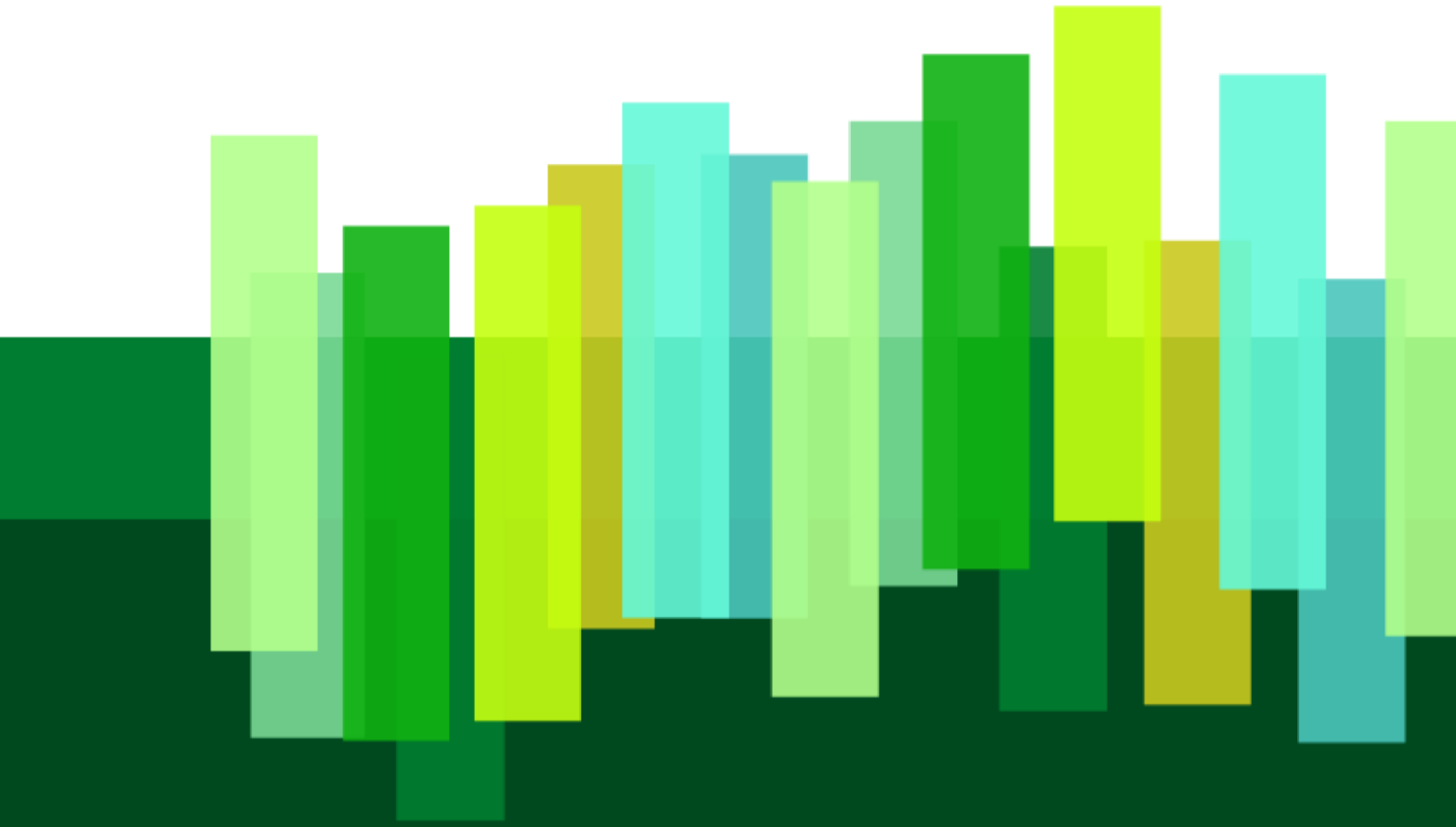
kenter

Manual
Metering data API



Version management

Version	Date	Note
1.0	31-07-2024	Initial outline
1.1	17-10-2024	Revision 3.2.1
1.2	28-10-2024	Revision Introduction, 2.1.1, 4.2

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Introduction

Part of our services is providing measurement data from our measuring services. We offer this for the past 36 months. An API link can be used to make this data insightful.

The API has the following endpoints

- Request meter list
- Retrieve measurement data

This is a REST API, the request and response are in JSON format.

