

## Application Note - How to add SG Ready Heat Pump on mySigen App

### Revision History

Version 1.0, August 2024 – Initial release

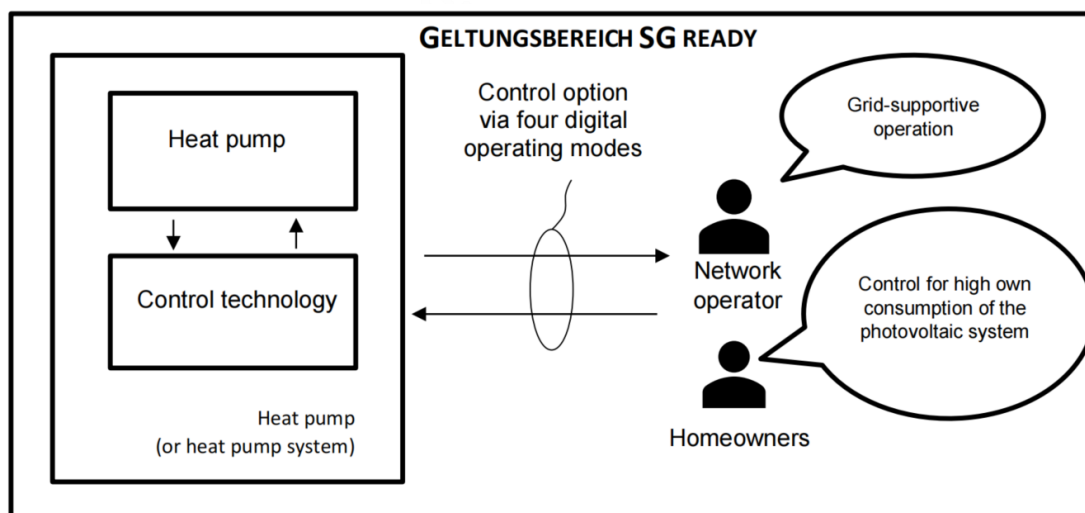
### Technical Description

#### 1. Background

The energy world is increasingly characterized by renewable, fluctuating feed-in.

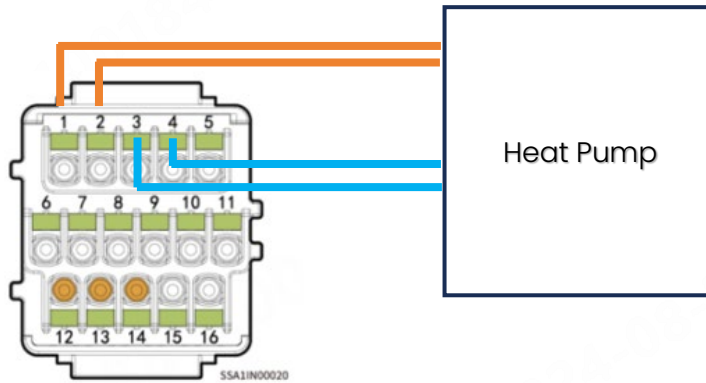
As load-variable consumers, heat pumps can store electricity that cannot be fed into the local grid in the form of thermal energy and use it to cover heating requirements, as well as being switched off in a targeted manner to mitigate consumption peaks.

Load management with heat pumps is proven and energy-efficient, creates synergies between the electricity and heating sectors, reduces dependence on imports and contributes to climate protection.



## 2. How to add SG Ready Heat Pump on mySigen APP

### 1. Physical location connection



When configuring, select a connect way as needed:

- **Way 1:** COM 1 and COM 2 (connected to DO input1)
- **Way 2:** COM 3 and COM 4 (connected to DO input2)

COM terminals explanation:

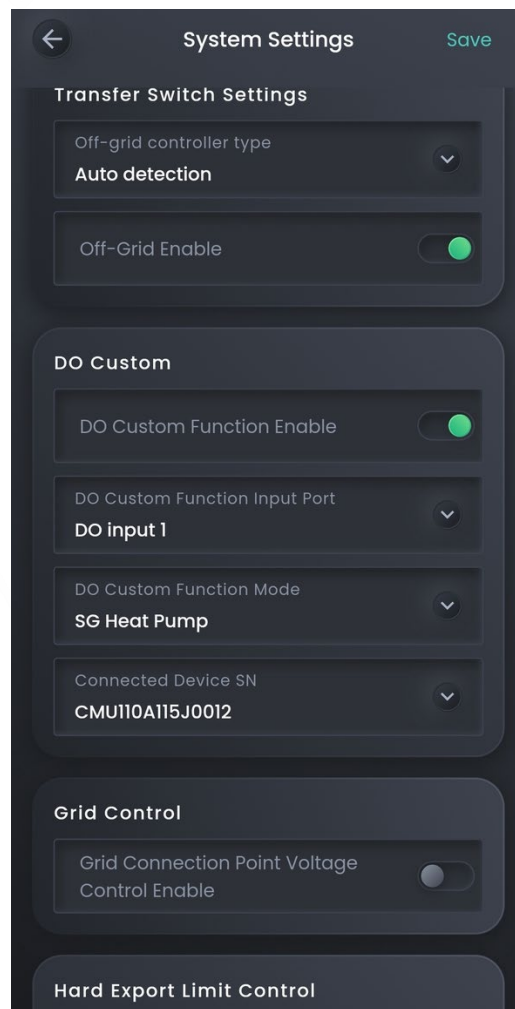
- **COM 1 and COM 3:** As a shared terminal, it is used to connect the common contact of the heat pump control circuit.
- **COM 2 and COM 4:** Normally in off state, it only be closed to start the device under certain conditions.

### 2. Set DO custom function

The heat pump control relies on the DO custom function in power station settings to achieve control.

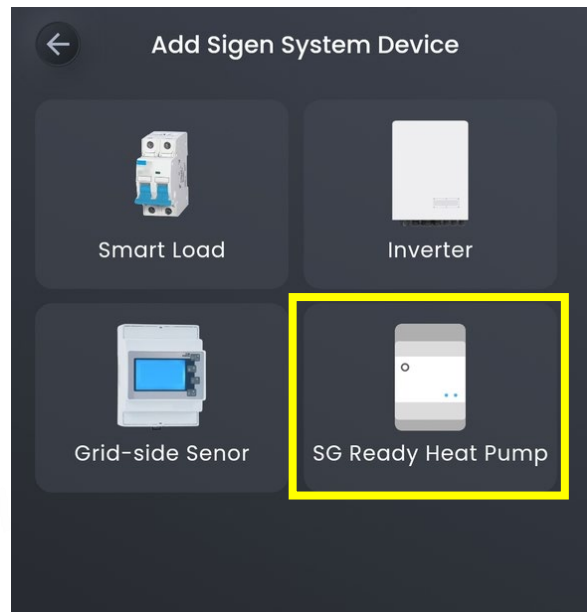
The configuration steps are as follows:

- (1) Enter the **'System Settings'** page of the site management interface.
- (2) Find **'DO Custom'** box and click **'DO Custom Function Enable'** button to enable the function .
- (3) After enabling the DO Custom function, choose **'DO Custom Function Input Port'**:
  - If you choose Way 1, which connects COM 1 and COM 2, choose **'DO input 1'**.
  - If you choose Way 2, which connects COM 3 and COM 4, choose **'DO input 2'**.
- (4) Set **'DO Custom Function Mode'** as **'SG Heat Pump'** by default.
- (5) Make sure that the connection is stable and input SN of heat pump in **'Connected Device SN'**



### 3. Add SG Ready heat pump

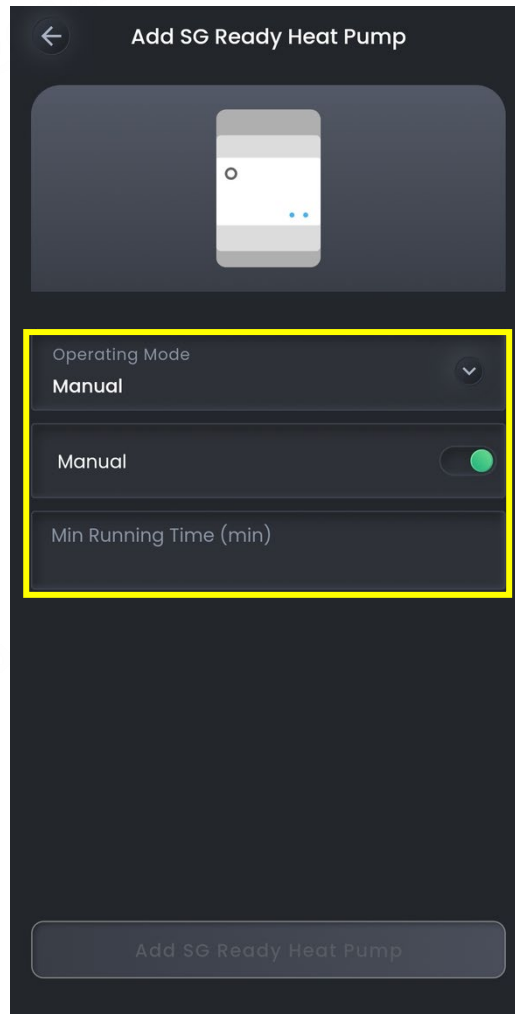
On the 'Add Sigen System Device' page, select to add 'SG Ready Heat Pump' to the system.



