

EKM Push3 Spec Sheet



We are very excited to release the third generation of our EKM Push system, that we're calling Push3, or Push v.3. This system builds upon the lessons learned with Push1 and Push2 and introduces some additional features and capabilities. Like Push2, Push3 is capable of reading our v.3, v.4, and v.5 Omnimeters. The meter data is Pushed to the cloud where it is available in real time as well as in a summarized form that we store and make available for at least two years.

This system provides many new features, but still offers the same plug-and-play integration that made Push2 so popular. All you have to do is plug it in. The Push3 gateway handles all of the meter communication, parses the meter data, and inserts the reads into a central cloud database. This completely eliminates all of the issues of configuring firewalls, dealing with dynamic IP addresses, and having a computer running all the time to make it happen. The Push system provides 1000 of the latest real time reads as well as a long term summarized dataset. These summaries allow you to access 15 min, hourly, daily, weekly, monthly, yearly, or custom period history for each of your meters.

Data is available immediately, seamlessly, and can be accessed from anywhere in the world by using a unique access key. In addition to the Master Account Key, that provides access to all of the meters in an account, every meter also has it's own unique Meter Key. This allows the account owners to share specific meters while keeping the rest private. So for example, using Meter Keys, a landlord could share meter data for each of their apartments with the appropriate tenants. Sub-group keys can also be created upon request that will provide access to a subset of the meters in your Push account.

New Features with Push3:

- Native WiFi connectivity in addition to ethernet
- 2-way communication for meter settings and control
- Onboard data storage for installations where internet connectivity is unreliable or undesirable (USB Drive or Micro SD Card - FAT32 Format)
- Each Push3 gateway can read any quantity of Omnimeters when communicating via 485Bee radios
- Each Push3 gateway can read 128x Omnimeters when hardwired. The meters can be daisy chained on 4000' of twisted pair wires (CAT5)
- DIN rail mountable

The entire Push3 system has been designed to be robust, reliable, and highly accurate. We truly believe that the Push3 system offers the most reliable, scalable, and economical metering solution on the market. This system is perfect for submetering rental units, monitoring utility resources, irrigation, solar/wind energy generation, car charging stations, etc. We have designed Push3 with reliability in mind so that users can have the confidence to design it into their business models. To our knowledge there is nothing else like this available. We believe the Push3 will be the backbone of the next generation of metering. It represents an entirely new paradigm for meter data and control.

Tools and Materials list:

- EKM Push3 gateway (included)
- Pluggable terminal blocks (included)
- Small standard screwdriver (included)
- 12V DC power adapter (sold separately)
- Twisted pair wire for the RS-485 data connections
- Ethernet cable if not connecting to WiFi

Installation instructions for use with the EKM-Omnimeter I v.3:

- Use a small standard screwdriver to install one strand of twisted pair wire from terminal 11 (A) on your Omnimeter to the RS-485 (A) terminal block of the EKM Push3.
- Use a small standard screwdriver to install one strand of twisted pair wire from terminal 12 (B) on your Omnimeter to the RS-485 (B) terminal block of the EKM Push3.
- You can connect the EKM Push3 to your Wifi network, or you can connect an ethernet cable from you internet router to the ethernet port in your EKM Push. <https://bit.ly/push3-wifi>
- Connect the 12V DC power adapter from any 110-240V AC outlet to the appropriate port on your EKM Push3. Use the barrel jack port or the +/- terminal block. Do not use both.

Installation instructions for use with the EKM-Omnimeter II UL v.3:

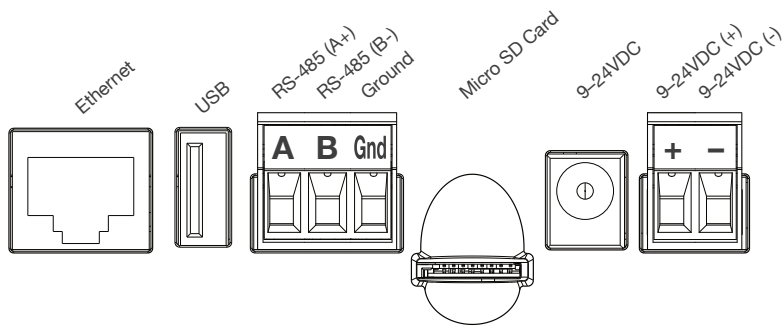
- Use a small standard screwdriver to install one strand of twisted pair wire from terminal 20 (A) on your Omnimeter to the RS-485 (A) terminal block of the EKM Push3.
- Use a small standard screwdriver to install one strand of twisted pair wire from terminal 21 (B) on your Omnimeter to the RS-485 (B) terminal block of the EKM Push3.
- You can connect the EKM Push3 to your Wifi network, or you can connect an ethernet cable from you internet router to the ethernet port in your EKM Push. <https://bit.ly/push3-wifi>
- Connect the 12V DC power adapter from any 110-240V AC outlet to the appropriate port on your EKM Push3. Use the barrel jack port or the +/- terminal block. Do not use both.