This manual will help you use the API. We'll also provide information that helps you use the measurement data. General information about measurement data can also be found in the general manual, under the measurement data module.

1 One-time configuration

The following steps are required for connecting to the API:

1. Create an API client
2. Request a JWT token

The steps will be further explained in the following paragraphs

1.1 API client

The starting point for the API configuration is the customer portal. Users with the "main user" role can create an API client as follows

Customer portal → Account → API clients → Add

Also see the screenshot below

The client secret is provided once.

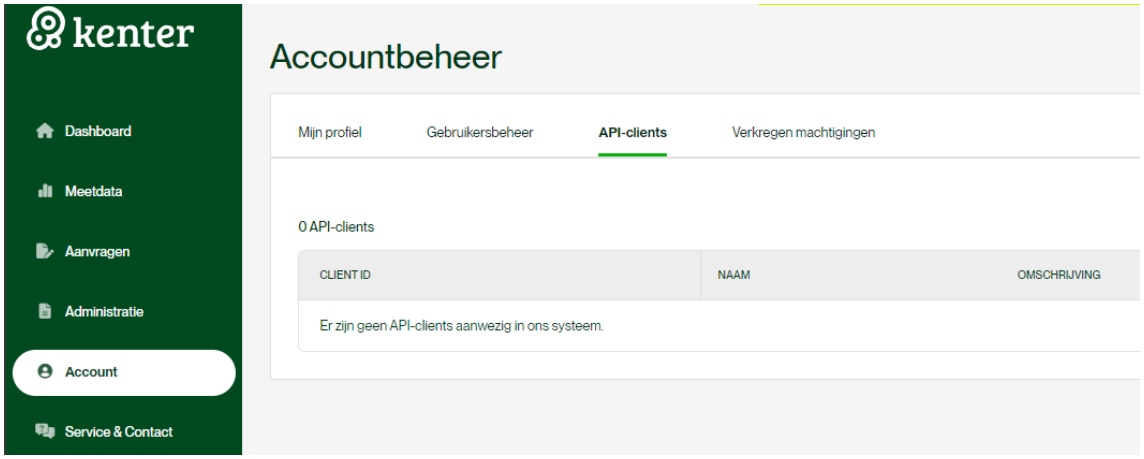


Image 1: Menu create API client

1.2 Request a JWT token

To obtain a token from the authentication service, send a POST request to the following URL:

https://login.kenter.nu/connect/token

Details of the POST request:

- **HTTP Method:** POST
- **Content-Type:** application/x-www-form-urlencoded
- **URL**: /connect/token

Body of the request:

The body of the request contains the following data, which are included in the form-encoded format:
client_id=client1&client_secret=secret&grant_type=client_credentials& scope=meetdata.read

Explanation of the parameters:

- **client_id**: This is the unique identifier of your application. In this example, it is ‘client1’.
- **client_secret**: This is the secret key that authenticates your application. In this example, it is ‘secret’.
- **grant_type**: This specifies the type of authorisation you're requesting, in this case ‘client_credentials’.
- **scope**: This defines the access rights you're requesting for the token. Use ‘meetdata.read’ here.

Expected response:

Upon a successful request, you will receive a JSON response with the following structure:

```
{
   "access_token": "...",
   "expires_in": 3600,
   "token_type": "Bearer",
   "scope": "meetdata.read"
}
```

- **access_token**: This is the token required for further API calls.
- **expires_in**: The time (in seconds) that a token is valid (3600 seconds or 1 hour).
- **token_type**: The type of token, in this case ‘Bearer’.
- **scope**: The access rights associated with the token.

Because the token has limited validity, you have to request a new token every time you wish to use the API.

2 Use of the API

The API consists of 2 endpoints:

1. Request meter list
2. Retrieve measurement data

These are explained in the following paragraphs

2.1 Retrieve meter list

The purpose of this endpoint is to display all active meters of the customer number as well as the meters on which an authorization has been obtained.

