182	High rate supply for invoicing	E	KWH	month	OP	Metering location	Consumption with transformer correction factor
18280	Feed-in for invoicing	E	KWH	month	BP	Metering location	Consumption with transformer correction factor
18281	Feed-in low rate for invoicing	E	KWH	month	OP	Metering location	Consumption with transformer correction factor
18282	Feed-in high rate for invoicing	E	KWH	month	OP	Metering location	Consumption with transformer correction factor
18381	Supply reactive power low rate for invoicing	E	KVARH	month	OP	Metering location	Consumption with transformer correction factor
18382	Supply reactive power high rate for invoicing	E	KVARH	month	OP	Metering location	Consumption with transformer correction factor
70180	Supply	G	M3	15/60 min		Metering field	Corrected volume from EVHI
70280	Feed-in	G	M3	15/60 min		Metering field	Uncorrected volume from EVHI
70380	Supply	G	M3	15/60 min		Metering field	Uncorrected volume from meter
70480	Feed-in	G	M3	15/60 min		Metering field	Uncorrected volume from meter
71180	Meter reading supply	G	M3	month		Metering field	Corrected volume from EVHI
71280	Meter reading feed-in	G	M3	month		Metering field	Corrected volume from EVHI
71380	Meter reading feed-in	G	M3	month		Metering field	Uncorrected volume from meter
71480	Meter reading feed-in	G	M3	month		Metering field	Uncorrected volume from meter
76180	Supply for invoicing	G	M3	60 min	GXX, GGV	Metering location	Uncorrected volume with gas correction factor or from EVHI
76280	Feed-in for invoicing	G	M3	60 min	GXX, GGV	Metering location	Corrected volume with gas correction factor or from EVHI
78180	Supply for invoicing	G	M3	month	G2C	Metering location	Corrected monthly volume with gas correction factor or from EVHI
78280	Feed-in for invoicing	G	M3	month	G2C	Metering location	Corrected monthly volume with gas correction factor

							or from EVHI

4.2 Additional channels

In the table below you will find additional channels for Power Quality, heating, cooling and water:

Terms:
E Electricity
W Water
H Heating
C Cooling
PQ Power Quality

Channel number	Description	Energy type	Unit	Interval	Only occurs at	Metering field / Metering location	Note
20335	Power factor L1	E	PF	5/15 min	PQ	Metering field	
20535	Power factor L2	E	PF	5/15 min	PQ	Metering field	
20735	Power factor L3	E	PF	5/15 min	PQ	Metering field	
30315	Current L1	E	A	5/10 min	PQ	Metering field	
30316	Total harmonic distortion current L1	E	A	5/10 min	PQ	Metering field	
30317	Total harmonic distortion current L1	E	%	5/10 min	PQ	Metering field	
30325	Power L1	E	V	5/10 min	PQ	Metering field	
30326	Total harmonic distortion current L1	E	V	5/10 min	PQ	Metering field	
30327	Total harmonic distortion current L1	E	%	5/10 min	PQ	Metering field	
30365	Active power L1	E	W	5/10 min	PQ	Metering field	
30515	Current L2	E	A	5/10 min	PQ	Metering field	
30516	Total harmonic distortion power L2	E	A	5/10 min	PQ	Metering field	
30517	Total harmonic distortion power L2	E	%	5/10 min	PQ	Metering field	
30525	Power L2	E	V	5/10 min	PQ	Metering field	
30526	Total harmonic distortion power L2	E	V	5/10 min	PQ	Metering field	
30527	Total harmonic distortion power L2	E	%	5/10 min	PQ	Metering field	
30565	Active power L2	E	W	5/10 min	PQ	Metering field	
30715	Current L3	E	A	5/10 min	PQ	Metering field	
30716	Total harmonic distortion current L3	E	A	5/10 min	PQ	Metering field	
30717	Total harmonic distortion current L3	E	%	5/10 min	PQ	Metering field	
30725	Power L3	E	V	5/10 min	PQ	Metering field	
30726	Total harmonic distortion power L3	E	V	5/10 min	PQ	Metering field	

