

FLOATBRIDGE

Input Control – Functional Description



Why do I need this feature?

SmartGridReady – primarily relevant for Switzerland:

In Switzerland, the requirements are similar to those in Germany: Grid operators must be able to temporarily regulate the electricity consumption of controllable devices to prevent grid overloads. However, there is a greater need for fine-grained control here, as more precise adjustment of consumer power is required. Input Control enables precisely this differentiated control.

§14a EnWG (Energiewirtschaftsgesetz) – relevant only for Germany:

Section 14a of the EnWG allows grid operators to temporarily reduce the electricity consumption of certain controllable devices to prevent grid overload. In return, customers receive reduced grid fees. Specifically, this means that grid operators must be able to limit the power of controllable devices to 4.2 kW (6 A) if necessary.

Other Use Cases

Example of Solar Power Usage:

By selectively controlling the two inputs of the Connect-Box, the charging current from charging stations can be gradually adjusted to match the available solar energy. When there is excess PV power, the charging power can be increased to maximize self-consumption. If, on the other hand, the available solar power decreases, a corresponding signal can be sent to the Connect-Box to reduce the charging power.

Example of Integration into an external EMS:

By controlling the two inputs, integration with an external energy management system (EMS) is possible. This allows the EMS to take over control without the charging stations themselves having to be directly integrated into the EMS. Instead, the Connect-Box can be controlled via the inputs like an additional load without significant configuration effort.

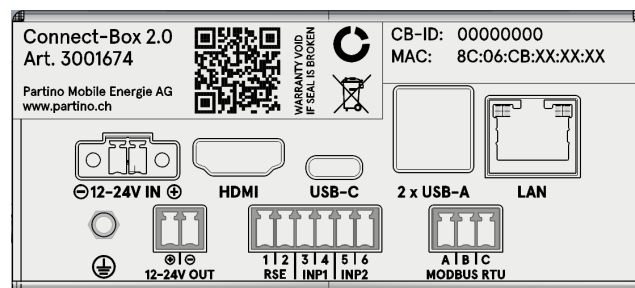
Note:

For more detailed information and solution recommendations, please feel free to contact Partino.
(e-mobility@partino.ch)

How is the solution structured?

The Connect-Box has two externally controllable inputs (INP1 and INP2). Depending on the switching state of these two inputs, four different states can be distinguished:

- 0 / 0: Both inputs inactive
- 1 / 0: Only INP1 active
- 0 / 1: Only INP2 active
- 1 / 1: Both inputs active



INP1 | INP2

Input 1 and 2 (Input signals)

How do I use this feature?



First, search for your site using the **“search icon”** (1) and select the desired project **“site”** (2). In the **“settings”** section (3-4), you can **“activate the feature”** (5) and enter the desired values. You can define **one or more states** (6)—fields left blank have no effect. Be sure not to enter a value that exceeds the **maximum allowable current** (7).

Search of the site

Search

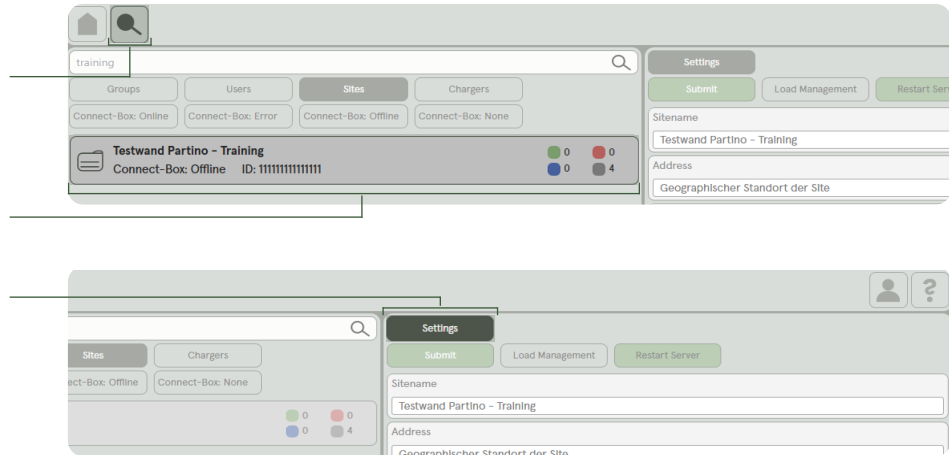
- 1 Click the search icon and enter the name of your site in the search bar.

Selection

- 2 Select your project under “Sites”.