2.1.1 Call

Domain:
api.kenter.nu

Header:

Authorization = Bearer *Token*

Path

GET/meetdata/v2/meters

Parameters:

name	*type*
updates_days	query

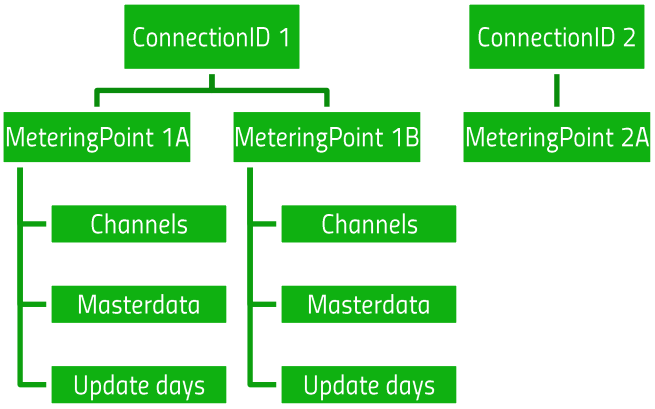
The 'updates_days' parameter allows you to obtain updated measurement data. In some cases, measurement data is updated retroactively. For example, when no measurement data is received due to a malfunction and estimated data is used. When the actual data is available, the original value is updated.

The entry for the parameter is an integer, this determines how many days of updated measurement data is retrieved. The default value is 1. This displays in the response which measurement data was updated yesterday, this is sufficient if the API is accessed daily.

Example
https://api.kenter.nu/meetdata/v2/meters

2.1.2 Result

The following image shows the structure of the response. The result can thus contain multiple connections where multiple measurements are carried out. Per measurement, 3 detail sets are available. The specifications of the response can be found in “Appendix: Specifications response meter list”. A substantive explanation is given in Chapter 5 “Measurement Field and Measurement Site”.



Example:


```
[
  {
    "connectionId": "871699900000099999",
    "meteringPoints": [
      {
        "meteringPointId": "00099999",
        "productType": "E",
        "meteringPointType": "BP",
        "meterNumber": null,
        "relatedMeteringPointId": "00099888",
        "channels": [
          {
            "channel": "10180",
            "unit": "KWH",
            "direction": "LVR"
          },
          {
            "channel": "10280",
            "unit": "KWH",
            "direction": "TLV"
          }
        ],
        "masterData": [
```

```
            {
                "contractedCapacity": "",
                "address": "STRAATNAAM",
                "city": "PLAATS",
                "bpCode": "KLANTNUMMER",
                "bpName": "KLANTNAAM",
                "authorizedFrom": "2005-11-01T00:00:00+00:00",
                "authorizedUntil": null,
                "customName": null,
                "source": "contract_meetdata_nl",
                "status": "Actief"
            }
        ],
        "meetdata_updates": [
            {
                "url": "/meetdata/v2/measurements/connections/871685900000099999/metering-
points/00099999/days/2024/9/4"
            },
            {
                "url": "/meetdata/v2/measurements/connections/87168590000009999/metering-
points/00099999/days/2024/9/5"
            }
        ]
    },
    {
        "meteringPointId": "00088888",
        "productType": "E",
        "meteringPointType": "BP",
        "meterNumber": null,
        "relatedMeteringPointId": "00077777",
        "channels": [
            {
                "channel": "10180",
                "unit": "KWH",
                "direction": "LVR"
            },
            {
                "channel": "10280",
                "unit": "KWH",
                "direction": "TLV"
            }
        ],
        "masterData": [
            {
                "contractedCapacity": "",
                "address": " STRAATNAAM ",
                "city": " PLAATS ",
```

```
                    "bpCode": " KLANTNUMMER ",
                    "bpName": " KLANTNAAM ",
                    "authorizedFrom": "2005-11-01T00:00:00+00:00",
                    "authorizedUntil": null,
                    "customName": null,
                    "source": "contract_meetdata_nl",
                    "status": "Actief"
                }
            ],
            "meetdata_updates": [
                {
                    "url": "/meetdata/v2/measurements/connections/871685900000099999/metering-
points/00088888/days/2024/9/4"
                },
                {
                    "url": "/meetdata/v2/measurements/connections/871685900000099999/metering-
points/00088888/days/2024/9/5"
                }
            ]
        },
  ...
]
```

2.2 Retrieving measurement data

When retrieving measurement data you can choose a period, e.g. a selection based on a year/month or a specific day. The measurement data is retrieved per meter.

