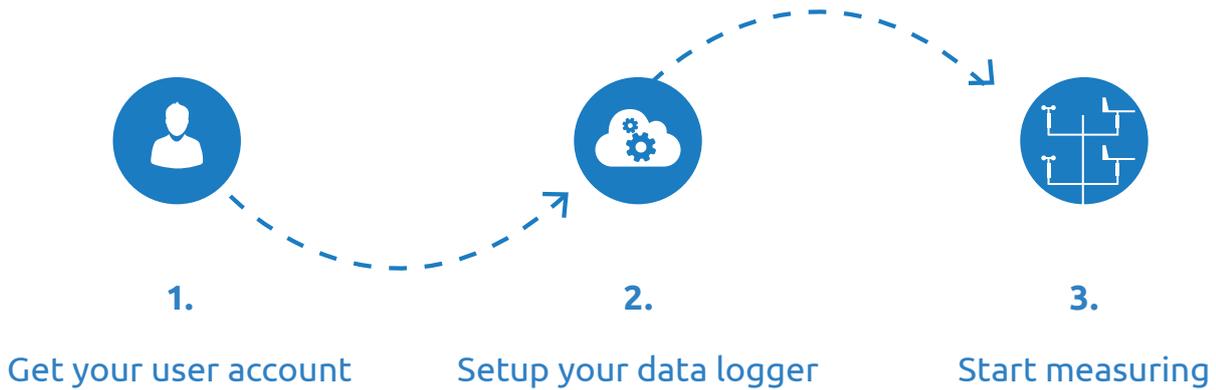


EOL ZENITH DATA LOGGER

QUICK USER GUIDE



Wind Resource Assessment



Solar Resource Assessment



Cold Climate Wind Resource Assessment



Wind Farm Monitoring



Meteorology

HERE ARE THE THINGS YOU WILL LEARN WHEN YOU HAVE READ THIS QUICK USER GUIDE

- (A) How to request a user account
- (B) How to download and install EOL Manager
- (C) How to understand the data management system
- (D) How to set up your first EOL Zenith data logger
- (E) How to upload the configuration to your EOL Zenith data logger
- (F) How to operate the EOL Zenith data logger in the field
- (G) How to download data from your EOL Zenith data logger

If you want to go into details please read our full user manual for the EOL Zenith data logger.

If you need technical support while setting up your data logger, please go to our website, www.kintech-engineering.com, and click on "Technical Support."

You can also contact our technical support directly via phone and/or email.



1. Get your user account

HOW TO REQUEST A USER ACCOUNT

If you do not already have a user account, please go to our website www.kintech-engineering.com and request a new user account.

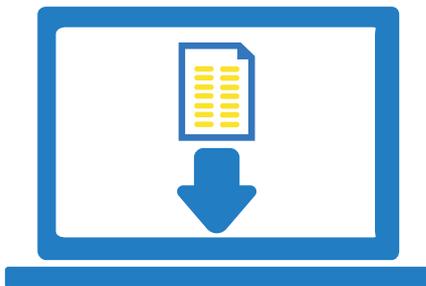
With an user account, you have access to the following:

- Your software licenses
- Technical support files
- Calibration certificates
- Quality control certificates
- Return authorization request
- Customer feedback

HOW TO DOWNLOAD AND INSTALL EOL MANAGER

Log into your account with your username and password. From the download menu within your account, you can download the latest version of EOL Manager.

When you have downloaded the installation file (EOLManagerSetup.msi), locate the file on your PC and double click it. One single file (EOLManagerSetup.msi) installs both the EOL Manager® and EOL Charting on your PC.



The first time you run the software, it will ask for the folder to store all your the data files. That folder will contain all other folders associated with all your future wind measurement sites.

We encourage you to keep up to date with the latest EOL Manager version. When you update to a newer version of EOL Manager, please uninstall the “old” version first and then install the new version. No data and/or configuration files are lost during this uninstall and install process.

