sunways

EN

User Manual

STM/STK/STK-Pro

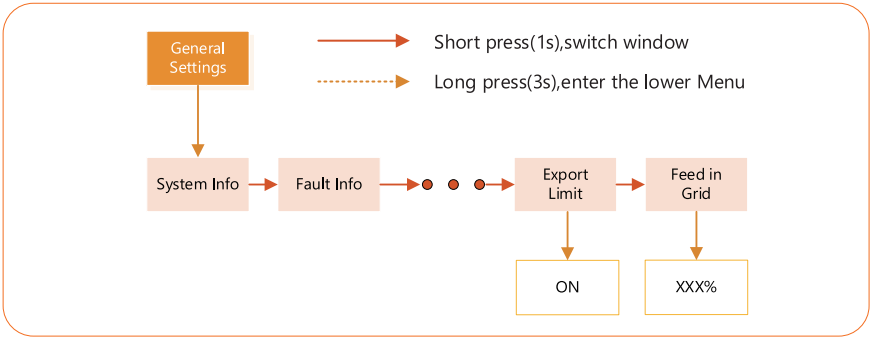
SUNWAYS TECHNOLOGIES CO., LTD.

1 STM Settings

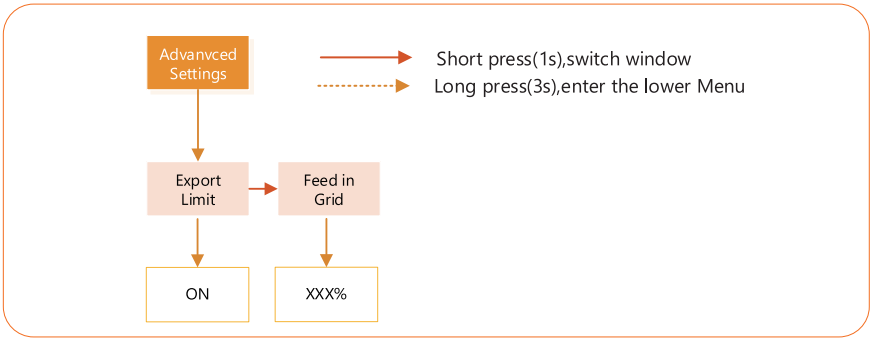
1.1 Export Limit Setting

① Enable the Export Limit function by short pressing or long pressing the button on the inverter display.

② Set the percentage of the power that allowed to feed into grid, when set to XXX%, it means that the maximum allowed feed in grid power is XXX% of the inverter' s rated output power. If Zero Export is needed, set the percentage to 0%.



General Version Setting Interface



Australia Version Setting Interface

CT ratio will be set in STM/STK/STK-Pro before delivery, no need to set on inverter.

1.2 ADD Device to Monitoring System

① Power on Inverter and STM.

② According to the operation instructions of the monitoring APP, create a PV plant and bind Inverter to the plant.

⑤ Damages of running in an environment that does not meet the requirement stated in this document.

⑥ Damages caused by operation beyond the parameters specified in applicable technical specifications.

⑦ Damages caused by unauthorized disassembly, alteration of products or modification of software codes.

⑧ Any damages caused by abnormal natural environment (force majeure, such as lightning, earthquake, fire, storm, etc.)

⑨ Products beyond the warranty period.

3 Product Description

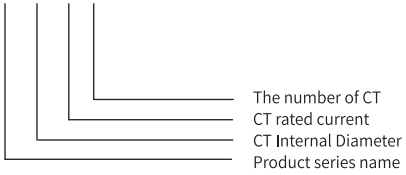
3.1 Function

STx series is a home smart energy management equipment and support different voltage levels and power grid. The series can collect the data in real time, including grid voltage, current, power and energy yield. Cooperating with Sunways monitoring system, it can realize real-time management and monitoring of household energy.

3.2 Model Description

The product model is defined as follows. For details, see the product Parameter page.

STx-xxDxx-x-(Pro)



3.3 Storage Conditions

① Equipment must be stored in its original packaging.

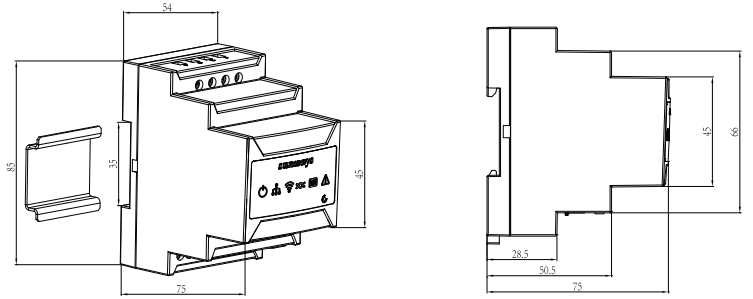
② The storage temperature should always between 0°C and 30°C. Humidity is less than 90%.

3.4 Packing list

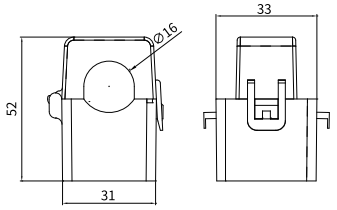
1	1*Slotted screwdriver	4	8*Pinhole terminal
2	2*RJ45 connector	5	1*User Manual
3	1*WiFi/ANT(STM no ANT)	6	1-3*CT

3.5 Product Appearance and Dimensions

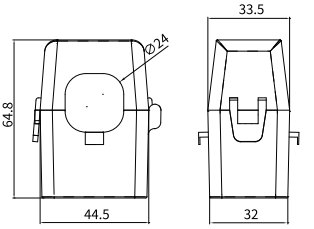
Unit: mm



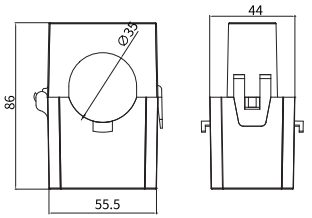
STM/STK/STK-Pro



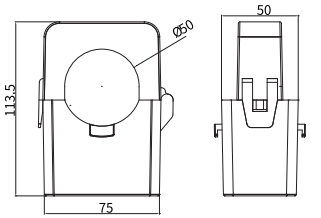
C-16D90/ C-16D120



C-24D90/ C-24D120



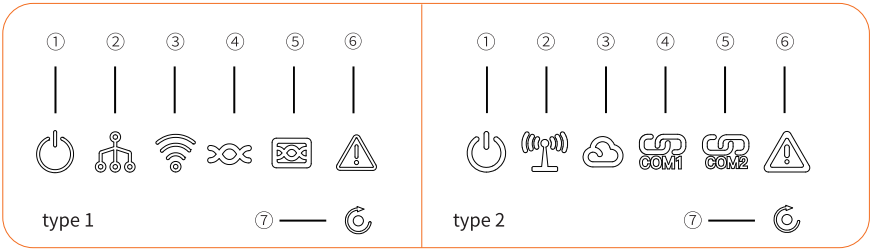
C-35D300



C-50D300

3.6 Product Appearance and Dimensions

Depending on the delivery time, the label may be either of the following two types.