Settings

- 3 You will now find this feature in the settings, if a Connect-box has been opened on the site.



Input Control - Adjustment of the settings

Under the settings menu, you can configure the settings for Input Control. Enable the feature by clicking the “Activate Feature” switch. Once the feature is enabled, the switch will turn yellow. Then enter the desired values for the four states. It is not necessary to fill in all fields. You can also define just one or more states. Empty fields have no effect on load management. Then click “Submit” to save the settings. Be sure not to enter a value that exceeds the maximum allowable current for your system. Values above this limit will be saved but will have no effect, as they are limited by the maximum current rating of the main meter.

Input Control

- 4 In this section, you can configure settings.

Activate

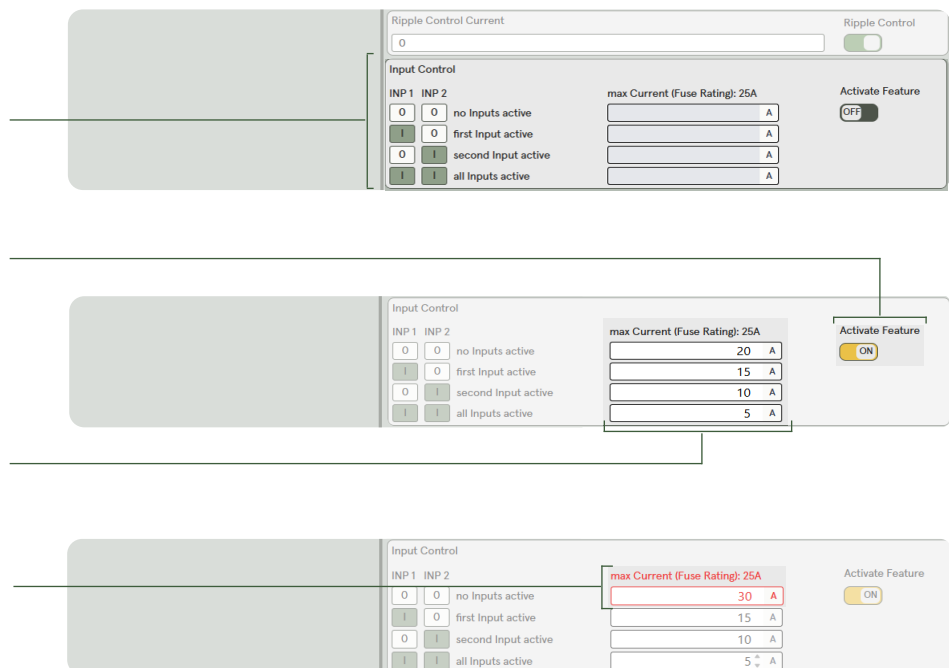
- 5 Enable the feature by clicking the button. When selected, it turns yellow.

Enter values

- 6 Enter the different values for the four states. Then click “Submit.”

Maximum current

- 7 Do not enter a value that exceeds your site's maximum current rating.





Adjusting the maximum current value (only if necessary)

Load Management

i If you want to adjust the maximum value, select the counter at the top level of the hierarchy in your site's "Load Management" section.

Current Rating

i In the next step, you can adjust the maximum current value in the "Current Rating" field.

Smart-Grid-Signal (Switzerland) - Specific Use Cases

Define up to four power levels that load management can adjust based on the smart grid signal. Example for a maximum current of 50A: Field 1 - 100%: Leave the field blank (no additional limit)

Field 2 - 60 %: 30A

Field 3 - 30 %: 15A

Field 4 - 0 %: 0A (Charging process blocked)

SmartGridReady

i Enter the values.

EnWG 14a (Germany) - Specific Use Cases

In Germany, each controllable device must be capable of being reduced to 4.2 kW or 6 A. Therefore, enter the total value of the number of charging stations multiplied by 6 A. Fill in the fields as follows (example with 3 charging stations): $3 \times 6 \text{ A} = 18 \text{ A}$

Enter this value by default in the "First Input active" field. If the connections are reversed or you are unsure, enter the same value in the "Second Input active" field as well.

EnWG 14a

i Enter the total number of charging stations.

E-mobility circuit - Specific Use Cases

Enter a value in the "No Inputs active" field. As long as the input control is active, this value serves as the maximum limit for the e-mobility output. Example: Max. 40A
(The remaining fields can be left blank or used for additional control stages)

E-mobility circuit

i Enter a value in the "No Inputs active" field.

