# Introduction to the AGS Application of RiiO Sun II V1.0

Version Change Record

| Date | Version | Remark | Author |
|---|---|---|---|
| 2023/3/7 | V1.0 | First version | Vic_Wu |
| | | | |

## 1. The Necessity of AGS Function

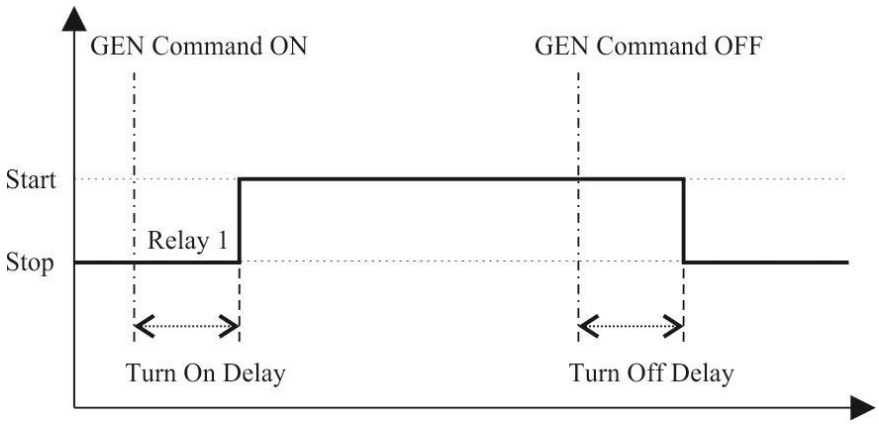
Through the AGS function, the generator can be integrated into the energy storage power system, which enables the automatic control of the entire power supply system based on the set conditions, thus improving the reliability of the system. Besides, by setting appropriate triggering logic for generator start and stop, the system's adaptive ability to loads can be enhanced, and the power configuration of the generator and inverter can be reduced, as well as the capacity of the backup battery pack can be reduced while ensuring that the load demand is met, thereby lowering the system cost.

## 2. Types of Generator Applicable to AGS Function

Different generators come with different starting mode, which can usually be divided into manual start (by pulling the handle of starter) and automatic start (with key or switch). AGS function can work with generator equipped with dry contact control for start & stop, but is not suitable for the one that can only be started manually.

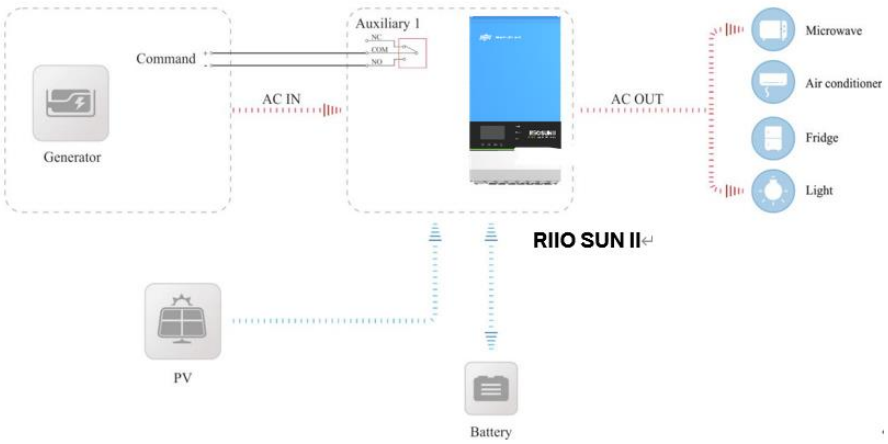
**Generator with 2 cable contacts is needed**

The start & stop signal of generator is controlled by the output dry contacts inside RiiO Sun II. When the normally open contact of the RiiO Sun II output dry contact is closed, the generator starts. On the other hand, when the normally open contact of the the RiiO Sun II output dry contact is opened, the generator stops.




## 3. AGS Signal Connection

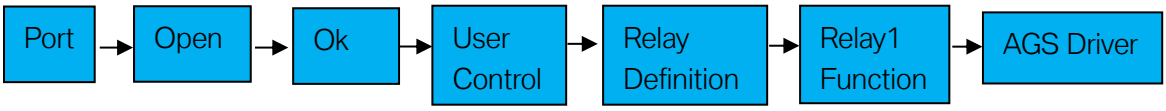
**Generator with 2 cable contacts is needed**



## 4. AGS Setting

The triggering logic for generator's automatic start & stop can be set via TBB link or NOVA. The flowchart below is for your reference.

### 4.1 AGS setting on TBB link




Notes: Please install TBB link program and connect the TBB interface correctly according to *TBB Link software and Interface drive installation V1.0*. The setting procedure above can be carried out on TBB Link App and completed with just one click on "Send settings". After the above settings are finished, the triggering logic can be set on AGS setting interface.

### 4.2 AGS setting on NOVA




Notes: Please install Kinergy-WIFI or Kinergy-GPRS, the wireless communication module, correctly according to *Kinergy-WiFi Quick Installation Guide V1.2* or *Kinergy-GPRS Quick Installation Guide V1.1*. Sign up for NOVA ID and build up a site, where the above setting procedure can be carried out and completed with one click on "Set". After the above settings are finished, the triggering logic can be set on AGS setting interface.

### 4.3 AGS logic setting

Personalized setting: The parameters of each AGS logic can be customized, and the generator running periods can be set, so as to meet the actual demand of using generator and electricity.

| Item | Default | Range | Notes |
|---|---|---|---|
| Switch on SOC<(%) | 50% | 0%~99% | 1. When using lithium battery, please set SOC as triggering condition.<br>2. When using other battery, please set battery voltage as triggering condition. |
| Switch off SOC>(%) | 80% | 51%~100% | |
| Switch on Voltage<(V) | 46V | 40V~54V | |
| Switch off Voltage>(V) | 48V | 48V~57.6V | |
| Switch on Load Power>(%) | 80% | 60%~100% | |

| | | | |
|---|---|---|---|
| Switch off Load Power<(%) | 50% | 0%~70% | |
| Switch on Delay | 10s | 10s~3600s | |
| Switch off Delay | 60s | 60s~3600s | |
| Min Running Time | 180s | 180s~1800s | |
| GEN Start Interval Time | 30s | 30s~1800s | |
| Time Window | 00:00-00:00 | Anytime | 1. Generator is only allowed to work on setting period; otherwise, it will be shut down compulsorily in the least running time.<br>2. If the beginning time and the ending time remain the same, the generator will start working whenever needed. |
| Manual Switch on Gen | / | Trigger | Forced start or shutdown can be achieved by using manual button. |
| Manual Switch off Gen | / | Trigger | |

## 4.4 AGS Driver setting

RiiO SUN II AGS comes with a set of external dry contact interface: NO, COM, NC, which favors electrical parameter of 30Vdc, 3A, or 250Vac/3A. This dry contact set can be customized based on the triggering condition of generators.

| Signal Type | | Range Of Input Values | Notes |
|---|---|---|---|
| Level | Turn On Delay | 0~180s | 0s (default) |
| | Turn Off Delay | 0~180s | 30s (default) |
| Pulse | Turn On Delay | 0~180s | No sending dry contact signal when generator is off. |
| | Pulse Time | 1~180s | 3s (default) |