



# SOLEOS – WIFIKIT User Manual

**SOLEOS Solar GmbH** 



#### **Overview of WIFIKIT Function**

SOLEOS-WIFIKIT is developed by SOLEOS as an external communication monitoring device, which integrates WiFi device for users and provides a wireless monitor function.

By connecting with inverters through RS485 interface, the Kit can receive information from inverters and realize cascade of inverters. One side It provides wireless function, another side, it may also use cable to transfer inverter data to the web server.

Users can monitor the runtime status of the device by checking the 4 LEDs on the panel which indicates Power, RS485, Link and Status respectively.



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## 1. RS485 Card Install SOP

## 1.1 Disassembly



Picture 1.1.1

Unscrew the four screws on the interface panel with the screwdriver as shown in Picture 1.1.1 and keep the screws aside.



Picture 1.1.2





Picture 1.1.3

Unscrew the two-holed water-proofing connector from the interface panel as shown in Picture 1.1.2, 1.1.3.

## 1.2 Installation

Pick out the net cable and the water-proofing connector from the package and follow the Picture :

- A. Put the net cable in from the gap
- B. Put the net cable one after another into the kneck of the interface panel



Picture 1.2.1



C. Insert the RS485 card lightly from the position as following picture



Picture 1.2.2



D. Finish the installation, as Picture 1.2.3 :

Picture 1.2.3



## 2. SOLEOS – WIFIKIT User Manual

## 2.1 Unpack

After unpacking the box, please check the parts according to the below list. Contact the manufacturer immediately if you find any damage, missing or wrong model of the device or any parts.

Serial	Name	Quantity	Model
А	PV data collector	1	WIFIKIT
В	Power supply adapter	1	FY0502000
С	screw	2	
D	expanded rubber tube	2	
E	manual	1	



Picture 2.1.1

## 2.2 Installation of data collector

#### 2.2.1 Wall-mounted installation

- 1. Mark two horizontal round holes which distance is 69mm in the selected position
- 2. Drill two φ6mm holes in the marked position, the depth of the hole is not less than 30mm
- 3. Punch the expanded rubber tubes into the holes lightly with a rubber hammer
- 4. Wring two screws into the expanded rubber tubes, the screws head exposed wall about 6mm
- 5. Hang the PV data collector WIFIKIT on the screws, hold the metal part of the antenna and rotate the antenna to a wanted position



Picture 2.2.1



#### 2.2.2 Horizontal data collector installation

#### Lay the data collector on a flat surface

Note1: The protection level of PV data collector WIFIKIT is IP21. It cannot be installed outdoors or in the conditions of damp, dusty or with corrosive steam. Direct sunlight is also avoided, as well as shock and pressure defense. In addition, as metal components have effect on the wireless signals, the antenna of PV data collector (in all direction) should be away from metal components at least 10cm.

Note2: When screw or adjusting the antenna position, please note only the metal part can be screwed, plastic part cannot be screwed, or the antenna will be damaged. In addition, the unusual installation status will affect the usage of data collector, more details please refer to the abnormal condition and dispose during debugging.

#### 2.3 Connection between data collector and inverter





Picture 2.3.1



Picture 2.3.2



Pin NO.	RS485	RS422
1	NC	NC
2	NC	NC
3	NC	RX+
4	А	TX+
5	В	TX-
6	NC	RX-
7	GND	GND
8	GND	GND

#### 2.3.2 Steps of connection

Both ends of the connecting wire are RJ45 network cable connector , all the line sequence are T568B.