SOFTWARE LICENSE

The EOL Manager software needs an active license to run on your computer. You can get this software license directly from your online user account. If your license has run out, just click the “Renew License” button under “Software Licenses” from your user account.

SYSTEM REQUIREMENTS

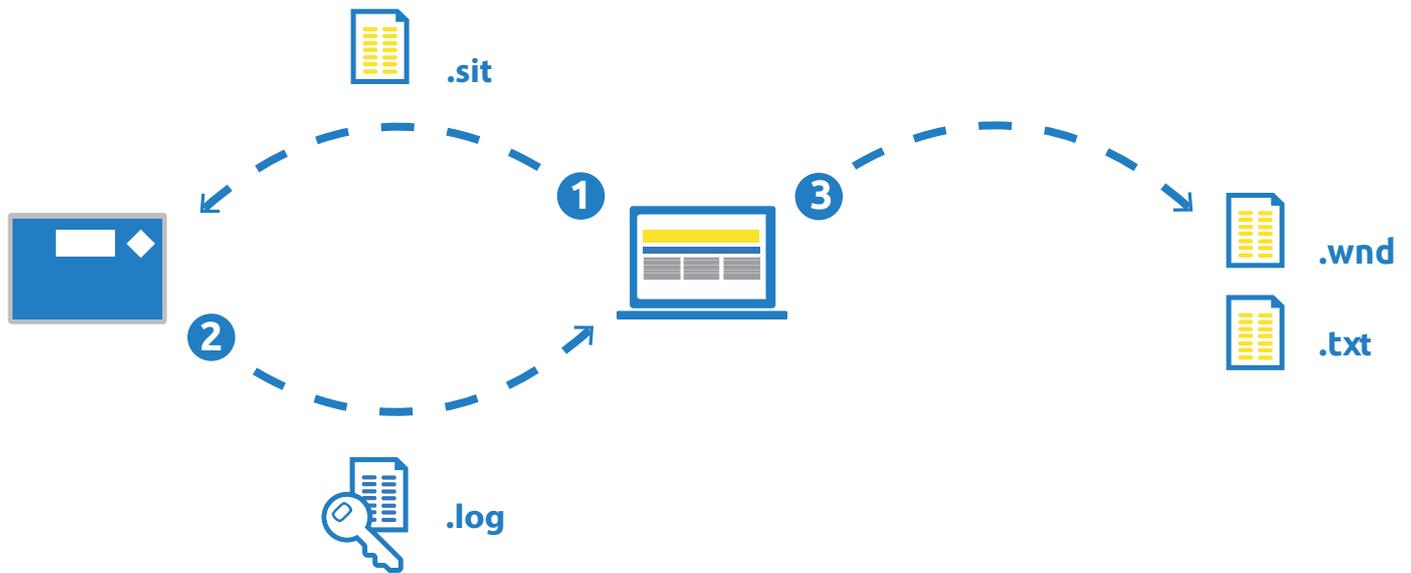
Operating System: EOL Manager is supported on Windows 7, Windows 8 and Windows XP with .NET Framework version 3.5 SP3 or later version installed.

MMC card reader: You need an MMC card reader for accessing the data on the MMC card from your PC and for configuring the EOL Zenith with your logger settings.

Google Earth: If you want to see the exact position of your wind measurement sites, you need to install Google Earth on your PC.

Telephone connection or Internet access: If you are planning to connect to the data logger via a telephone MODEM or Internet.

We recommend connecting to the data logger via an internet connection. However you can connect via a modem as well.



HOW TO UNDERSTAND THE DATA MANAGEMENT SYSTEM

Before you start configuring your first EOL Zenith data logger you need to know how the overall data management works:

1. The .sit file (configuration file) has to be uploaded to the data logger through EOL Manager and not by copying the file to the SD card.
2. EOL Manager downloads the encrypted .log file from the data logger. The .log file contains all the RAW data (volts and hertz stored from all the sensors connected to the data logger).
3. EOL Manager then automatically converts the .log file into .wnd file and .txt file using the active logger configuration file (also stored on your PC).

