

Quick Guide:

How to install a Fronius Smart Meter 63A-1 and 63A-3

*for 63A-1, 63A-3 whole current Fronius Smart Meters only. For the 50kA Fronius Smart Meter, the 240V/480V Fronius Smart Meters UL or the Fronius Smart Meter TS refer to their respective guides.

Quick Guide

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Gender-specific wording refers equally to female and male form.

1. GENERAL

Fronius Smart Meters are Energy Meters which can be used to measure consumption data of a site or for export limitation of a PV system with the Fronius SnapINverter or GEN24 inverters.

The meter measures the energy flow to the loads or to the grid and feeds the information to the Fronius inverter via ModBus RTU/RS485. On the SnapINverter, this communication interface is the Datamanager 2.0 which is installed as standard in Fronius Galvo, Primo, Symo and Eco SnapINverter. Light versions are an exception. Datamanager 2.0 can also be retrofitted to all older Fronius inverters. In the GEN24 inverters, the necessary communication interface is always built in as standard (there is no light version).



This document describes how to install and set up only the 63A-1 single phase or 63A-3 3-phase Fronius Smart Meter range. Please use the below links if using a different model of Fronius Smart Meter.

Further information about the entire range of Fronius Smart Meters can be found in our Fronius Smart Meter Application Guide:

https://www.fronius.com/~/downloads/Solar%20Energy/Whitepaper/SE_WP_Fronius_Smart_Meter_Application_Guide_EN_AU.pdf

For installation and setup instructions of the 240V1-UL or 480V3-UL Fronius Smart Meters refer to the following document:

<https://www.fronius.com/~/downloads/Solar%20Energy/Operating%20Instructions/42%2C0410%2C2289.pdf>

For installation and setup instructions of the 50kA-3 Fronius Smart Meter refer to the following document:

https://www.fronius.com/~downloads/Solar%20Energy/Technical%20Articles/SE_TEA_Quick_Guide_How_to_install_and_commission_a_Fronius_Smart_Meter_50kA-3_EN_AU.pdf

The document for setting export limitation with the Fronius Smart Meter can be found here:

https://www.fronius.com/~downloads/Solar%20Energy/Technical%20Articles/SE_TEA_Quick_Guide_How_to_set_up_Export_Limiting_using_the_Fronius_Smart_Meter_EN_AU.pdf

Product information / Operating instructions Fronius Smart Meter TS 65A-3

<https://manuals.fronius.com/html/4204260349>

Product information / Operating instructions Fronius Smart Meter TS 100A-1

<https://manuals.fronius.com/html/4204260350>

Product information / Operating instructions Fronius Smart Meter TS 5kA-3

<https://manuals.fronius.com/html/4204260348>

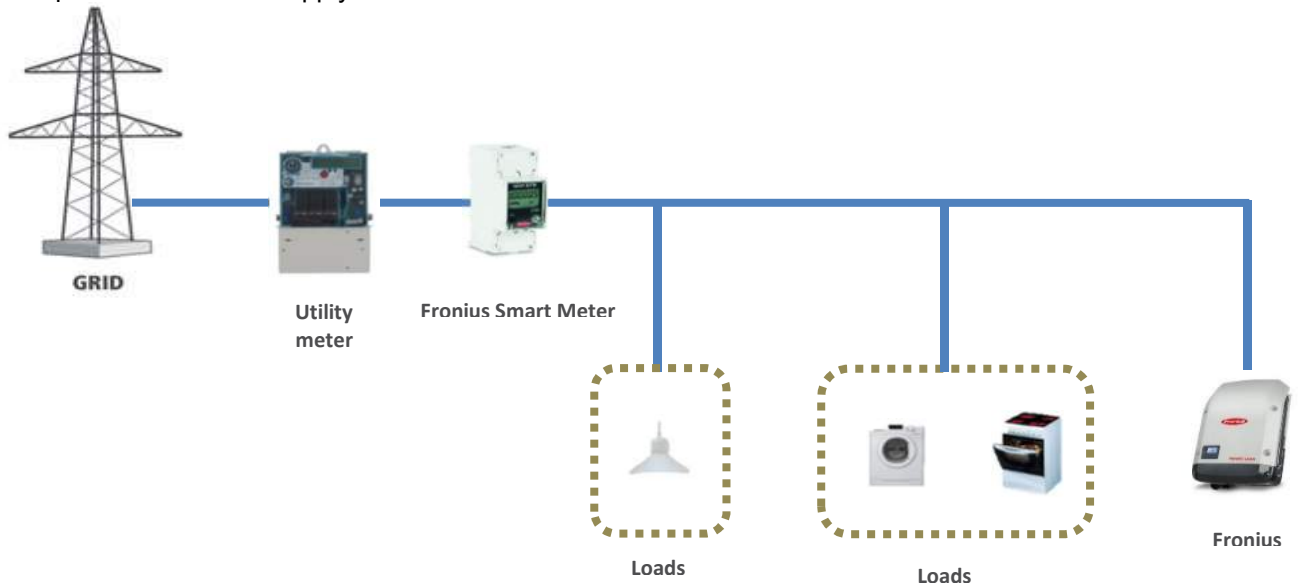
1.1 Location of the Fronius Smart Meter

With the Fronius Smart Meter there are 2 possible energy paths/ locations where it can be installed.

In almost all cases, the Fronius Smart Meter will be installed in the **feed-in path**. This is also the default setting in the Datamanager's METER section.