#### A. Single inverter connection

- 1. Cut off the power supply of the inverter
- 2. Insert the network cable into anyone RJ45 port on anyone inverter
- 3. Let the other network cable connects the network interface of PV data collector WIFIKIT
- 4. Connect the power supply adapter to data collector, then insert into the socket

#### **B.** Multiple inverter connection

- 1. Cut off the power supply of the inverter
- 2. Insert the network cable into anyone RJ45 port on anyone inverter
- 3. Insert the other network cable into anyone RJ45 port on second inverter
- 4. Make the needed monitoring inverters in series in the same way
- 5. Connect the PV data collector WIFIKIT to a inverter with the bus, (constitute serial LAN)
- 6. Connect the power supply adapter to data collector, then insert into the socket



Picture 2.3.3

Note: Must cut off the power supply before connection. Please make sure that all the connections are completed, and then power on the inverters and PV data collectors. Otherwise may cause personal injury or equipment damage.



### 2.4 WiFi settings

#### 2.4.1 Wireless Network





- 1. Prepare a computer or device, e.g. tablet PC and smartphone, that enables WiFi.
- 2. Obtain an IP address automatically
- Open Wireless Network Connection Properties, double click Internet Protocol Version 4(TCP/IPv4)
- > Select Obtain an IP address automatically, and **click OK**



	Internet Protocol Version 4 (TCP/IPv4) Properties
Networking Sharing	General Alternate Configuration
Connect using:	You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Configure This connection uses the following items:	Obtain an IP address automatically     O Use the following IP address:
<ul> <li>✓ ■ VMware Bridge Protocol</li> <li>✓ ■ QoS Packet Scheduler</li> </ul>	IP address:
	Subnet mask:        Default gateway:
Link-Layer Topology Discovery Mapper I/O Driver     Link-Layer Topology Discovery Responder	Obtain DNS server address automatically
Install Uninstall Properties	Use the following DNS server addresses:     Preferred DNS server:
Description	Alternate DNS server:
wide area network protocol that provides communication across diverse interconnected networks.	Validate settings upon exit Advanced
OK Cancel	OK Cancel

Picture 2.4.2

3. Open wireless network connection and click View Wireless Networks

Select wireless network of the data logging module, no passwords required as default. The network name consists of **AP** and the **serial number** of the product. Then click **Connect.** 



Curre	ntly connected to:	43	-
D	soleos-solar.com Internet access		
-	Connectify-me No Internet access		10
	Unidentified Network No network access		10
Wirele	ess Network Connection	~	
AD 50	1262422	<b>U.1</b>	
AF_JU.	1202423	1000	
m 🚯	ight be visible to others.	network	
-	nnect automatically	Connect	
Co			
Co			100
Co			
Co			
Co	Customize		

Picture 2.4.3



Picture 2.4.4



Notice: If **AP\_(serial number of product)** is not available in the wireless network list, there may be problems in the connection or setting of data logging module. Please check if the WiFi had installed ok, and inverter has been powered on.

Before troubleshooting, please inquire with your inverter installer whether you are allowed to remove the cover of the inverter to trouble shoot the module. If not allowed, please contact customer service.

4. Set parameters of WiFi module

Open a web browser, and enter 10.10.100.254(the Default IP address of WiFi Kit, you may set domain name access, please see the picture 2.4.5), then fill in username: **admin** and password: **admin**, both of which are admin as default.

Recommended browsers: Internet Explorer 8+, Google Chrome 15+, Firefox 10+

Note:

- 1. In order to make sure the setting goes smoothly, you need check following points:
- Set your WiFi router into DHCP mode
- Confirm the RS485 Card installed well and do not loose in the inverter
- 2. The default username & password : admin & admin, we suggest modify the username & password:

Step: choose "Account", input your username &password.



Password: ••••• a	min
	OK Cancel







WiFi SSID (Caution: case-sensitive)	C2101 Search
Security Mode	WPA2PSK 💌
Encryption Type	AES OD not fill in
Key (1~32 Bytes) (Caution: case-sensitive)	I234567890 → Fill in the password of your wifi     Show Key
DHCP Select	Enable V "Disable" or "Enable",
IP Address	"Enable" suggested
Subnet Mask	
WiFi Gateway	
DNS Server	
'Apply''	ly Cancel

Picture 2.4.5

Note: this default setting is router DHCP on, if you cannot connect to the network, please check if you open the DHCP function.

