SUN2000-(2KTL-6KTL)-L1 User Manual

This document describes the SUN2000-(2KTL-6KTL)-L1 in terms of its installation, electrical connection, commissioning, maintenance, and troubleshooting.

Overview

Function

The SUN2000-(2KTL-6KTL)-L1 is a single-phase grid-tied string inverter that converts the DC power generated by PV strings into AC power and feeds the electricity into the power grid.

Model

This document involves the following product models:

- SUN2000-2KTL-L1
- SUN2000-3KTL-L1
- SUN2000-3.68KTL-L1
- SUN2000-4KTL-L1
- SUN2000-4.6KTL-L1
- SUN2000-5KTL-L1
- SUN2000-6KTL-L1

Figure 2-1 Model identifier (using SUN2000-5KTL-L1 as an example)

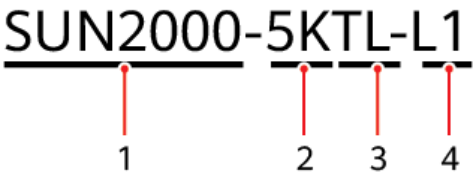

Table 2-1 Identifier description

No.	Meaning	Value
1	Product family name	SUN2000: grid-tied solar inverter
2	Power level	• 2K: The power level is 2 kW. • 3K: The power level is 3 kW. • 3.68K: The power level is 3.68 kW. • 4K: The power level is 4 kW.