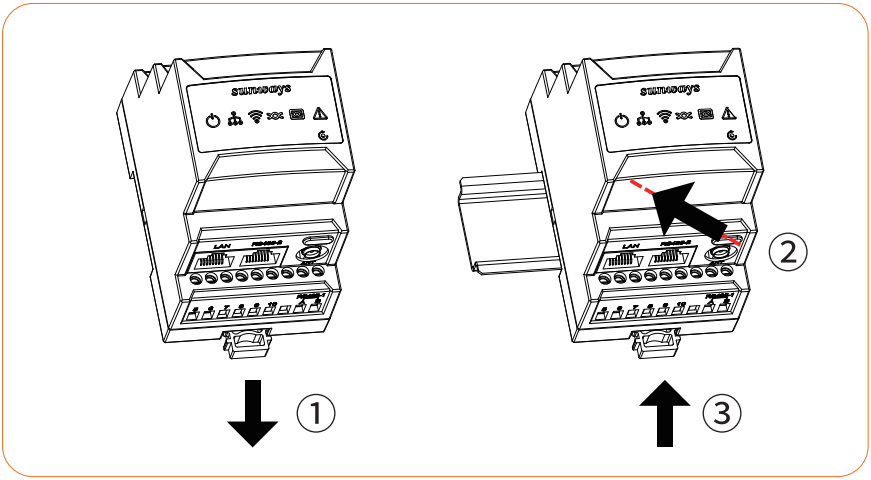
No.	Indicator	Status	Description	Remark
1	Running indicator	Off	The equipment is not powered on.	
		Steady on	The equipment is powered on.	
2	Local communication indicator	Off	Local communication with APP fails.	STM no this indicator
		On	Local communication with APP succeeds.	
3	Remote communication indicator	On	Remote communication with severe succeeds.	STM no this indicator
		Slow flashing	The device is not connected to the router.	
		Quick flashing	The device is connected to the router but not connected to the server.	
4	RS485-1 communication indicator	Flashing	A communication data interaction has been conducted.	STM
		Off	No communication data interaction has been conducted.	STM
		Flashing	Communication is not established with all connected devices.	STK, STK-Pro
		On	Communication is established with all connected devices.	STK, STK-Pro
5	RS485-2 communication indicator	Flashing	A communication data interaction has been conducted.	
		Off	No communication data interaction has been conducted.	
6	Alarm indicator	Off	The device is running normally.	
		On	An alarm or faults is generated, fault information can be viewed from the APP.	
7	Reset button		Long press for 3 seconds to reset.	

4 Installation

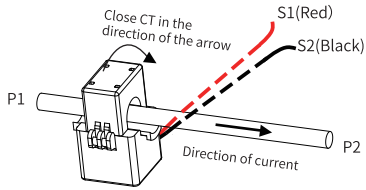
Sunways STM/STK/STK-Pro series is protected to IP20 and only can be installed indoors.

4.1 STM/STK/STK-Pro

STM/STK/STK-Pro installed on DIN 35mm standard guide.

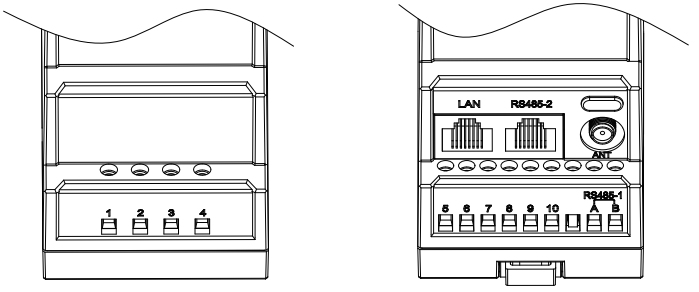


4.2 Current Transformer



No.	P1	P2	Application Scenarios
1	House	Grid	Monitoring Grid Power
2	Power Generator	House	Monitoring Power Generator
3	Grid	Load	Monitoring Load

5 Wiring Connection



Port	Function	Remark
1	Connect to L1 or L	
2	Connect to L2	STx-xxDxx-1 no this port
3	Connect to L3	STx-xxDxx-1/2 no this port
4	Connect to N	
5	Connect to CT-S1 of L1 or L	
6	Connect to CT-S2 of L1 or L	
7	Connect to CT-S1 of L2	STx-xxDxx-1 no this port
8	Connect to CT-S2 of L2	
9	Connect to CT-S1 of L3	STx-xxDxx-1/2 no this port
10	Connect to CT-S2 of L3	
RS485-1	RS485 port 1	
RS485-2	RS485 port 2	
LAN	LAN communication port	STM no this port
ANT	WIFI antenna port	
Type-C	Specified Debug Interface	

Wiring connection methods vary according to application scenarios. Scan the QR code below to obtain the supported scenarios and corresponding wiring diagrams.

STM/STK/STK-Pro

sunways

No. 1, Second Road, Green Industrial Zone, Chongshou Town,
Cixi City, ZheJiang Province, PRC
www.sunways-tech.com
service@sunways-tech.com

S11-00039-00

sunways

EN

Application Scenarios and Wiring Connection

STM/STK/STK-Pro

SUNWAYS TECHNOLOGIES CO., LTD.

sunways

CONTENTS

1 STM/K-xxDxx-1 5

1.1 Communications Port 5

1.2 Application Scenarios and Wiring Connection 5

2 STM/K-xxDxx-2 7

2.1 Communications Port 7

2.2 Application Scenarios and Wiring Connection 7

3 STM/K-xxDxx-3 12

3.1 Communications Port 12

3.2 Application Scenarios and Wiring Connection 12

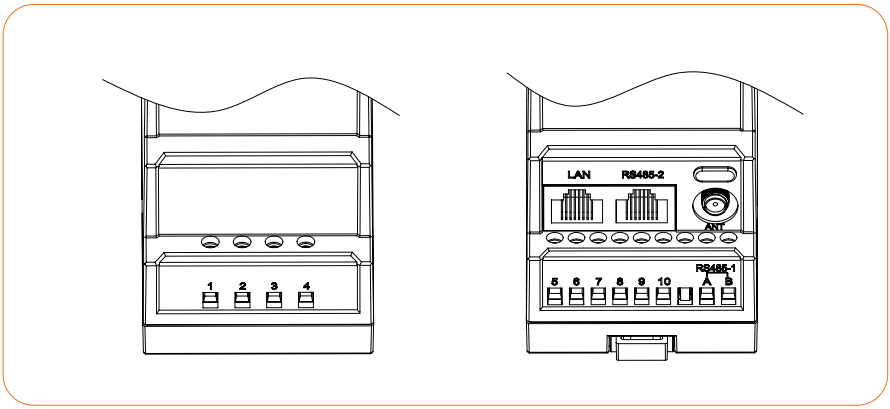
Attention

The products, services or features purchased are subject to the commercial contracts and terms of Sunways technologies Co., Ltd. All or part of the products, services or features described in this document may not be within purchased. Unless otherwise agreed in the contract, the Company shall not make any express or implied declaration or guarantee of the contents of this document.

Due to product version upgrades or other reasons, the contents of this document will be updated periodically. Unless otherwise agreed, this document serves only as a guide to use, and all statements, information and recommendations in this document do not constitute any express or implied guarantee.

1 STM/K-xxDxx-1

※ 1.1 Communications Port



Port	Function	Remark
1	Connect to L	
4	Connect to N	
5	Connect to CT-S1 of L	
6	Connect to CT-S2 of L	
RS485-1	RS485 port 1	
RS485-2	RS485 port 2	
LAN	LAN communication port	STM no this port
ANT	WIFI antenna port	STM no this port
Type-C	Specified Debug Interface	

※ 1.2 Application Scenarios and Wiring Connection

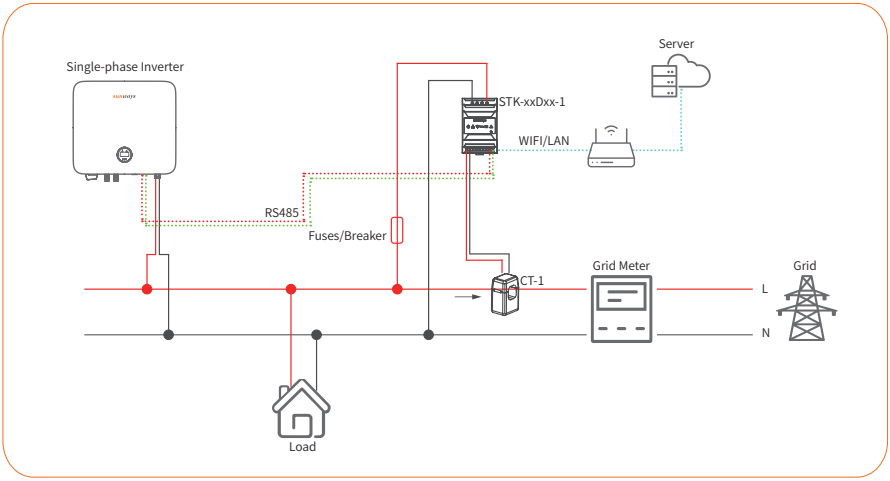
Product functions are under continuous development, please contact Sunways for more scenario solutions.

