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LUNA2000 ESS Application Scenarios  
Without Considering Backup (for better readability)  
Supported configurations for grid-tied ESS



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# LUNA2000 ESS Application Scenarios

## Restrictions – Non-supported Scenarios

# Restrictions using LUNA2000 ESS in AC-coupling Scenarios

## It is not possible to

- ✘ Use more than three inverters in systems with one or more LUNA2000 ESS.
- ✘ Use the surplus of cascaded SUN2000-60KTL-M0 and/or SUN2000-100KTL-M1.
- ✘ Use LUNA2000 ESS with inverters that have no PV attached - meaning pure AC-coupling (exception: one single M1/L1 with a second Smart Power Sensor).
- ✘ Use surplus energy to charge LUNA2000 ESS generated by any other external power source (e.g. inverters, wind turbines, etc.) - exception: one single M1/L1 with a second Smart Power Sensor.

## “Time-of-use” mode without PV

- ✓ For using a battery system without PV (“**Maximum self-consumption**” mode is not possible without PV), you can use the “**Time-of-use**” mode. In this mode, charging the battery is only done according the selected time range(s).



# LUNA2000 ESS Application Scenarios

## Table Overview

# LUNA2000 ESS in AC-coupling Scenarios - Overview

Controlling Device	Supported Controller Devices	PV required at Huawei Inverters	Maximum number of Huawei Inverters	Number of required Smart Power Sensors	Maximum Storage Capacity	Supported Huawei Inverter Models						Third Party Generators
						2-6KTL-L1	3-10KTL-M1	12-20KTL-M2	30-40KTL-M3	<i>60KTL-M0</i>	<i>100KTL-M1</i>	
Smart Dongle	Smart Dongle WLAN/FE Smart Dongle 4G/LTE	Yes	3	1	90 kWh	1-3x L1 only	1-3x M1 only	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
	Smart Dongle WLAN/FE	<i>No</i>	1	2	30 kWh	1	1	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>Yes, via 2<sup>nd</sup> Smart Power Sensor</i>
SmartLogger	SmartLogger 3000	Yes	3	1	90 kWh	1-3x L1 only	Combinations of min. 1x M1 and M2/M3 (max. 3 inverters in total)			<i>No</i>	<i>No</i>	<i>No</i>