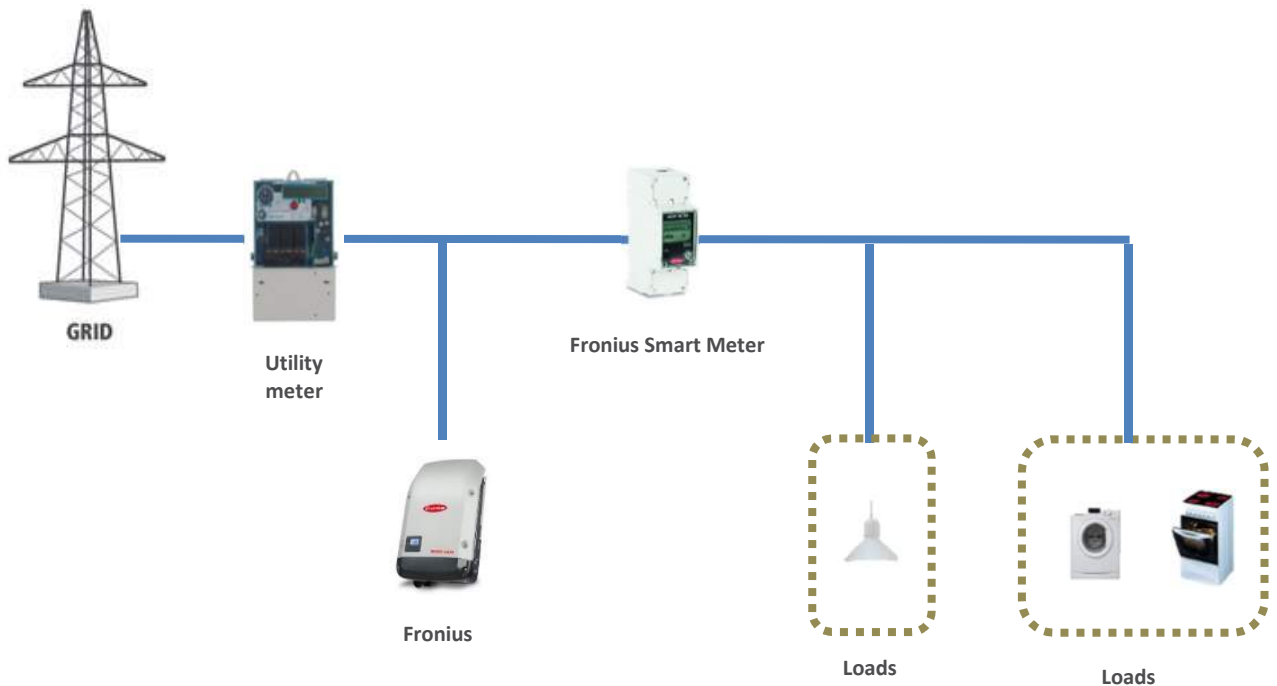
/ Feed-in point

In this position the Solar Supply Main Switch is on the load side of the Fronius Smart Meter



/ Consumption path

In this position the Solar Supply Main Switch is on the grid side of the Fronius Smart Meter



2. INSTALLING AND ACTIVATING A FRONIUS SMART METER

2.1 Schematics and Wiring Requirements

/ Wiring between Fronius Smart meter and inverter should use a CAT5 or CAT6 cable.

Important: To be compliant with the AS3000 standards, it is recommended to have the CAT5/CAT6 cable in a heat shrink tubing (probably 10mm) when it enters the switchboard part or alternatively use a 240V rated CAT5/CAT6 cable (e.g. Clipsal CBUS cable).

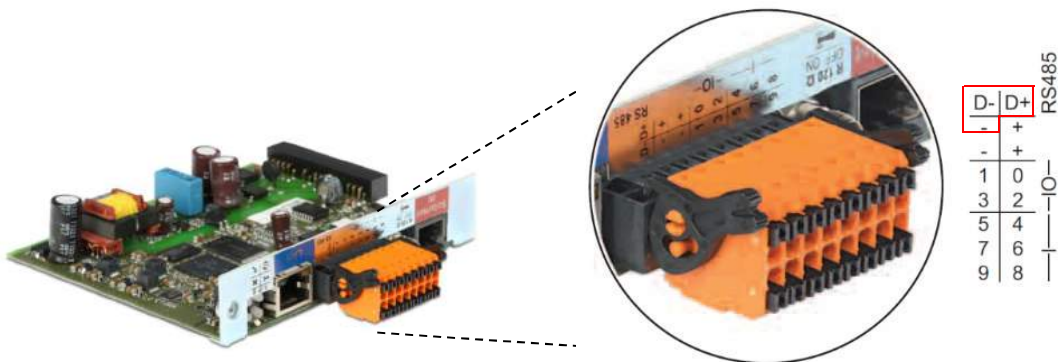
/ Connection is a data line for Modbus RTU / RS485 using screw terminals on the meter

/ Maximum distance: 300 m (980 feet)