2.2.1 Call

Domain:
api.kenter.nu

Header:

Authorization = Bearer *Token*

Path - for month selection

GET /meetdata/v2/measurements/connections/{connectionId}/metering-points/{meteringPointId}/months/{year}/{month}

Path - day selection

GET /meetdata /v2/measurements/connections/{connectionId}/metering-points/{meteringPointId}/days/{year}/{month}/{day}

Parameters

name	*type*	*description*
connectionId	path	connection id
meteringPointId	path	meteringpoint id
year	path	Year - YYYY
month	path	Month - MM
day	Path	Day - DD

Example - for month selection:
https://api.kenter.nu/meetdata/v2/measurements/connections/37168711000123456 7/metering-points/00099999/months/2024/05

Example - for day selection:
https://api.kenter.nu/meetdata/v2/measurements/connections/37168711000123456 7/metering-points/00099999/days/2024/05/01

2.2.2 Result

The measurements are displayed by channel, an explanation of the channels can be found in Chapter 4 “Channel List”

Example:

```
[
   {
      "channelId": "string",
      "Measurements": [
         {
            "origin": "string",
            "status": "string",
            "timestamp": int,
            "value": float
         },
         ...
      ]
   },
   ...
]
```

The origin and status fields provide insight to determine reliability.

origin	status (validation status)	Description
Measured (m)	Valid (v)	Measured data which is approved on the basis of the validation rules of the measuring code.
	Invalid (i)	Measured data which is rejected on the basis of the validation rules of the measuring code. The failure of the automated process is assessed by Kenter staff. This status is therefore temporary, the data will later be offered with definitive status
	Manually approved (m)	Follow-up of Measured Invalid data, which was manually approved by a Kenter staff member after verification.
Estimated (e)	-	In case of a fault in the metering device, data is automatically estimated in accordance with the metering code based on historical data. If this has taken place, a Kenter employee will follow up on it. Thus, this is a temporary status until actual measurement data is available or calculated data is chosen.
Calculated (c)	-	Follow-up of measured or estimated. Correction of measurement data when the actual measurement data can no longer be retrieved.
Unknown (u)	-	This refers to the history of data to which the Origin and Validation Status attributes have never been assigned.

3 Channel list

Below you will find an explanation of the potential channels you may encounter.

It is possible that this list will be expanded in the future. It's a good idea to take this into account when doing your programming.

Terms:
E Electricity
G Gas
OP Transfer point measurement (Main measurement)
BP Gross production measurement
TM Interim measurement
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 previous 36 months

3.1 Most common channels

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

Channel number	Description	Type of energy	Unit	Interval	Occurs at	Measurement field / measurement site	Comment
10180	Supply of electrical energy	E	kWh	5/15 min	OP, BP, TM	Measurement field	Usage from meter
10280	Feed-in or generation of electrical energy	E	kWh	5/15 min	OP, BP, TM	Measurement field	For OP: Feed-in for BP: Generation
10380	Supply of reactive current	E	kVARh	5/15 min	OP	Measurement field	Usage from meter
10480	Feed-in of reactive current	E	kVARh	5/15 min	OP	Measurement field	For OP: Feed-in For BP: Generation
11160	Peak supply capacity	E	kW	month	OP	Measurement field	Max quarter-hour capacity out of meter
11180	Meter reading delivery total	E	kWh	month	BP	Measurement field	Meter reading
11181	Meter reading delivery low rate	E	kWh	month	OP	Measurement field	Meter reading
11182	Meter reading delivery high rate	E	kWh	month	OP	Measurement field	Meter reading
11260	Peak capacity feed-in	E	kW	month	OP	Measurement field	Max quarter-hour capacity out of meter
11280	Meter reading feed-in total	E	kWh	month	BP	Measurement field	Meter reading
11281	Meter reading feed-in low rate	E	kWh	month	OP	Measurement field	Meter reading
11282	Meter reading feed-in high rate	E	kWh	month	OP	Measurement field	Meter reading

