Dynamic Power Control with SnapINverter Light

Application Guide

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Business Unit Solar Energy

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1 Introduction

This application guide describes how to set up dynamic power control from **0% to 99% using a SnapInverter Light** combined with a third-party S0 meter.

1.1 Dynamic Power Control

Electric grids are designed to accommodate a certain amount of intermittent power due to the uncertain nature of renewable energy sources such as solar, wind etc. However, grid stability is impaired if the power exported to the grid increases above a certain level, so to safeguard the grid, the utility or network operator restricts the amount of energy flowing into the grid from PV systems.

Installers and homeowners must comply with these regulations set by the grid operators in order to connect their PV systems to the grid.

1.2 Difference between SnapINverter and SnapINverter Light

Our Fronius SnapINverter generation comes with an integrated Data Manager which also functions as a communication and control unit for the Fronius PV system. This offers our customers many benefits in terms of monitoring and controlling the PV system.

Our Fronius SnapINverter Light generation comes without the Data Manager. In situations where dynamic power control is needed, our customers can still make use of this option by using a third-party S0 meter. In the following sections, we present a step-by-step guide to configuring the dynamic power control for a SnapInverter Light together with the S0 meter.

1.3 S0 Meter

An S0 meter is an energy meter with an S0 interface. The S0 interface is a two-wire, open collector/current loop interface for the transmission of measured consumption values. This interface is defined in EN 62053-31. While standard signals are suitable for values such as current, voltage, temperature or power, meter readings are transmitted using impulses. Such meters with impulse output are used to transmit impulses corresponding to a certain value to a receiver.

It is important to note that the S0 meter is not a Fronius product. It is a third-party product.

1.3.1 Requirements for the S0 meter

The S0 meter must comply with the IEC62053-31 Class B standard.
Table 1 describes the max. recommended impulse rate of the S0 meter:

PV output kWp [kW]	Max. impulse rate per kWh
30	1000
20	2000
10	5000
≤ 5.5	10,000

Table 1: Recommended max. impulse rate of the S0 meter

2 Implementing dynamic power control for a SnapINverter Light with an S0 meter

This chapter describes how to implement dynamic power control on a SnapINverter light using an S0 meter. It is important to ensure that the SnapINverter light has the firmware fro33350.upd or higher. How to perform the update via a USB stick on the inverter and where to download it is described here on our website.

2.1 Connecting the S0 meter with the Fronius SnapINverter Light

The SnapINverter light communicates with the S0 Meter via a wired connection. At the inverter, the two cables must be wired to pin 1 and pin 2 of the multifunction current interface. This interface (orange plug) is located on the left side of the connection area, as shown in figure 1.