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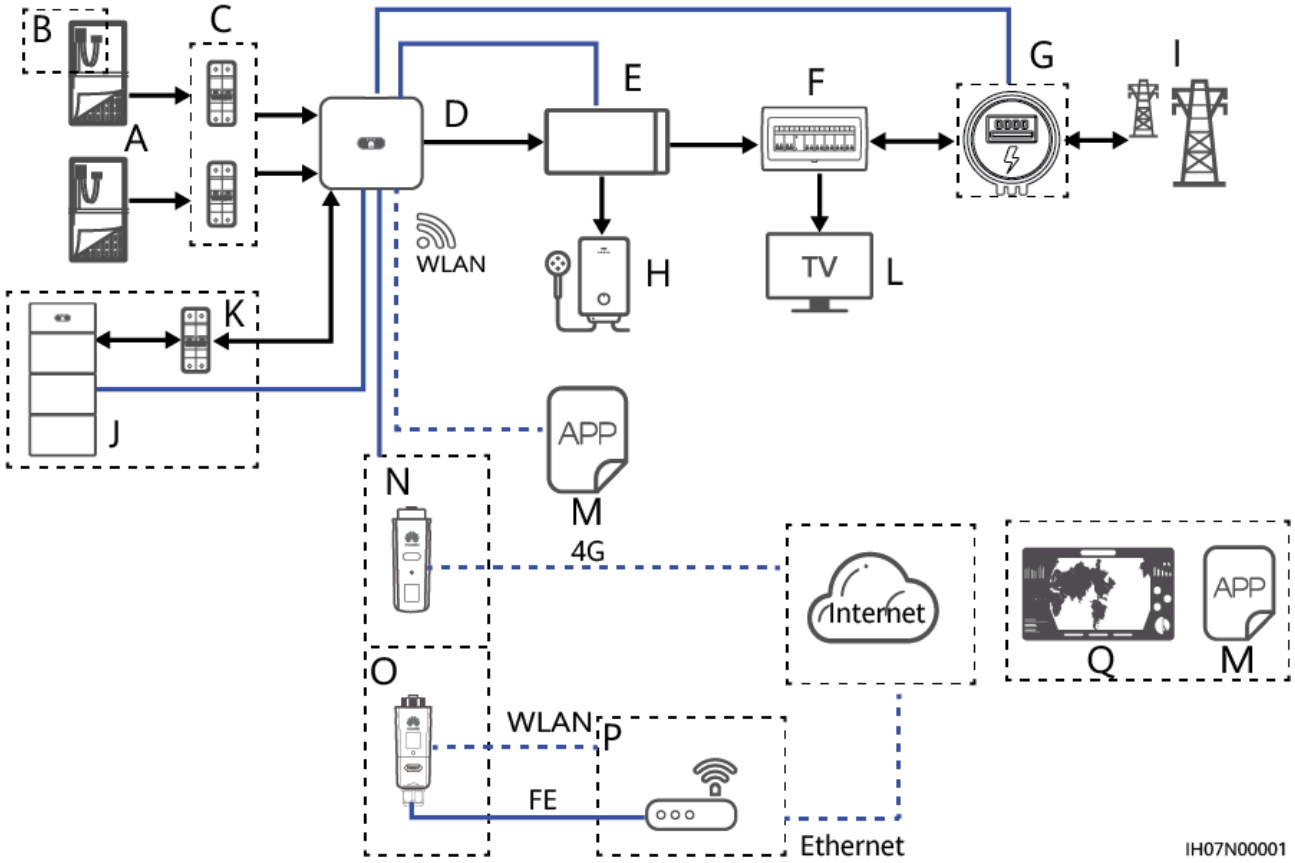
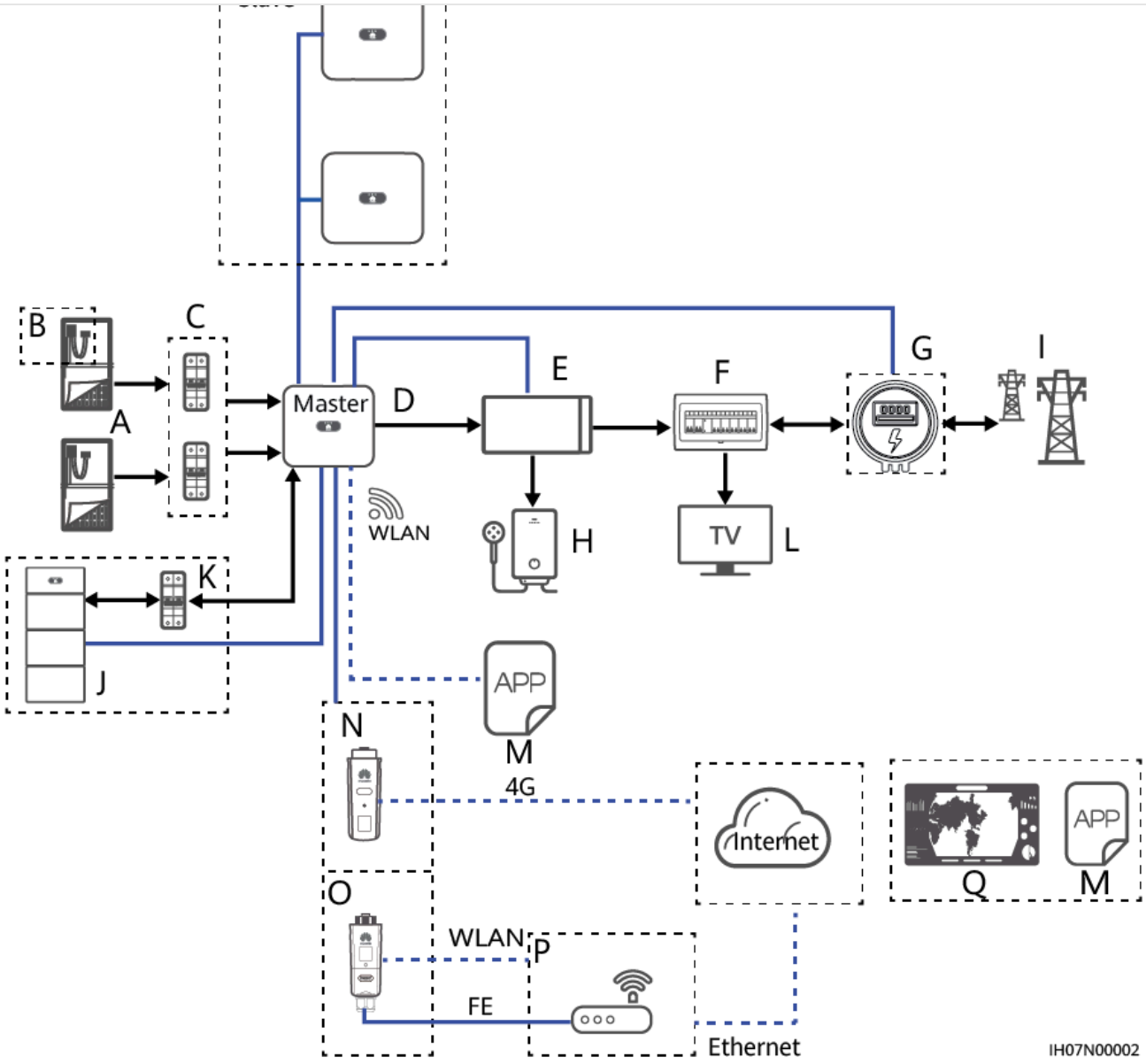
		• 6K: The power level is 6 kW.
3	Topology	TL: transformerless
4	Design code	L1: residential

Networking Application

The inverter applies to residential rooftop grid-tied systems. The system consists of PV strings, grid-tied solar inverters, AC switches, and power distribution units (PDUs).