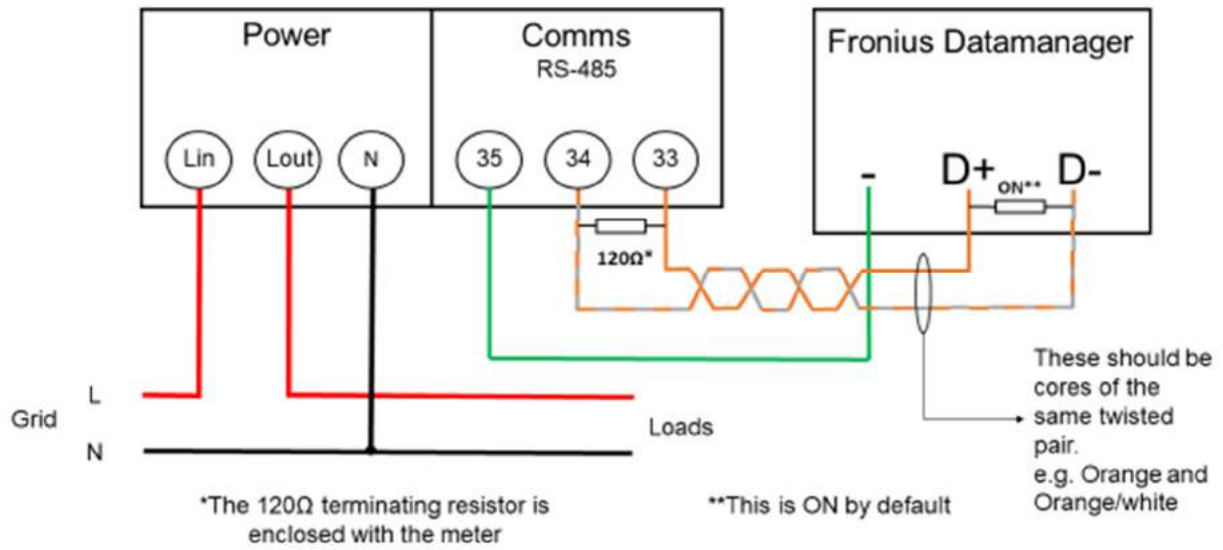
/ Use a single core per terminal connection between Fronius Smart Meter and the inverter. For D+ and D- use the single cores from the same colour (e.g. D+ is orange/white, D- is orange)

Meter connection on the Datamanager 2.0

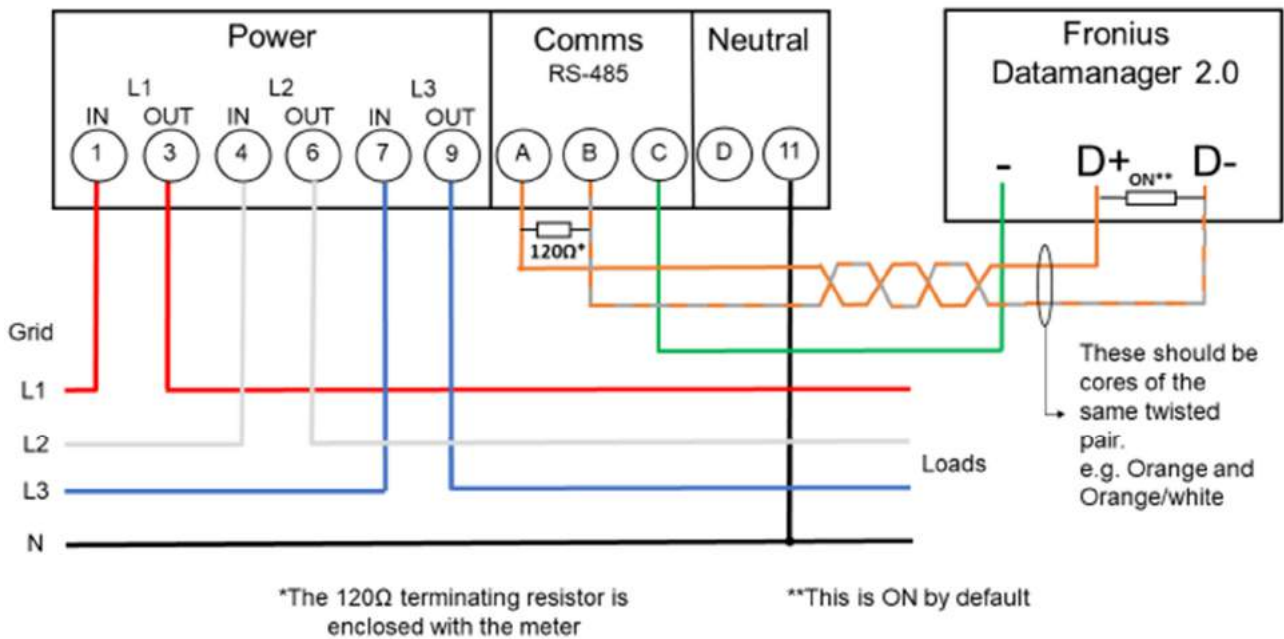
The meter needs to be connected to the Datamanager's terminal block using terminals D+, D- and -.



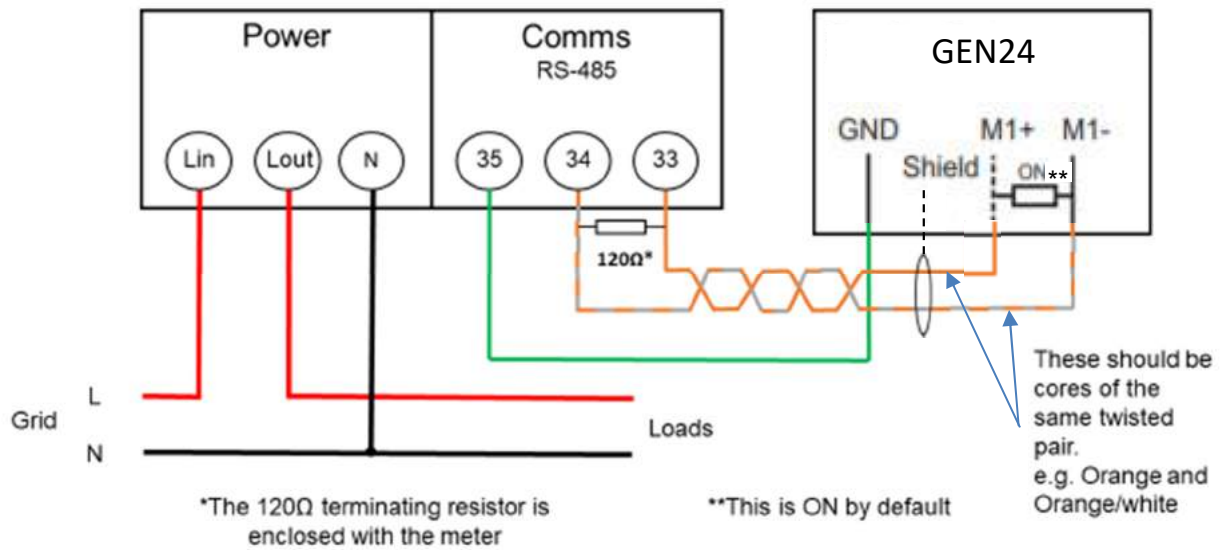
2.1.1 - Wiring detail for Single Phase Fronius Smart Meter 63A/1PH and Datamanager 2.0