# Supported Smart Dongle Scenarios

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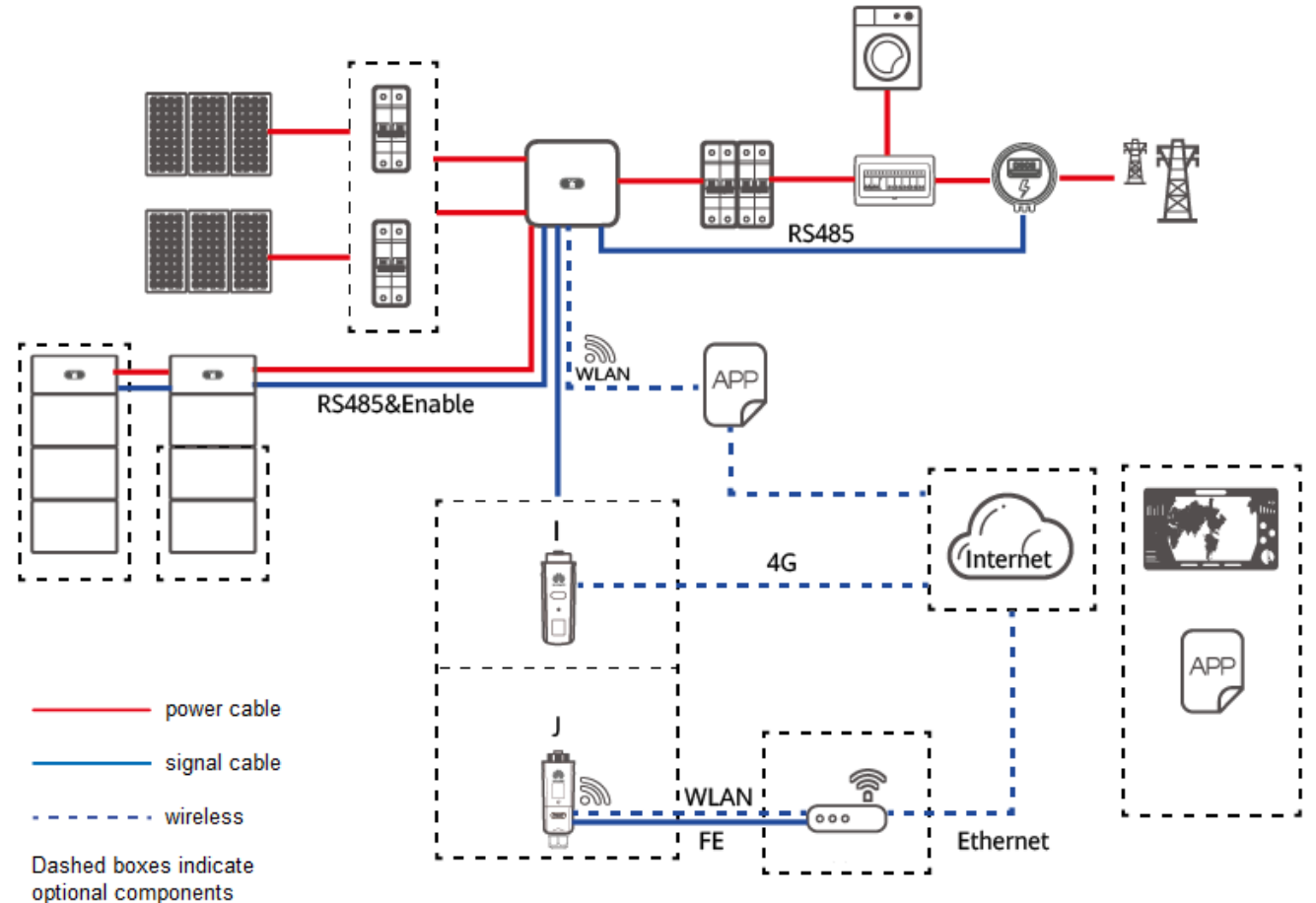
# LUNA2000 ESS Application Scenarios

## Scenario: Dongle System – Single Inverter

# Dongle System – Single Inverter Scenario

Supported battery inverters:

- ✓ SUN2000-2-6KTL-L1
- ✓ SUN2000-3-10KTL-M1
- ✓ PV is required.
- ✓ Up to 30kWh storage capacity.





# LUNA2000 ESS Application Scenarios

**Scenario: Dongle System – Single Inverter with third party Inverters**





# Dongle system – single inverter with third party inverters

AC-coupling of one SUN2000-2-6KTL-L1 inverter or one SUN2000-3-10KTL-M1 inverter with third-party inverters is supported by using a second Smart Power Sensor.

- ✓ SUN2000-2-6KTL-L1 – firmware V200R001C00SPC**117** or later.
- ✓ SUN2000-3-10KTL-M1 – firmware V100R001C00SPC**140** or later.

WLAN/FE Smart Dongle firmware V100R001C00SPC**126** or later required.  
4G/LTE Smart Dongle not supported.

PV is **not** required on the Huawei inverter but possible of course.

Smart Dongle supports a second Smart Power Sensor on RS485-1 measuring the AC-generation of third party inverters. No cascading possible therefore, and no output limitations possible (e.g. Zero feed-in is not possible).

The second Smart Power Sensor has to be configured at the Smart Dongle directly (not at the inverter).  
Compare this Huawei support article: [Adding a Power Meter Through Smart Dongle](#)

When “Charge from grid” is enabled on M1/L1-side, the third party generator can supply power to loads and charge batteries through the Huawei inverter. In this case, the batteries can work in maximum self-consumption and TOU modes.