After your WiFi Kit set ok and get IP address from your router for example: 192.168.16.89.

Input: <u>http://192.168.16.89/</u> will display the page.

Now we finish the network setting, then you may login <u>www.SOLEOSportal.com</u> to browse your data.

#### 2.4.2 Wired network

As the picture 2.3.1, you can use network cable to connect to the Ethernet port of WiFi Kit and the port of router. Then the inverter info received by WiFi will be directly transferred to the remote server.

Note: the default WiFi Kit is WiFi network, if use the Ethernet port, please restore to the factory default status.



## 2.5 Debug

### LED indicating lamp Introductions



Picture 2.5.1

Name of LED	Status	Description of status
	Light	The power is normal
POWER	Dark	The power is abnormal
	Light	The connection between collector and inverter is normal
485\422	Flashing	Data is transferring between collector and inverter
	Dark	The connection between collector and inverter is abnormal
STATUS Dark	LINK Flashing	Connecting WiFi
	LINK Flashing	Data is transferring of WiFi
STATUS Light	LINK Light	The connection of collector is normal
	LINK Dark	The connection of collector is abnormal
	LINK Flashing	Data is transferring of port
STATUS Flashing	LINK Light	WiFi is in the AP way, a terminal is connecting with the equipment
	LINK Dark	WiFi is in the AP way , no terminal is connecting with the equipment



#### Trouble shootings with LEDs

	phe	nomenon			
POWER	485/422	LINK	STATUS	Possible reasons	Dealing ways
Dark	Dark	Dark	Dark	Haven't connected to the power	Connect power and ensure that the power supply is good.
Light	Dark	х	x	The connection of	Check the connection cable is right and ensure that the order is according to 568-B Ensure the stability of
				inverter is abnormal	RJ-45 connector line Confirm the status of inverter and ensure it's working condition is normal
Light	Х	Х	Flashing	In the AP Mode	Set network settings
					Confirm if the antenna is loose or fall off. If so, please screw it.
Light	х	Flashin g	Dark	Collector is not connected with WIFI	Check if the WIFI wanted is covered.
					Restore the factory settings according to the installation manual and reset.
Light	Light	Dark	Light	Fail to connect the remote server	Please confirm that WIFI can be connected with the Internet.
Light	Dark	Dark	Dark	The system is initialized	Please wait. If there is no change in 2min, please reset the collector.

Note1:x means the status is instability

Note 2: when screw or adjusting the antenna position, please note only the metal part can be screwed, plastic part cannot be screwed, or the antenna will be damaged Note3: If the equipment still cannot work according to the above instructions, please connect your device customer service.



### 2.6 Register on monitoring website

Our products supported by PV monitoring system Web site browser: IE8, Firefox, Chrome, safari, log into the website **http://www.SOLEOSportal.com**, Click to register, enter the user registration page, follow the requirements for registration, after successful registration, enter the mailbox and activity the account, then complete the registration.

#### 2.6.1 Register new account

Click Register button to go to registering interface for new account





Picture 2.6.1



2.6.2 Fill in user's information





Remarks: please read the <Soleos service agreement >carefully, the enclosure is the cost list for all the countries, please choose your operators *End User* means the final user "\*" you must fill it

#### 2.6.3 "End User" Account

Site Name	soleos	*Maxim	um 20 Letter	s
Upload Image	Default.jpg	Clic	k and	Choose
		the	Picture	
Country	Germany	*		
Province/State	Berlin	*		
City	Berlin	*		
Street		Locate Y	our Site On N	lap
ZIP Code				
Timezone	(GMT +01:00) Amsterda	am,Berli 💽 🗹 Enat	ble the DST?	
Number Format	1234567.89	Ch	oose yo	ur
Temperature Unit	°F		untry FC	ormat



