

Commissioning guide for SUN2000 inverters with RS485 communication



Huawei Technologies Co. Ltd.

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This document will describe how to commissioning the inverters with RS485 communication Modbus-RTU Protocol.

- 1. Check the connection between inverters and Smartlogger and check if the match resistance is enable for the last inverter from the chain.
- 2. Prepare the ESNList with the inverters allocate for each substation that include the SN, name and RS485 address. Ask for a template from service team.

· · ·		~	<u> </u>
SN	Slave Address	FullName	
21010735296TH7900645	1	INV.1	
21010735296TH7900592	2	INV.2	
21010735296TH7900653	3	INV.3	
21010735296TH7900655	4	INV.4	
21010735296TH7900584	5	INV.5	
21010735296TH7900646	6	INV.6	
21010735296TH7900607	7	INV.7	
21010735296TH7900727	8	INV.8	
21010735296TH7900948	9	INV.9	
21010735296TH7900576	10	INV.10	

3. Set your computer local area connection with an IP in the same range with the Smartlogger.

The Smartlogger default IP is: 192.168.0.10

Go to Windows start->Control Panel->Network and Internet->Network and Sharing Center->Change adapter settings->Double click on Local Area Connection->Double click on Internet Protocol Version 4 and set the IP like below:



ieneral	
You can get IP settings assigned supports this capability. Otherwis administrator for the appropriate	automatically if your network ie, you need to ask your network IP settings.
Obtain an IP address autom	atically
Ose the following IP address	5:
IP address:	192.168.0.15
Subnet mask:	255.255.255.0
Default gateway:	• • •
Obtain DNS server address	automatically
• Use the following DNS serve	er addresses
Preferred DNS server:	
Alternate DNS server:	· · ·
Validate settings upon exit	Advanced

4. Connect on Smartlogger

Open a browser (Chrome recommended) and type the link: https://192.168.0.10 Chose user name "Advanced User" and the default password "Changeme"

HUAWEI		j	SmartLogger2000
		Enspire	
	Language	English	
	User Name	Advanced User	
	Password	© Changeme	
		Log In Reset	



5. Add the inverters on Smartlogger

Choose Maintenance menu->Connect Device->Auto Assign Address->Start address 1->Auto Assign Address->Confirm start to allocate address->Confirm the address adjusting->Select Address Adjustment->Confirm Search again->Close.

After this operation all the inverter will communicate with Smartlogger with RS584 address and name allocate by Smartlogger. If the inverters do not communicate with Smartlogger than change the polarity on communication port of the Smartlogger and start the process again.

If you change the polarity and again the inverters do not communicate with Smartlogger than you must check the connection on inverters and if the match resistance is enable for the last inverter from the chain. Please also check if the communication parameters on inverters and Smartlogger is correctly set.

The name and address can be change in concordance with the Esn.list that you made on the second step like we will see below.

Ensorre	_						English	· (if)
	Over Vie	ew Monitoring	Query Setti	ngs Maintenance	1			
Firmware Upgrade	Total Device Q	2ty.:37						000
Product Information	Connect Dev	rice						
Security Settings			Built-in PLC Fna	hle 🔹				
System Maint.		Device discon	nection time 5	Jmin(5 -	30)			
Device Log			Auto Assig	n Address				
- Oncite Tect	No.	Device		Start address 1	(1 247)	4	Devices Status	ł
O Offsite Test	1	45KTL(COM0 1)						
Device Mgmt.	2	45KTL(COM0-2)						
Connect Device	2 3	45KTI (COM0-3)						
	I 1	45KTL(COM0-4)						
Export Param.	0 5	45KTL(COM0-5)						
Alama Darat	6	45KTL(COM0 6)						
	0 7	45KTL(COM0-7)						
Collect Perf. Data	8	45KTI (COM0-8)						
Adjust total energy yield	9	45KTL(COM0-9)						
	10	45KTL(COM0-10)		Auto Ac	ion Address	5		
	III	45KTL(COM0 11)		Auto Ass	agn Address	210101002001111000104		
	12	45KTL(COM0-12)		0-12		21010735296TH7901146		
	13	45KTI (COM0-13)		0-13		21010735296TH7900714		
	14	45KTL(COM0-14)	-	0-14		21010735296TH7900733		-
	Auto, Search	Add Devices	Remove Devices	Auto Assign Address	Boort Config.	Export Config		
<u></u> Lime _2017-12-24 06c36						ॳ Copyright 🗅 Huawei Tecl		All rights reserved.