1.2.1 Scenario 1-1 (STK)

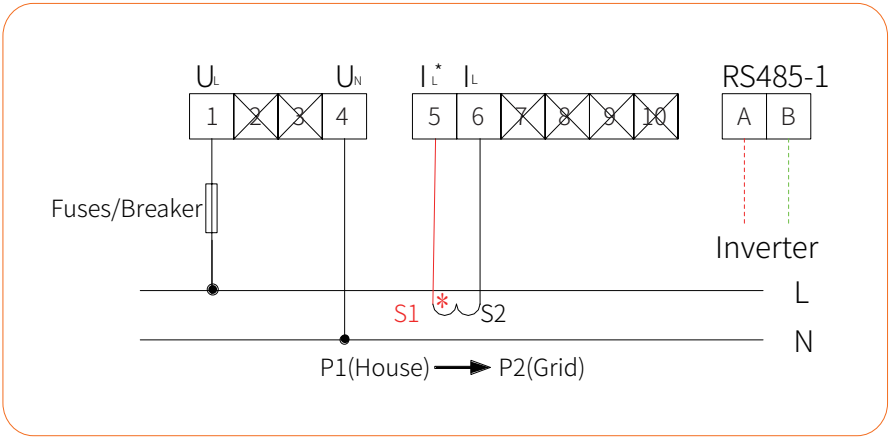
① Description：In single-phase system, export limitation and 24 hours energy consumption monitoring can be realized.

② System configuration：Sunways single-phase inverter, one piece，STK-xxDxx-1, one set.

③ Applicable grid mode：Single-phase system，L+N，110/120/127(L-N)，220/230/240V(L-N).

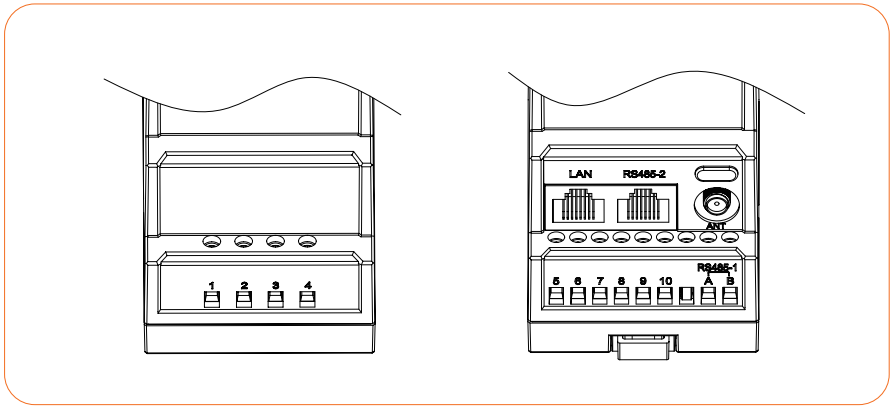


According to different design requirements, it is recommended to add fuses or circuit breakers to the voltage input terminals to meet the safety requirements of relevant electrical codes.



2 STM/K-xxDxx-2

※ 2.1 Communication Port



Port	Function	Remark
1	Connect to L1	
2	Connect to L2	
4	Connect to N	
5	Connect to CT-S1 of L1	
6	Connect to CT-S2 of L1	
7	Connect to CT-S1 of L2	
8	Connect to CT-S2 of L2	
RS485-1	RS485 port 1	
RS485-2	RS485 port 2	
LAN	LAN communication port	STM no this port
ANT	WIFI antenna port	STM no this port
Type-C	Specified Debug Interface	

※ 2.2 Application Scenarios and Wiring Connection

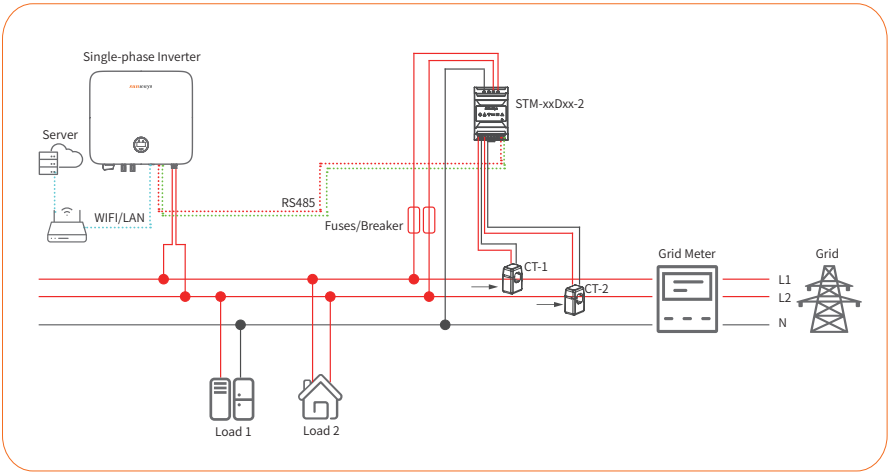
Product functions are under continuous development, please contact Sunways for more scenarios.

2.2.1 Scenario 2-1 (STM)

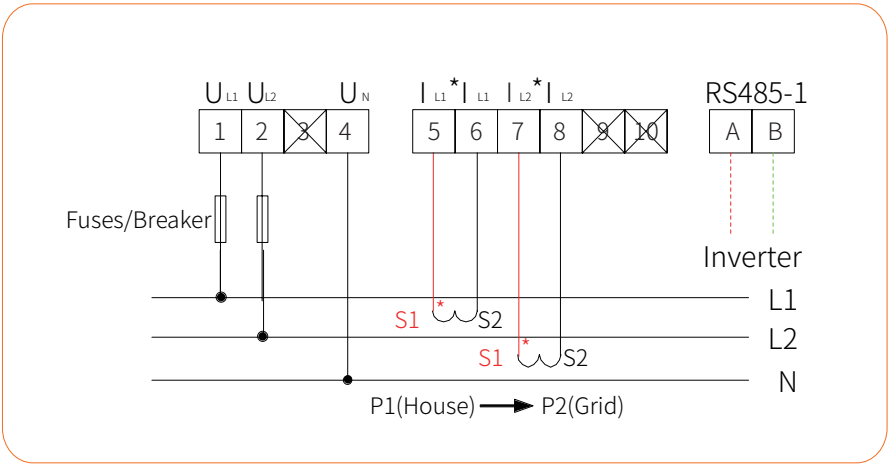
① Description：In split-phase system，export limitation can be realized.

② System configuration：Sunways single-phase inverter, one piece. STM-xxDxx-2,one set.

③ Applicable grid mode：Split-phase system，2L+N，220/230/240V(L-L).



According to different design requirements, it is recommended to add fuses or circuit breakers to the voltage input terminals to meet the safety requirements of relevant electrical codes.