How does EOL Manager convert the .log file? When you set up your data logger in EOL Manager, you typed in the slope and offset for the sensors you were going to connect to that data logger. EOL Manager uses those slopes and offsets to convert the .log file. It's that simple.

EOL Manager also keeps a history of all your modifications to your logger configurations. Why is that important? Well, say for example you replaced an anemometer on one of your met masts two weeks ago. You can then modify the configuration file in EOL Manager and manually convert/decode the last two weeks' raw data (the .log file) into new .wnd files.



2. Setup your data logger

HOW TO SETUP YOUR FIRST EOL ZENITH DATA LOGGER

All the settings for the EOL Zenith data logger are stored in a file called .sit. This configuration file is prepared by using the EOL Manager. When you are done with the configuration you have to upload the configuration file to the data logger.

Start the EOL Manager. From the dashboard in EOL Manager go to Options > License Information and type in your software license.

Main dashboard

Go to File > New Logger. This opens up a window where you can configure all the settings for your first data logger. You also have the option to import an already prepared standard configuration file (.sit). Please ask our tech support team for this and/or go to your on-line user account and look under "important documents and files."

Site info tab

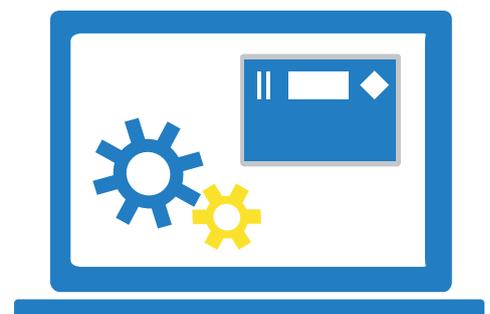
1. Type in the unique serial number of your data logger in the field marked "Serial Number."
2. Select a "Site Number" that makes it easier for you to organize all your future wind measurement sites.
3. Choose a name for your new site, language to display in the data logger, company, city, country, notes, etc.

Inputs tab

Here you setup all the sensors you are going to connect to the data logger as well as the data you want to collect from each sensor. For now you can choose to use the standard slope and offset and then later adjust these values to the real values given on your calibration certificates. Adjust the averaging time and gust integration as needed.

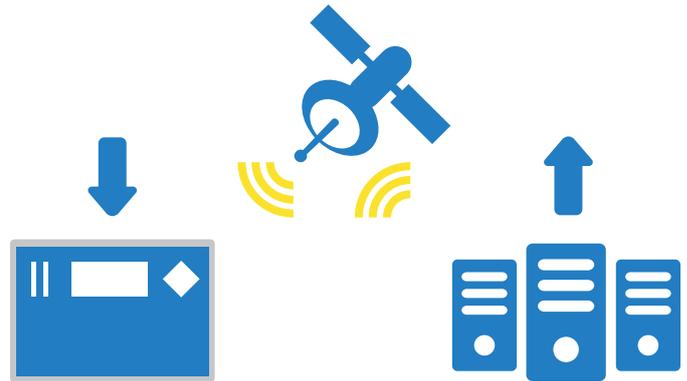
Logger communication tab

1. If you are going to download data via GSM/GPRS select the "GSM/GPRS".
2. Enable the GPRS in case you have a SIM card with GPRS activated.
3. Type in the Mobile Operator Settings, APN Name, User Name and APN Password.
4. Select the passwords for accessing your data logger.
5. If you want to receive data directly from the data logger via email, fill in the required fields. We do not recommend downloading data via email. It is easier and more reliable to use your internet connection to connect directly with your data logger (via GSM/GPRS).