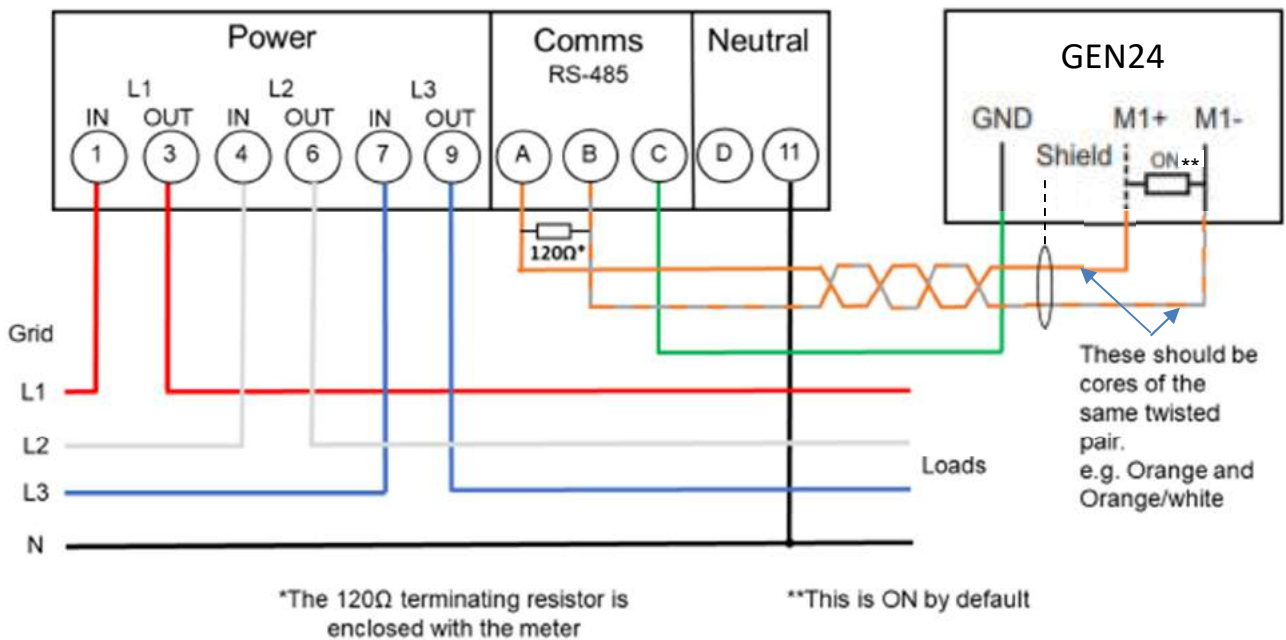
2.1.2 - Wiring detail for 3-Phase Fronius Smart Meter 63A/3PH and Datamanager 2.0



2.1.3 Wiring detail for Single Phase Fronius Smart Meter 63A/1PH and GEN24 inverter



2.1.4 Wiring detail for 3-Phase Fronius Smart Meter 63A/3PH and GEN24 inverter

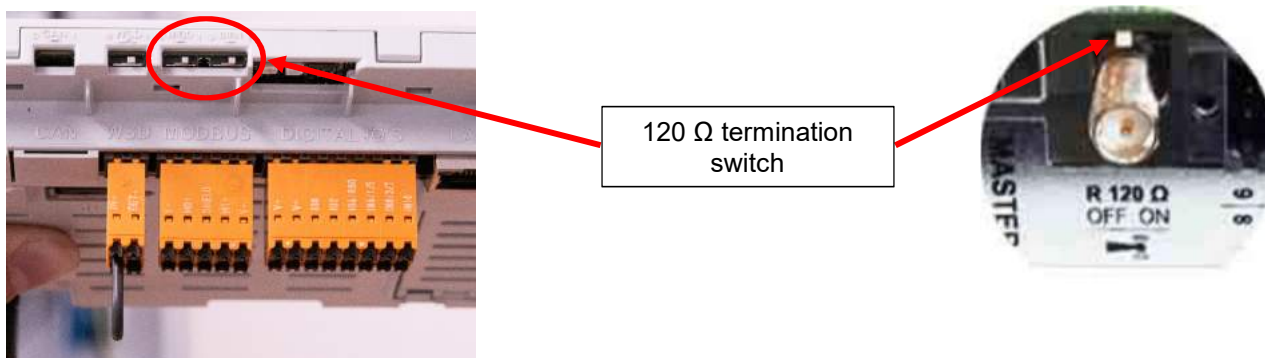


Modbus termination switch on the Datamanager 2.0 and the GEN24 inverter:

The internal bus termination 120-Ohm resistance (for Modbus RTU) needs to be switched to **ON**. **This switch is set to ON by default.**

Please Note:

The termination resistance must be activated for the first and last device in an RS485 bus.