30727	Total harmonic distortion power L3	E	%	5/10 min	PQ	Metering field	
30765	Active power L3	E	W	5/10 min	PQ	Metering field	
30915	Zero-current	E	A	5/10 min	PQ	Metering field	
50180	Consumption supply	C	GJ	15 min		Metering field	
50280	Consumption feed-in	C	GJ	15 min		Metering field	
51180	Meter reading supply	C	GJ	15 min		Metering field	
51280	Meter reading feed-in	C	GJ	15 min		Metering field	
60180	Levering	H	GJ	15 min		Metering field	
60280	Feed-in	H	GJ	15 min		Metering field	
61180	Meter reading supply	H	GJ	15 min		Metering field	
61280	Meter reading feed-in	H	GJ	15 min		Metering field	
80180	Supply	W	M3	15 min		Metering field	
80280	Feed-in	W	M3	15 min		Metering field	
81180	Supply	W	M3	15 min		Metering field	
81280	Feed-in	W	M3	15 min		Metering field	

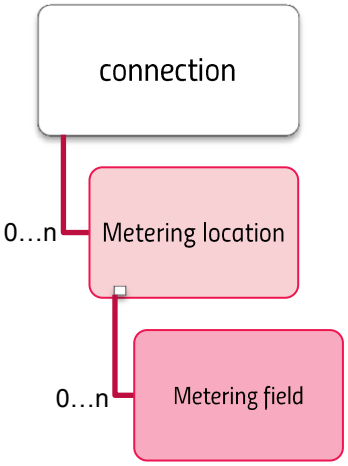
For all the above channels, new data is made available on a daily basis.

5 Metering field and Metering location

If you have used the former API of Meetdata.nl, you will have heard of the distinction we make between Metering location and Metering field. Unfortunately, given the services we perform, we cannot avoid making this distinction in the new API as well. However, the structure for it has changed slightly.

5.1 Which is which

A **Metering field** is a metering point hierarchically below a Metering location and has a 0 to n relation to it. The channels under a Metering field represent the readings from a device, meter or EVHI.
Depending on the type and configuration of the meter or EVHI, the interval at interval data will always be 5, 15 or 60 minutes of data, at Meter readings monthly or yearly.
In the case of intermediate meters, a Metering field can also be a calculation for a metering point that is calculated by means of the data from other readings, e.g. by means of summing or balancing, so that there does not have to be a physical meter to get the desired metering data.



A **Metering location** is a metering point hierarchically above a Metering field, but of which there may be several under a connection.
The channels under a Metering location represent meter data at an aggregated level that are used in legal processes. These meter data are calculated on the basis of the meter data from the Metering field.
Examples of calculations at the Metering location level are:

- Summing/balancing of measurement data of various meters
- Applying the energy loss factor (transformer and gas correction factor) if the meter is not at the transfer point of the connection

Depending on the technical capacity of the connection, the interval in which data is available is:

- For allocation at electricity 15 and at gas 60 minutes of data
- For invoicing of both electricity and gas: monthly or annual data

Please note: In many cases the Metering location will be calculated on the basis of 1 meter and the Metering field and Metering location will give exactly the same frequency of data (for example both 15 minutes values). When this occurs, we will not forward the data of the Metering Field level, to prevent you from receiving the same data twice.
Thus, when you do receive the data of the Metering field level, this means that this data may be interesting, for example:

- Because the data of the Metering location is the sum from several meters.
- Because the data frequency at the level of the Metering field level is higher than that at the level of the Metering location, for example:
  - Month values at Metering location and 15/60 minute values at Metering field
  - 15 minutes values at Metering location and 5 minutes values at Metering field.
- Because it is an intermediate meter. These have the measurement data only at the level of the Metering field (from the meter), and therefore not at the level of the Metering location, since no messages need to be sent for invoicing and allocation.

5.2 How to recognize

You recognize a **Metering field** by the presence of a relatedMeteringPointId and the unfilled meteringPointType field. The relatedMeteringPointId will always refer to a Metering location of the same connection. This means that you can derive the type of measurement for a Metering field via the meteringPointType of the relatedMeteringPointId. The type of measurement OP / BP / TM is in fact a property of the Metering location.

A **Metering location** can be recognized by the fact that the relatedMeteringPointId field is not filled, while the meteringPointType field is indicated here.

Hierarchical level	Data level	Missing master data fields	Interval of data
Metering field	Device, e.g. meter or EVHI	meteringPointType	monthly/annual values or 5, 15 or 60 minutes values
Metering location	Transfer point, as established in laws and regulations	relatedMeteringPointId	monthly/annual values and possibly 15 or 60 minutes values

Colophon:

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