

FIMER

VSN700-05 **Data Logger**

**and 3rd party meter enabling
“self-consumption” monitoring
via Energy Viewer**

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Terms and definitions

Generator convention/Generator reference system

Power reference system where the current generated by the PV plant and injected into the grid takes on a positive sign, as opposed to the consumer reference system. The Export Limitation function requires meters to be aligned with this reference system.

Load convention/Consumer reference system

Power reference system where the current absorbed from the grid takes on a positive sign, as opposed to the generator convention (generator reference system).

Aurora Vision

FIMER's cloud-based platform enables remote monitoring and management of PV plants through the use of different products (e.g. Energy Viewer mobile app or Plant Portfolio Manager professional web portal)

Point of Connection (PoC)

The contractual electrical point where the Export Limitation shall be ensured.

Energy Viewer

FIMER mobile app integrated with Aurora Vision cloud, available for Android and iOS mobile devices, enabling remote monitoring of all the energy flows of a PV plants.

DHCP

Dynamic Host Configuration Protocol, a protocol where a DGCP server automatically configures the IP settings of the client's devices with DHCP enabled.

RS-485 Daisy Chain

Wiring scheme according to which multiple devices (inverters or PV plant accessories) are wired together in a sequence over an RS-485 serial bus.

Export limitation solution

The innovative distributed control algorithm built-in in every FIMER PVS string inverter allowing PV plant output power exported to the grid to be dynamically controlled and automatically kept under a certain limit set by the Installer for solar inverters mobile app.

Installer for solar inverters

FIMER mobile app enabling solar professionals like installers to complete the commissioning and the parameter settings of multiple FIMER PVS string inverters all together.

Data Logger (or simply logger)

Device (either external accessory or plug-in card) enabling the polling and the recording of data over time from PV plant assets connected to it (like inverters, environmental sensors, meters etc). The FIMER VSN700 product family are about external data logger; the FIMER VSN300 product is about a Wi-Fi plug in card acting as data logger for single inverter; the PVS string inverter family (as well as the UNO-DM-PLUS or the REACT 2 storage system) comes with built-in logging capability enabling remote monitoring of PV plants without the need to install any external data logger or accessory.

Self-Consumption monitoring

Monitoring of the generation, consumption and, in general of all the energy flows within a PV plant where FIMER inverters are installed in order to maximize self-consumption and self-sufficiency.

1. Introduction

Energy Viewer

Energy Viewer is an easy to use mobile application (the web portal version is coming soon) belonging to the Aurora Vision® cloud-based product family enabling PV plant owners as well as solar professionals to remotely monitor all the energy flows and the main Key Performance Indicator (KPI) of their PV plants, with or without an energy storage system installed.

Energy Viewer users can view all energy entering and exiting a building, including residential applications or commercial offices, while keeping track of energy self-consumption as well as energy self-sufficiency.

In order to enable the remote monitoring of such energy flows and, therefore, get Key Performance Indicators (KPIs), like Self-consumption, properly calculated and provided, at least one of the supported meters needs to be installed by the Point of Connection (PoC) of the PV Plant.

In most modern PV plants where a FIMER smart inverter is installed (for instance a machine belonging to the PVS string inverter family), it is possible to connect the supported RS-485 device (like a VSN800 Weather Station or a RS-485 meter) directly to the inverter's RS-485 in order to leverage its logging capability and to enable the transferring of data from such accessory to Aurora Vision cloud. This will enable the customer to monitor the performance, the energy flows and the main KPI (e.g. self-consumption) of the PV plant by using any Aurora Vision® products (primarily Energy Viewer) without the need to install any additional data logger on the field.

Please refer to the **Export Limitation Solution User Manual** for further information on how to connect an external meter to a FIMER PVS string inverter, either by the RS-485 or through Ethernet and, hence, enable remote monitoring and Export limitation controlling without the need to use any external data logger or controller (further information available on the official FIMER website <https://www.fimer.com/>)

Whenever FIMER inverters with no embedded logging capability are installed, in order to enable the remote monitoring of the PV plant via Aurora Vision® products it is necessary to install one of the compatible data logger

accessories available in our catalogue.

The present user guide will focus on how to use one of the compatible third-party **standard meters** connected to the external **VSN700-05 Data Logger** to enable self-consumption monitoring of a PV plant via the **Energy Viewer** mobile app. A FIMER customer owning a PV plant where any FIMER string inverter is installed (e.g. PVS, PVI and TRIO models) can follow the instructions contained in this document in order to enable the monitoring of the energy flows and the consumption of their PV plant as well as getting significant KPIs (primarily Self-Consumption and Self-Sufficiency) calculated and tracked 24 hours a day.