6. Change the name and the address of the inverters

After you auto assign the address of inverters, the name and address will not be the same with the Esn.list that you prepare. In order to be the same choose Maintenance menu->Device list->Import device info->choose file (select the file that correspond



with the substation) ->Import device info->Confirm

After this operation your inverters will have the name and address like in the Esn.list accordingly with each substation.

F @ power system									English	· (IF)
Enspire	Ove	er View	Monitoring	Query Settings	/lainten	ance	1			
• Firmware Upgrade	Total Dev	ice Qty.:3	7							
Product Information		No.	Device		port	Comn	n. Address	Logical addr.	SN	Devices Status
Security Settings	0	1	45KTL(COM0-1)	(a~z,A~Z,0~9,_,-,#,(,),.)	0	1	(1-247)	10	210107352951117900384	•
a development of the		2	45KTL(COM0 2)	(a - z,∧ - Z,0 - 9,_, ,#,(,),.)	0	2	(1 247)	4	21010735296TH7900716	
 System Maint. 		3	45KTL(COM0-3)	$(a \sim z_i A \sim Z_i 0 \sim 9, -, =, #_i(i),.)$	0	3	(1-247)	9	21010735296TH7901147	
Device Log		4	45KTI (COM0-4)	(a-7,A-7,0-9,,-,#,(,),.)	0	4	(1-247)	22	21010735296TH7900718	
Onsite Test	8	5	45KTL(COM0-5)	(a~∠,A~Z.0~9,-,#,(,))	0	5	(1-247)	18	21010735296TH7900729	
- Douiso Menst		6	45K	a Infe					8	
- Device Mginc.	8	7	45KT	.e 1010					9	
	1 🖂	8	45K		4				2	
Device List	2	9	45K	Select a device info file	Choos	Eile No	o file chosen	Impo	rt Device Info	
		10	45KT	L	1				7	
		11	45K						4	
Collect Perf. Data	0	12	45K7			С	lose		6	
Adjust total anarowsiald		13	45KTL(COM0-13)	(a~z,A~Z,0~9, ,-,#,(,),.)	0	13	(1-247)	23	21010735296TH7900714	
Aujust total energy yield		14	45KTI (COM0-14)	(a-7,A-7,0-9,_,-,#,(,),.)	0	14	(1-247)	33	21010735296TH7900733	
		15	45KTL(COM0-15)	(a~z,A~Z.0~9,-,#,(,))	0	15	(1-247)	37	21010735296TH7900882	
		16	45KTL(COM0-16)	(a~z,A~Z,U~9,_,-,#,(,),.)	0	16	(1-247)	21	210107352961117900918	
	6	17	45KTL(COM0 17)	(a- z,∧ - Z.0 - 9, ,#,(,))	0	17	(1 247)	31	21010735296TH7901023	
		18	45K 3COM0-18)	$(a \sim z_r A \sim Z_r 0 \sim 9, -, -, \#_r(r),)$	0	18	(1-247)	8	21010735296TH7900739	•
	Modify	Device Inf	o Import Device	Into Export Device Int						
🕕 Lime 2017-12-24.06:38								🎎 Copyright 🕻	Huawei Technologies Co., Ltd. 20	17. All rights reserved.

7. Upgrade the inverters

After you set the communication with inverters please upgrade all the inverters with firmware received from service support like below:

Select Maintenance menu->Firmware upgrade->Choose File->Upload->Confirm upload-> after the upload finish select Batch upgrade->Upgrade->Confirm