2.2 Activating the Fronius Smart Meter on the SnapInverter

*It is recommended to complete the Solar.web Wizard first and get the system online. Once completed please go to **Section 2.2.1** for the Fronius Smart Meter activation.*

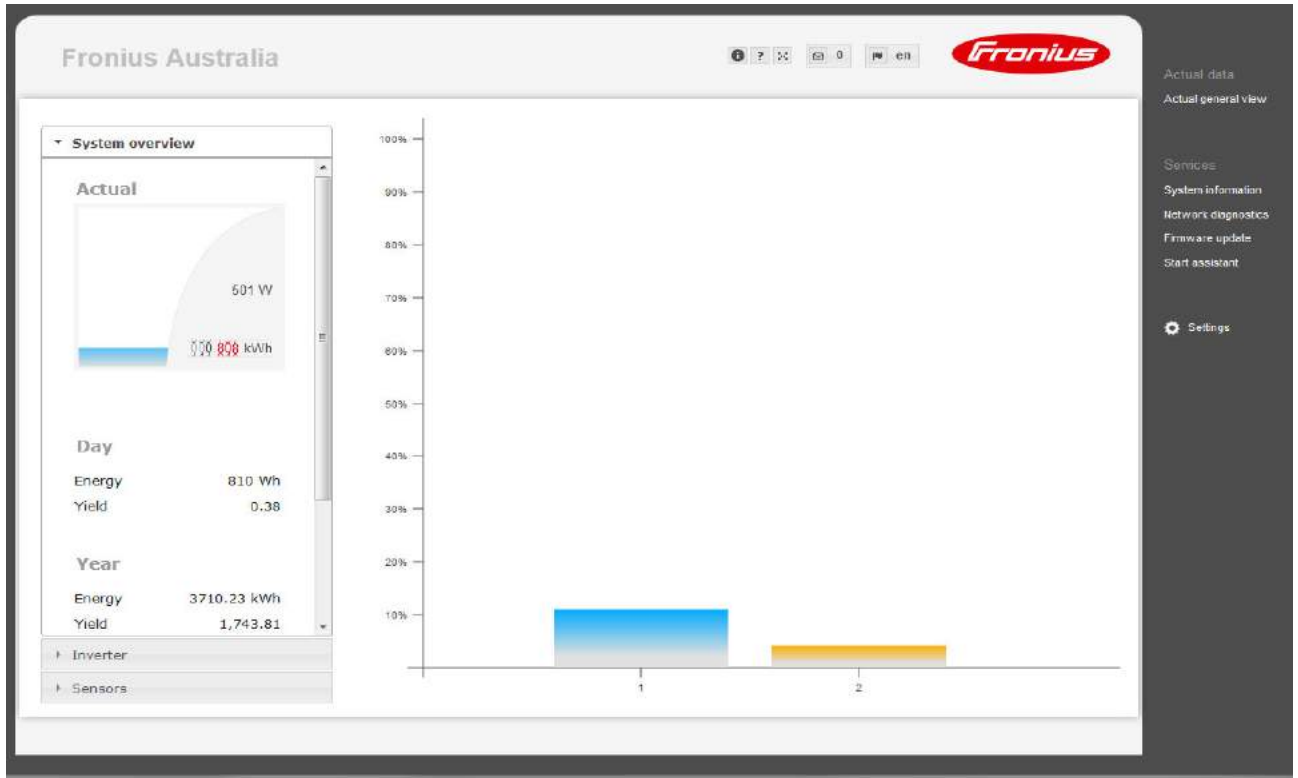
*If the system is not being set up for online monitoring the Fronius Smart Meter can be activated within the **Technician Wizard** as per **Section 2.2.2**.*

2.2.1 Activating the Fronius Smart Meter in the SnapInverter Web Interface

The PV Inverter homepage can be accessed in two ways:

1. Via the Wi-Fi Access Point:
 - Activate the Wi-Fi Access Point on the Datamanager card (inverter screen under Setup) or Datamanager Box 2.0
 - Connect your computer/tablet/smart phone to the **Fronius_240.XXXXXX** network
 - Open a web browser and go to <http://192.168.250.181>.
Alternatively you can use the Fronius SolarWeb App (Tablet/Smart Phone), open the Solar.web app and select Settings. Then select "PV Inverter Homepage" or "Your System Monitoring" depending on your device.
2. Via the LAN Port:
 - Connect your computer to the Datamanager via LAN cable
 - Switch the Datamanager IP Switch to Position 'A'
 - Open a web browser and go to <http://169.254.0.180>

Once connected follow the below steps:



The screenshot shows the 'TSN Primo 3.0' Settings page, specifically the 'Passwords' section. The page has a sidebar on the left with a menu including 'GENERAL', 'PASSWORDS', 'NETWORK', 'FRONIUS SOLAR.WEB', 'IO MAPPING', 'LOAD MANAGEMENT', 'PUSH SERVICE', 'MODBUS', 'INVERTERS', 'FRONIUS SENSOR CARDS', 'METER', and 'DNO EDITOR'. The 'PASSWORDS' section is active, showing two password configuration forms. The first form has 'User name' set to 'admin' and empty 'Password' and 'Repeat password' fields. The second form has 'User name' set to 'service' and empty 'Password' and 'Repeat password' fields. A checkmark icon is visible next to the second form. A sidebar on the right contains a menu with 'Current data', 'Current general view', 'Services', 'System information', 'Network diagnostics', 'Firmware update', 'Start assistant', 'Contact', 'Send feedback', and 'Settings'. Four red callout boxes provide instructions: 'Step 1 Select 'Settings'' points to the 'Settings' menu item; 'Step 2 Select "PASSWORDS"' points to the 'PASSWORDS' menu item; 'Step 3 Set a service password. Minimum 8 characters with numbers and letters' points to the 'service' user name field; and 'Step 4 Select the tick to save the new password' points to the checkmark icon.

Step 5
Select "METER" tab

Step 6
Login with Username: service and the password from Step 3

The screenshot shows the 'Settings' page for 'Fronius Australia'. The left sidebar has a 'METER' tab highlighted with a red circle. A 'Sign in' dialog box is open in the center, with the 'Username' field containing 'service' and the 'Password' field filled with dots. A red callout points to the 'Sign in' button.