NOTE:

As mentioned above, some string inverter models feature an integrated data logger enabling the direct connection of external accessories (such as a supported RS-485 meter) directly to its RS-485 port. This will enable the remote monitoring of the PV inverter / PV plant through any Aurora Vision® product, without the need to use any additional data logger. However, in some cases, although the use of an external data logger would not be necessary, as previously said, you may want to connect the meter to the RS-485 of the VSN700-05 Data Logger instead of connecting it to the inverter's RS-485 (where possible) in order to have remote monitoring of the load consumption also during the night; indeed, since some inverter models (like UNO-DM-PLUS) turn off when the DC input voltage is below a certain limit (which always happens during the night) the monitoring of telemetry data from the meter installed at the Point of Connection will not be provided if the meter is connected to the inverter (just acting as data logger for it). In all those applications where this constraint could be too restrictive or limiting, it is highly recommended to install a VSN700-05 (if not already present on the field) and connect the meter to the RS-485 of the external data logger rather than to the inverter's RS-485. The VSN700-05 Data Logger is powered by an external power supply and it is able to monitor the telemetry data for any accessory connected to it, including energy flows and load consumption, 24 hours a day.

2. Pre-requisites

This document is intended for trained professionals and the tasks described in this document must be performed by these people only.

Professionals must have the following skills:

- Knowledge of IP-based network protocols
- Knowledge of the Modbus specifications
- Knowledge about how to properly set up an RS-485 serial line bus connecting FIMER Modbus devices
- Trained in the installation and configuration of FIMER products and solutions (VSN700-05 and Aurora Vision cloud-based products)
- Knowledge about how to install and configure the third-party compatible meter being used in combination with the FIMER VSN700-05 Data Logger

- Knowledge of and compliance with this document and all safety precautions

Additional information on how to install and configure the VSN700-05 Data Logger to enable remote monitoring of PV plants with FIMER inverters is available in the following documents

- VSN700 Data Logger Product Manual
- Devices supported by VSN700-05 Data Logger
- Accessories compatibility matrix
- How to connect Ethernet inverters with VSN700 Data Logger through the Ethernet

For information about how to appropriately install and configure a 3rd party supported meter, please refer to the specific product user guide.

3. Equipment

To enable self-consumption monitoring of a PV plant via the Energy Viewer mobile app, the following pre-requisites must be met:

- PV Plant with any FIMER string inverter installed
- At least one supported meter installed at the Point of Connection
- VSN700-05 Data Logger properly installed and configured
- FIMER Energy Viewer mobile app installed on a compatible Android or iOS device with Internet access
- Aurora Vision account enabled access to the Energy Viewer mobile app

4. Configuration process

In order for your PV plant to be properly configured and monitored via the Energy Viewer mobile app, the following procedure needs to be followed

- Install and configure one of the compatible meters at the Point of Connection
- Install the VSN700-05 Data Logger (if not already available on the field) and connect the meter to the available RS-485 port of the data logger
- Commission the VSN700-05 Data Logger
- Get an Aurora Vision account enabled access to Energy Viewer
- Register the solar plant with Aurora Vision cloud (Asset Registration)
- Download the mobile app named FIMER Energy Viewer mobile app from Apple or Android stores and install it on your smartphone or tablet

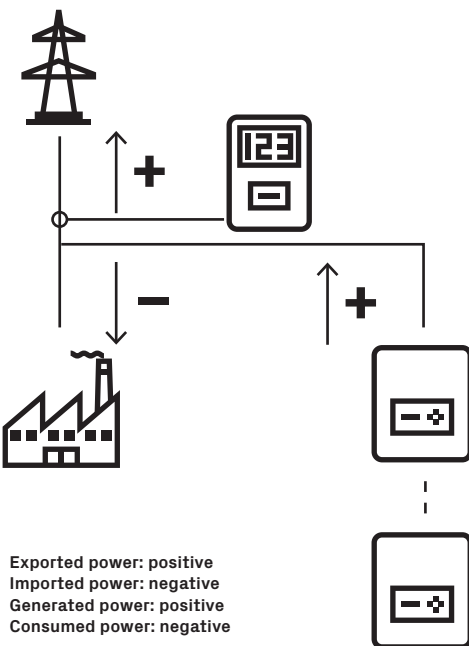
5. METER installation

At least one of the compatible electricity meters needs to be appropriately installed and configured at the Point of Connection. Please refer to the meter's user manual to make sure to install and configure it properly.