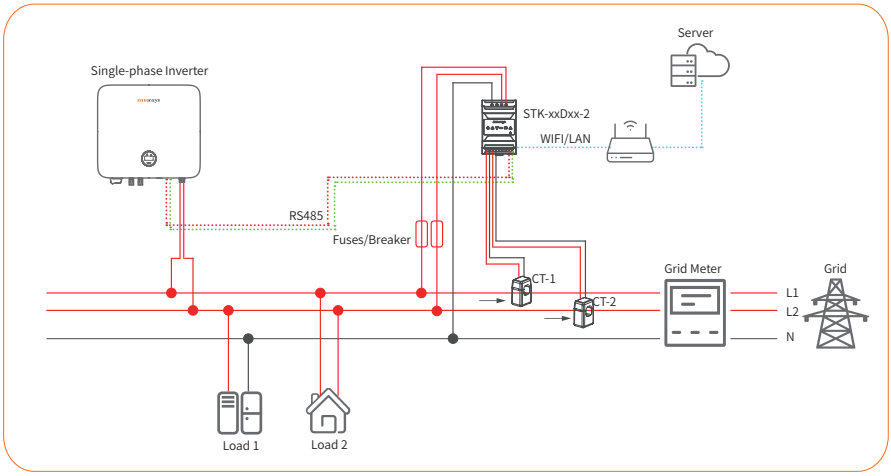


2.2.2 Scenario 2-2 (STK)

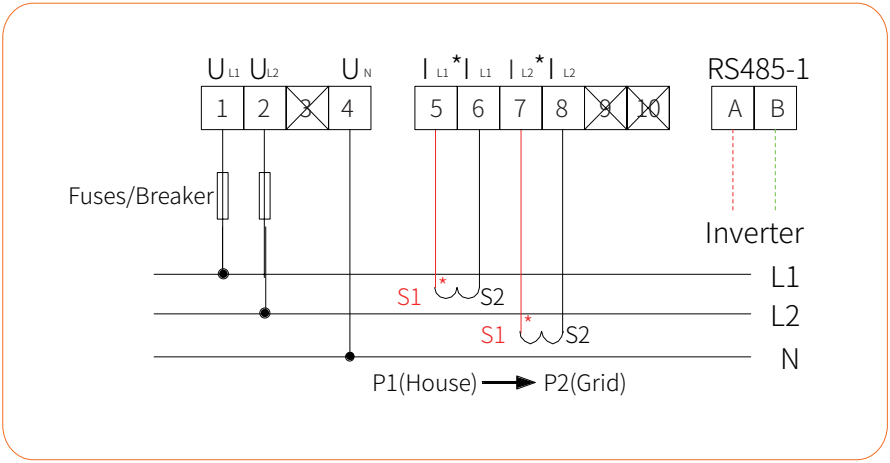
① Description：In split-phase system，export limitation and 24 hours energy consumption monitoring can be realized.

② System configuration：Sunways single-phase inverter, one piece. STK-xxDxx-2, one set.

③ Applicable grid mode：Split-phase system，2L+N，220/230/240V(L-L).



According to different design requirements, it is recommended to add fuses or circuit breakers to the voltage input terminals to meet the safety requirements of relevant electrical codes.

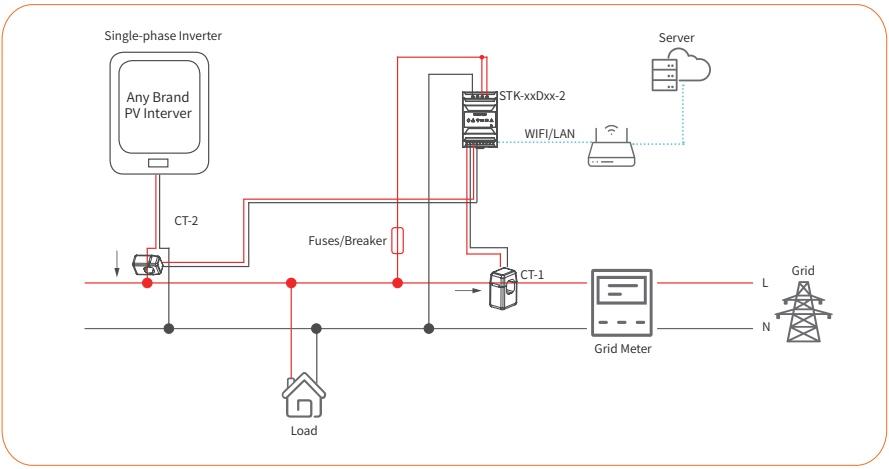


2.2.3 Scenario 2-3 (STK)

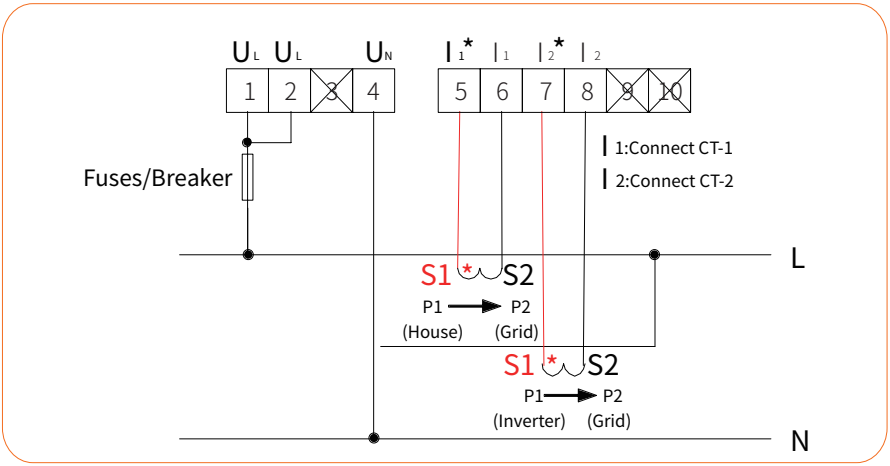
① Description：In single-phase system, 24 hours energy consumption monitoring of any brand inverters can be realized.

② System configuration：Single-phase inverter, one piece. STK-xxDxx-2, one set.

③ Applicable grid mode：Single-phase system，L+N，220V110/120/127(L-N)，220/230/240V(L-N).



According to different design requirements, it is recommended to add fuses or circuit breakers to the voltage input terminals to meet the safety requirements of relevant electrical codes.

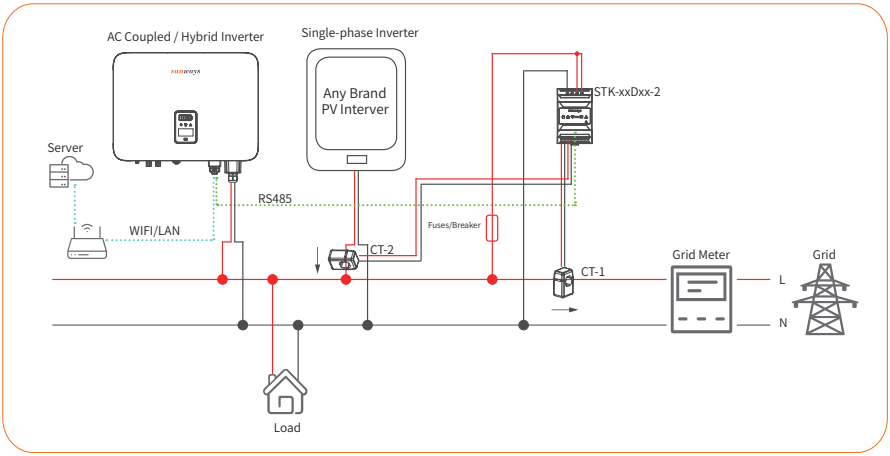


2.2.4 Scenario 2-4 (STK)

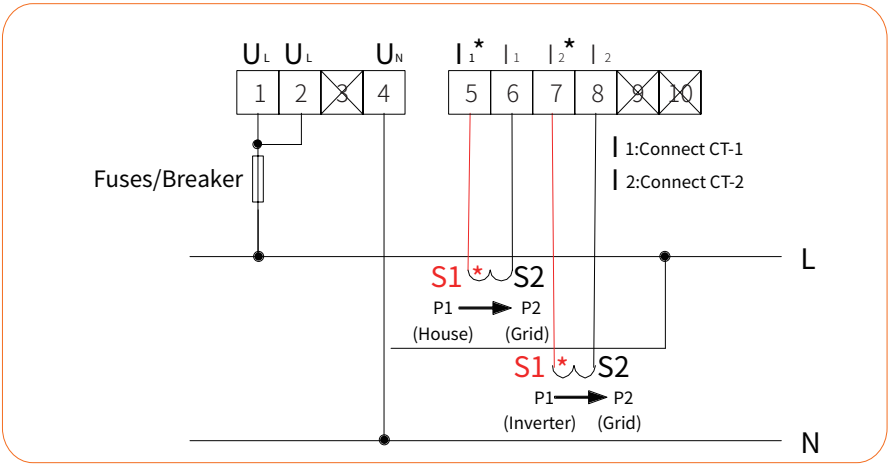
① Description：In single-phase system，the monitoring of any brand inverters that connected with Sunways AC couple inverter can be realized.