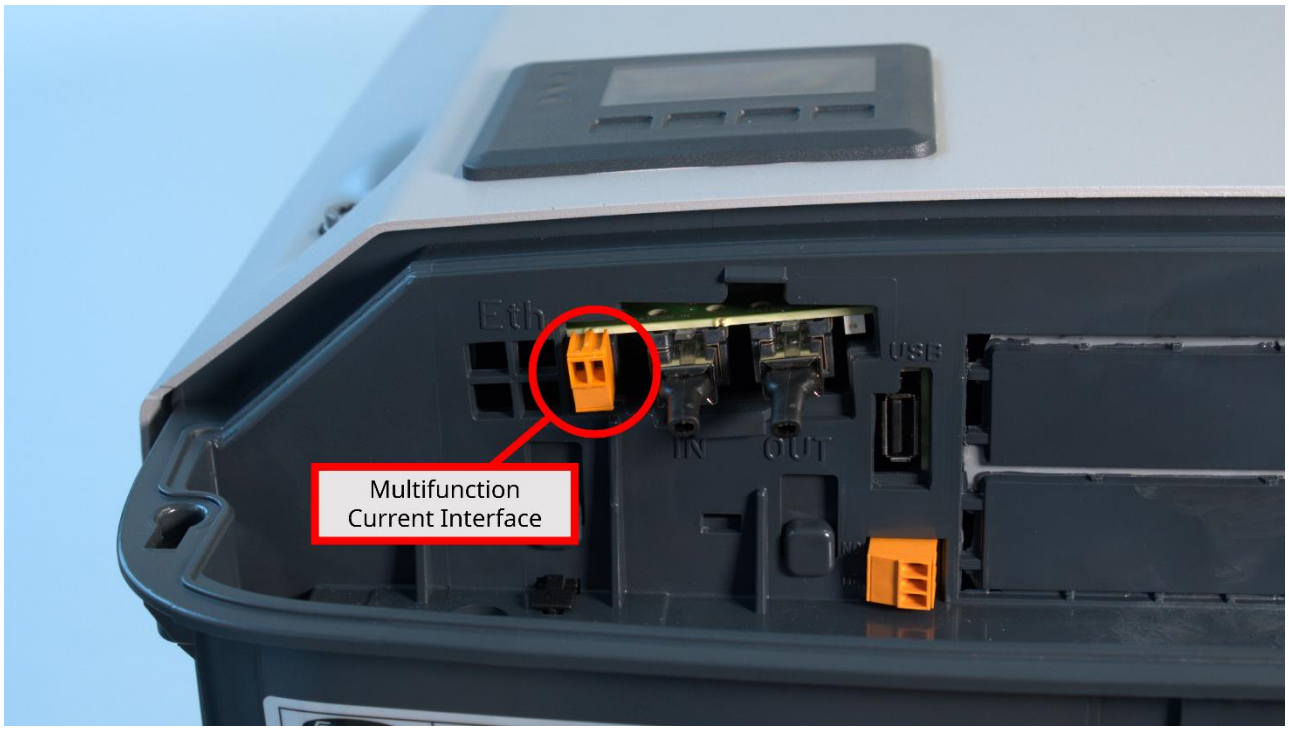


Figure 1: Connection area of a SnapINverter Light

The 2 pins of the multifunction current interface are then connected to the inputs on the S0 Meter. To do this, connect pin 1 to input S0- and pin 2 from the inverter to input S0+ on the S0 meter (see figure 2).

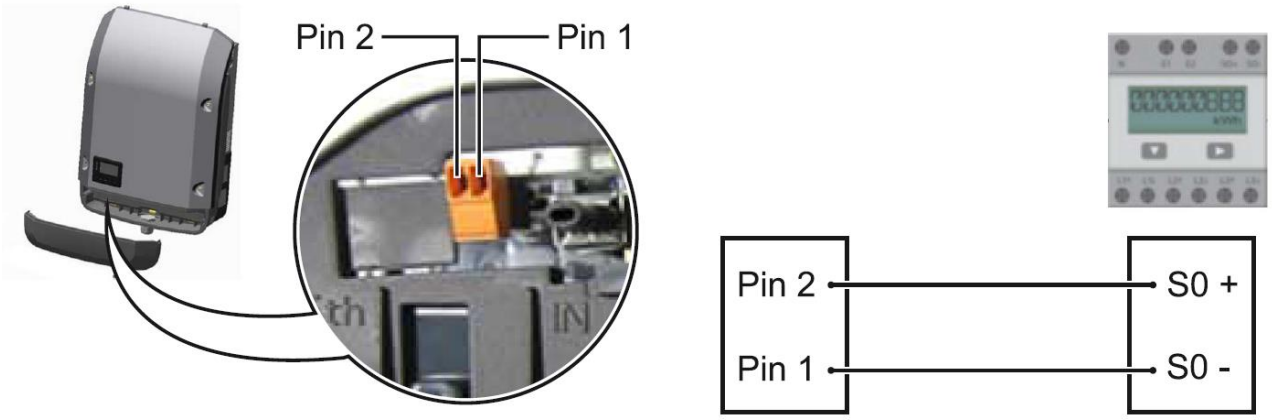


Figure 2: Connection of the SnapINverter light to the S0 meter

Important: To guarantee proper operation, the S0 meter must be located in the consumption branch of the PV system:

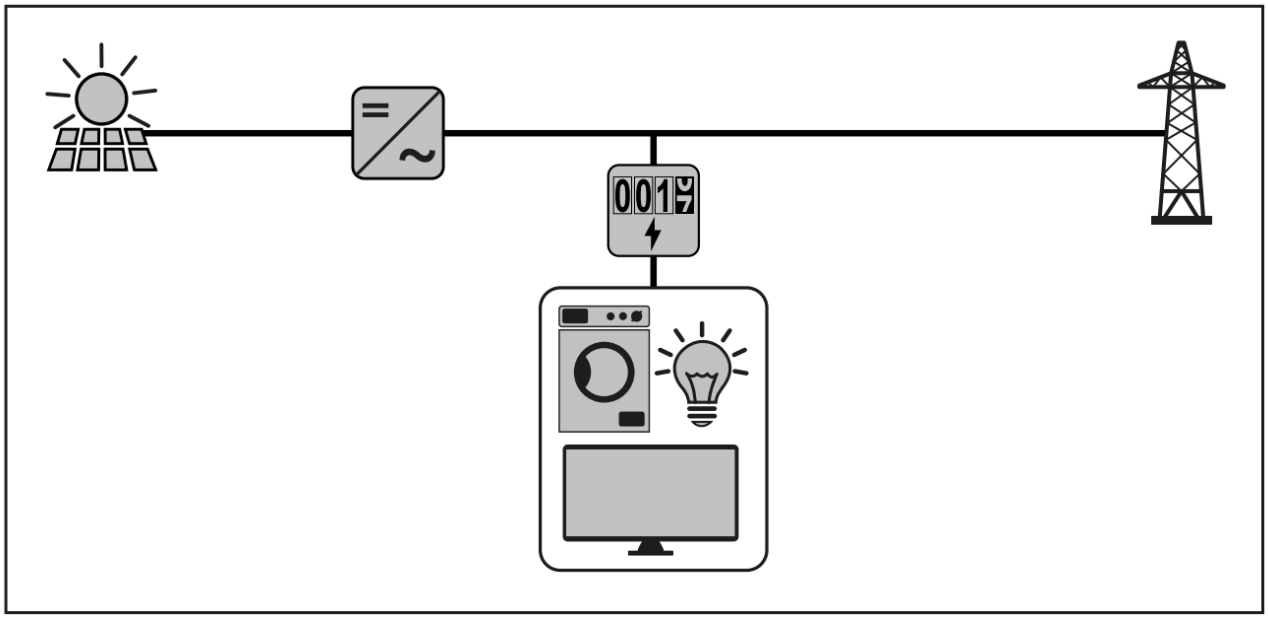
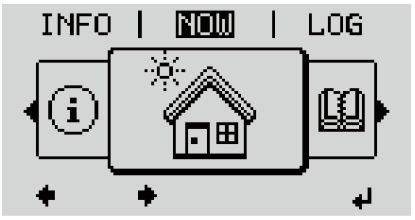
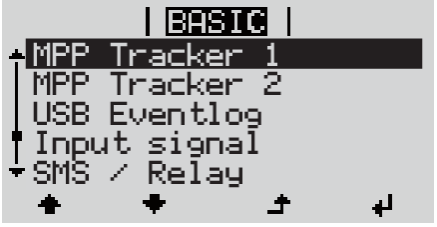


Figure 3: Position of the S0 meter in the consumption branch

2.2 Setting dynamic power control on the display of the SnapINverter Light

Since the SnapINverter light does not have a communication unit (data manager), the dynamic power reduction must be set on the inverter display. To be able to make the settings, the inverter must at least be supplied on the AC side.

Then start at the display of the SnapINverter:

Step	Activity	Screenshot Display
1	Press the "menu" key: ↑ The menu level appears.	
2	Press the unassigned "Menu / Esc" key 5 times: 	
3	"Access Code" is displayed in the "CODE" menu; the first digit starts flashing. Enter the code 22742: Use the "Plus" and "Minus" keys to select a value for the first digit of the code	
4	Press the "Enter" key: ↵ The second digit flashes.	
5	Repeat steps 3 and 4 for the second, third, fourth and fifth digits of the access code until the selected code starts flashing.	
6	Press the "Enter" key: ↵ The Basic menu appears.	
7	Select "Input Signal" by using the arrows and confirm with the "Enter" key: ↵	
8	Select “Mode of Operation” and then “S0-Meter” by using the arrows and confirm with the "Enter" key: ↵	

9	Set the grid power limit using the "Plus" and "Minus" keys to select a value (in watts) and confirm with the "Enter" key: ↵ *Example: For a 10 kWp PV system and a power limitation set to 70%, a value of 7000 watts must be entered here. Zero feed-in is possible as well.*	
10	Set the impulse rate using the "Plus" and "Minus" keys to select a value (impulses per kWh) and confirm with the "Enter" key: ↵ The impulse rate depends on the S0 meter used.