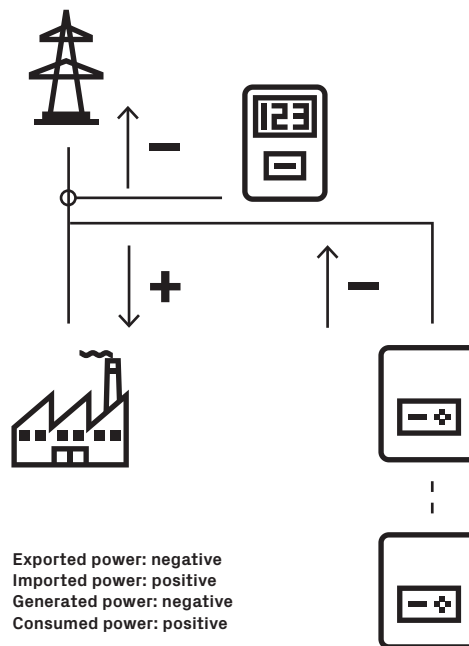
5.1. Reference system

Most of the supported meters (such as the ABB B23/B24 models) are standard models designed to be used in a variety of different applications, even beyond remote monitoring of PV plants. This is the reason why, in most cases, the instructions provided in the meter's user guide might guide the installer to electrically configure the meter in order to meet the so-called Load Convention. According to the Load Convention, the signs of both power and current exported to the grid are considered negative, while the signs of power and current imported from the grid are considered positive.

Generator Reference System (Generator Convention)



Consumer Reference System (Load Convention)



The Load Convention is not suitable to properly represent the energy flows within a PV plant for which the Generator Convention (power and current exported to the grid are considered positive while power and current imported from the grid are considered negative) shows to be much more suitable. Self-Consumption monitoring through Aurora Vision® products as well as the configuration associated to the FIMER Export Limitation control solution adopt the Generator Convention. Configuring the meter differently compared to the Generator Convention may cause the malfunction of Aurora Vision® products which may show the wrong data, as well as of the control algorithm associated to the Export Limitation which might not be able to appropriately regulate the PV generator's output power.

Please refer to Figure 1 - Generator VS Consumer reference systems for a comparison between Generator and Consumer Reference systems.

Figure 1 - Generator VS consumer reference systems

That said, in our specific case, in order to enable the VSN700 Data Logger to properly collect data about PV generators and load consumption, as well as Energy Viewer mobile app to be able to properly interpret the energy flows and calculate Key Performance Indicators (KPIs) like Self-Consumption, the Generator Reference System must be complied with when connecting the meter to the

Point of Connection. This means that the meter has to be installed and configured in order to have positive current and power when moving to the grid and the opposite (negative values of current and power flows) when they move from the grid to the plant. Please refer to the following scheme for further details:

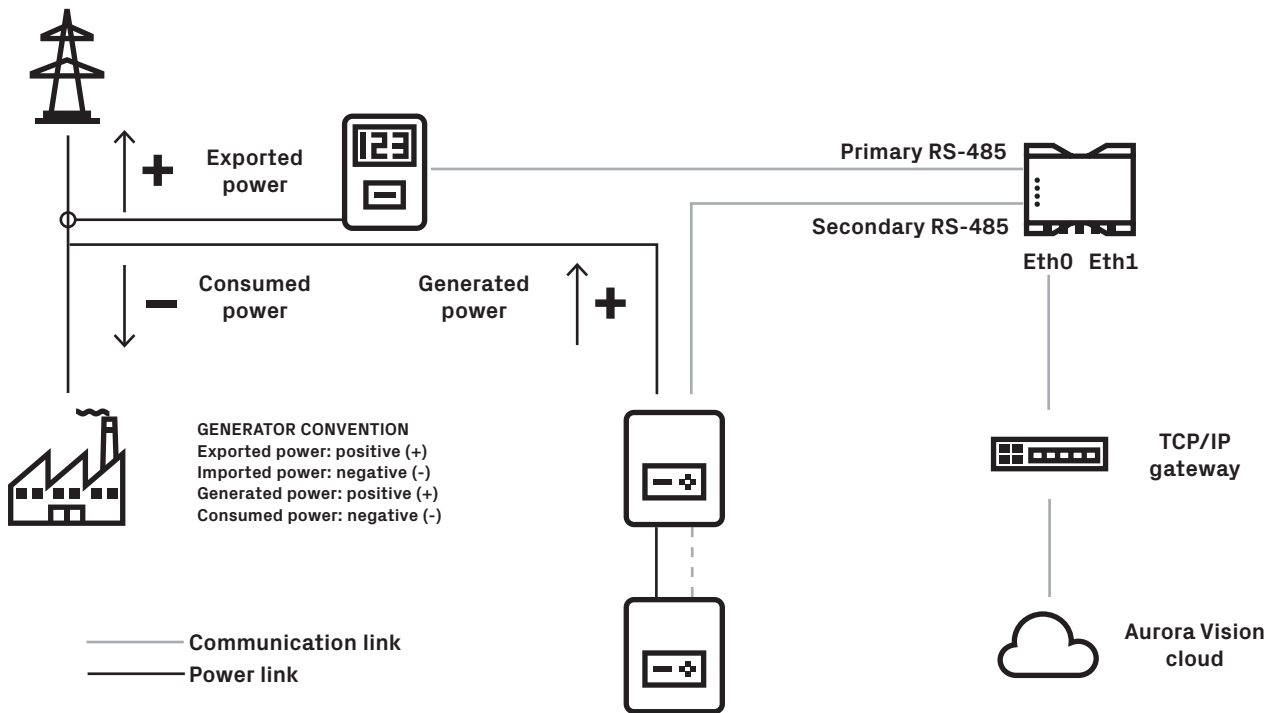


Figure 2 - Generator reference systems applied to the meter installed at the Point of Connection (PoC)