Download tab

1. If you want to use a SIM card with GPRS in your data logger (we recommend this), select the option "By Internet".
2. EOL Manager can download your data automatically. Just select "Auto Download" and set the time and date for the next download. In the timetable on the right you can see the upcoming events for auto download.



Decoding tab

Here you can choose to apply a time offset to your data. You can also load custom python scripts here for post processing your data.

After Download tab

1. From here you can manage what EOL Manager does every time data has been downloaded from a data logger.
2. You can choose to forward data to a customer or another colleague. Select "Send Notification by Email After Download" and mark what file(s) you want to forward.



Every time data (.log file) is downloaded, EOL Manager automatically creates the following 3 files:

- ".log" is the encrypted binary RAW data that is downloaded from the data logger.
- ".txt" is the status and event report created by EOL Manager.
- ".wnd" is the output wind data with slope and offset applied by EOL Manager.



These 3 files are saved in the download folder for this specific wind measurement site. Pr. default Windows® does not show the file extensions and since the three files pr. default have the same name (with the only difference being the extension) we recommend modifying this in your operating system.

Open a random folder in e.g. Windows 7 > go to "Tools" > "Folder Options" > click the tab "View." Scroll down the button and unselect the option "Hide file extensions".

When you are done configuring your first data logger click the "OK" button in the lower right corner. This will store your new configuration file (.sit) on your PC. Please follow the instructions here below on "How to upload the configuration file to your EOL Zenith data logger."

PASSWORDS

You can apply two types of passwords for accessing your EOL Zenith data logger remotely. Until you are familiar with the system, we recommend not using a password. You can always apply password protection at a later stage.



Full Access Password: With this password, the user can perform all types of communications with the logger (real time connection, download data, upload new configurations to the logger, etc).

Real Time Data Password: With this password, the user can only connect to the logger in real time (e.g. to check that all the sensors are connected correctly).

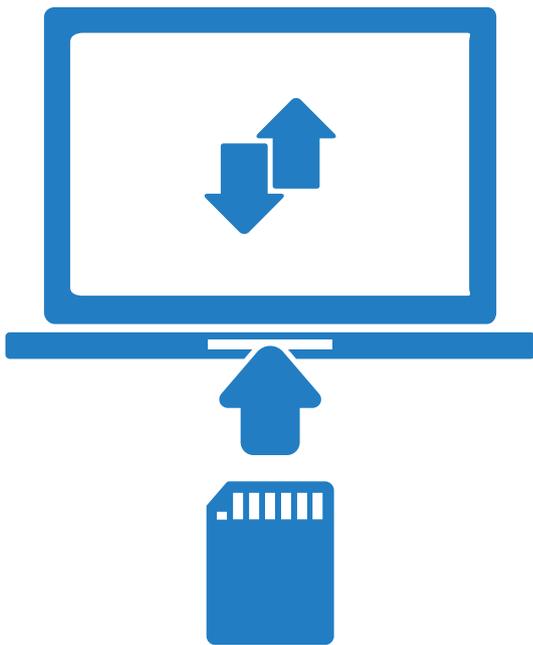
Important Notice: You cannot use Windows explorer to upload the settings (.sit file) to the SD memory card. Please use the SD card that was supplied together with the data logger.

You are now done with the configuration of your first EOL Zenith data logger. You have created a .sit file on your computer and this file now has to be stored in the SD memory card (this SD card is later inserted in the data logger).

There are two ways to upload the configuration file to the SD memory card:

 **SD MEMORY CARD CONNECTED TO YOUR PC**

1. Insert the SD memory card in your computer's MMC card reader. Once you have filled in all the parameters for your new data logger (site) go to Tools > Upload Settings Tool or right click on a logger and select "Upload Settings".
2. Choose the option "Memory Connected to PC" in the upper right corner of the pop up window and click the "Start" button. A new window comes up, where you should choose the MMC card unit.