# LUNA2000 ESS Application Scenarios

**Scenario: Dongle system – Multiple Inverters Cascaded**



# Dongle system - Cascaded

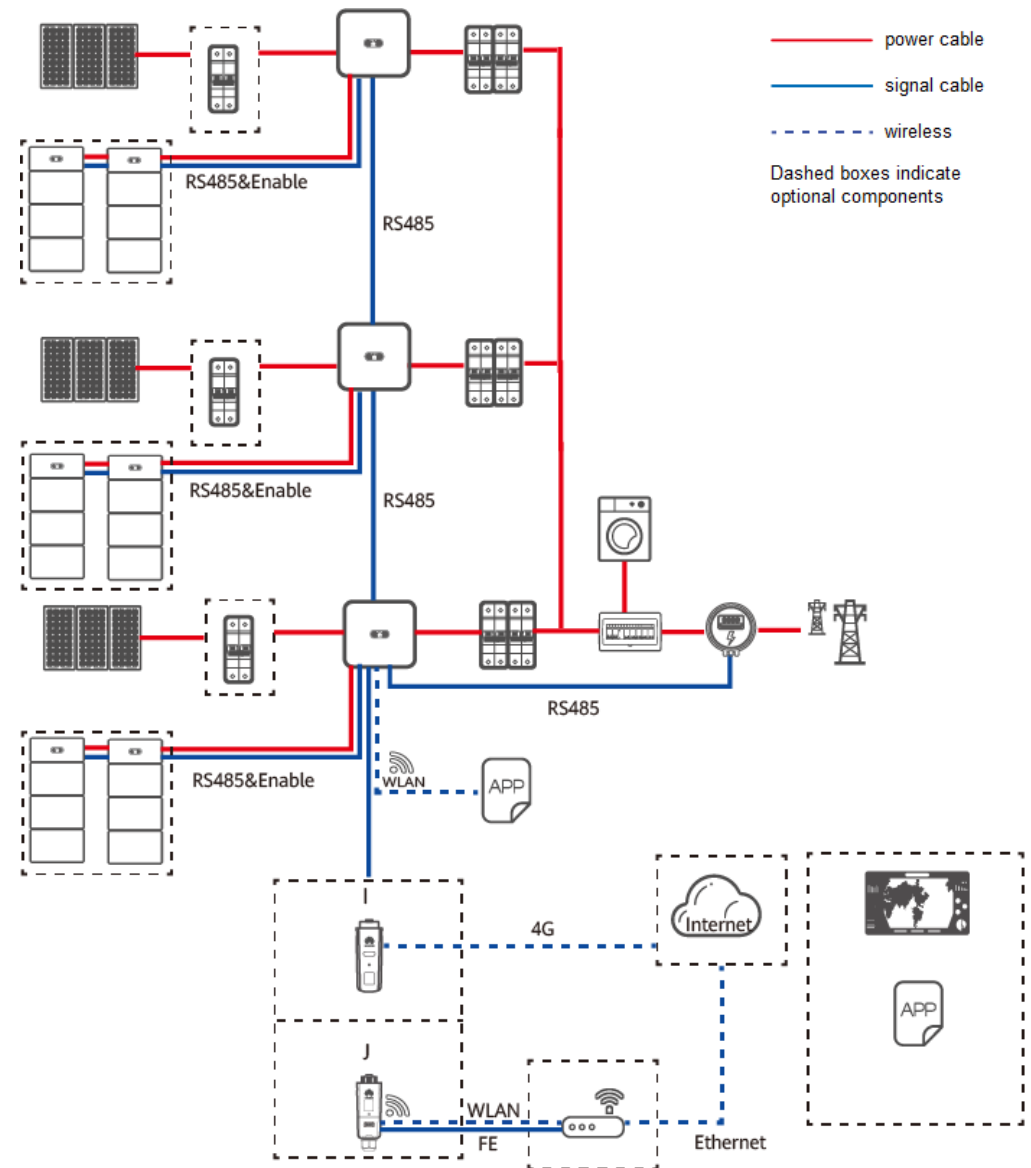
Maximum configuration:

✓ 3x SUN2000-3-10KTL-M1

or

✓ 3x SUN2000-2-6KTL-L1

**Note!** Only same type of inverter models supported. No mixed inverter types possible in this scenario.



# Supported Smart Dongle Scenarios - Cascaded

- ✓ A maximum of three M1 or three L1 inverters can be cascaded.
- ✓ PV at each inverter is required.  
The battery powerflow controller only uses PV surplus energy that is produced by the cascaded inverters (no surplus of any other external AC-sources considered).  
When “Charge from grid” is enabled, solely the surplus power generated by cascaded inverters without batteries can be used to charge the batteries.
- ✓ The batteries can be used with to up to 3 inverters.
- ✓ The first LUNA2000 ESS, Smart Power Sensor and Smart Dongle need to be connected to the Master inverter.
- ✓ Inverters that support batteries cannot be cascaded with inverters that do not support batteries.  
E.g. SUN2000-3-10KTL-M1 and SUN2000-12-20KTL-M2 cannot be cascaded through Smart Dongle (use SmartLogger 3000 instead).
- ✓ When the battery working mode is set to **Maximum self-consumption** or **Time-of-use (TOU)**, the Smart Dongle must be connected.  
If the working mode is set to **Fully fed to grid**, the Smart Dongle is optional.





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# Supported SmartLogger 3000 Scenarios



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# LUNA2000 ESS Application Scenarios