11381	Meter reading supply reactive current low rate	E	kVARh	month	OP	Measurement field	Meter reading
11382	Meter reading supply reactive current high rate	E	kVARh	month	OP	Measurement field	Meter reading
16080	Net consumption for allocation	E	kWh	15 min	OP > 100kW	Measurement site	Net supply = supply (16180) - feed-in (16280).
16180	Delivery for allocation	E	kWh	15 min	OP > 100kW	Measurement site	Usage with transformer correction factor
16280	Feed-in for allocation	E	kWh	15 min	OP > 100kW	Measurement site	Feed-in with transformer correction factor
18160	Peak supply capacity for billing	E	kW	month	OP	Measurement site	Maximum 15-minute capacity with transformer correction value
18180	Supply for billing	E	kWh	month	BP, NP	Measurement site	Usage with transformer correction factor
18181	Low tariff supply for billing	E	kWh	month	OP	Measurement site	Usage with transformer correction factor
18182	High tariff supply for billing	E	kWh	month	OP	Measurement site	Usage with transformer correction factor
18280	Feed-in for billing	E	kWh	month	OP, BP, NP	Measurement site	For OP: Feed-in with transformer correction factor For NP/BP: Generation with transformer correction factor
18281	Feed-in low rate for billing	E	kWh	month	OP	Measurement site	Feed-in with transformer correction factor
18282	Feed-in high rate for billing	E	kWh	month	OP	Measurement site	Feed-in with transformer correction factor
18381	Supply of reactive current low rate for billing	E	kVARh	month	OP	Measurement site	Usage with transformer correction factor
18382	Supply of reactive current high rate for billing	E	kVARh	month	OP	Measurement site	Usage with transformer correction factor
70180	Derived supply volume	G	m³	15/60 min		Measurement field	Derived volume from EVHI
70280	Derived feed-in volume	G	m³	15/60 min		Measurement field	Derived volume from EVHI
70380	Non-derived supply volume	G	m³	15/60 min		Measurement field	Non-derived volume from meter
70480	Non-derived feed-in volume	G	m³	15/60 min		Measurement field	Non-derived volume from meter
71180	Meter reading delivery derived	G	m³	month		Measurement field	Derived volume from EVHI
71280	Meter reading feed-in derived	G	m³	month		Measurement field	Derived volume from EVHI

71380	Meter reading delivery non-derived	G	m³	month		Measurement field	Non-derived volume from meter
71480	Meter reading feed-in non-derived	G	m³	month		Measurement field	Non-derived volume from meter
76180	Derived supply volume for billing	G	m³	60 min	GXX, GGV	Measurement site	Derived volume with gas correction factor or from EVHI
76280	Derived feed-in volume for billing	G	m³	60 min	GXX, GGV	Measurement site	Derived volume with gas correction factor or from EVHI
77180	Aggregated delivery volume derived for billing on the basis of gas month calculation	G	m³	month	GXX, GGV	Measurement site	Derived monthly volume with gas correction factor or from EVHI
77280	Aggregated feed-in volume derived for billing on the basis of gas month calculation	G	m³	month	GXX, GGV	Measurement site	Derived monthly volume with gas correction factor or from EVHI
78180	Derived supply volume for billing	G	m³	month	G2C	Measurement site	Derived monthly volume with gas correction factor or from EVHI
78280	Derived feed-in volume for billing	G	m³	month	G2C	Measurement site	Derived monthly volume with gas correction factor or from EVHI

3.2 Additional channels

The table below contains your additional channels for Power Quality, heat, cold, and water.

Terms:

E Electricity
W Water
H Heat
C Cooling
PQ Power Quality

Channel number	Description	Type of energy	Unit	Interval	Occurs at	Measurement field / measurement site	Comment
20335	Labour factor L1	E	pF	5/15 min	PQ	Measurement field	
20535	Labour factor L2	E	pF	5/15 min	PQ	Measurement field	
20735	Labour factor L3	E	pF	5/15 min	PQ	Measurement field	
30315	Electricity L1	E	A	5/10 min	PQ	Measurement field	

30316	Total harmonic distortion current L1	E	A	5/10 min	PQ	Measurement field	
30317	Total harmonic distortion current L1	E	%	5/10 min	PQ	Measurement field	
30325	Voltage L1	E	V	5/10 min	PQ	Measurement field	
30326	Total harmonic distortion voltage L1	E	V	5/10 min	PQ	Measurement field	
30327	Total harmonic distortion voltage L1	E	%	5/10 min	PQ	Measurement field	
30365	Active power L1	E	W	5/10 min	PQ	Measurement field	
30515	Electricity L2	E	A	5/10 min	PQ	Measurement field	
30516	Total harmonic distortion current L2	E	A	5/10 min	PQ	Measurement field	
30517	Total harmonic distortion current L2	E	%	5/10 min	PQ	Measurement field	
30525	Voltage L2	E	V	5/10 min	PQ	Measurement field	
30526	Total harmonic distortion voltage L2	E	V	5/10 min	PQ	Measurement field	
30527	Total harmonic distortion voltage L2	E	%	5/10 min	PQ	Measurement field	
30565	Active power L2	E	W	5/10 min	PQ	Measurement field	
30715	Electricity L3	E	A	5/10 min	PQ	Measurement field	
30716	Total harmonic distortion current L3	E	A	5/10 min	PQ	Measurement field	
30717	Total harmonic distortion current L3	E	%	5/10 min	PQ	Measurement field	
30725	Voltage L3	E	V	5/10 min	PQ	Measurement field	
30726	Total harmonic distortion voltage L3	E	V	5/10 min	PQ	Measurement field	
30727	Total harmonic distortion voltage L3	E	%	5/10 min	PQ	Measurement field	
30765	Active power L3	E	W	5/10 min	PQ	Measurement field	
30915	Zero current	E	A	5/10 min	PQ	Measurement field	
50180	Supply usage	C	GJ	15 min		Measurement field	
50280	Feed-in consumption	C	GJ	15 min		Measurement field	
51180	Meter reading supply	C	GJ	15 min		Measurement field	
51280	Meter reading feed-in	C	GJ	15 min		Measurement field	
60180	Supply usage	H	GJ	15 min		Measurement field	
60280	Feed-in consumption	H	GJ	15 min		Measurement field	
61180	Meter reading supply	H	GJ	15 min		Measurement field	
61280	Meter reading feed-in	H	GJ	15 min		Measurement field	