② System configuration：Sunways single-phase hybrid inverter, one piece. Single-phase inverter, one piece. STK-xxDxx-2, one set.

③ Applicable grid mode：Single-phase system，L+N，220V110/120/127(L-N)，220/230/240V(L-N)

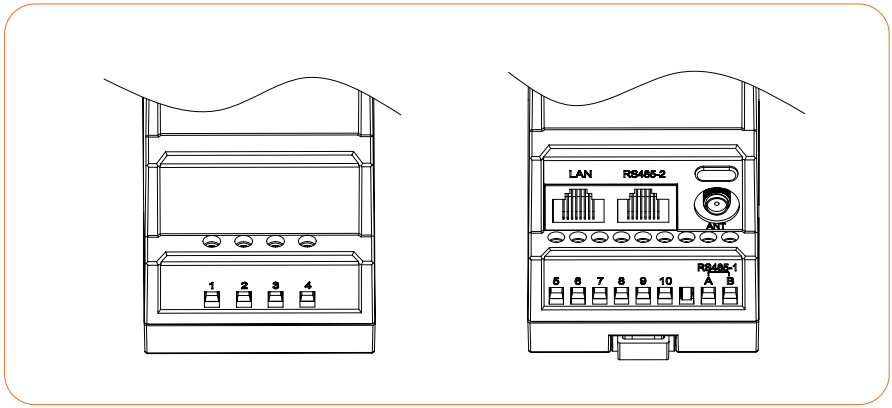


According to different design requirements, it is recommended to add fuses or circuit breakers to the voltage input terminals to meet the safety requirements of relevant electrical codes.



3 STM/K-xxDxx-3

※ 3.1 Communications port



Port	Function	Remark
1	Connect to L1	
2	Connect to L2	
3	Connect to L3	
4	Connect to N	
5	Connect to CT-S1 of L1	
6	Connect to CT-S2 of L1	
7	Connect to CT-S1 of L2	
8	Connect to CT-S2 of L2	
9	Connect to CT-S1 of L3	
10	Connect to CT-S2 of L3	
RS485-1	RS485 port 1	
RS485-2	RS485 port 2	
LAN	LAN communication port	STM no this port
ANT	WIFI antenna port	STM no this port
Type-C	Specified Debug Interface	

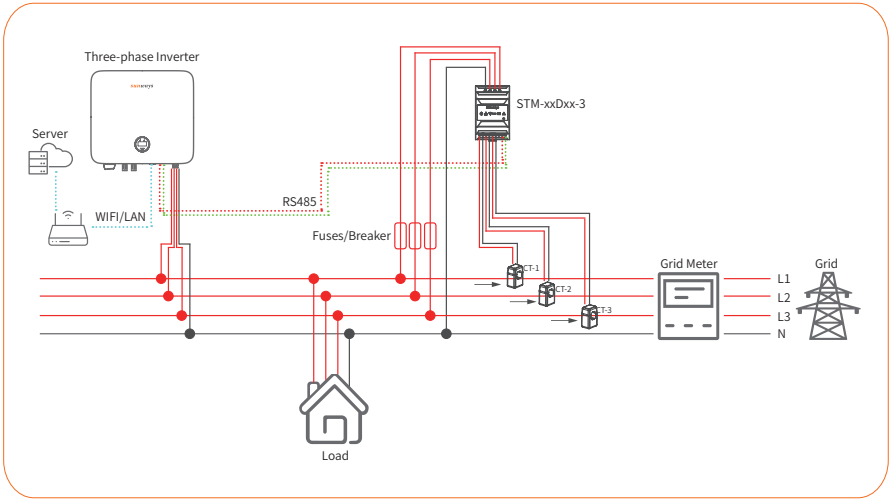
※ 3.2 Application Scenarios and Wiring Connection

▼ 3.2.1 Scenario 3-1a (STM)

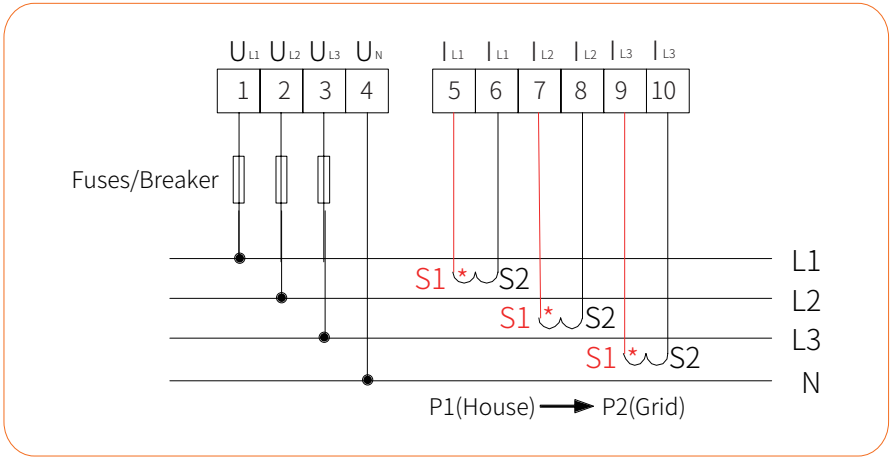
① Description：In three-phase four-wire system, the export limitation can be realized.

② System configuration：Sunways three-phase inverter, one piece. STM-xxDxx-3, one set.

③ Applicable grid mode：Three-phase system，3L+N，208/220/240V(L-L)，380/400V/415V(L-L).



According to different design requirements, it is recommended to add fuses or circuit breakers to the voltage input terminals to meet the safety requirements of relevant electrical codes.

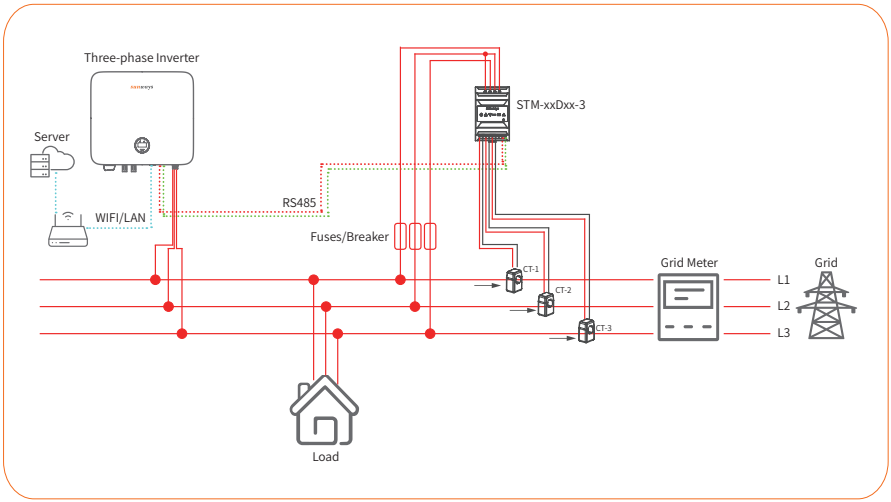


3.2.2 Scenario 3-1b (STM)

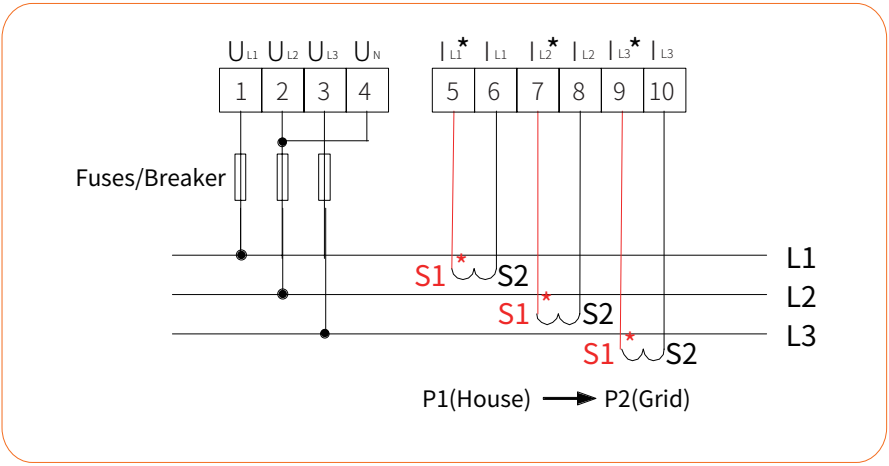
① Description：In three-phase three-wire system, the export limitation can be realized.

