



GEN24 PV Point

Application guide

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Solar Energy Business Unit

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Gender-specific formulations refer equally to the female and male form.

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1 Introduction

The PV Point is the basic backup power supply for the Fronius GEN24 series and is integrated into the device as standard. A receptacle can be installed on the PV Point, which is supplied in the event of a grid outage based on the currently available PV generator output (or existing battery). Switching is automated by the inverter and does not require any additional grid switching components. The PV Point can be used to supply all important single-phase loads in the household up to 1.6 kW. The PV Point does not require the installation of a storage unit - but it can also be installed with a storage unit as an option.

The functional diagram of the PV is shown in Figure 1:

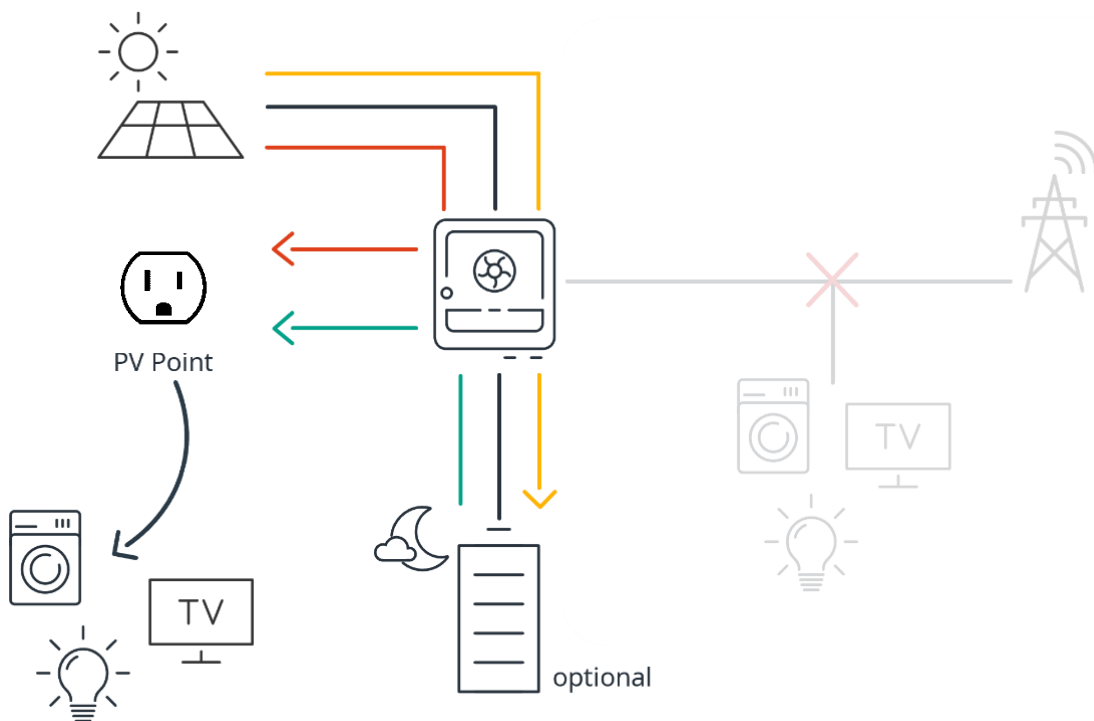


Figure 1: Schematic of the basic backup power supply PV Point of the Fronius GEN24 series.