Figure 2-2 Single inverter scenario (dashed boxes indicate optional configuration)





(A) PV string

(B) Smart PV optimizer

(C) DC switch

(D) SUN2000

(E) Backup

(F) Residential PDU

(G) Smart Power Sensor

(H) Important Load

(I) Power grid

(J) Battery

(K) Battery switch

(L) Household load

(M) FusionSolar App

(N) 4G Smart Dongle

(O) WLAN-FE Smart Dongle

(P) Router

(Q) FusionSolar Smart PV Management System

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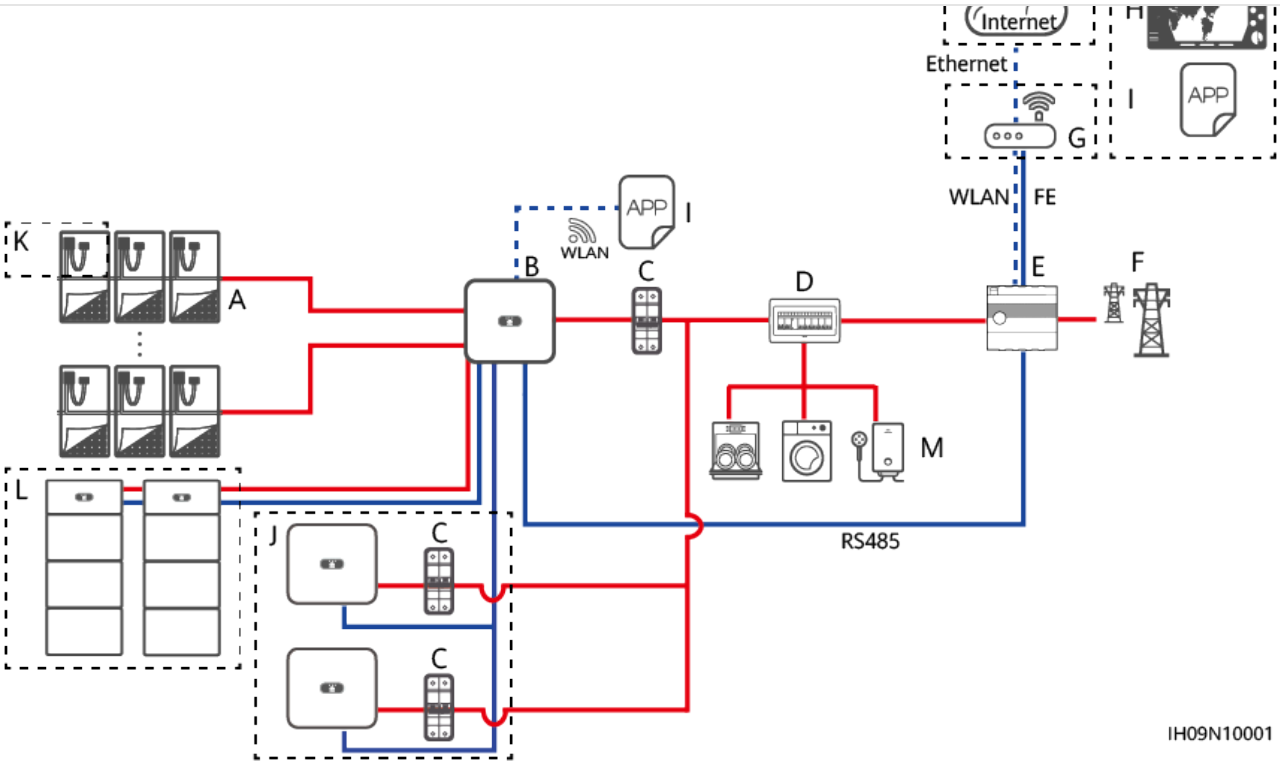

(A) PV strings	(B) SUN2000	(C) AC switches
(D) AC PDU	(E) EMMA	(F) Power grid
(G) Router	(H) FusionSolar management system	(I) FusionSolar app
(J) SUN2000	(K) Optimizer	(L) LUNA2000
(M) Load		

NOTE

- → indicates the power flow direction, ——— indicates the signal line, and - - - - - - - indicates the wireless communication.
- The SUN2000-(2KTL-6KTL)-L1 can connect to only one LUNA2000-(7, 14, 21)-S1 ESS in the Smart Dongle networking or inverter WLAN direct connection scenario, and can connect to a maximum of two LUNA2000-(7, 14, 21)-S1 ESSs in the EMMA networking scenario. When the inverter is connected to two ESSs, the FE network cable between the ESSs must be connected, and an ESS needs to be connected to the EMMA or router through an FE network cable.
- In the inverter cascading scenario, only one smart power sensor (G in the figure) can be connected to the master inverter.
- In the inverter cascading scenario, the inverters connected to the power grid must meet the local power grid requirements.
- For details about the Smart Dongle networking, see the Residential Smart PV Solution Quick Guide (Single-Phase PV+ESS Scenario + Smart Dongle Networking) or Residential Smart PV Solution User Manual (Smart Dongle Networking and Inverter Direct Connection).
- For details about the EMMA networking, see the Residential Smart PV Solution Quick Guide (Single-Phase PV+ESS Scenario + EMMA Networking) or Residential Smart PV Solution User Manual (EMMA Networking and SmartGuard Networking).
- For details about the SmartGuard networking, see the Residential Smart PV Solution Quick Guide (Single-Phase PV+ESS Scenario + SmartGuard Networking) or Residential Smart PV Solution User Manual (EMMA Networking and SmartGuard Networking).