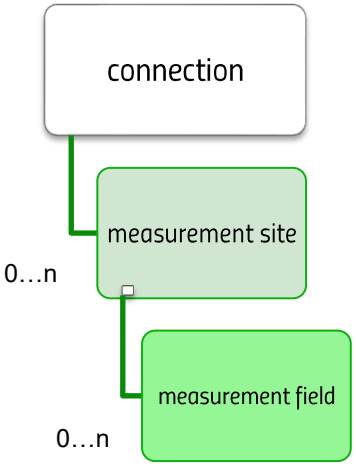
80180	Supply usage	W	m³	15 min		Measurement field	
80280	Feed-in consumption	W	m³	15 min		Measurement field	
81180	Meter reading supply	W	m³	15 min		Measurement field	
81280	Meter reading feed-in	W	m³	15 min		Measurement field	

For all the abovementioned channels, new data is made available daily.

4 Measurement field and measurement site

This chapter explains more about the applied hierarchy, how to distinguish between them and when what is relevant.

4.1 What's what



A **measurement field** is a measurement point (meteringPoint) that lies hierarchically below a measurement site and has a 0 to n relationship to that end. The channels under a measurement field represent the raw measurement data from a meter or EVHI.
Depending on the type and configuration of the meter or EVHI, the interval will always be 5, 15 or 60 minutes of data for interval data, and monthly or yearly for meter readings.
With intermediate meters, a measurement field can also be a calculation for a measurement point that is calculated using the data from other measurements, e.g. by means of summation or netting, so that no physical meter needs to be present to obtain the desired measurement data.

A **measurement site** is a measurement point (meteringPoint) that is hierarchically above a metering field, but of which there may in turn be several below a connection.
The channels under a measurement location represent measurement data at an aggregated level that are used in legal processes, for example for billing.
These measurement data are calculated on the basis of the measurement data from the measurement field.
Examples of calculations at the measurement site level are:

- Summing up/netting measurement data from multiple meters;
- Apply the energy loss factor (transformer and gas correction factor) if the meter is not located at the transfer point of the connection:
    - The transformer correction factor can theoretically be different for each connection, but normally it is 1.4% at Liander and 1.3% at Enexis and Stedin;
    - The gas correction factor is usually around 2%.

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

- For allocation for electricity 15 and for gas 60 minute data;
- For billing with both electricity and gas monthly or annual data.

Note: in many cases, the measurement site will be calculated based on 1 meter and its measurement field and measurement site will give exactly the same frequency of data (for example, both 15-minute values). When this occurs, we do not forward the data at the measurement field level so that you do not receive the data unnecessarily twice.
Thus, when you do receive the data on the measurement field it means that this data can be of interest, for example:

- Because the data at the measurement site is summed from multiple meters;
- Because the data frequency at measurement field is higher than that at the measurement site, for example:
    - Monthly values at the measurement site and 15/60 minute values at the measuring field;

    - 15-minute values at the measurement site and 5-minute values at the measuring field;
- Because this is an intermediate meter. These have the measurement data only at the level of measurement field (from the meter), and thus not at the measurement site because there is no need to send a message for the purpose of billing and allocation.

4.2 How to distinguish

You can recognize a **measurement field** by the presence of a relatedMeteringPointId. The relatedMeteringPointId will always refer to a measurement location on the same connection.