Step 7
Select Fronius Smart Meter from the drop down menu

Step 8
Select the Settings button

The screenshot shows the 'Meter settings' page. The 'Primary meter' section has a dropdown menu open, showing 'None selected', 'None selected', and 'Fronius Smart Meter' (highlighted). A red callout points to the 'Settings' button next to the dropdown. Below, there is a 'Secondary meter' section with another dropdown and an 'Add' button. At the bottom, there is a 'Configuration positions' section with a diagram showing a PV generator, external producer, generator meter, and DNO grid.

Step 9
Leave this window open until the State changes to **OK** or **Timeout**

Note
The meter has been activated and should provide data soon. Please wait a moment!
State: looking for the meter

Meter type	Location of the meter
Fronius Smart Meter	Feed-in point

Step 10
If State is **OK** then set meter location. Refer to Section 1.1 of this guide for explanation of locations

If the State is **Timeout** then retry the process. If it still times out refer to troubleshooting steps at the end of this guide

Step 11
Select **Ok** to go back to the Meters Overview page

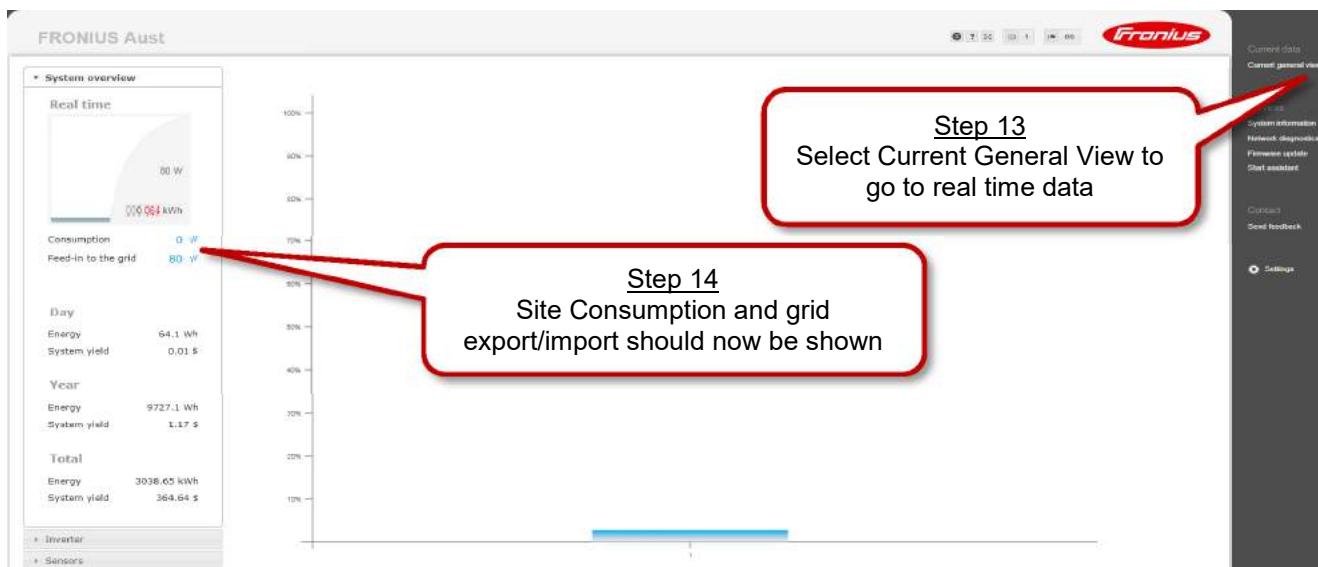
Note
State: **OK** Power: 0 W
Location of the meter: Feed-in point Consumption path
Modbus address: 1
Serial number: 15070170

Meter type	Location of the meter
Fronius Smart Meter	Feed-in point

Step 12
Select the tick to save the Meter Settings

Older software versions do not have the *List of Configured Meters* or *Secondary Meter*

Meter type	Location of the meter	Category	Name	Meter value	Settings	Delete
Fronius Smart Meter	Feed-in point	Primary meter		Consumption: 7 W	<input checked="" type="checkbox"/>	<input type="checkbox"/>



2.2.2 Activating the Fronius Smart Meter in the Technician Wizard

The Technician Wizard can be accessed in two ways:

1. Via the Wi-Fi Access Point:
 - Activate the Wi-Fi Access Point on the Datamanager card (inverter screen under Setup) or Datamanager Box 2.0
 - Connect your computer/tablet/smart phone to the **Fronius_240.XXXXXX** network
 - Open a web browser and go to <http://192.168.250.181>.
 - Alternatively you can use the Fronius SolarWeb App (Tablet/Smart Phone), open the Solar.web app and select Settings. Then select "PV Inverter Homepage" or "Your System Monitoring" depending on your device.
2. Via the LAN Port:
 - Connect your computer to the Datamanager via LAN cable
 - Switch the Datamanager IP Switch to Position 'A'
 - Open a web browser and go to <http://169.254.0.180>

Once connected follow the below steps:

System monitoring en

Welcome to the Fronius setup wizard.
You are just a few steps away from convenient system monitoring.

Step 1
Select Technician Wizard to begin

SOLAR.WEB WIZARD
Connect the system with the Fronius Solar.web and use our Apps for mobile devices.

TECHNICIAN WIZARD
System settings for feed-in limits, Power Control-functions and open interfaces!
! For qualified persons only !