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For detailed operations on devices in the network, see the following guides:

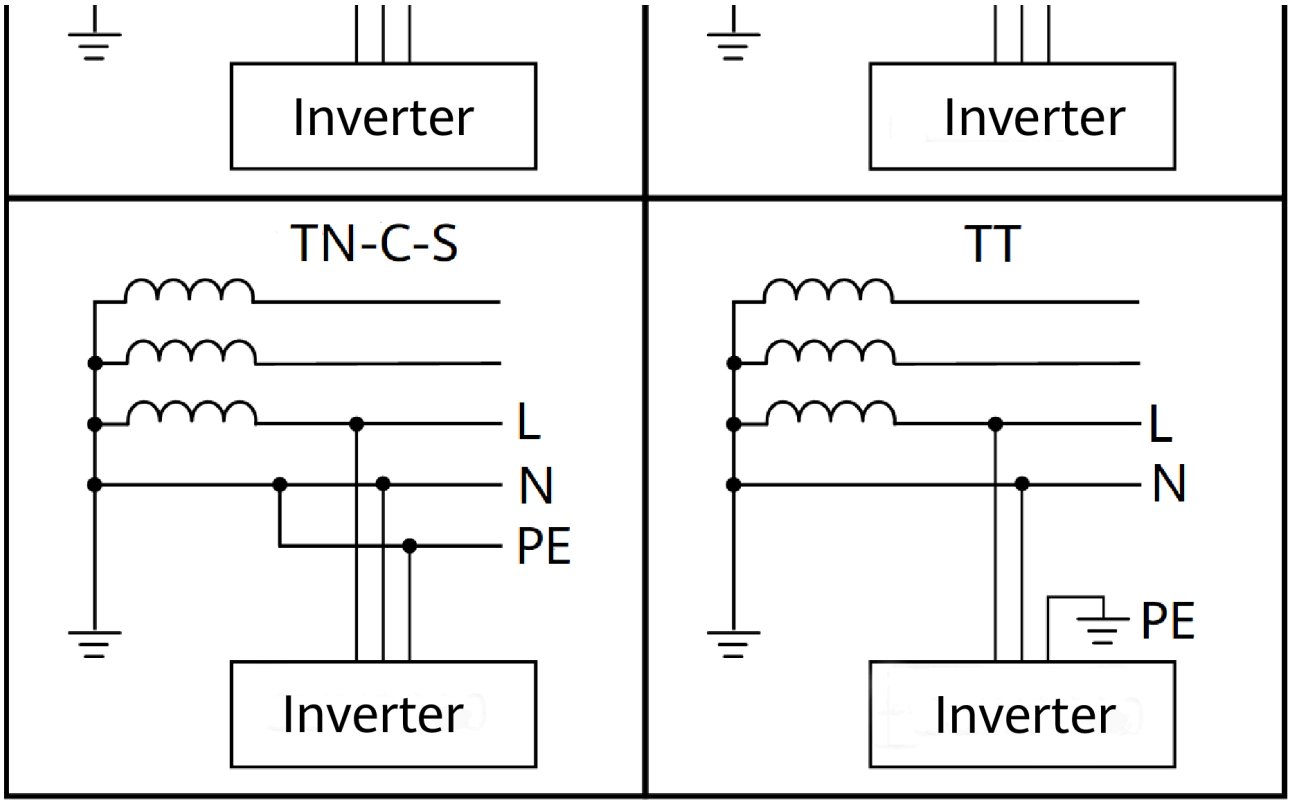
- *SUN2000-450W-P Smart PV Optimizer Quick Guide*
- *SUN2000- (600W-P, 450W-P2) Smart PV Optimizer Quick Guide*
- *SUN2000 Smart PV Optimizer User Manual*
- *LUNA2000-(5-30)-S0 User Manual*
- *Backup Box-(B0, B1) Quick Guide*

CAUTION

- The off-grid load output port of the Backup Box cannot be directly connected to the power grid. Otherwise, the Backup Box will be shut down due to overload.
- Off-grid electric motor loads are not supported. The startup power of an electric motor is several times of its rated power, which may exceed the load capacity of the inverter, resulting in startup failure.

Supported Power Grid Types

The inverter supports the following power grid types: TN-S, TN-C, TN-C-S, and TT. In the TT power grid, the N-to-PE voltage must be less than 30 V.



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