2 Installation

2.1 Hardware preparation

The installation of the PV Point requires drilling of the predefined conduit markings. Predefined inputs at $\frac{1}{4}$ " or $\frac{3}{4}$ " on the underside and back of the inverter allow for PV Point installation. The underside of the GEN24 series with the conduit inputs is shown in figure 2:

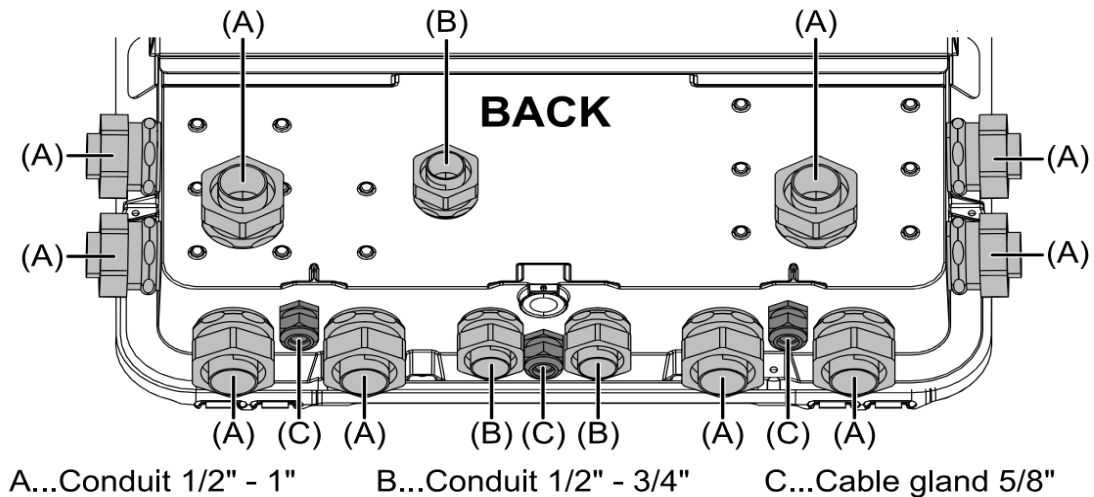


Figure 2: Inverter underside of the Fronius GEN24 series with the 2 predefined conduit inputs

The first step is to drill a hole through one of conduit input markers on the base shell. We recommend using a **step drill (7/8" - 1 1/8")** for this. As soon as the hole has been drilled, a rain tight conduit fitting must be fitted to the drilled-through base shell to continue to ensure the highest protection class NEMA 4X. The conduit ends must be filled to avoid condensation and water intrusion. Figure 3 shows the drilling process and the base shell with the conduit fitting inserted:

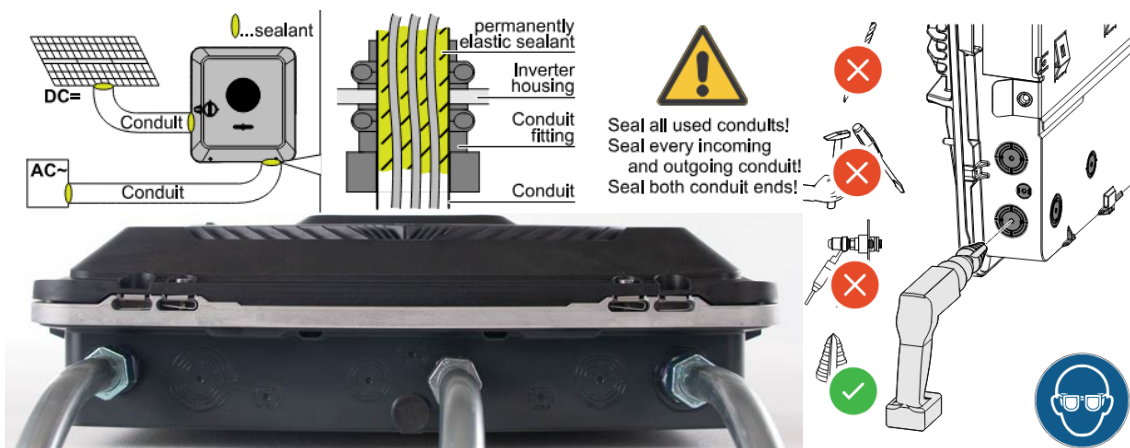


Figure 3: Drilling through the base shell and raintight conduit fitting inserted at the drilled-through point.