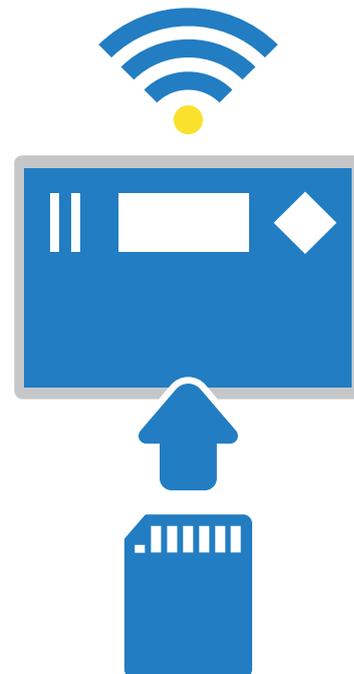


 **SD CARD INSERTED INTO THE DATA LOGGER**

If the data logger is turned ON and already communicating you can upload settings remotely via the internet.

1. Once you have filled in all the parameters for your new data logger (site) in EOL Manager go to Tools > Upload Settings Tool or right click on a logger and select "Upload Settings". Make sure the SD card is correctly inserted into the data logger.
2. Choose the option "Remote Mode" in the upper right corner of the pop up window and click the "Start" button.
3. When ready, click the "Start" button. EOL Manager will now upload the .sit file to the SD card inserted in the data logger.

Some communication parameters like the PIN code for the SIM card will not be uploaded as the system is already working.

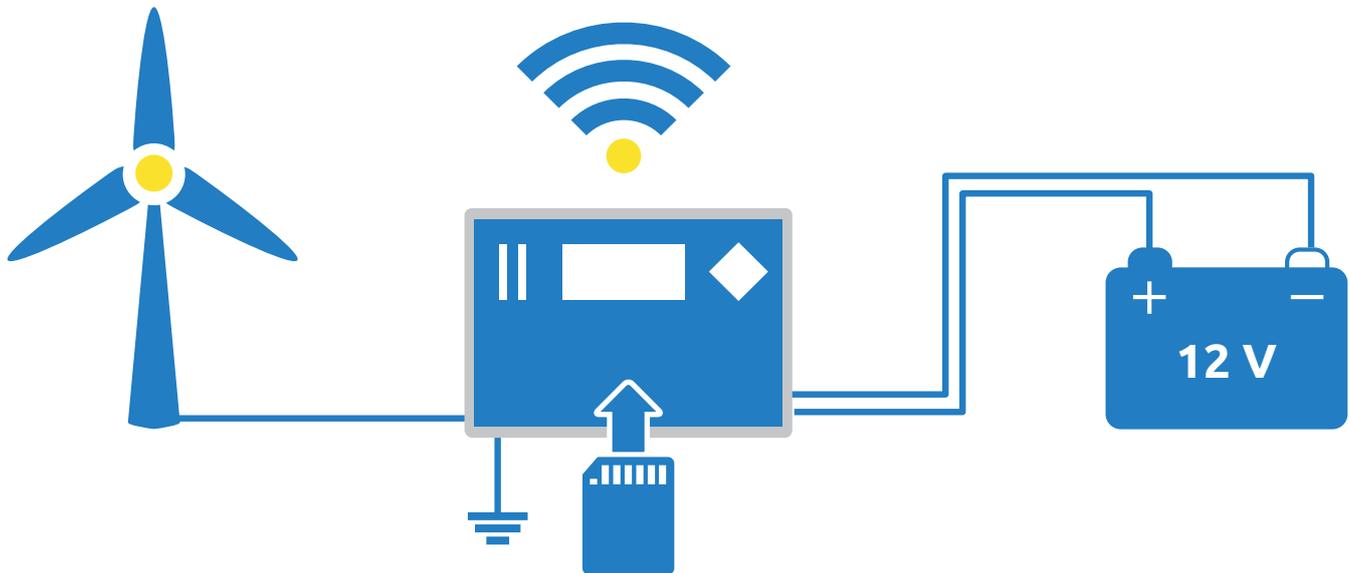


Important Notice: MMC SD operations will work only if the EOL Manager program is launched with administrative privileges. This is not the default option in Windows 7. See our online "FAQ" for help on this.