② System configuration：Sunways three-phase inverter, one piece. STM-xxDxx-3, one set.

③ Applicable grid mode：Three-phase system，3L，208/220/240V(L-L).



According to different design requirements, it is recommended to add fuses or circuit breakers to the voltage input terminals to meet the safety requirements of relevant electrical codes.

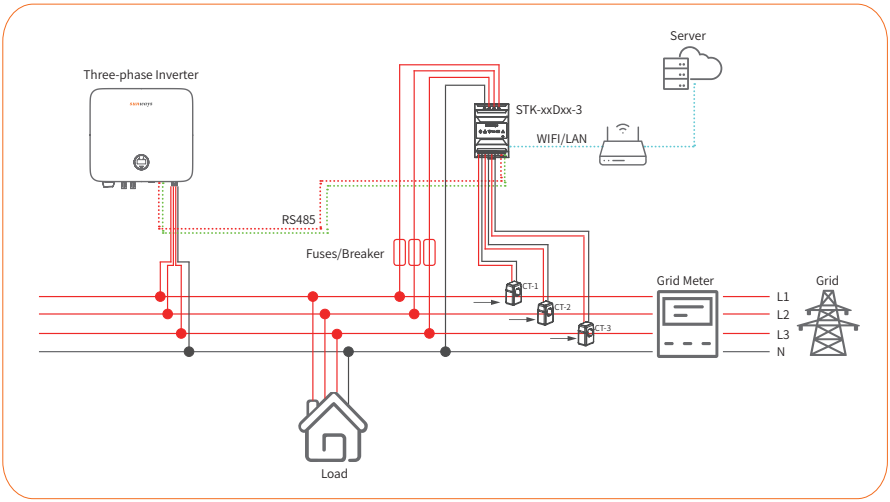


3.2.3 Scenario 3-2a (STK)

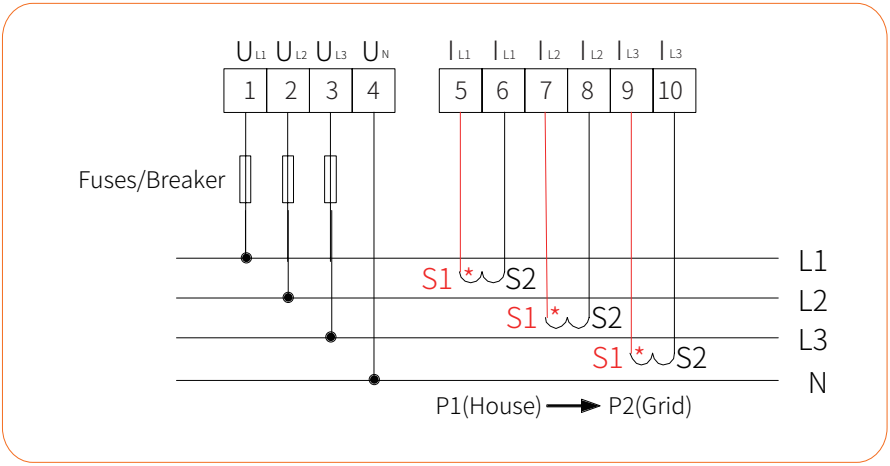
① Description：In three-phase four-wire system，export limitation and 24 hours energy consumption monitoring can be realized.

② System configuration：Sunways three-phase inverter, one piece，STK-xxDxx-3, one set.

③ Applicable grid mode：Three-phase system，3L+N，208/220/240V(L-L)，380/400V/415V(L-L).



According to different design requirements, it is recommended to add fuses or circuit breakers to the voltage input terminals to meet the safety requirements of relevant electrical codes.

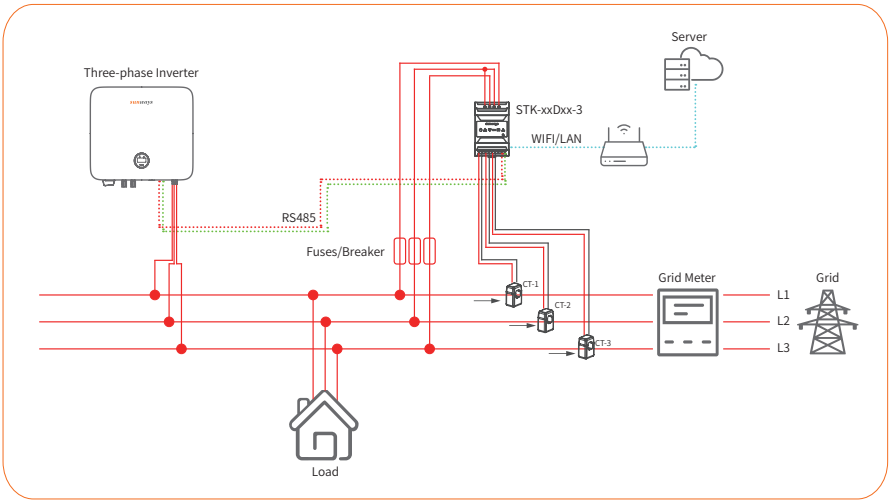


3.2.4 Scenario 3-2b (STK)

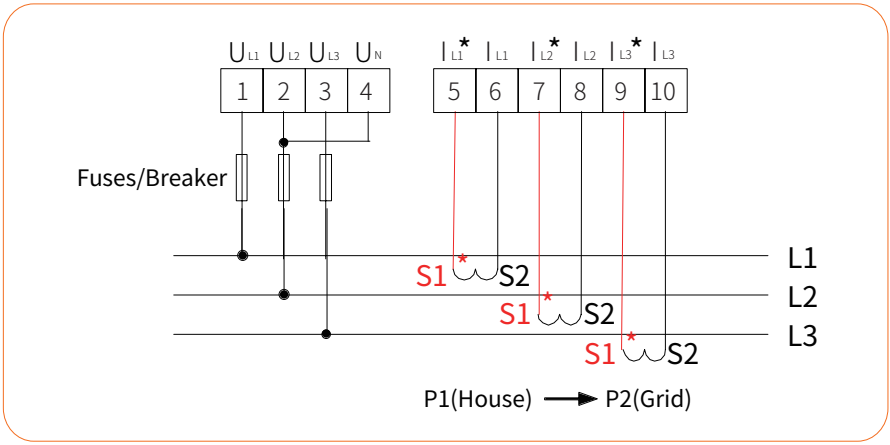
① Description：In three-phase three-wire system，export limitation and 24 hours energy consumption monitoring can be realized.

② System configuration：Sunways three-phase inverter, one piece. STK-xxDxx-3, one set.

③ Applicable grid mode：Three-phase system，3L，208/220/240V(L-L).



According to different design requirements, it is recommended to add fuses or circuit breakers to the voltage input terminals to meet the safety requirements of relevant electrical codes.



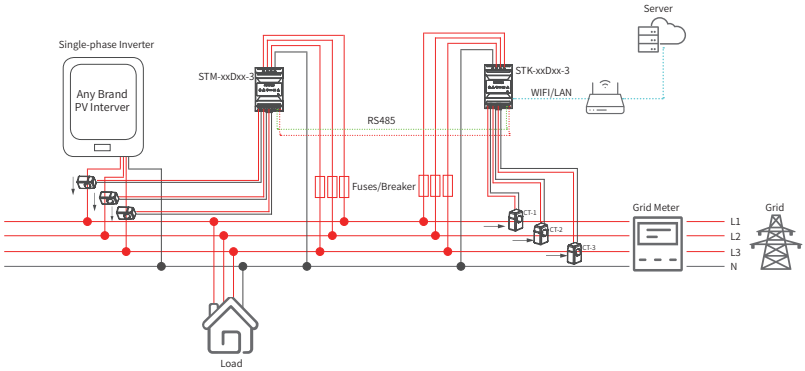
The networking solution of three-phase three-wire system(380/400V/415V(L-L) is under development.