2.2 PV Point cabling

Once the conduit and fitting has been successfully inserted, the cable can be fed through and connected in the inverter. In the GEN24 series, a separate output / push-in spring-loaded terminal marked "OP" is provided for the PV Point on the AC side, which is shown in Figure 4:

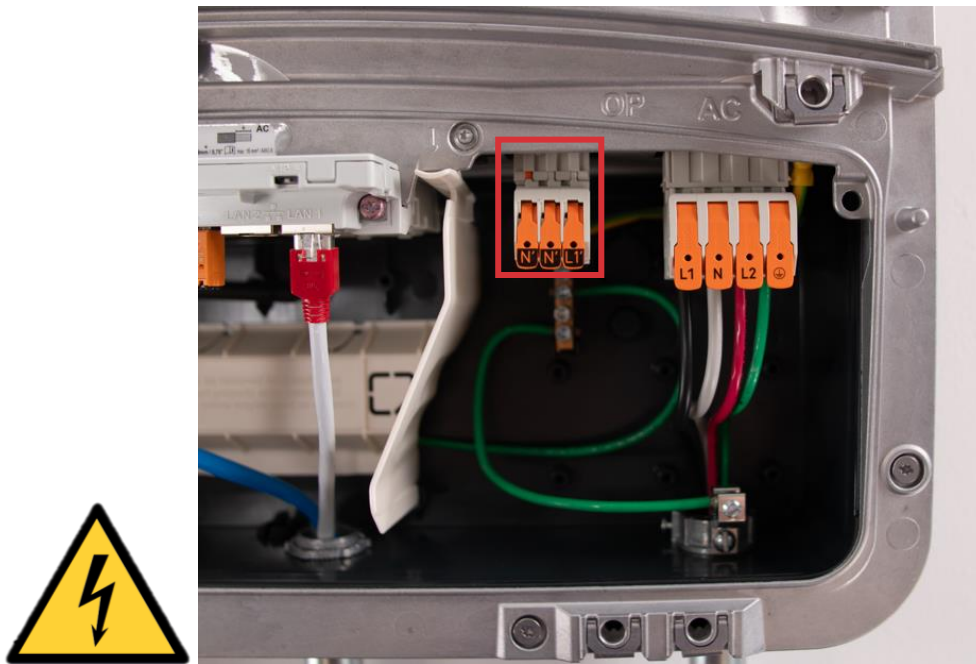


Figure 4: Connection area of the Fronius GEN24 with PV Point Push-in spring clamp.

The push-in spring terminals are characterized by their **ease of use**, which enables **quick installation**. No special tools are required to install the PV Point and no ferrules need to be fitted to the cables. Regarding cables, Fronius recommends the use of a copper cable size **14AWG - 8AWG**. Figure 5 shows the requirements for the cable as well as the handling and function of the spring-loaded terminals:

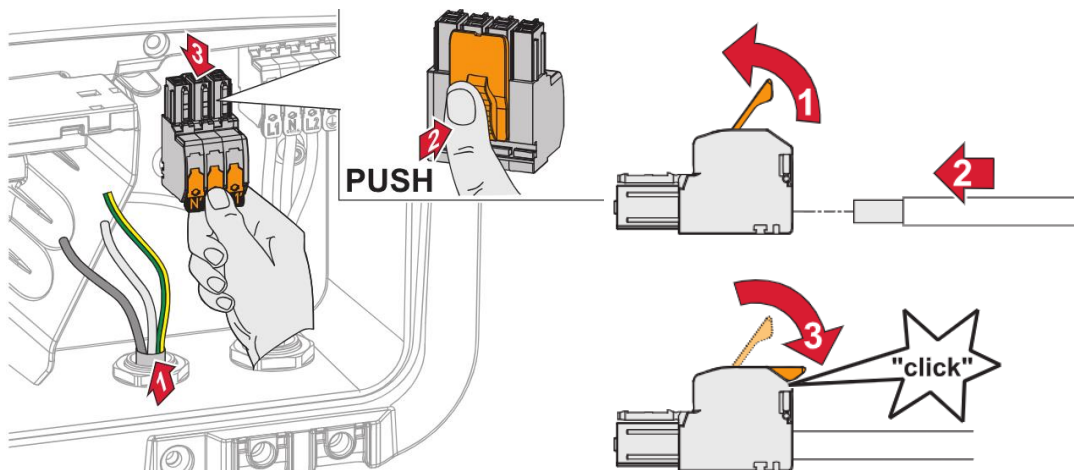


Figure 5: operating the spring clamp terminal.