WARNING! Configuring the MMC card in this way overwrites existing data on the memory card.

HOW TO OPERATE THE EOL ZENITH DATA LOGGER IN THE FIELD

Before installing a data logger in the field, make sure that all your settings are correct and that the e.g. GSM/GPRS connection has been thoroughly tested.



1. Install the data logger inside a weather proof metal cabinet. Connect all the sensor cables to the data logger terminals. Keep a maximum clearance between the GSM antenna cable and sensor cables. Do not connect the battery to the 12V terminal yet.
2. Make sure that all the grounding shields from the sensors are thoroughly connected to ground.
3. Make sure the SD memory card is correctly inserted. The card is inserted gently with the metal connectors facing towards the left. Press the bezel down until you hear a “click”. The memory only has one possible position when inserted. Forcing the card may damage the internal connector of the logger or the card itself.
4. Check that all your sensors are connected correctly.
5. Power on the data logger by connecting the orange battery plug into the data logger.
6. The data logger will now load the settings in the SD memory card and immediately start logging data. The display turns off automatically after a short while.

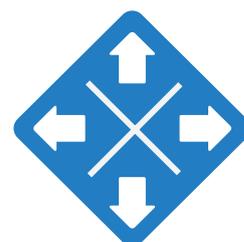
Here are some hints that might help you while operating the EOL Zenith data logger in the field:

Turning the data logger ON and OFF

To turn the data logger OFF, disconnect the orange terminal from the data logger. To turn the data logger ON, connect the orange terminal to the data logger. When the data logger has powered up and the GPS gets satellite coverage, it will automatically correct both the time and the date.

Navigation keys

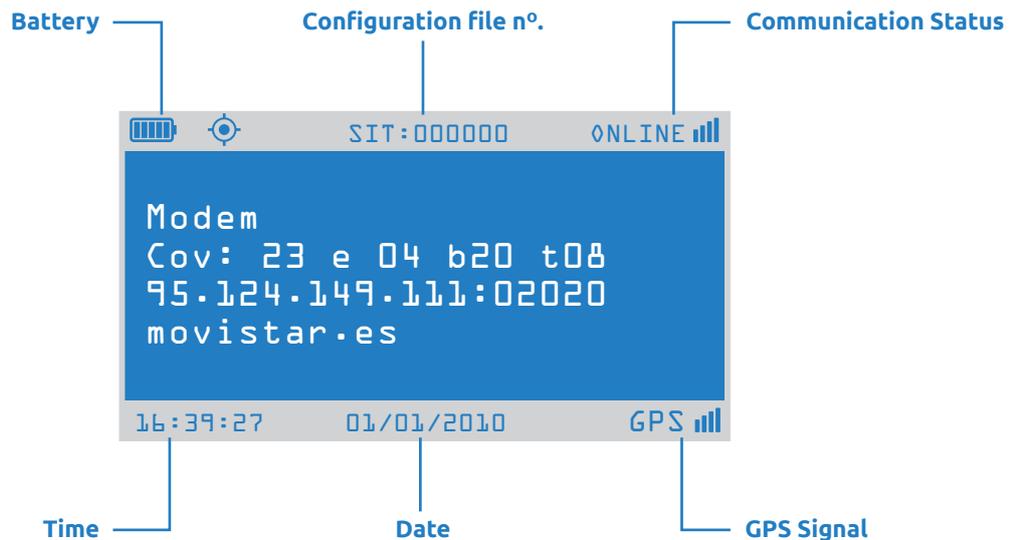
The keys on the front panel are the navigation keys (start, edit, left, right, up, and down). These keys can be used to navigate up and down in the menus as well as selecting and editing sensors.