F e power system	_					English 🗸 🌘	IG)
_nspn c	01	er View Monitoring	Query Settings Maintenanc	91		<u> </u>	<u>.</u>
• Firmware Upgrade	2 Singl	e Upgrade 🖲 Batch Upgrade	5				
Product Information			Select an upgrade file: Choose l	File No file chosen	Upload 4		
Security Settings	No.	Device	Devices Status	Curr. ver.	Target ver.	Upgrade Progress	Curi
System Maint.	1	45KTI (COM0-1)	<u> </u>	V100R001C105PC101	NA		*
Device Log	2	45KTL(COM0-2)	٠	V100R001C105PC101	NA		
Onsite Test	J	45KTL(COM0-3)		V100R001C105PC101	NA		
- Dovice Mant	4	45KTL(COM0 4)	•	V100R001C10SPC101	NΛ		
- Device Mgmc.	5	45KTL(COM0-5)	۰	V100R001C10SPC101	NA		
Connect Device	6	45KTI (COM0-6)	•	V100R001C105PC101	NA		
Device List	7	45KTL(COM0-7)	•	V100R001C10SPC101	NA		
Export Param.	8	45KTL(COM0-8)		V100R001C105PC101	NA		
Alarm Reset	9	45KTL(COM0 9)	•	V100R001C10SPC101	NΛ		
Collect Perf. Data	10	45KTL(COM0-10)	•	V100R001C10SPC101	NA		
Adjust total energy yield	11	45KTI (COM0-11)	(a)	V100R001C105PC101	NA		
	12	45KTL(COM0-12)	٠	V100R001C10SPC101	NA		
	13	45KTL(COM0-13)		V100R001C10SPC101	NA		
	14	45KTL(COM0 14)	•	V100R001C10SPC101	NΛ		
10~ 10 · 성공· 기가 3	41		~	14000001010000101			
	Upgra	ie 6					
				ঙা ঙ c	opyright 🗅 Huawei Techno	logies Co., Ltd. 2017. All rights re	served.

8. Upgrade the Smartlogger

After you finish the inverters upgrade please upgrade the Smartlogger with the firmware received from service support like below:

Select Maintenance menu->Firmware upgrade->Choose file->Upload->Confirm upload->Select Single upgrade->Select the Smartlogger->Upgrade and confirm.



E e power system	_						English 🗸	(IF)
	0	ver View	Monitoring Query Settings	Maintenance 1			<u></u>	<u>. 0 0 0)</u>
• Firmware Upgrade	• Sing	le Upgrade	O Batch Upgrade					
• Poduct Information	5		Select an upgr	ade file: Choose File N 😚 le ch	hosen Uplo	ad 4		
 Security Settings 	0	No.	Device	Devices Status	Curr. ver.	Target ver.	Upgr	ade Progress
System Maint.		6 1	Logger(Local)	٠	V200R001C30SPC105	NΛ		*
Device Log		2	45KTL(COM0-1)	•	V100R001C10SPC101	NA		
• Onsite Test		З	45KTL(COM0-2)	۰.	V100R001C10SPC101	NA		
Dovice Marmt		4	45KTL(COM0 3)	•	V100R001C10SPC101	NA		
- Device ingine.		5	45KTL(COM0-4)	•	V100R001C10SPC101	NA		
Connect Device	1	6	45KTI (COM0-5)	٠	V100R001C10SPC101	NA		
Device List	0	7	45KTL(COM0-6)	٠	V100R001C10SPC101	NA		
Export Param.		8	45KTL(COM0-7)	•	V100R001C105FC101	NA		
Alarm Reset		9	45KTL(COM0 8)	•	V100R001C10SPC101	NA		
Collect Perf. Data	0	10	45KTL(COM0-9)	•	V100R001C10SPC101	NA		
Adjust total energy yield	•	11	45KTI (COM0-10)	•	V100R001C10SPC101	NA		
	0	12	45KTL(COM0-11)	•	V100R001C10SPC101	NA		
		13	45KTL(COM0-12)	•	V100R001C10SPC101	NA		
		14	45KTL(COM0 13)	•	V100R001C105PC101	NA		
		45		-	14000001010000104	***		
	Upgra	ide Stop	Upgrade					
di Time 2017-12-24 05:38				uterte here here here here h	ॳ Copyright 🕮 F	luawei Technologies C	o., Ltd. 2017. All rigi	nts reserved.

9. Set the grid code for all the inverters

Select Monitoring menu->Select one inverter-> running parameters->Grid parameters->Select the grid code accordingly to your country ->Batch configuration->Confirm

After this operation all the inverters will be set with the same grid code accordingly. If you do not know what grid code to set on your inverters please contact the service support in order to help you.