The PV Point's push-in spring-loaded terminal can be removed by pressing the catch on the back. For the subsequent cabling, the earthing of the PV Point must be connected to the internal earthing terminal block in the inverter. An additional earthing cable must be run from the earthing terminal block to the PV Point terminal (PE-N conductor). The cable cross-section of the PE-N connection must be dimensioned to match the minimum cross-section of the inverter. The wiring in the inverter is shown in Figure 6:

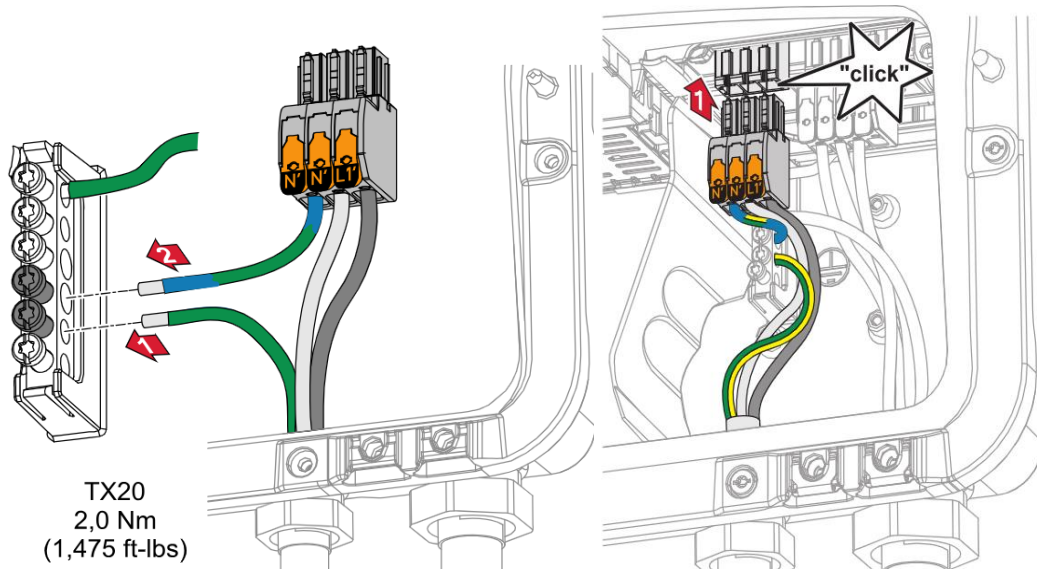


Figure 6: Wiring of the PV Point in the inverter.

When using the PV Point function, rapid shutdown cannot be triggered via the loss of the AC grid. Depending on jurisdiction, this may be a violation of the NFPA 70. Therefore, the WSD (wired shut down) must be configured for compliance. The WSD lines function as a simple detection circuit which can be wired to a switch. Fronius recommends the IMO ESS-RSD01 rotary switch for this purpose. The switch must be located in a readily accessible location and must be field labeled accordingly. A jumper wire is included on the WSD terminal block which must be removed before connection. CAT 5/6/7 cable should be used for cabling. See the GEN24 (Plus) operation manual for more details on the WSD function.