System monitoring en

General Inverter Service password

System name * **Step 2**
Set System Name, Yield and Date/Time then select Forward

Yield

Feed-in tariff \$ (AUD) /kWh

Grid supply tariff /kWh

System time

Date / time * : PM

Set time automatically

Time zone settings

Time zone *

Back Forward

System monitoring

en

General Inverter Service password

System name * Fronius Australia

Set all

No	visible	Device type	Device name	PV[Wp]
1	<input checked="" type="checkbox"/>	Primo 3.0-1	Primo 3.0-1 (1)	3000

Back Forward

Step 3
Set the DC array Watt Peak (Wp) value for all inverters then select Forward

System monitoring

en

Inverter Service password IO mapping

Please set a password! The Service password protects the system settings from unauthorized changes.

User name service

Password * ***** acceptable

Repeat password * ***** identical

Back Forward

Step 4
Set a service password to limit access. Minimum 8 characters with both numbers and letters. Then select Forward

System monitoring

Service password

Meter

Sign in

http://192.168.250.181

Your connection to this site is not private

Username: service

Password:

Sign in Cancel

Back Forward

Step 5
Login with username: service and the password created in Step 4

System monitoring

en

Service password

IO mapping

Meter

RS485

9	7	5	3	1	-	-	D-
8	6	4	2	0	+	+	D+

RS485

- can be used as an input or output
- can be used as an input
- pin already in use

PIN ASSIGNMENTS

- 0. IO control feedback
- 1. none
- 2. none
- 3. none
- 4. IO control 3
- 5. IO control 4
- 6. none

AUS - Demand Response Modes (DRM)

IO control

Load management

Back Forward

Step 6
Skip Forward over IO Mapping

System monitoring en

IO mapping **Meter** Dynamic power

Primary meter:

Meter: None selected Settings

Secondary meter:

The secondary meters can be configured in the 'Settings Page' later.

List of configured meters:

Meter type	Location of the meter	Category	Name	Meter value	Settings	Delete
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The secondary meters can be configured in the 'Settings Page' later.

[Download a schematic diagram of the wiring.](#)

Note: when connecting a Fronius Smart Meter, Modbus RTU is automatically disabled.

Back Forward

Step 7
Select Fronius Smart Meter from the dropdown box and then select Settings

System monitoring en

IO mapping **Meter** Dynamic power

Primary meter:

Meter: Fronius Smart Meter Settings

Secondary meter:

The secondary meters can be configured in the 'Settings Page' later.

List of configured meters:

Meter type	Location of the meter	Category	Name	Meter value	Settings	Delete
------------	-----------------------	----------	------	-------------	----------	--------

The secondary meters can be configured in the 'Settings Page' later.

[Download a schematic diagram of the wiring.](#)

Note: when connecting a Fronius Smart Meter, Modbus RTU is automatically disabled.

Back Forward

Step 8
Leave this window open until the State changes to **OK** or **Timeout**

Note

The meter has been activated and should provide data soon. Please wait a moment!

State: looking for the meter

Cancel

Step 9
If State is **OK** then set meter location and select OK. Refer to Section 1.1 of this guide for explanation of locations

If the State is **Timeout** then retry the process. If it still times out refer to troubleshooting steps in Section 4 of this guide

Note
State: **OK** Power: **5 W**
Location of the meter: Feed-in point Consumption path
Modbus address: 1
Serial number: 15070170

Buttons: OK, Cancel, Settings, Delete, Forward

Step 10
Select Forward

Older software versions do not have the *List of Configured Meters* or *Secondary Meter*

Primary meter:
Meter: **Fronius Smart Meter** Settings

Secondary meter:
The secondary meters can be configured in the 'Settings Page' later.

List of configured meters:

Meter type	Location of the meter	Category	Name	Meter value	Settings
Fronius Smart Meter	Feed-in point	Primary meter		Consumption: 4 W	Settings

The secondary meters can be configured in the 'Settings Page' later.

[Download a schematic diagram of the wiring.](#)

Note: when connecting a Fronius Smart Meter, Modbus RTU is automatically disabled.

Buttons: Back, Forward

System monitoring en

IO mapping Meter **Dynamic power**

Dynamic power reduction

Power limit: No limit limit for entire system

If an export limit needs to be set please refer to our separate export limiting guide

Step 11
Select Forward

Back Forward

System monitoring en

Welcome

You are just a few steps away from being online.

The Technician Wizard is now complete and the meter has been setup. Online monitoring can be setup via the Solar.Web Wizard

SOLAR.WEB WIZARD TECHNICIAN WIZARD

Connect the system with the Fronius Solar.web and use our Apps for mobile devices.

FURTHER SETTINGS

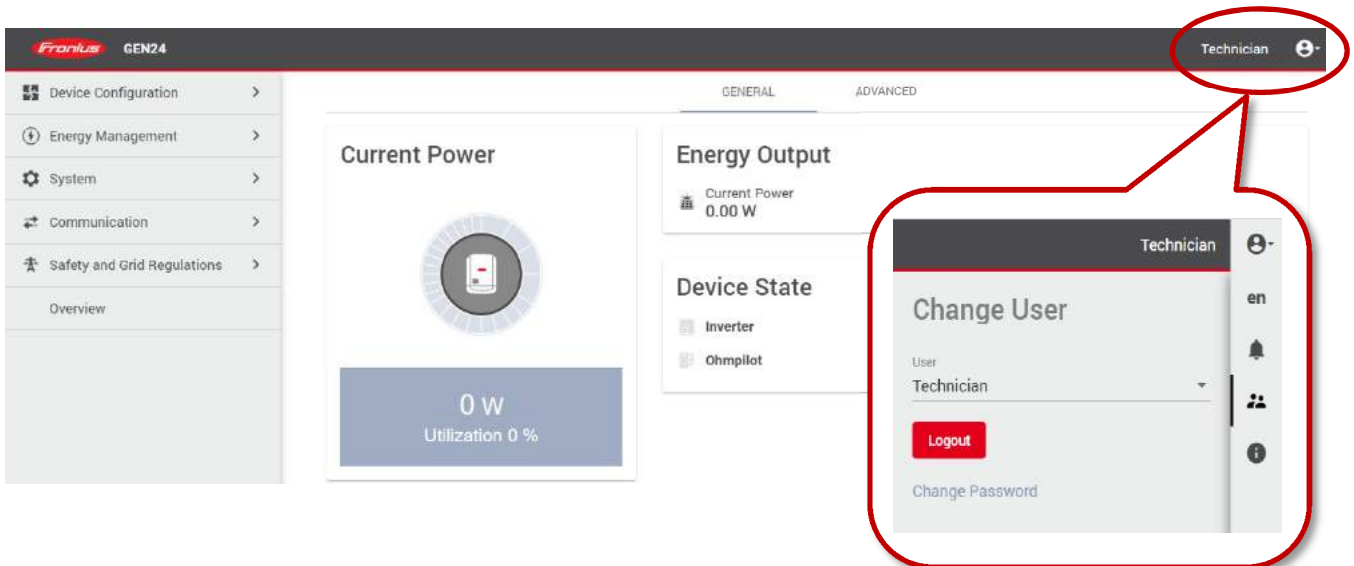
! For qualified persons only !