e power system					English 🗸 🕕 🕞
Liispire	Over	View Mo	nitoring Query Settir	ngs Maintenance	
= SmartLogger2000 📫	Running	y Info. 🕖 Act	ive Alarm 🖉 Performance Data	Vield Running Param. 3bout	
logger(local)	🗸 Grid Par	rameters 🔪 I	otect Parameters 👋 Feature P	Parameters	
= SUN2000		No.	Signal Name	Value	Unit
🖕 45KTL(COM0-1)	Ø	4	Grid code	RD1599/651	5
15KTL(COM0-2)	U	2	Isolation	PRC_024_Western-MV480	1
45KTL(COM0-3)				RD2699/661-WV800	
15KTL(COM0-1)				SA_RPPs	·
45KTL(COM0-5)	1			SA_RPPs-MV480 TAI-MEA	
45KTL(COM0-6)	•			TAI MEA MV480	
45KTL(COM0-7)	J			TAI-PEA-MV480	
45KTL(COM0-8)				UTE C 15-712-1(A) UTE C 15-712-1(B)	
45KTL(COM0-9)				UTE C 15 712 1(C) UTL C 15-712-1-MV480	
45KTL(COM0-10)				VDE 0126-1-1-BU	
45KTL(COM0-11)				VDF 0126-1-1-GR(A) VDE 0126-1-1-GR(B)	
45KTL(COM0-12)				VDE AR N 4105 ZAMBIA	
45KTL(COM0-13)				ZAMBIA-MV/80	
45KTL(COM0-14)					
9 45KTL(COM0-15)					
45KTL(COM0-16)	Submit	Batch config	urations 6		
Jt lime 2017-12-24 06:02		5		拳 Copyright 🗅 Huawei	Technologies Co., Ltd. 2017. All rights reserved.

10. Check the inverters communication

After all of this operation go to Monitoring menu and check your inverters communication with Smartlogger.

All the inverters must have the led status green and the DC and AC voltage accordingly.

E e power system			Er	iglish v 🕕 🕞
		Over View Monitoring Query Settings M	Naintenance	
SmartLogger2000	- _	Running Info. 🔪 Active Alarm 🎽 Performance Data 🎽 Yield	Running Param. About	📀 🖸 😔
🍵 Logger(Local)	No.	Signal Name	Value	Unit
= SUN2000	1	Inverter status	Idle: Detecting irradiation	<u>^</u>
45KTL(COM0-1)	2	Rated power	45	kW
45KTU(COM0-2)	3	E Day	3.03	kWh
	4	E-Total	979.55	kWh
O 45KTL(COMU-3)	5	Carbon dioxide emission reduction	976.61	kg
15KTL(COM0-1)	6	Total input power	0.000	kW
45KTL(COM0-5)	1	Active power	0.000	kW
15KTL(COM0-6)	• 8	Reactive power	0.000	kVar
45KTL(COM0-7)	9	Power factor	0.000	
15KTL(COM0-8)	10	PV1/PV2/PV3/PV4/PV5/PV6/PV7/PV8 voltage	153.5/153.5/154.5/154.5/153.5/153.5/152.1/152.1	V
45KTL(COM0-9)	11	PV1/PV2/PV3/PV4/PV5/PV6/PV7/PV8 current	0.0/0.0/0.0/0.0/0.0/0.0/0.0/0.0	A
	12	Uab/Ubc/Uca	607.6/610.5/605.8	V
	13	la/lb/lc	0.1/0.1/0.1	Λ
• 45KTL(COM0-11)	14	Grid frequency	60.01	Hz
15KTL(COM0-12)	15	Cabinet temperature	18.5	degC
45KTL(COM0-13)	16	Locking	Locked	
15KTL(COM0-14)	1/	Startup time	2017-12-24 06:08:15	
• 45KTL(COM0-15)	18	Shutdown time	2017 12 24 06:13:16	
15KTL(COM0-16)	19	Collect DSP data	Normal	-
1 Lime 2017-12-24.06:26	*		🧤 Copyright © Huawei Technologies Co., L	td. 2017. All rights reserved.



11.Set local time zone and date and time on Smartlogger

After you connect all the inverters choose "Settings" menu->Date and time and set the Local time zone->Submit. Set date and time and Submit.

🗲 e power system		English	· (86)
Lispire	Over View Monitoring Query Settings Maintenance		<u>\</u> 0 <u>1</u> 0 🛞0)
🗉 User Param.	Time Zone		
Date&Time	Local time zone (UTC+08:00)Beijing Set your local time zone		
Plant	Submit		
Currency	Date&Time		
Save Period	Date 2017-12-24 (YYYY-MM-DD) Set the date and time		
= Comm. Param.	Time 04:58:24 (HH:MM:SS)		
Ethernet	Submit		
RS485	Time Synchronization		
Power Meter	Clock source NetFco		
NetEco	Submit		
Modbus TCP			
IEC103			
IEC104			
Extended Param.			
FTP			
Email			
= Port Settings			
DO			
USB	•		
🚹 time 2017-12-24 04:58	👋 Copyright 🗅 Huawei Technologies C		all rights reserved.

After you set the time zone and date&time and submit the Smartlogger will synchronize with the inverters.