

Flecto Sense Rest API v1.6 guide for Demo data.

- Limit the number of API GET requests to no more than once every 15 minutes.
- Only 32 days of data will be kept on our server.
- Your DB will host historic meter data.
- Data sets larger than 4000 entries will not execute.
- Data set calculation = ((number of meters) x (60/reading interval) x (hours in query))
- Time is always in Universal Time Coordinated (UTC).

Query parameters:

API:

http://api.flecto.xyz/flecto_tl_v1.6.php?

API string Authentication: the bearer token will remain the same while the account is paid up.

The bearer token is not linked to a concentrator but to the account.

All your concentrators will be linked to your account and billed monthly or annually.

If an account is not paid the bearer token will get disabled. When payment is received, a new bearer token will be sent via email. This means that the bearer token could change once a month.

Create a DB field for bearer tokens. Let the query pull the most recent bearer token from your DB to be used for authentication.

`bearer = mjb8261915 [varchar max length = 40]`

`&last=0-1440minutes Default is [0] When not set, the &take parameter will be used`

`&take=1-3832 Default is [1000] if the parameter is not set. Takes 1000 rows`

Example for daily query:

http://api.flecto.xyz/flecto_tl_v1.6.php?bearer=mjb8261915&last=30

Elapsed time = 30 minutes.

&take Parameter

Specifies the number of records to retrieve.

Used for pagination to limit the number of results returned in a single request.

Example: ?take=10 retrieves the newest 10 records.

&last Parameter

Usually refers to retrieving the most recent records.

It returns the last N records based on a timestamp in sequential order.

Example: ?last=10 retrieves the 10 most recent entries.

Key Difference:

`&take=10` fetches the newest 10 records.

`&last=10` fetches the last 10 minutes of records (typically the most recent ones).

Examples of optional parameter usage:

http://api.flecto.xyz/flecto_tl_v1.6.php?bearer=mjb8261915
http://api.flecto.xyz/flecto_tl_v1.6.php?bearer=mjb8261915&last=40
http://api.flecto.xyz/flecto_tl_v1.6.php?bearer=mjb8261915&take=100
http://api.flecto.xyz/flecto_tl_v1.6.php?bearer=mjb8261915&take=100&last=40

The TL300 module will return values based on the data configured in the **Analysis Logger** of the **Kamstrup Omnipower meter**. The Analysis Logger acts as a data extraction and logging system that captures and stores energy register values at predefined intervals.

How the TL300 Module Retrieves Data:

1. Configured Register Values

- The **Utility company** can configure which registers are logged in the **Analysis Logger**.
- The TL300 module will fetch the values of these registers during each logging cycle.

2. Default Recommended Registers

- The table provided suggests a **default set of registers** to monitor, such as:
 - **T1 Import/Export Active Energy** (Council-supplied power or Peak ToU)
 - **T2 Import Active Energy** (Generator power)
 - **T3 Import Active Energy** (Battery backup power)
 - **T5 Import/Export Active Energy** (STD Energy ToU)
 - **T6 Import/Export Active Energy** (Off-peak Energy ToU)

3. Retrieval Process:

- The TL300 communicates with the meter and extracts the logged register values.
- These values are sent to the backend system
- If the Utility configures additional or alternative registers, the TL300 will return those values instead.

4. Customization by Utility:

- Since the **Utility can configure the Analysis Logger**, they may choose to log **different register values, change logging intervals, or define custom triggers**.
- However, following the **default table configuration** ensures consistent data collection across multiple deployments.

Example response (JSON):

```
[
  {
    "auto_id": 29056,
    "id": 60453,
    "rtc": 794646000,
    "reg_A": 792.32,
    "reg_B": 0,
    "reg_C": 9.1,
    "reg_D": 0.15,
    "reg_E": 210.14,
    "reg_F": 88.52,
    "reg_G": 0,
    "reg_H": 0,
    "reg_I": 0,
    "reg_J": 0,
    "reg_K": 0,
    "reg_L": 0,
    "reg_M": 0,
    "reg_N": 0,
    "reg_O": 0,
    "log": 11,
    "serial": "32910073",
    "created_at": "2025-03-07 05:14:40"
  }
]
```

	A	B	C	D	E
1	Flecto Energy Registers allocation for Kamstrup Omnipower Electricity Meters				
2	Register	Register Value Description	Meter display symbol	Application	
3	Reg A	T1 Import Active Energy (kWh)	T1 A+	T1 4 quadrant energy registers for Council Supplied power for single tariff or Peak Energy Time of Use (ToU)	
4	Reg B	T1 Export Active Energy (kWh)	T1 A-		
5	Reg C	T1 Inductive Reactive Energy (kvarh)	T1 R+		
6	Reg D	T1 Capacitive Reactive Energy (kvarh)	T1 R-		
7	Reg E	T2 Import Active Energy (kWh)	T2 A+	T2 Reserved for Generator supplied power	
8	Reg F	T3 Import Active Energy (kWh)	T3 A+	T3 Reserved for Battery back-up supplied power	
9	Reg G	T4 Import Active Energy (kWh)	T4 A+	T4 Reserved for Spare future use supply	
10	Reg H	T5 Import Active Energy (kWh)	T5 A+	T5 4quadrant energy registers for STD Energy (ToU)	
11	Reg I	T5 Export Active Energy (kWh)	T5 A-		
12	Reg J	T5 Inductive Reactive Energy (kvarh)	T5 R+		
13	Reg K	T5 Capacitive Inductive Energy (kvarh)	T5 R-		
14	Reg L	T6 Import Active Energy (kWh)	T6 A+	T6 4 quadrant energy registers for Off-peak Energy (ToU)	
15	Reg M	T6 Export Active Energy (kWh)	T6 A-		
16	Reg N	T6 Inductive Reactive Energy (kvarh)	T6 R+		
17	Reg O	T6 Capacitive Reactive Energy (kvarh)	T6 R-		
18					

Time of Use (TOU) Consumption Calculation

You have three different TOU periods with Active and Reactive energy measurements. Calculate the net active and reactive energy consumption for each:

1). Peak Time of Use (T1)

Active Energy Consumption: T1 A+–T1 A
 $13016 - 22.17 = 12993.83 \text{ kWh}$

Reactive Energy Consumption: T1 R+–T1 R
 $5984.76 - 47.37 = 5937.39 \text{ kVarh}$

2). Standard Time of Use (T5)

Active Energy Consumption: T5 A+–T5 A
 $26.61 - 23944.7 = -23918.09 \text{ kWh}$ (negative means net export)

Reactive Energy Consumption: T5 R+–T5 R
 $13130.7 - 0.03 = 13130.67 \text{ kVarh}$

3). Off-Peak Time of Use (T6)

Active Energy Consumption: T6 A+–T6 A
 $35650.8 - 11.79 = 35639.01 \text{ kWh}$

Reactive Energy Consumption: T6 R+–T6 R
 $15601.4 - 0.04 = 15601.36 \text{ kVarh}$

Total Energy Consumption Across All TOU Periods

Total Active Energy:

$(12993.83 - 23918.09 + 35639.01) = 24714.75 \text{ kWh}$

(Note: The negative Standard TOU means more energy was exported than imported during that period.)

Total Reactive Energy:

$(5937.39 + 13130.67 + 15601.36) = 34669.42 \text{ kVarh}$

reg_A	reg_B	reg_C	reg_D	reg_E	reg_F	reg_G	reg_H	reg_I	reg_J	reg_K	reg_L	reg_M	reg_N	reg_O
13016	22.17	5984.76	47.37	0	0	0	26.61	23944.7	13130.7	0.03	35650.8	11.79	15601.4	0.04