3.2.5 Scenario 3-3a (STM+STK)

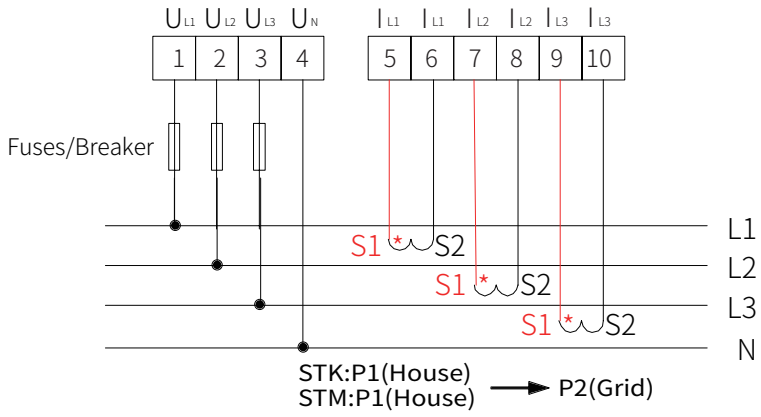
① Description：In three-phase four-wire system，24 hours energy consumption monitoring of any brand inverter can be realized.

② System configuration：Three-phase inverter, one piece. STM-xxDxx-3/ STK-xxDxx-3 one set for each.

③ Applicable grid mode: Three-phase system，3L+N，208/220/240V(L-L)，380/400V/415V(L-L).



According to different design requirements, it is recommended to add fuses or circuit breakers to the voltage input terminals to meet the safety requirements of relevant electrical codes.

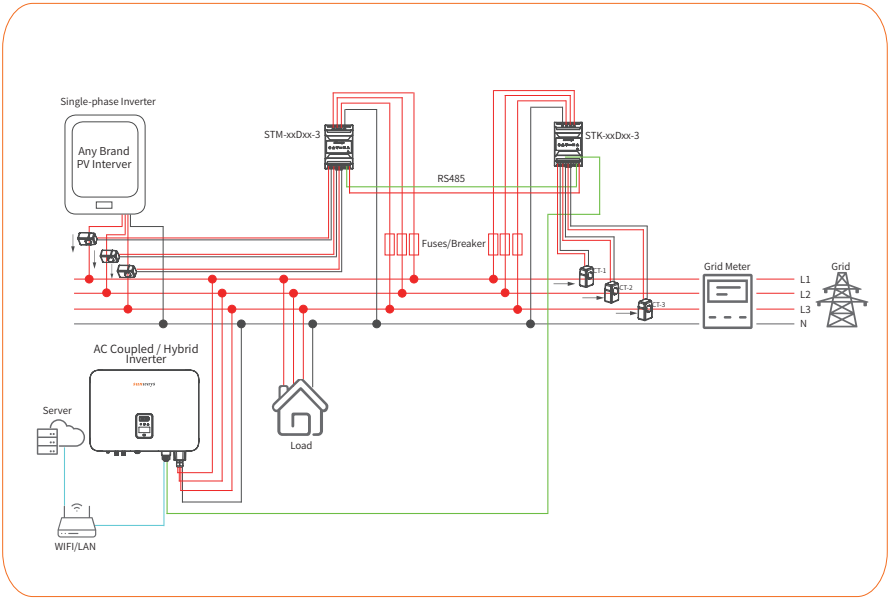


3.2.6 Scenario-4a (STM+STK)

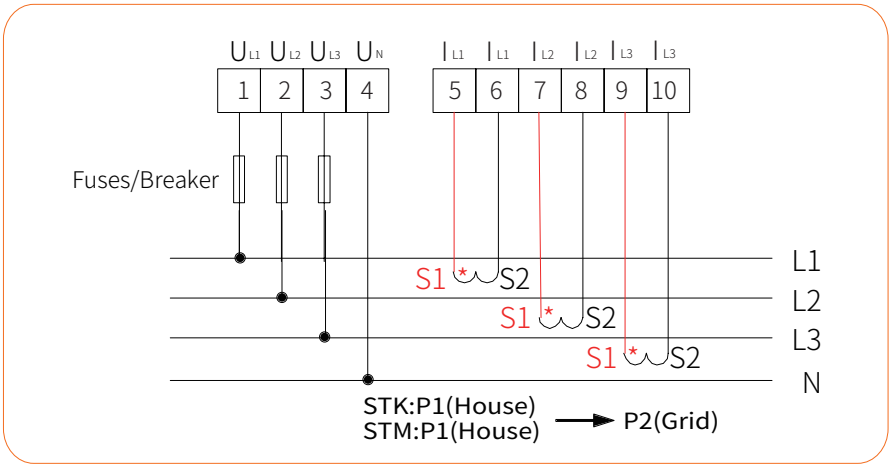
① Description：In three-phase four-wire system，the monitoring of any brand inverters that connected with Sunways AC couple inverter can be realized.

② System configuration：Sunways three-phase inverter, one piece. STM-xxDxx-3/ STK-xxDxx-3 one set for each.

③ Applicable grid mode：Three-phase system，3L+N，208/220/240V(L-L)，380/400V/415V(L-L).



According to different design requirements, it is recommended to add fuses or circuit breakers to the voltage input terminals to meet the safety requirements of relevant electrical codes.



sunways

No. 1, Second Road, Green Industrial Zone, Chongshou Town,
Cixi City, ZheJiang Province, PRC
www.sunways-tech.com
service@sunways-tech.com

V1.0.0

sunways

EN

Setting

STM/STK/STK-Pro

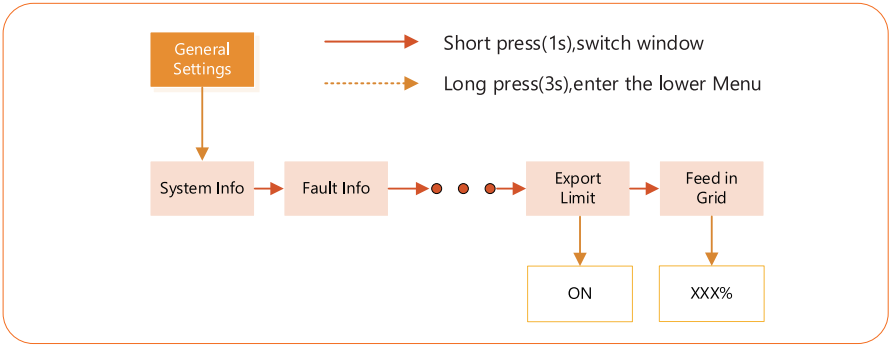
SUNWAYS TECHNOLOGIES CO., LTD.

1 STM Settings

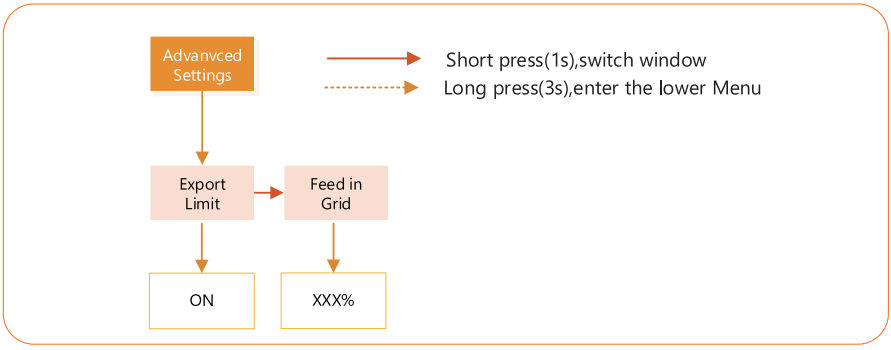
1.1 Export Limit Setting

① Enable the Export Limit function by short pressing or long pressing the button on the inverter display.