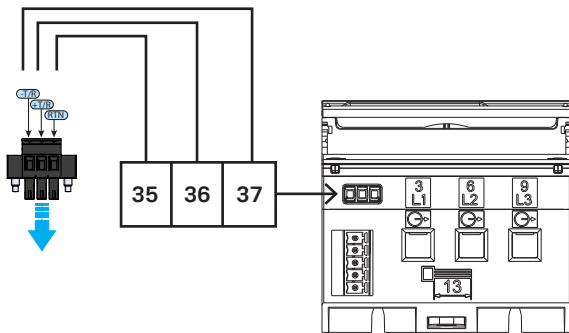
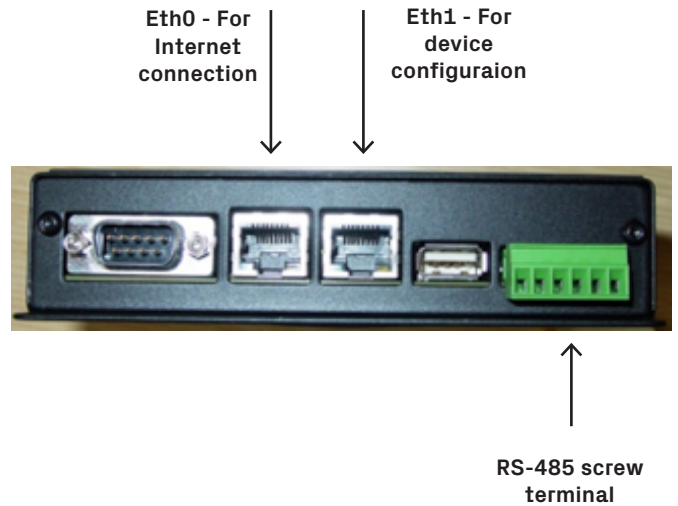
6. VSN700-05 Data Logger installation and connection

This guide is intended for trained professionals already familiar with how to install and configure the FIMER VSN700-05 Data Logger system in order to enable the remote monitoring of a PV plant via Aurora Vision® cloud-based products. Please refer to the VSN700-05 Data Logger Product Guide document (available at www.fimer.com) for additional information on how to mechanically and electrically install a VSN700-05 Data Logger.

The connection between the VSN700-05 Data Logger and the meter can be established either through the serial RS-485 line or Ethernet depending on the communication interface features of the selected meter. This guide shows how to establish the connection between the VSN700-05 Data Logger and a meter through a RS-485 serial communication bus. Please refer to "How to connect Ethernet inverters with VSN700 Data Logger over Ethernet" technical guide for further information on how to enable the VSN700-05 to log data from an Ethernet device. Use a RS-485 data wire with one twisted pair, one ground conductor, and a shield with drain wire (Belden#3106A or equivalent). **DO NOT USE CAT5/6 CABLES FOR THE RS-485 DATA WIRE.**

Connect shielded twisted-pair wires to the RS-485 terminals on the meter. Connect the other end of the shielded twisted-pair wire to the

secondary RS-485 terminals on the VSN700-05 Data Logger. Please refer to the following picture and table to connect the devices properly.



Device	-TX/RX (A)	+TX/RX (b)	RTN
Energy meter ABB B24	37	36	35

Figure 3 – Example of PIN connection in a terminal block for ABB B23/B24 meters

RS-485 connection	Data Logger RS-485 screw terminal connector	Example ABB B23/B24 meter RS-485 pin label
RS-485 Negative (-)	1	37
RS-485 Positive (+)	2	36
RS-485 Negative (-)	3	
RS-485 Positive (+)	4	
Ground	5	35
VDC power only	6	

Figure 4 –Example of PIN connection in a terminal block for ABB B23/B24 meters

7. VSN700-05

Data Logger commissioning

Please refer to the VSN700-05 Data Logger Product Guide (available at www.fimer.com) for additional information on how to mechanically and electrically install a VSN700-05 Data Logger. First of all, make sure that the FW version of the VSN700-05 Data Logger is the one listed in Table 1 (Chapter Annex 1). Refer to the following chapter for further information on how to locally update locally the FW of the installed VSN700-05.

7.1 Updating the FW of the VSN700-05 Data Logger via the USB flash procedure

The USB Flash Upgrade Procedure provides a simple way to upgrade the software installed on a VSN700-05 Data Logger by using a USB flash drive.

Please contact FIMER's technical support to get the latest FW version available for your VSN700-05 Data Logger product provided as single .ZIP file (like r22107-ausm-usb_upgrade_ck801_9260.zip). An USB flash drive with at least 16MB or more free space is required. Transfer the .zip file provided by FIMER's technical support, containing the latest FW version for your VSN700-05, to the USB flash drive.