### 4. Heat pump settings page

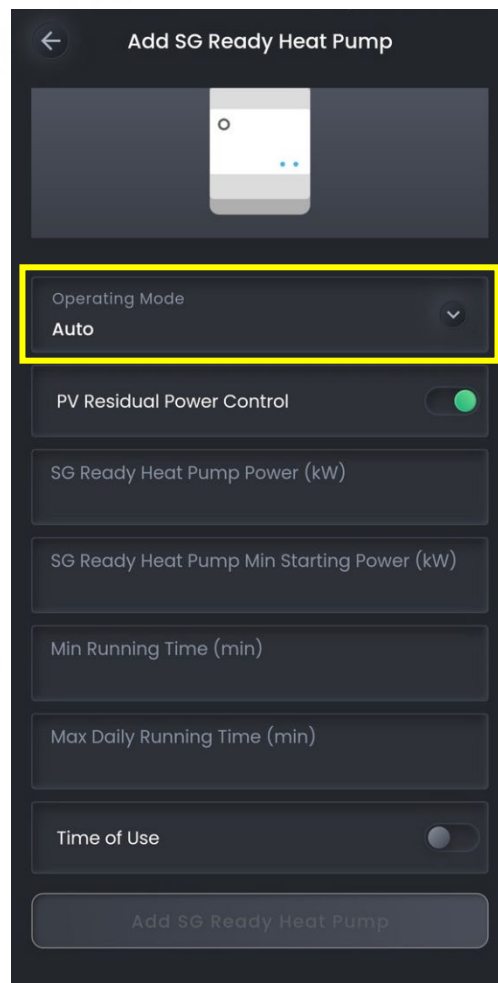
The heat pump control supports two operating modes: manual mode and automatic mode.

(1) Manual Mode:



- Select 'Manual Mode' in 'Operating Mode'.
- Set 'Min Running Time(min)' of the heat pump to avoid frequent start and stop of the heat pump. Set the minimum running time as 10 minutes, it means that the heat pump will run for at least 10 minutes after starting before it can be shut down.

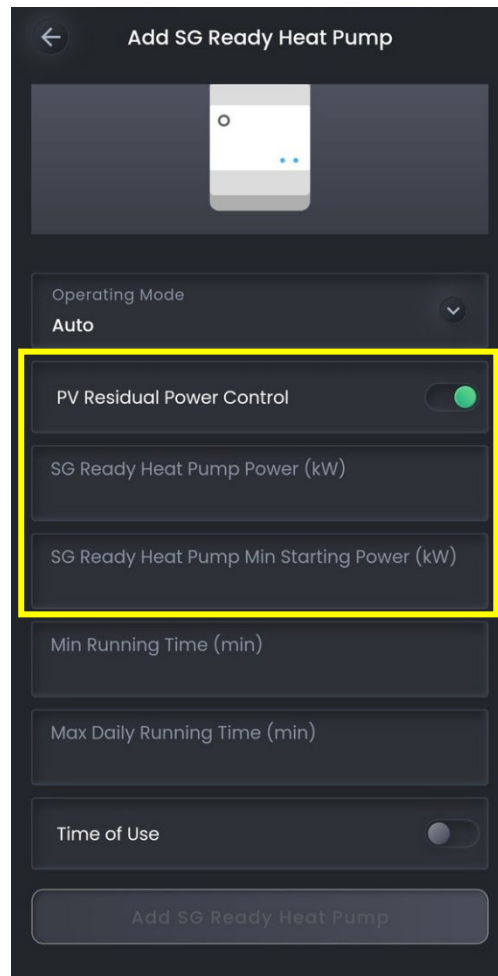
(2) Automatic mode:



- Select **"Auto"** in 'Operating Mode'. The system will automatically control the operation of the heat pump according to the pre-set conditions.
- Automatic mode includes the following two sub-functions.

