EKM METERING INC.

EKMAPI

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FREE DATA AND AN OPEN API

That's right, EKM offers unrestricted data access and an API that is open to all.

Our EKM Push gateway sends our meter data to the cloud and our Open API makes the data available in a variety of formats. Our goal when designing it was to create an intuitive and clear API that not only we could use, but that any developer could integrate into their SaS product with minimal effort. Whether you're building a dashboard, billing platform, or resource management software, our API will make integrating our meter data a snap. Our complete API documentation can be found here: **https://goo.gl/KFkXK5**

EKM PUSH v2

The EKM Push features truly unprecedented capabilities, and offers plug-and-play setup. All you have to do is plug it in. The EKM Push gateway handles all of the meter communication, parses the meter data, and inserts reads into a central database. Data is available immediately, seamlessly, and can be securely accessed from anywhere in the world by using a unique user key. Up to 50 of our Omnimeters can be daisy-chain-connected to each EKM Push gateway, on up to 4000 feet of RS485 communication wire. The Push gateway also connects to your internet router or cellular modem in order to push data to our cloud database.

The entire Push system, from the gateway to the database and API, has been rigorously developed to be as robust as we can make it while minimizing the cost. We're proud to say that the system has maintained ~99.9% uptime, making the data super reliable.

We also offer a Pro version of our Push gate that adds a couple 9's of reliability, with a hardened power supply and opto-isolated RS-485 communications.

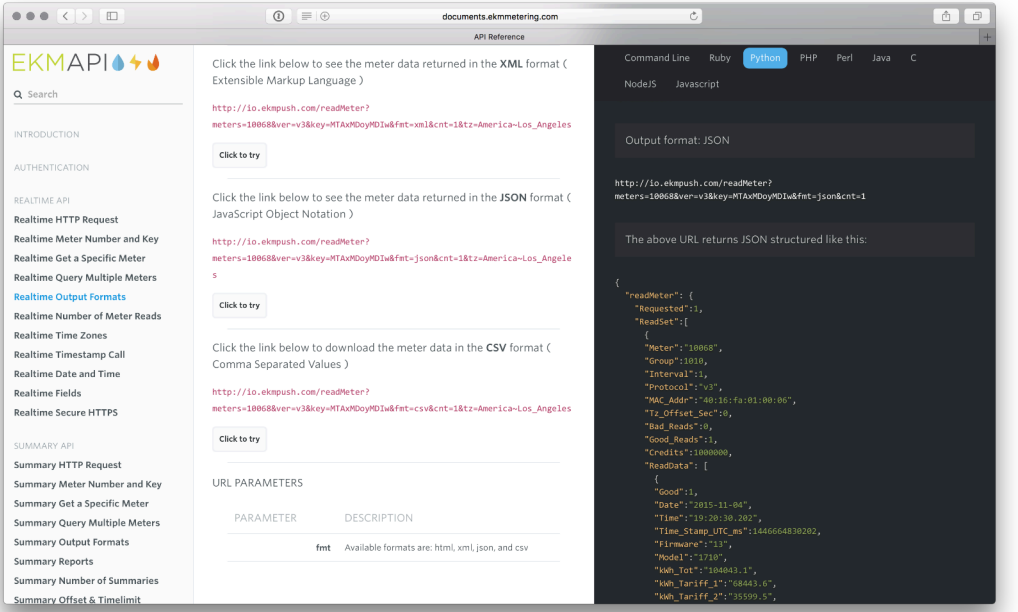
It's probably obvious by now but we feel that reliability is a critical element of the EKM Push system. We want our customers, and 3rd party developers, to be confident that our products and services will work, every time.

More info here: **https://goo.gl/6NZOB5** *(*Note that these URLs are case sensitive)*

REAL TIME API

The Push database stores the latest 1000 real-time meter reads, which is typically the last 1000 minutes of data. The Real Time API allows you to call for 1–1000 reads at a time. The API calls can also be custom made to suit your particular needs. See some of the available options on page 5.

We also provide examples of our API wrapped in languages like Ruby, Python, Javascript, etc. See the right column in the image below for an example of this.



Here are just some of the available options:

Format: Available format options are html, json, XML, and CSV

Number of reads: Choose how many records you want returned

Timezone: Meter reads are store according to UTC timestamps. These timestamps can be adjusted by timezones in order to get accurate local timestamps.

Multiple meters: Any quantity of meters can be called at the same time to minimize the number of API calls needed.