Unzip the ZIP file provided by FIMER's technical support and make sure that all the unzipped files are stored in the top level of the flash drive's directory structure. This means that, if they have been unpacked into a folder you need to move them out of that folder on the flash drive.



NOTE

Only an official FW version file, provided by FIMER's official technical support team, must be used in order to avoid any damage or unexpected behavior of the FIMER product.

You should have the following six files in the top level of the flash drive's directory structure:

- README.txt
- build_number
- upgrade
- flash tool
- release_file
- a firmware release file, such as r16946.arm_nofpu-jffs2.tar.gz

Insert the flash drive into the data logger USB port. Such port is located next to the RS-232 interfaces, on the top of the VSN700-05 data logger (please refer to the VSN700-05 Product Guide for additional information)

Reset or power cycle the data logger:

- To power cycle the data logger open and close the AC supply fuse holder or disconnect and reconnect the power supply;
- To reset the data logger, press and release the reset button located close to the corner on the opposite side compared to the screw terminal block. You don't have to push hard and

it is possible to break off the switch. You will feel the switch gently click if you are pressing it correctly.



NOTE

The upgrade process usually takes approximately 90 seconds.

At the end of the upgrade procedure a single LED (located opposite to the screw terminal block) will shine steady green. During the procedure the lights will flash in various sequences. Finally, use a laptop to connect to the Eth1 port (using a crossover cable) and verify that the upgrade has been completed using the local web interface. The URL which should be used to load the web UI is

http://172.17.17.1.

The new firmware release number should be displayed in the home page - in the upper right corner of the VSN700-05 Web User Interface

7.2. VSN700-05 Data Logger configuration

The following major steps are about how to properly configure the VSN700-05 to make sure the system is operational and that data are aptly being transmitted to the Aurora Vision cloud.

1. Connect the data logger to your Ethernet network (LAN)
2. Configure the data logger through its web-based user interface.
3. Verify that you have a working Internet connection from the data logger to Aurora Vision's servers.
4. Carry out an asset registration through the Administration page on Aurora Vision (reachable from the Plant Portfolio Manager web interface).
5. Verify the end-to-end data transfer using the Aurora Vision Plant Portfolio Manager web portal.

The commissioning procedure will not be completed until you have performed the final two steps above over the Internet. However, these two steps do not necessarily need to be performed as part of the hardware installation.

7.2.1. Connecting the VSN700-05 to the Internet

Connect the data logger to the Internet through a local area network. Use a standard Ethernet cable and connect it to the Ethernet RJ-45 port marked Eth0 (Internet) at the front of the data logger. The data logger can connect through any switch or router in your network¹.

1) The data logger is by default set to DHCP and will try to acquire its IP-address from the DHCP server on your local network (LAN). The data logger is designed for use on an Ethernet network and must be assigned an IP address (DHCP or static) to make it accessible. If it is required to set a static IP for the data logger, your connection will not work until this address is set. If required, please refer to the VSN700-05 user guide, particularly to the section on how to set a Static IP address. Normally no ports should need to be opened in the network firewall. The data logger will use port 443 outbound to transmit the data.

2) Due to the constantly evolving nature of any software, the images shown in this manual may be out of sync with the current user interface.

Verify that the data logger has an Ethernet connection. The Eth0 (Internet) LED can be used to detect a network link and network traffic:

- Eth0 LED = GREEN = Link
- Eth0 LED = GREEN BLINK = Traffic
- Eth0 LED = OFF = No network link

If no activity is seen on the LEDs, double-check all connections.

FIMER recommends a wired Internet connection because it is more reliable and requires less setup. If it is necessary to connect to a wireless network, a wireless network bridge with an Ethernet port is required. Purchase and configure the wireless network bridge that is compatible with the host wireless network. Ensure that the wireless connection is operational with a laptop before connecting it to the Eth0 (Internet) port of the data logger.

FIMER does not provide Internet service or the cables required to connect the data logger to the Internet.

7.2.2. Configuring the VSN700-05 data logger via integrated Web User Interface

The installer must use a laptop with an Ethernet cable to communicate directly with the data logger’s web-based user interface for configuration. The data logger’s web server has many options and capabilities, but here we only describe those necessary to get your system up and running.

- Configure the laptop’s Ethernet port to obtain a Dynamic IP address automatically through DHCP; typically, laptops are already configured this way.
- Connect the Ethernet cable between the secondary Ethernet port marked Eth1 (Local) on the data logger and the laptop computer.
- Wait for the laptop to obtain an IP address from the data logger and then open an Internet browser window on the computer. Type in the following URL in the address bar.

http://172.17.17.1

- The following Home page (or similar) will appear:



Figure 5 – Home page of the VSN700-05 Web User Interface

- Select the tabs across the top to perform configuration operations and select one of the ports in the Devices list to set up devices.
- Verify that all the icons for the data logger in the status area to the right are green. It may take some time for all the icons to turn green.