Installation instructions for use with the v.4/5 Omnimeter models:

- Use a small standard screwdriver to install one strand of twisted pair wire from terminal 20 (A) on your Omnimeter to the RS-485 (A) terminal block of the EKM Push3.
- Use a small standard screwdriver to install one strand of twisted pair wire from terminal 21 (B) on your Omnimeter to the RS-485 (B) terminal block of the EKM Push3.
- You can connect the EKM Push3 to your Wifi network, or you can connect an ethernet cable from you internet router to the ethernet port in your EKM Push. <https://bit.ly/push3-wifi>
- Connect the 12V DC power adapter from any 110-240V AC outlet to the appropriate port on your EKM Push3. Use the barrel jack port or the +/- terminal block. Do not use both.

*Up to 128x Omnimeters can be daisy-chained together and connected to each Push3 gateway. Simply run twisted pair wire from terminal (A) on the first meter to terminal RS-485 (A) on the next meter, and so on. Repeat the process for the RS-485 (B) terminals as well. An unlimited number of Omnimeters can communicate with a single EKM Push3 gateway by using our 485Bee radio modules that create a wireless mesh network.

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Operation:

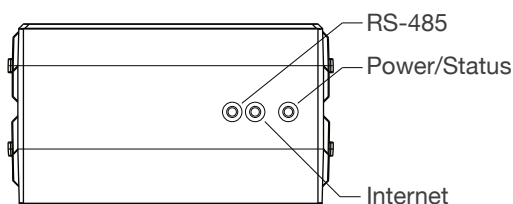
- Booting the Push3 gateway takes ~4 minutes.
- Assuming that your meters are installed correctly and you have followed the appropriate instructions, your EKM Push3 should already be pushing data over the internet to our cloud database.
- No additional hardware or software is necessary in order for your EKM Push to send your Omnimeter data to the database. To learn how to access all of your meter data, please refer to the EKM Push account information email that we sent out when the system was purchased. We also included a hard copy of that email with the first order. The email includes your EKM Push account key, which provides administrative access to your Push account and your meter data. Only share this key with parties that you wish to provide this level of privileges.
- You can use your key to log in to your Push Account Portal here: https://api.ekmpush.com/account.html?key=*enter key here*
The account portal allows you to see the status of all of your meters and gateways, as well as craft API queries and make meter settings.
- Push3 related tutorials, including one regarding how to connect to your WiFi network, can be found here: <https://bit.ly/push3-tutorials>

WiFi:

- The clearest explanation for how to connect to WiFi can be found here: <https://bit.ly/push3-wifi>

Software:

- No software is required for the data collection but we offer a number of software options that make use of the data that has been collected and store in the cloud. The most popular option for data visualization and bill is Encompass. You can register your free Encompass account here: <https://encompass.io/meters/signup/>
Encompass tutorials: <https://bit.ly/encompass-tutorials>
- A quick data visualization option, that doesn't require a login, is the EKM Widget. You can view your own EKM Widget here: https://widget.ekmmetering.com/EKM2/?reads=500&key=*enter Push key here*&meter=*enter meter serial number here*
Widget tutorials: <https://bit.ly/widget-tutorials>



LED Lights (from left to right):

- **RS-485:** Blinks green every time a meter is read locally. It blinks red if the meter read is not successful. Meters are read as fast as possible by default. This is different than the data send rate (sent to the cloud), which is once/minute by default.
- **Internet:** Blinks green every time a meter read is pushed to the cloud. One meter read per minute is pushed out by default. An orange blink means it could not send data to the cloud but that it will retry. A red blink means the gateway is not able to send to the cloud and that it is running out of storage space on the gateway, so a read was dropped.
- **Power/Status:** Solid green indicates the Push is powered up and the status is good. An orange LED means a helper service has not started yet or has failed. A red LED means that the main device agent code has not started yet or has failed. The LED should eventually turn green, which could take up to 20 minutes. If it does not eventually turn green, power cycle the Push3 gateway.
You can see the most up-to-date LED color/blinking definitions here (provided your gateway is on the latest Firmware and Updater): <https://bit.ly/Push3-LEDs>

Troubleshooting:

- Meters are assigned to a specific EKM Push before we ship out your order. If you are adding Omnimeter(s) to an existing Push system, or are adding the Push system to your existing Omnimeter(s), please contact us so we can assign all of your meters to your EKM Push system.
- The most common reasons that users have trouble getting good meter reads are either that the Push3 gateway is not properly connected to the internet, or the the Omnimeter(s) are not properly connected to the Push3 gateway. How to interpret your data to diagnose these issues: <https://bit.ly/push-troubleshooting>

Specs:

- Dimensions: 107x51x90mm
- Input Voltage: 9–24VDC
- Temperature: 0–75°C (32–167°F)

Developers:

- For more information about the data provided by the EKM Push system, please visit the Developer Portal for information regarding our Open APIs: <https://bit.ly/push-api-docs>

Open APIs:

- EKM offers both a Real-Time API and a summary API. The APIs are documented here: <https://bit.ly/push-api-docs>
We also provide an API Builder tool that can be found in your Push Account Portal in the API Query section. This tool is intended to help you craft your API calls so that you can get the data you require, particularly if you are unable to get the with one of the software options we provide.

Supplier's Declaration of Conformity 47 CFR § 2.1077 Compliance Information

EKM PUSH3
EKM Metering Inc.
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www.ekmmetering.com



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Complete Declaration of Conformity: https://bit.ly/Push3_FCC