You can recognize a measurement site by the fact that the relatedMeteringPointId field is not filled.

Hierarchical level	Data level	RelatedMeteringPointId
Measurement field	Device, e.g. meter or EVHI	Present, refers to measurement location
Measurement site	Transfer point as determined by laws and legislation.	Empty

5 Use of measurement data

In order to ensure that the measurement data are interpreted correctly and the correct conclusions are thus drawn, this chapter provides substantive explanations of these data.

5.1 Calculating load / peak

The load or peak of an electricity connection can be calculated based on the kWh values for supply and feed-in.

Note here that there are 2 “types” of load, the one used by the grid operator to control the Contracted Transmission Capacity (the “GTV”) of the connection with, and the one closest to the actual peak on the installation.

The 'grid operators' load
The GTV is always calculated based on the quarterly data at measurement site channel 16180 (delivery). So feed-in is not examined (at the moment).
An example: for a quarter-hour supply of 90 kWh, the load for the grid operator during that quarter-hour was 90 * 4 = 360 kW.

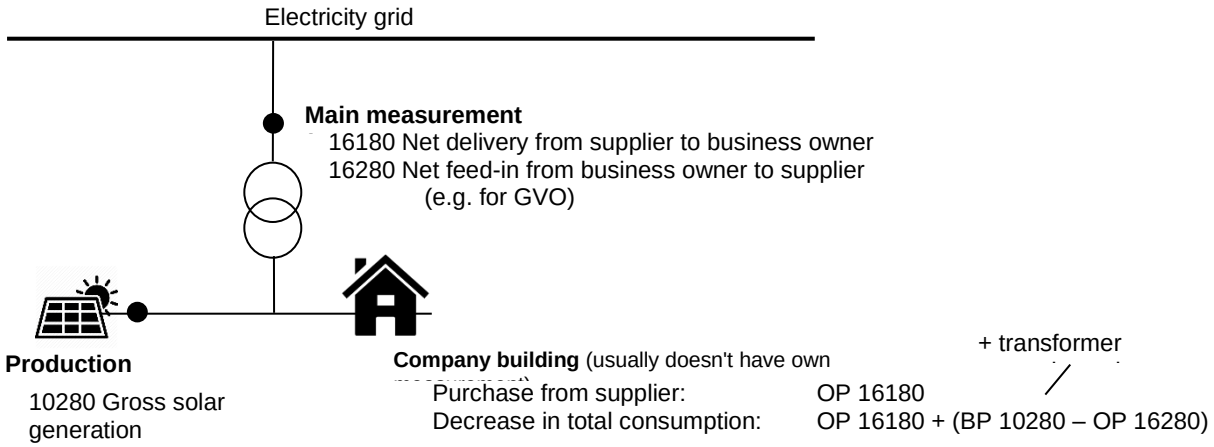
The 'actual’ load
However, there are also meters that measure consumption every 5 minutes. This data is not sent to the grid operator so you do not see it reflected in the channels at the measurement site (see also chapter 5). Still, these can be of interest to the client, for example, to see at exactly which 5 minutes within a quarter of an hour the peak is. You will therefore find these (provided the meter is configured to 5-minute interval) in the measurement field channels 10180 (supply) and 10280 (feed-in/generation).
To calculate a peak over 5 minutes, the consumption during that period must be multiplied by 12. For example, consumption of 60 kWh in 5-minutes is a load of 720 kW.
However, if the remaining 10 minutes within this quarter-hour were lower in consumption, the “actual” peak over these 5 minutes will be higher than the “grid operator” peak, because in the latter those three 5-minute consumptions are averaged out.

An example:

Time	Consumption per 5 minutes	‘actual’ peak per 5 minutes	‘grid operator’ peak per 5 minutes
7:00-7:05	60 kWh	60*12=720 kW	60+8+22=90*4=360 kW
7:05-7:10	8 kWh	8*12=96 kW	
7:10-7:15	22 kWh	22*12=264 kW	

5.2 Example - Production measurement: generation or feed-in

In the case of a production measurement, your information needs and the available measurement configuration determine which measurement and channels you will need to retrieve the data from. This is best explained using an example situation of a business owner who generates energy using solar panels:



When we talk about **delivery**, we are talking about the flow of energy from the energy supplier to the customer, in this case the business owner.
By **feed-in**, we mean the “return” of energy from the customer to the energy supplier from the customer's own generation, such as solar or wind, that is not used by the business owner and thus “physically” fed back into the grid.
The term **generation** is used for the gross energy generated by a generating plant.