Display

The liquid crystal display is built into the logger to facilitate site visits and is activated by pressing any key on the logger keypad. The user can view real-time wind conditions as well as data logger settings.

As a power saving function, the display will always shut off after two minutes without any key inputs. The logger continues to collect data while the display is off.



Communication status

In the upper right corner of the data logger display, the GSM/GPRS coverage and current communication status is shown.

STATUS	DESCRIPTION	DISPLAY
GSM connection	The communication between the data logger and the internal modem has been established and the SIM card is now registered on the GSM network.	GSM
GPRS connection	The data logger has now received a correct IP address.	GPRS
Internet connection	The data logger is now connected to the Internet.	INET
Online mode	The data logger is now ready for receiving and transmitting data over the Internet using the EOL Manager® software.	ONLINE
Satellite mode	The data logger has been configured for satellite communication.	SAT
Connection error	There is a communication error. It might be an incorrect PIN code.	
E-mail transmission	Icon shown during an e-mail transmission.	ONLINE

For additional information on communication, please navigate to “Modem” in the data logger menu using the navigation keys. Go to STATUS > MODEM.

Here you can see the internal status codes while communication is being established. The list below explains the different states:

INDICATION	CODE	STATUS
X	E33-37	Waiting for a connection to the GSM or satellite network. Enter PIN code if necessary.
GSM	E64-65	Starting modem Internet stack.
SAT	E3-4	Satellite modem ready, showing signal strength in display.
GPRS	E66	Setting up TCP packet size.
GPRS	E67	Waiting for connection to the GPRS network.
GPRS	E68	Activating the GPRS bearer.
GPRS	E69	Setting the APN name.
GPRS	E70	Setting the APN user.
GPRS	E71	Setting the APN password.
GPRS	E72	Connecting to the APN (Access Point Name).
INET	E73	Reading the IP address assigned from the network.
INET	E74	Data logger now starts listening for incoming connections.
INET	E75	Connecting to the LNS (Logger Name Server).
INET	E80	Sending data (IP Address) to the LNS.
ONLINE	E3-4	IP address has been updated to LNS, showing signal strength in display.

When the data logger is powered on, it automatically goes through a startup process to be ready for you to establish a connection with the data logger from your office. As soon as the data logger has gone through the start-up process, there are 3 possible states: ONLINE, SAT or GSM. At this point the red led right below the SD memory card should be flashing.

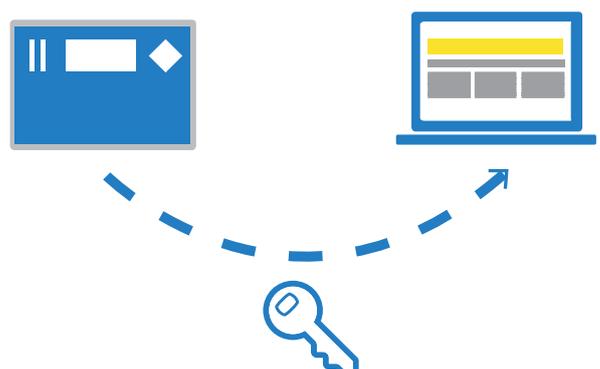
HOW TO DOWNLOAD DATA FROM YOUR EOL ZENITH DATA LOGGER

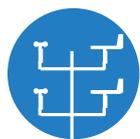
If you have configured EOL Manager to automatically download data from your data logger, you can go directly to your site folder and/or to EOL Charting to check the data.

If you do not want to wait for the automatically programmed download you have the option to download data directly at any time.

1. Open EOL Manager.
2. From the dashboard in EOL Manager, select the data logger you want to download data from.
3. Right click on the line indicating this data logger and select the "Download Now".

4. The "download tool" window opens up.
5. Assuming the data logger status is "ONLINE" mark the "Internet".
6. Click the "Start Button."
7. Your PC now connects to your data logger and downloads data directly.





3. Start measuring



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