**Scenario: SmartLogger – Multiple  
1-Phase Inverters cascaded**





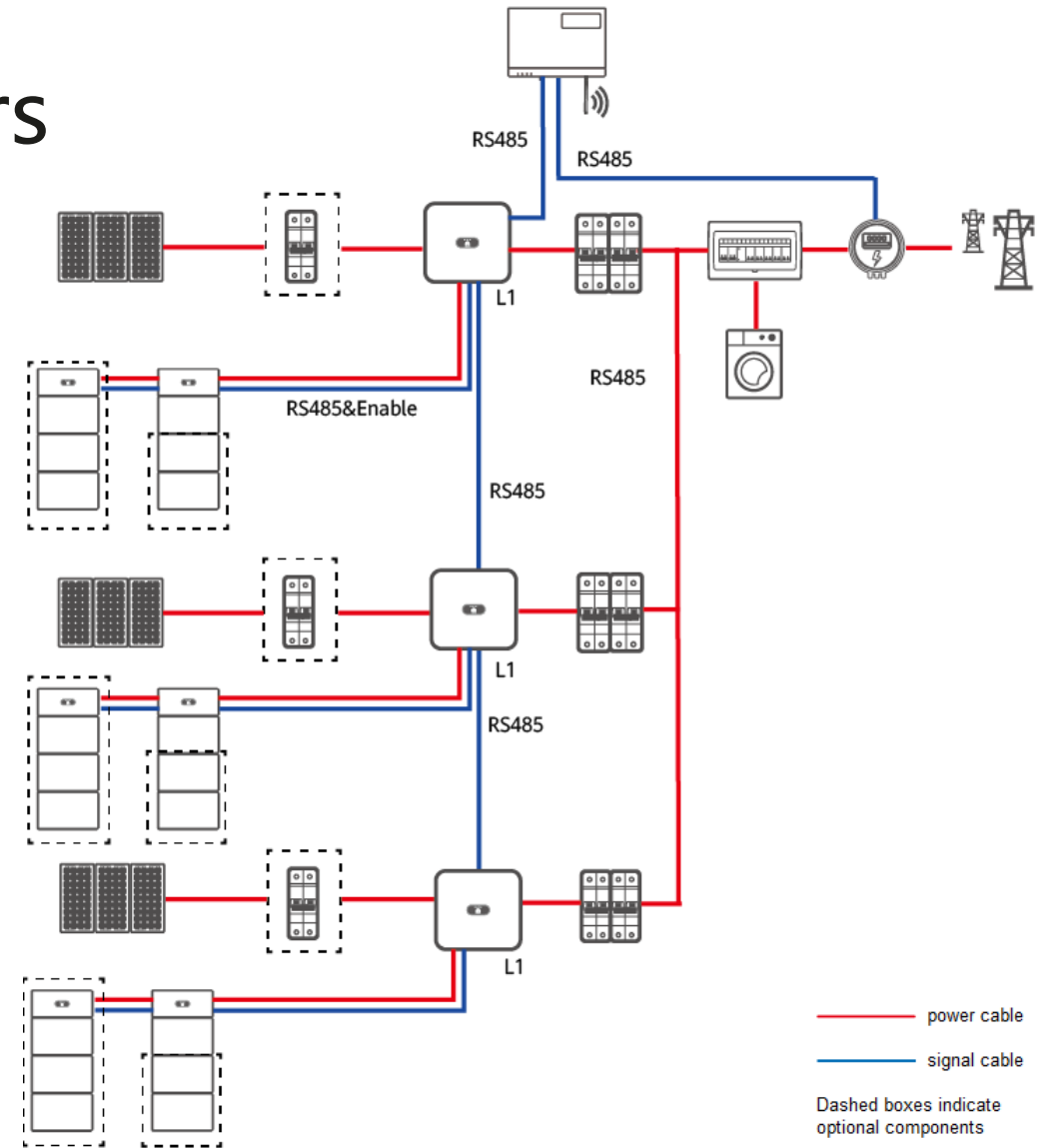
# SmartLogger – 1-phase Inverters

- ✓ Supports up to 3x SUN2000-2-6KTL-L1 inverters.
- ✓ Max. 90kWh storage capacity with 3x L1 inverters.

**Note! PV and battery at each inverter is required.**

The inverters can be connected to the grid only at the same phase and controlled solely by a single-phase power meter. Grid connection at different phases or using a three-phase power meter is not supported.

SmartLogger Firmware V300R001C00SPC**100** and later required



# LUNA2000 ESS Application Scenarios

**Scenario: SmartLogger – Multiple  
3-Phase Inverters cascaded**



# SmartLogger – 3 phase

Supported inverters (max. 3 inverters in total):