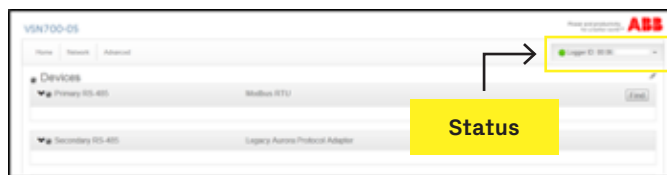


Figure 6 – Home page of the VSN700-05 Web User Interface with localization of the “Status” menu

- The MAC address (Logger ID) for the data logger is displayed at the top of the page. Be sure to write down the MAC address of the data logger. The MAC address will be needed later to carry out the Asset Registration on Aurora Vision cloud (in case it has not been registered yet)

7.2.3. Making the VSN700-05 recognize the connected meter

The Devices list on the Home page shows all the different devices connected through all the RS-485 ports on the VSN700-05 data logger. It is essential that the devices you set up here match how devices are physically connected to your data logger.

Although the VSN700-05 is able to automatically recognize the devices connected to the RS-485 ports (this is, for example, the case of a VSN800 Weather Station or most of the FIMER inverters), supported meters need to be manually added. To do so, that please click on the ‘+’ button and select the model of the meter connected from the drop-down menu (as shown in the pictures below regarding an ABB B23/B24 meter aimed to be added).

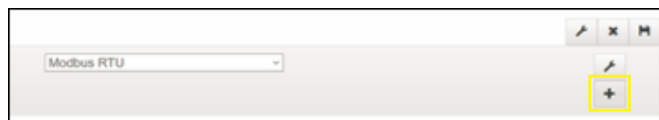


Figure 7 – ‘+’ button of one of the two available RS-485 port allowing user to select the meter physically connected to that logger’s RS-485 port from a drop-down menu (usually, the primary RS-485 is configured as a Modbus port by default)

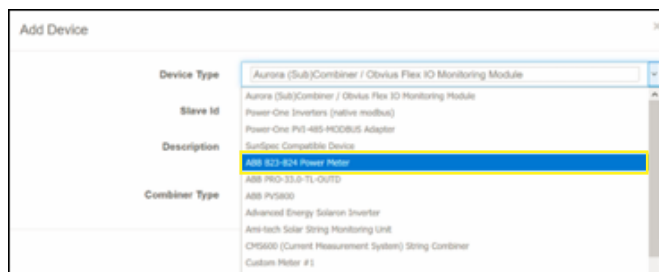


Figure 8 – drop-down menu with the list of all the supported devices appearing when the ‘+’ button is clicked

Once selected, the slave ID address of the meter needs to be manually inserted in the field “slave ID”. Please refer to the user manual of the specific meter being configured for further information about how to assign a slave ID address to the meter and/or to get information about what was the slave ID address assigned to the meter.

Please make sure that every slave device connected to the same RS-485 line (for example multiple Modbus devices connected in daisy chain over the same RS-485 line) have got a unique Slave ID address.

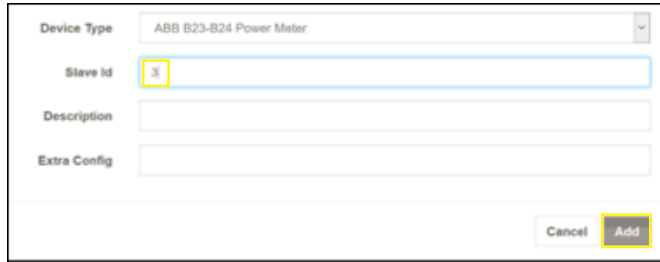


Figure 9 –configuration page of the specific device selected from the drop-down menu with evidence of the “Slave ID address filed and the ADD button to be pushed to finalize the commissioning

Finalize the configuration by clicking on the “ADD” button

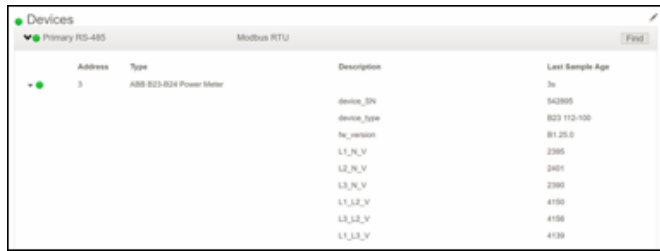


Figure 10 – once added, the selected device appears in the Home page of the VSN700-05 Web User Interface and the main logged data are also shown under the RS-485 port menu the device has been physically connected with

7.2.4. Final check of the installation and Internet connection

Verify that the Ethernet cable is connected to the data logger’s Eth0 (Internet) and to your network.

The data logger acts as a router. From your laptop connected to Eth1 (Local), verify internet connectivity by opening an Internet browser window and connecting to www.auroravision.net.