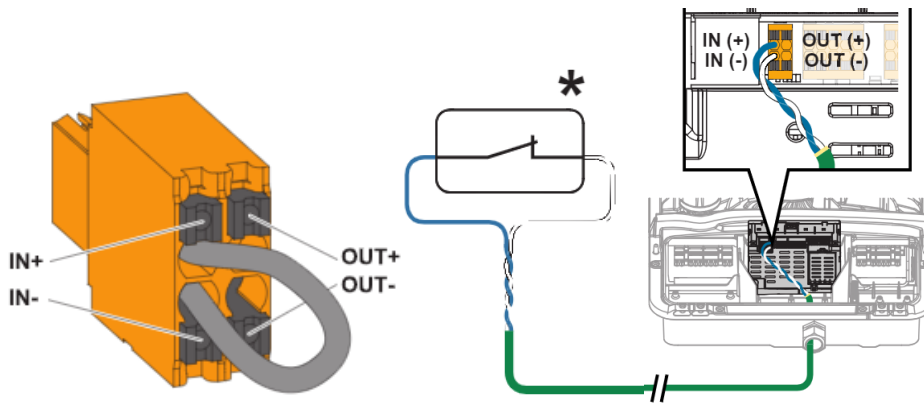


Figure 7: Wiring the WSD input to switch and inverter.

3 Commissioning

The PV Point is commissioned via the web interface of the inverter and can be activated both during initial commissioning and at a later stage. Fronius recommends carrying out commissioning with the "**Fronius Solar.start**" app, which is available free of charge in the Google Play Store and for iOS. The Fronius Solar.start app is identified by the following icon (Figure 8):

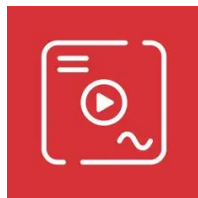


Figure 8: Icon of the Fronius Solar.start app.

The basic requirement for both of the following variants is access to the web interface of the Fronius GEN24 device. By quickly pressing the button on the front of the device once, the inverter automatically opens its local network, to which you can then connect with any mobile device (laptop, smartphone, etc...). Figure 9 shows the LED communication interface with its functions:



Figure 9: Opening the local network (Wifi access point) of the Fronius GEN24 inverter series and description of the functions of the LED patterns.

The feedback from the inverter is indicated by the communication light flashing blue and the connection to the inverter (via app or WLAN/LAN) can be established. The network can be recognized (with a WLAN connection) by the following parameters:

Name: *FRONIUS_Pilot* serial number

Password for devices with production date before 08/2023: 12345678

Password for devices with production date from 08/2023: visible on the **nameplate**

Opening a web browser (Fronius recommendation: Google Chrome) and entering the IP address **192.168.250.181** opens the installation wizard. In a LAN connection, the required IP address is 169.254.0.180.

3.1 Activation of the PV Point during initial commissioning

The PV Point can already be activated during initial commissioning in the commissioning wizard under the "Product Wizard" in the "Functions and I/Os" menu item. Here it is important to **activate** the basic backup power function and the **"PV Point" mode**. This selection applies to both PV Point and PV Point. Figure 10 shows the photo gallery of the most important steps and settings:

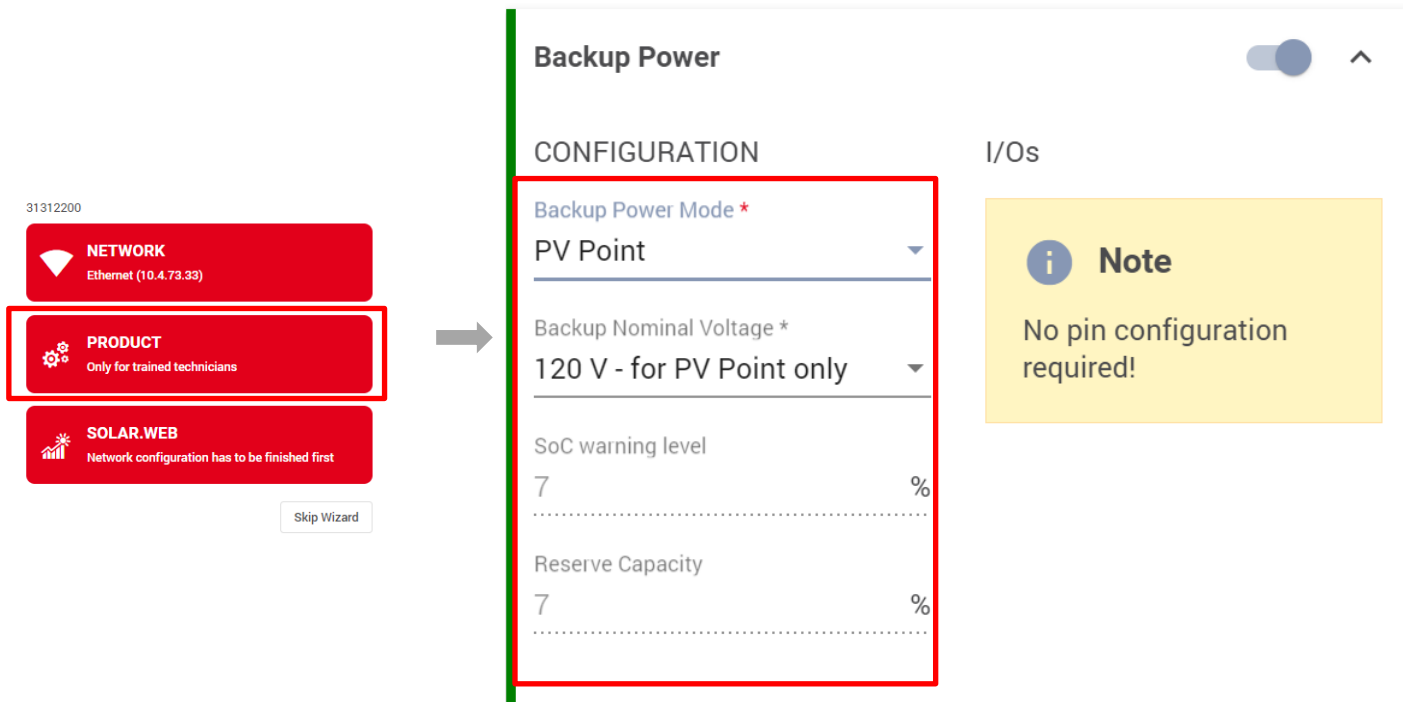


Figure 10: Activation of the PV Point in the commissioning wizard during initial commissioning of the GEN24 inverter.

3.2 Activation of the PV Point at a later date

The PV Point can also be installed and activated retrospectively at any time. In this case, it is also necessary to connect to the web interface of the inverter after installation. To activate, navigate away from the start page via the "Device configuration" menu item to the "Functions and I/Os", where you can again set the basic backup power function and the "PV Point" mode. Figure 11 shows the photo gallery of the most important steps and settings:

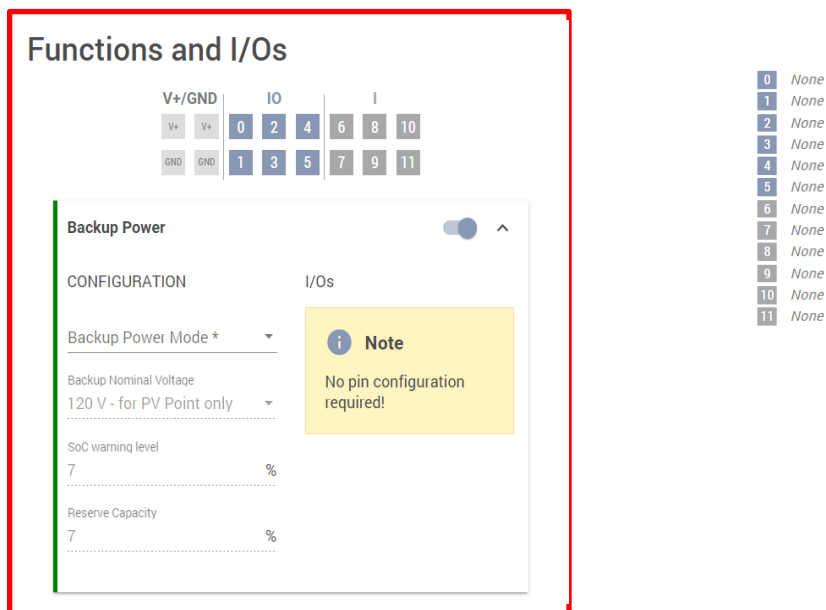
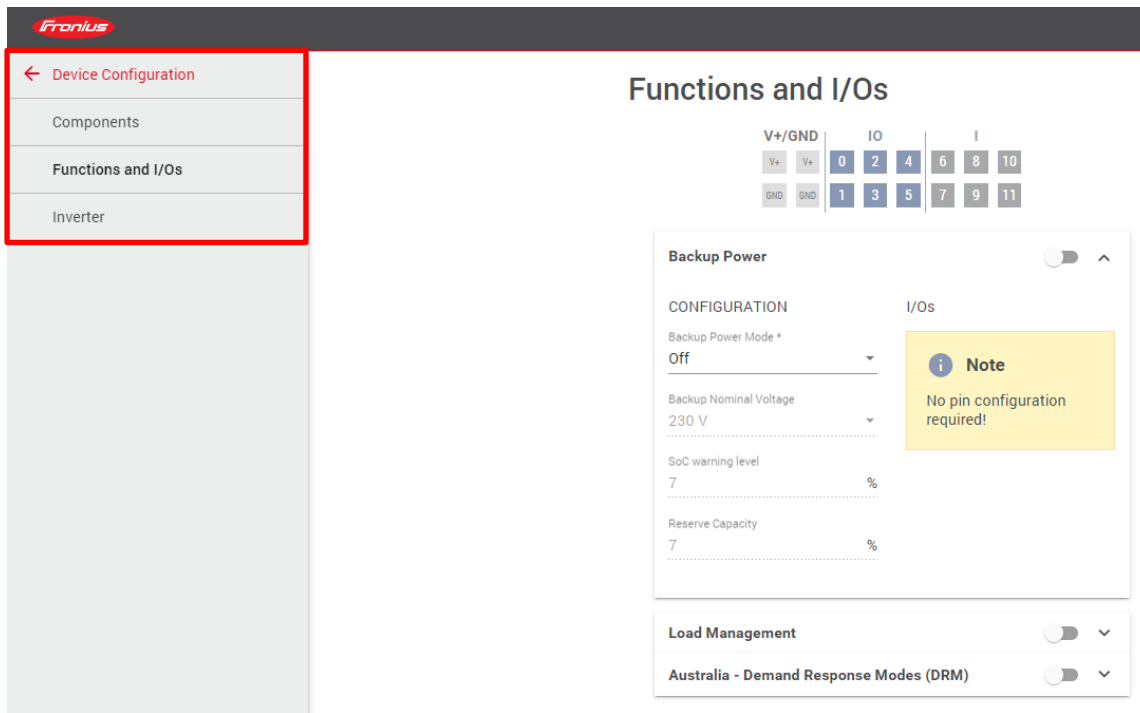


Figure 11: Activation of the PV Point in the web interface at a later time.

After successful installation and commissioning, Fronius recommends a **functional test** of the PV Point. The **switching time** is **less than 23 seconds**.

4 Fuse protection for the socket or circuit

It is important to use a GFCI receptacle **in order to** guarantee personal protection and ensure compliance with standards. Therefore, a simple GFCI receptacle is **mandatory**. This is **not provided** with the Fronius GEN24 inverter and must be purchased separately. One such product is shown in Figure 12:



Figure 12: GFCI integrated socket.

The PV-Point outlet is protected by the over-current safety function of the inverter. In cases of overload, due to low output power or circuit overload, the PV-Point will cease to operate, and the inverter will attempt to restart the function up to 3 times. The PV-Point function is current limited at 13A nominal.