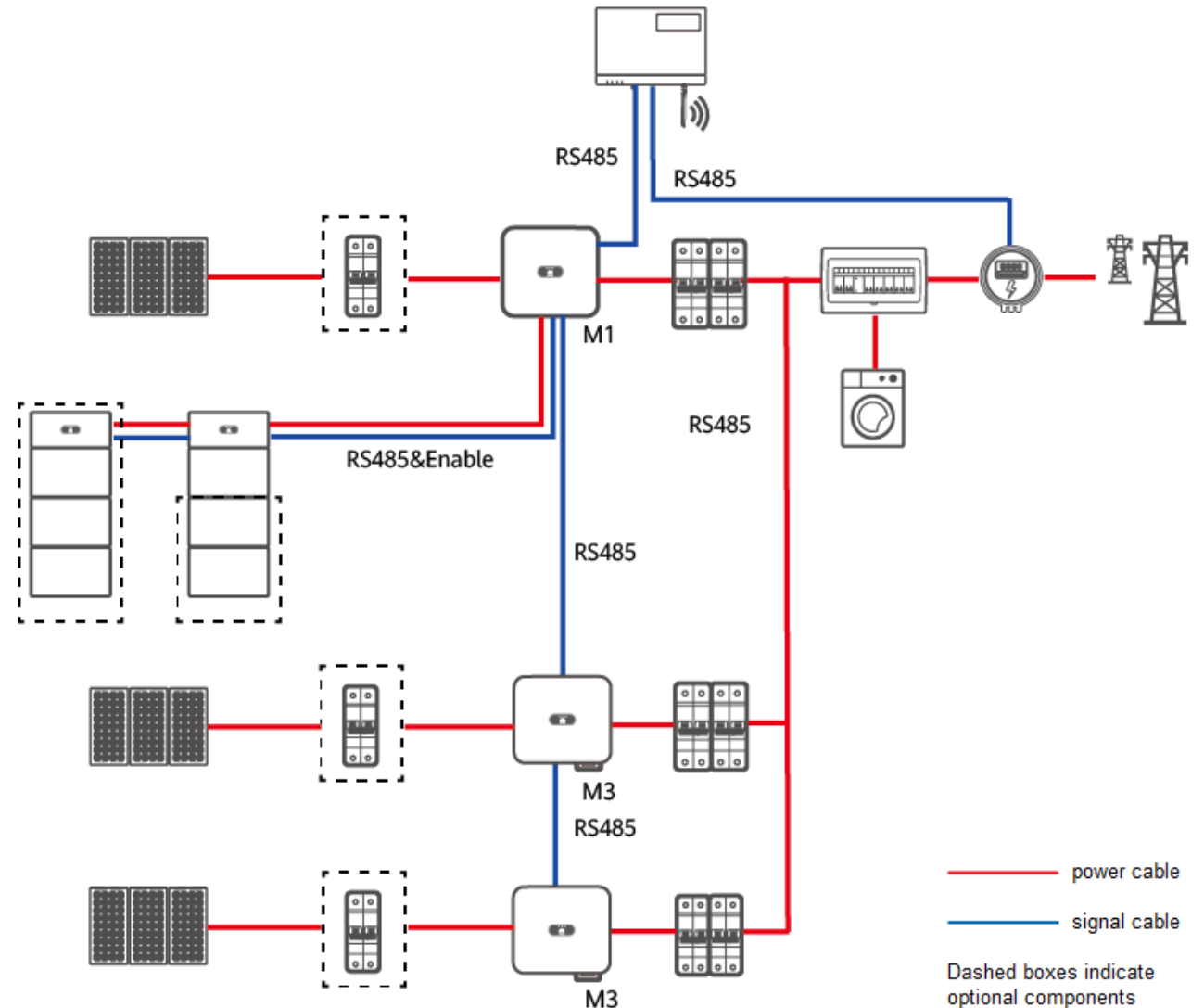
- ✓ SUN2000-3-10KTL-M1
  - ✓ SUN2000-12-20KTL-M2
  - ✓ SUN2000-30/36/40KTL-M3
- ✓ Max. 90kWh storage capacity with 3x M1 inverters.

Note! PV at each inverter is required.

The battery powerflow controller only uses PV surplus energy that is produced by the cascaded inverters (no surplus of external AC-sources considered).

When “Charge from grid” is enabled, solely the surplus power generated by cascaded inverters without batteries can be used to charge the batteries.

SmartLogger Firmware V300R001C00SPC**100** and later required



# SmartLogger – 3 phase

Mapping relationship table

Cascading Device	SUN2000 #1	SUN2000 #2	SUN2000 #3
SmartLogger	SUN2000-(3KTL-10KTL)-M1 (with batteries)	SUN2000-(30KTL, 36KTL, 40KTL)-M3	SUN2000-(30KTL, 36KTL, 40KTL)-M3
SmartLogger	SUN2000-(3KTL-10KTL)-M1 (with batteries)	SUN2000-(12KTL-20KTL)-M2	SUN2000-(12KTL-20KTL)-M2
SmartLogger	SUN2000-(3KTL-10KTL)-M1 (with batteries)	SUN2000-(12KTL-20KTL)-M2	SUN2000-(30KTL, 36KTL, 40KTL)-M3
SmartLogger	SUN2000-(3KTL-10KTL)-M1 (with batteries)	SUN2000-(3KTL-10KTL)-M1 (with batteries)	SUN2000-(30KTL, 36KTL, 40KTL)-M3
SmartLogger	SUN2000-(3KTL-10KTL)-M1 (with batteries)	SUN2000-(3KTL-10KTL)-M1 (with batteries)	SUN2000-(12KTL-20KTL)-M2
SmartLogger	SUN2000-(3KTL-10KTL)-M1 (with batteries)	SUN2000-(3KTL-10KTL)-M1 (with batteries)	SUN2000-(3KTL-10KTL)-M1 (with batteries)