The remaining steps for commissioning are performed via the Internet to check end-to-end communications. Proceed with one of the following steps:

- a. If you are not responsible for these remaining steps, make sure you to pass on the MAC address (Logger ID) information to the responsible party (for example the administrator of the plant). Remove the cable from **Eth1 port**: Installation is complete!
- b. If the Asset Registration is already complete, proceed to the section **End-to-End Data Check**.
- c. If the Asset Registration is not complete, proceed to the next section for further information on how to get a valid Aurora Vision account and finalize the **Asset Registration** process.

8. Getting an Aurora Vision account

To access and use the multiple products and services part of the Aurora Vision offer, a valid account is needed.

According to the privilege role associated to the Aurora Vision account owned, it is possible to use all or only some of the products. The functionalities enabled depend on the privilege roles and rights assigned to the account itself. Below a couple of examples show how the privilege role associated to the Aurora Vision account regulates the access to the Aurora Vision products and to the specific functionalities provided.

Aurora Vision account with Administrator privilege role

- This account enables the user (supposed to be a solar professional like an O&M manager or installer) to get access to the professional web portal named Plant Portfolio Manager;
- This account level can modify the plant configuration and it is enabled to amend any setting within Plant Portfolio Manager
- This kind of account is also enabled to use any Aurora Vision products (Energy Viewer included)
- This kind of account is the only one entitled to access and use the Administration tool available in the Plant Portfolio Manager, as well as register new plants in the managed and create new accounts for final customers (for example, the owner of the PV plant registered) or collaborators.
- Only FIMER's Technical support can provide customer with an Aurora Vision account with Administrator privilege role. Please contact FIMER technical support to get yours.

Aurora Vision account with Operator privilege role

- This account enables the user (supposed to be an advanced user asking for in-depth monitoring of PV plant telemetry data) to access the professional web portal named Plant Portfolio Manager;
- This kind of account is not allowed to modify plant configuration features within the Plant Portfolio Manager and may only view data
- This account is enabled to use any Aurora Vision product as well (Energy Viewer included)
- This account can be created by the administrator of a portfolio of PV plants allowed to access the Plant Portfolio Manager with Administrator privilege role

Aurora Vision account with Site_Owner privilege role

- This account enables casual users (generally not trained professionals or experts, like most owners of residential and small commercial PV plants) to monitor a PV plant remotely via easy-to-use products (like the mobile Energy Viewer or Plant Viewer / Plant Viewer for Mobile)
- This kind of user is not allowed to access and use the Plant Portfolio Manager
- This account can be created either by the administrator of a portfolio within the Plant Portfolio Manager accessed through his/her own account with an Administrator privilege role or autonomously by the owner of the PV plant by

following the self-registration wizard from the home page of the Aurora Vision products or from the Aurora Vision web page (www.auroravision.net): the former method should be used in case both installer and owner aim to monitor that same PV plant by using their own Aurora Vision account and, in general, by using different Aurora Vision products (collaborative monitoring); the latter method should be used whenever the plant owner aims to monitor his/her PV plant and no other account needs to be authorized to monitor that specific PV plant in parallel (single user monitoring).



NOTE:

The two different registration methods mentioned (self-registration wizard or through an Administrator account) enable the customer to get an Aurora Vision account with Site Owner privilege role and do not overlap in terms of functions. The result achieved at the end of the process (in terms of authorization to monitor that plant) will be different depending on the specific method chosen. Please refer to the following specific section for further information.

8.1. Creating a Site-Owner account

As mentioned, there are different ways to get an Aurora Vision account with a Site_Owner privilege role, created and assigned to the owner of the PV plant. In particular:

- By following the registration wizard directly from the home page of the Energy Viewer mobile app or clicking on the "Sign up" button on the Aurora Vision webpage (www.auroravision.net).
- This procedure will guide customers in getting an Aurora Vision account with Site_Owner privilege role and to register their own plants properly with the appropriate Aurora Vision products. This procedure is designed and thought for any PV plant owner aiming to use an easy-to-use product like Energy Viewer to monitor, without the need to ask any third-party for support.
- This also means that in case of a Site_Owner account creation with this method, nobody, except for the owner will be authorized to monitor that specific PV plant. For example, an installer or O&M manager won't be allowed to use their account (even in case that another user's account has Administrator privilege role).
- Please do not create any account by following the registration wizard if the PV plant is supposed to be monitored in parallel by different Aurora Vision accounts owned by different users (for instance installer and owner).
- By using the Administration tool in the Plant Portfolio Manager. To access the Administration tool of the Plant Portfolio Manager an Aurora Vision User ID and password with Administrator privileges are needed. This also means that only an administrator of the plant, enabled by FIMER's

technical support to access the Plant Portfolio Manager with Administrator rights can create and provide the final customer (the owner) with a new personal account with Site_Owner privilege role.