There is always a **main measurement** on the wholesale connection with the electricity grid. Because the business owner applied for a subsidy for their generation plant, there is also a (gross) **production measurement**. A production measurement always has at least monthly data as prescribed by law. Depending on the purchased service, this can also be read out daily, or this can be requested.

An overview of possible data that can be derived from this measurement configuration:

- If you are looking for the **generation** of the solar installation, for which the subsidy is also awarded, for example, you can use the following channels:
    - 10280 of production measurement for daily available 5/15-minute data;
    - 18280 of production measurement for monthly available aggregated monthly volume.

  Note: you will find difference between when you start adding up all the values of a month for 10280 and compare them with the total of 18280. This is because 18280 has already incorporated a transformer correction factor. This can theoretically be different for each connection, but normally it is 1.4% at Liander and 1.3% at Enexis and Stedin.
- If you are looking for the amount of **feed-in** to the grid, which, among other things, is used to issue green certificates, you can use the following channels:
    - 16280 on the main measurement for daily available 5/15-minute data;
    - 18280 on the main measurement for monthly aggregate monthly volume available.

This is the generation minus the company building's own consumption, leaving only the actual feed-in to the grid.

- For the purchase of electricity at the commercial building, it is best to use the channels and calculations as shown in the schematic above.

If you also receive Guarantees of Origin (formerly Green Certificates), you have received a so-called “green EAN code” for this from your grid operator. Unfortunately, we do not have these, and cannot reflect them in the data. However, this refers to channel 16280 of the main measurement.

6 Attachments: Specifications response meter list

Connections

field	*type of data*	*output*	*description*
connectionId	VARCHAR	(various)	Level on the basis of the EAN code or alternative reference.
meteringPoints	VARCHAR	(various)	List of measurements, see sub-table

Meteringpoints

field	*type of data*	*output*	*description*
meteringPointId	VARCHAR	*(various)*	Physical or virtual measurement point.
productType	VARCHAR	C = Cooling, E = Electricity, G = Gas, H = Heat, W = Water, X = Combination	Product type
meteringPointType	VARCHAR	OP = Main measurement, BP/NP = Production measurement, TM = Intermediate measurement, FP = Coupling point, NP = Net production, TB = Allowable operating consumption, PAP = Primary Allocation Point at MLOEA, SAP = Secondary Allocation Point at MLOEA	Type of measurement.
RelatedMeteringPointId	VARCHAR	*(various)*	Relationship with parent measurement point ‘meteringPointId’.
meterNumber	VARCHAR	*(various)*	Meter number. Only filled in for physical measurement point.
channels	array	*(various)*	List of channels, see sub-table
masterData	array	*(various)*	List of master data, see sub-table
meetdata_updates	array	*(various)*	List of URL by which updated measurement data can be retrieved

Channels

field	*type of data*	*output*	*description*
channel	VARCHAR	(various)	Channel ID
Unit	VARCHAR	A = amperes, kWh = kilowatt hour, kW = kilowatt, m^3 = cubic meters, W = watt	Unit
direction	VARCHAR	LVR = supply, TLV = feed-in, NET = grid (LVR-TLV), (empty) = other	

Masterdata

field	*type of data*	*output*	*description*
customName	VARCHAR	(various)	Chosen name in portal.
status	VARCHAR	Active, Malfunction, In progress	Status of the connection.
contractedCapacity	VARCHAR	(various)	Contract transport capacity (GTV).
address	VARCHAR	(various)	Street
city	VARCHAR	(various)	town/city
bpCode & bpName	VARCHAR	(various)	Customer number and name of party on contract.
authorizedFrom	VARCHAR	(various)	Starting date of the period during which contract or authorisation is active.
authorizedUntil	VARCHAR	(various)	End date of the period during which contract or authorisation is active.
source	VARCHAR	contract_ meetdata_nl, machtiging	Basis for requesting data.

7 Appendix: Specification response measurement data

field	*type of data*	*output*	*description*
origin	VARCHAR	m = measured, e = estimated, c = calculated u = unknown	
status	VARCHAR	v = valid, i = invalid, m = manually approved	
timestamp	BIGINT	(various)	Time stamp in Unix Time Stamp format in time zone UTC. For consumption, it refers to the end of the period. Does not incorporate summer/winter time.
value	DECIMAL	(various)	Usage/reading, decimal value.

Colophon:

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