2.3 Activating the Fronius Smart Meter on the GEN24 inverter

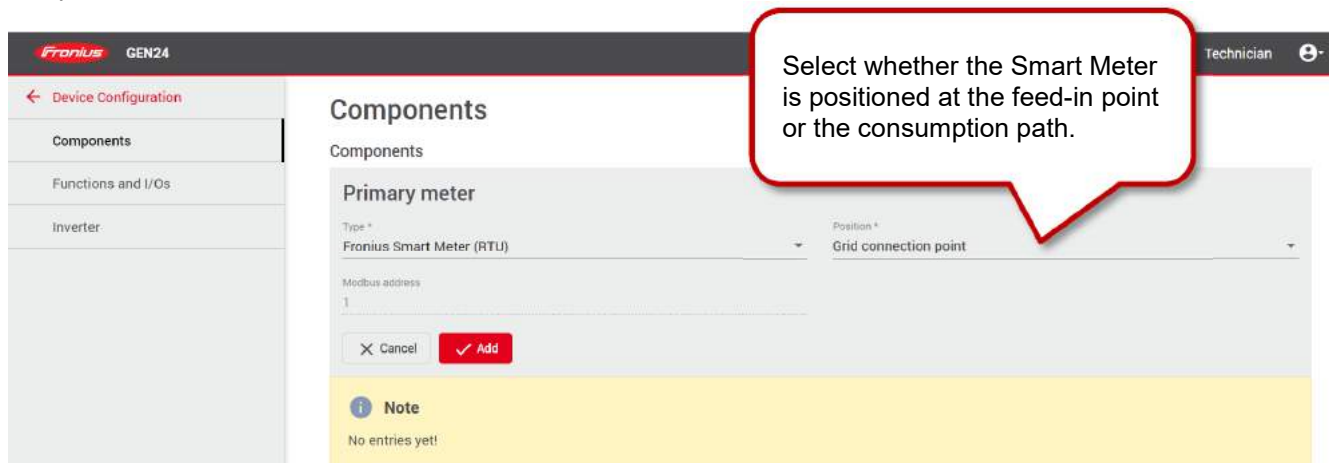
The web interface of the GEN24 can be reached in two ways:

1. Via Wi-Fi Access Point:
 - Open the access point by pressing once on the sensor of the GEN24.
 - Connect to the inverter's network
 - o Name: FRONIUS_Pilot Serial Number
 - o Password: **12345678**
 - Enter IP address **192.168.250.181** in the browser.
2. Via LAN connection:
 - Connecting the computer to the inverter via LAN cable
 - o Use the LAN 1 port on the GEN24
 - Open browser and enter IP address **169.254.0.180**

When you access the dashboard, you must unlock the submenus with the technician password if this has not already been done at start-up.



Open the "Configure Device" submenu and navigate to the "Components" menu. Here you can "add another component".





3. FRONIUS SMART METER TROUBLESHOOTING

4.1 – Timeout, meter not detected

If the Fronius Smart Meter is not being detected in the Technician wizard or PV Inverter Homepage try the following steps in order. After each step try to activate the meter again

- 1) Restart the inverter, shutdown both AC and DC to the inverter to switch it off and then power it back up. Reconnect to the wifi access point and attempt to activate the meter again.
- 2) Check that the 120 Ω resistor is installed correctly across the meter terminals as per the wiring diagrams in Section 2.1.
- 3) Confirm that the cable used between smart meter terminals and inverter terminal block are properly terminated.
- 4) Confirm that the RS485 wiring between meter terminals and inverter terminal block are correct as per the wiring diagrams in Section 2.2.
- 5) If cable is short enough complete a continuity test on the cores used to ensure no breaks in the cable
- 6) Update the GEN24 inverter/Datamanager 2.0 software. After software update restart the GEN24 inverter/Datamanager 2.0 as per Step 1 of this section. Refer to our update guide for more information: https://www.fronius.com/~/downloads/Solar%20Energy/Technical%20Articles/SE_TEA_Quick_guide_How_to_update_Fronius_Datamanager_firmware_EN_AU.pdf

4.2 – Data is not accurate in Solar.web

- 1) Meter is set in the incorrect path compared to actual installation. Refer to Section 1.1 of this guide and correct as per the above set up steps in 2.2.1 and 2.2.2.
- 2) Meter is installed in the wrong location in the switchboard. It must be installed after the Normal Supply Main switch and before the rest of the site loads including the Solar Supply Main Switch for feed in path. Refer to the single line diagrams in Section 1.1
- 3) If getting minimal load consumption values the meter may be in parallel with the Normal Supply Main Switch. Ensure they are in series or the meter will be mostly bypassed.