- When the owner of the solar plant gets the Site_Owner account from the administrator of his/her plant (usually the installer) both installer and owner are authorized to monitor that same plant in parallel (collaborative monitoring of PV plants).

- The former will have a view privilege role and the latter an administrator privilege role.
- Please see the Plant Portfolio Manager Users Guide for further information on how to use the Administration tool to create and assign accounts.

9. Asset registration within Aurora Vision

Once an Aurora Vision account is assigned, to enable the remote monitoring of a solar plant via Aurora Vision products like Energy Viewer (as well as any other Aurora Vision product depending on the privilege role assigned to your account) the PV Plant must be created on Aurora Vision in order to finalize the Asset Registration process.

An asset is simply a logical entity that must be created on Aurora Vision so that the PV plant can be physically recognized and understood by the cloud. Therefore, it can be correctly processed by the platform with all the given components associated to it (loggers, meters, etc.)

The logical association between data logger and PV plant on Aurora Vision is created by registering the MAC address of all the loggers installed in the PV plant (in our specific case the MAC address of the VSN700-05 Data Logger installed).

The Asset Registration process branches based on how and by whom it is carried out:


- If the account with Site_Owner rights was created independently by the owner of the PV plant following the self-registration wizard (please refer to the previous chapter for further information), the Asset Registration process will be completed by continuing to follow the same wizard process;
- If, on the other hand, the account with Site_Owner rights has been provided to the owner by the system administrator of the PV Plant, through the use of the Administration tool inside the Plant Portfolio Manager product, the Asset Registration process must necessarily be completed using the specific features provided within the Administration tool itself.

Please see the Plant Portfolio Manager User Guide for further information on how to use the Administration tool to create and assign accounts.

10. Energy Viewer app: download and installation

First of all, make sure that your mobile device is a smartphone, tablet or any standard device featuring Android or iOS operating system in the following SW versions:

 **Android 6.0.1 or higher**

 **iOS 11.0 or higher**

Download and install the mobile App Energy Viewer from the Android Play Store or Apple Store



ANDROID



iOS

Once installed, a valid Aurora Vision account (with at minimum Site_Owner privilege role) is needed to access the installed Energy Viewer mobile app. Please refer to Chapter 8 for information on how to get a Site_Owner Aurora Vision account

Once accessed to Energy Viewer mobile app by using the Aurora Vision account with at least Site_Owner privilege role, it is possible to monitor the PV plant only if this plant has been properly registered on Aurora Vision. Please refer to chapter 5 for information about how to perform and successfully register the PV plant with Aurora Vision cloud.



NOTE:
This procedure shows the proper Energy Viewer configuration and operation when a supported meter is connected to an installed VSN700-05 Data Logger Plant Portfolio Managed is not able to get configured automatically and correctly show telemetry data from meter connected to the VSN700-05 Data Logger. Please contact FIMER's technical support to request the Plant Portfolio Manager to get appropriately configured as well as the proper display of the telemetry data collected by the meter.

Annex 1: compatibility matrix

Meter model	PN for order	Connection mode	CT available	VT available	Mounting
FIMER REACT-MTR-1PH	3N520010000A	RS-485	Yes	No	Dyn bar
ABB B21-212-100 RS485	n/a	RS-485	Yes	No	Dyn bar
FIMER REACT-MTR-3PH	n/a	RS-485	Yes	No	Dyn bar
ABB B23-212-100 RS485	n/a	RS-485	Yes	No	Dyn bar
ABB B24-212-100 RS485	2CMA100180R1000	RS-485	Yes	No	Dyn bar
ABB A43-212-100 RS485 (2CMA170522R1000)	A442121	RS-485	Yes	No	Dyn bar
ABB A44-212-100 RS485 (2CMA170522R1000)	n/a	RS-485	Yes	Yes	Dyn bar
M4M 20 – MODBUS	n/a	RS-485	Yes	Yes	Front panel
M4M 20-Ethernet	n/a	Ethernet	Yes	Yes	Front panel
M4M 30 – MODBUS	n/a	RS-485	Yes	Yes	Front panel
M4M 30-Ethernet	n/a	Ethernet	Yes	Yes	Front panel
M2M- MODBUS*	n/a	RS-485	Yes	Yes	Front panel
M2M-Ethernet*	2CSG299903R4052*	Ethernet	Yes	Yes	Front panel

Table 1 – Meter compatibility matrix

* Product no longer available on the market.

VSN700-05 MODELS	LOGGER FW VERSION	NOTERelease
VSN700-05-E0	3.25.15	Meter to be manually set by VSN700-05 Web User Interface
VSN700-05-A0	3.25.15	Meter to be manually set by VSN700-05 Web User Interface
VSN700-05-N0	3.25.15	Meter to be manually set by VSN700-05 Web User Interface
VSN700-05-00	3.25.15	Meter to be manually set by VSN700-05 Web User Interface

Table 2 – VSN700-05 Data Logger compatibility matrix