Fields: The API defaults to return all available fields but the return can be limited by adding specific fields to the API call.

Secure: https is available for security

Here is just one example of what a real time API call looks like:

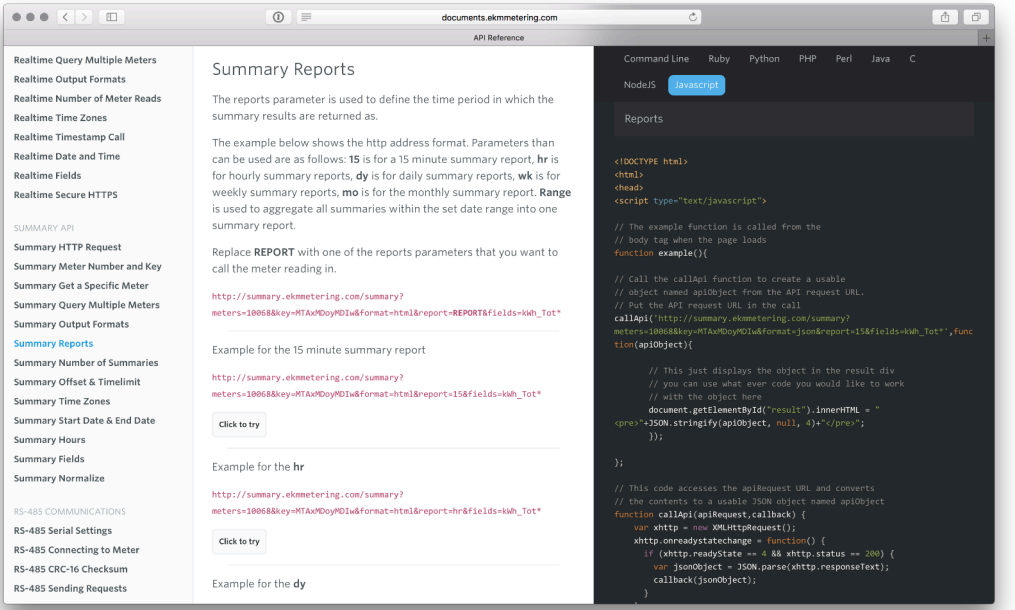
https://io.ekmpush.com/readMeter?meters=10068&ver=v3&key=MTAxMDoyMDIw&fmt=html&cnt=10&tz=America~Los_Angeles&fields=kWh_Tot~Rev_kWh_Tot~RMS_Watts_Tot

For more information we encourage you to visit our Real Time API documentation here: https://**goo.gl/YKBUOb**

SUMMARY API

In order to store data long term, real time reads are condensed into 15 minute summaries. These summaries are then able to be compiled into summaries of longer time periods, such as hours, days, months, etc. This data is stored in the cloud indefinitely, so each meter has a historical record that extend back to when it was first read by the EKM Push system.

Users interested in historical and cumulative values, like kWh or pulse counts, will be most interested in the Summary API.



In addition to the options it has in common with the Real Time API, the Summary API has these additional options available:

Report: Choose 15 minute, hour, day, week, month, or range.

Number of summaries: Choose the number of records that you want returned for each API call.

Multiple meters: Any quantity of meters can be called at the same time to minimize the number of API calls needed. Data can be aggregated for multiple meters in a single return, or retuned for each meter individually.

Fields: In addition to the fields shared with the Real Time API, the Summary API provides Sub-Fields that include values like Max, Min, DeltaMax, DeltaMin, Diff, and Average, among others.

Start and End Dates: In addition to the reports shown above, range can be used along with specific start and end dates to give reports for any period of time.

Here is just one example of what a real time API call looks like:

http://summary.ekmmetering.com/summary?meters=10068&key=MTAxMDoyMDIw&format=html&report=15&limit=10&offset=0&timelimit=5&timezone=America~Los_Angeles&fields=kWh_Tot~RMS_Volts_Ln_1**

For more information we encourage you to visit our Summary API documentation here: https://**goo.gl/2EzIIe**

RS-485 COMMUNICATIONS

Our Omnimeters communicate via a modified version of an IEC 62056-21 communication standard, which is what each EKM Push gateway reads and serializes. We provide both the v.3 and v.4 Omnimeter serial protocols, along with code examples for users who want to communicate with the meters directly over RS-485, and not with the EKM Push system.

More info here: **https://goo.gl/PNSw1e**

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