② Set the percentage of the power that allowed to feed into grid, when set to XXX%, it means that the maximum allowed feed in grid power is XXX% of the inverter' s rated output power. If Zero Export is needed, set the percentage to 0%.



General Version Setting Interface



Australia Version Setting Interface

CT ratio will be set in STM/STK/STK-Pro before delivery, no need to set on inverter.

1.2 ADD Device to Monitoring System

① Power on Inverter and STM.

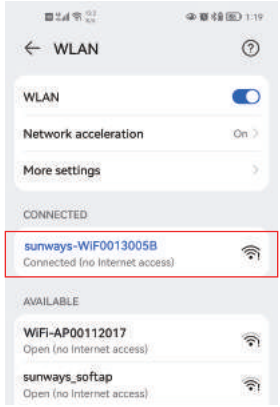
② According to the operation instructions of the monitoring APP, create a PV plant and bind Inverter to the plant.

2 STK Settings

2.1 Setting WiFi

1 Prepare a laptop, tablet or smart phone and turn on the wireless network function on the device.

2 Searching for the corresponding WLAN in the WLAN connection list" sunways-WiFi********" (*represents digital), and tap connect.



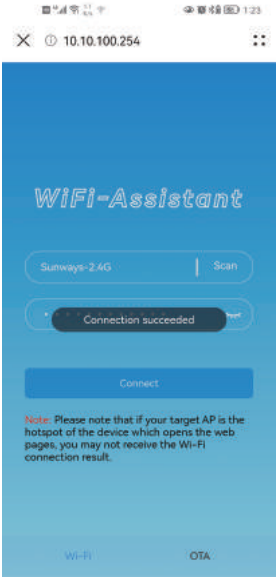
3 Open the browser and access 10.10.100.254, system information page is displayed.

4 Tap “Scan”，A list of WiFi network names pops up.

5 Click and select the corresponding router network you want to configure.

6 6.Input the password of wireless network，(note the case difference)，Tap “Connect”.

7 If connected successfully，“Connection succeeded” will displayed. After successful configure, the indicator status of WIFI will be steady on.

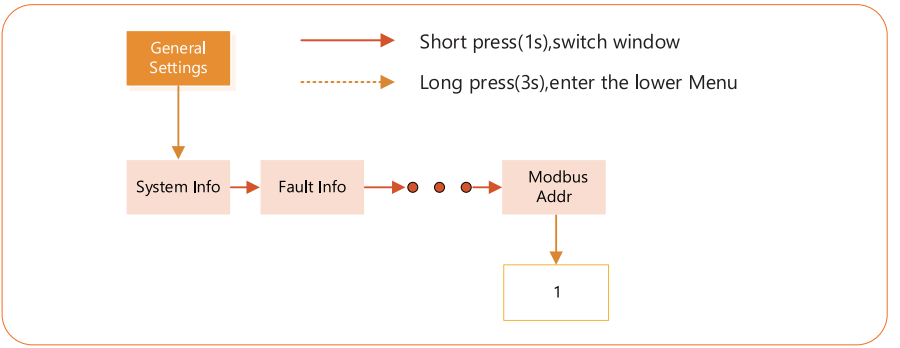


2.2 Setting LAN

Only support DHCP mode. When DHCP is enabled on the router, no need to configure the LAN parameter and can be used directly.

2.3 Setting Inverter Modbus Address

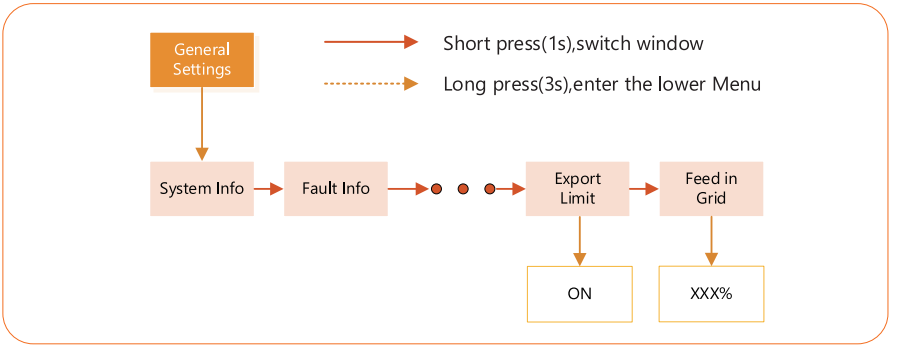
Set the Modbus address to 1 by short pressing or long pressing the button on the inverter display.



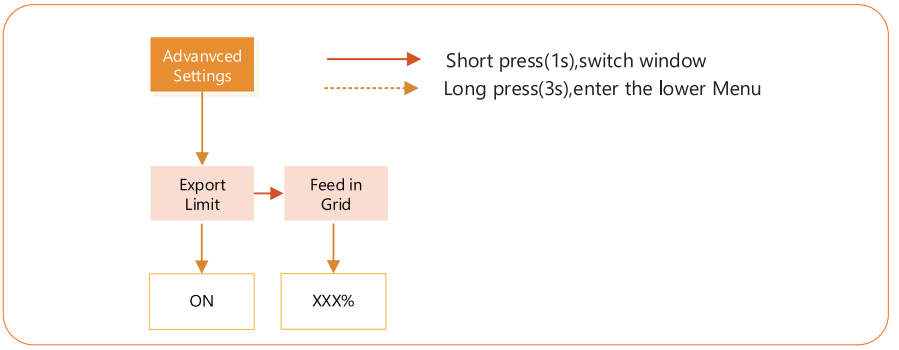
2.4 Export Limit Setting

① Enable the Export Limit function by short pressing or long pressing the button on the inverter display.

② Set the percentage of the power that allowed to feed into grid, when set to XXX%, it means that the maximum allowed feed in grid power is XXX% of the inverter' s rated output power. If Zero Export is needed, set the percentage to 0%.



General Version Setting Interface



Australia Version Setting Interface

CT ratio will be set in STM/STK/STK-Pro before delivery, no need to set on inverter.

2.5 ADD Device to Monitoring System

① Power on Inverter and STK.

② According to the operation instructions of the monitoring APP, create a PV plant and bind Inverter to the plant.

3 STK-Pro Settings

3.1 Setting WiFi

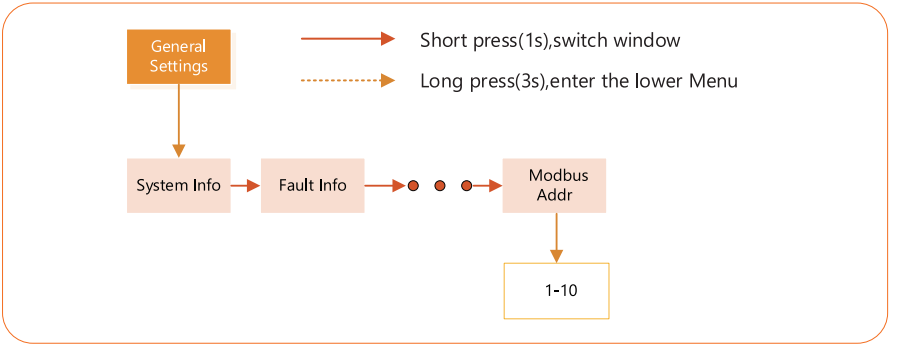
Same with STK Settings, please refer to 2.1 Setting WiFi.

3.2 Setting LAN

Only support DHCP mode. When DHCP is enabled on the router, no need to configure the LAN parameter and can be used directly.

3.3 Setting Inverter Modbus Address

Set Modbus address of the inverter that connect with STK-Pro to 1~10 by short pressing or long pressing the button on the inverter display.



3.4 Export Limit and Other Setting

More Settings over the APP directly connected to STK, please follow the operation instructions of the APP or contact Sunways.

3.5 ADD Device to Monitoring System

① Power on Inverter and STK-pro.

② According to the operation instructions of the monitoring APP, create a PV plant and bind Inverter to the plant.

sunways

No. 1, Second Road, Green Industrial Zone, Chongshou Town,
Cixi City, ZheJiang Province, PRC
www.sunways-tech.com
service@sunways-tech.com

S11-00045-00