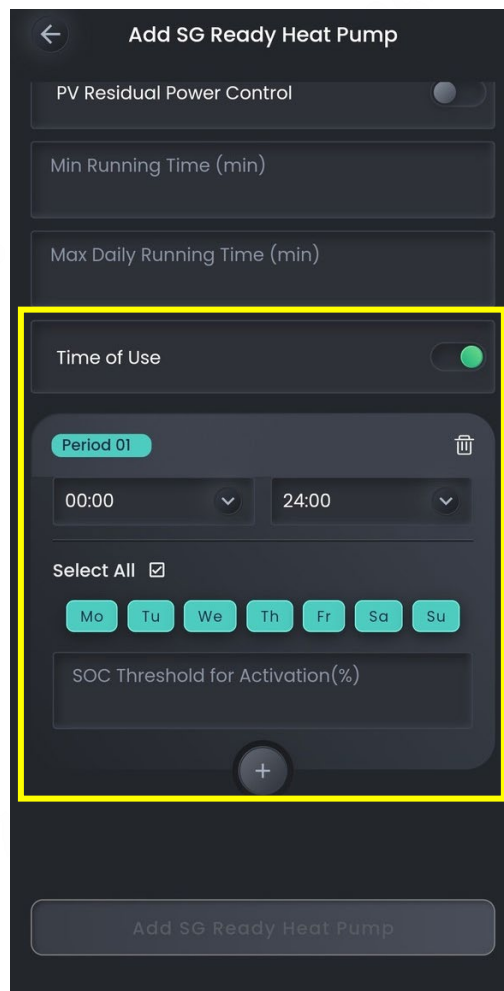
1) PV surplus power control:

When the export power to grid from inverter is higher than start up power of heat pump, then the heat pump can be started automatically.



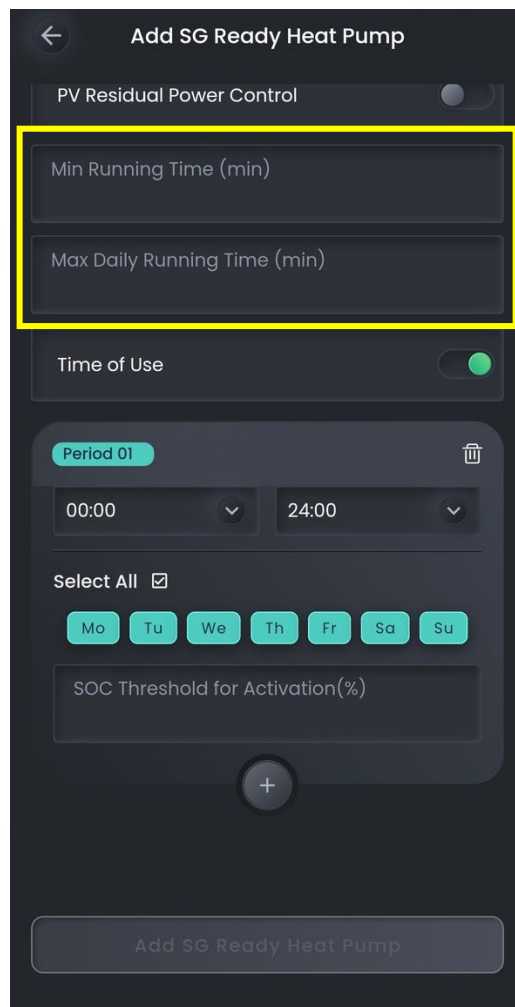
2) TOU control:

TOU (Time of Use) mode allows to set the operation time window of the heat pump according to the electricity price. During the set time period, if the battery's SOC is higher than the set value in advance, for example SOC is 70%, the heat pump can be started automatically. A maximum of 3 windows can be added



Notes: In auto mode, the following parameters also need to be set:

- Minimum running time: The minimum time of heat pump must run after starting to avoid frequent starts and stops of the device.
- Maximum running time of the day: The maximum running time allowed for the heat pump in a day to prevent long-term operation from causing overheating of the device or excessive energy consumption.



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