Te	emperature Unit	°F		•
Sy	stem Size(kWp)	3 Exch	ange Uni	*
Fe	ed-in Tariff(FIT)	0.30	EUR€	*
	Panel Type	Soleos		•
	Inverter Type	OXYGEN		
	Description			
с	hoose it to sh	are your plant	;	
7 <u>2</u>		👿 Make This Site Pu	ublic	
	Registration F	ill WiFi Kit S/	N Code,S	See Pic 2.6.4
	Datalogger S/N			* 🕀
	Installer			
	Contact			
	Name			
	Phone			
Fir	ish the	Complete	Cancel	

Picture 2.6.3





Picture 2.6.4

### 2.7 Monitoring

After the successful register and account activation, open the login interface as below picture 2.7.1, input the correct email and code and enter the PV monitoring system, then you can monitor and manage the power station.



Picture 2.7.1



н	ome	M	y Site	Pul	olic Sites	Acco	ount				soleos
Site Name	9:	Country:	Provin	ce/State:	City:	Powe	er(KWp) from/to:				
				_						ow All Customi	zod Viow
		All	► All	•					L Q Vi	ew All Customi	zed View
Maj	D	All	•   All	•					Q Vi	ew All Customi:	zed View
Ma Status	Image	All List Site Name	<ul> <li>All</li> <li>Country</li> </ul>	• City	Address	System Size	Power Now	Total Energy	Total Income	ew All Customi	zed View Averaged Working Tim

Page: 1 K < > >



## Enter your station:



Picture 7-3 Navigation Bar



Picture 2.7.4 Main interface of power station



o Demo 💌	Overview	Real Time	History	Alert	Report	Settings
					à	Alerts: 4 items

#### K 🗙 Page 1 of 1 🔰 🔰 C

No. Tru	Terrenten C /N	DC Input			AC Output					Total Energy (kWh)	Tomporatu
NO.	Inverter 5/N	Channel	Voltage(V)	Current(A)	Phase	Voltage(V)	Current(A)	Power(W)	Frequency(Hz)	Total Energy(KWN)	Temperatu
		PV1	285.4	0.0	L1	236.1	0.8	5			34.3
1 NLSN1330134R300	NLSN1330134R3001	PV2	327.4	0.0	L2	232.5	0.8	11	50.01	2709.1	
		PV3	0.0	0.0	L3	235.2	0.9	6			
		PV1	215.4	0.0	L1	233.6	0.0	0	50.02	1065.1	27.7
2	CNDN4020136L2502	PV2	215.4	0.0	L2	0.0	0.0	0			
		PV3	0.0	0.0	L3	0.0	0.0	0			
	3 CNDN4020136L2501	PV1	199.0	0.0	L1	233.1	0.0	0			27.8
3		PV2	199.3	0.0	L2	0.0	0.0	0	50.01	1135.3	
		PV3	0.0	0.0	L3	0.0	0.0	0			
•											F.

Picture 2.7.5 Real Time Interface



Picture 2.7.6 History Interface



Demo 💌			Overview Real Time History	Alert	Report S	Settings
					🔺 Alert	ts: 4 items
Select: View All	View All 🔻					Search
Inverter	Information	Code	Alerting Time	Status	View History	Delete
CNDN4020136L2502	Utility Loss	F09	9/11/2013 04:26:31 - 9/11/2013 08:44:50 GMT+1	Unhandled	<u>ļ. 11.</u>	Ī.
CNDN4020136L2501	Utility Loss	F09	9/11/2013 04:26:31 - 9/11/2013 08:44:49 GMT+1	Unhandled	<u>ļ.lt.</u>	Ī.
NLSN1330134R3001	Utility Loss	F09	9/11/2013 06:26:34 - 9/11/2013 08:44:48 GMT+1	Unhandled	<u>ļ. 11.</u>	Î.



Picture 2.7.7 Alert Interfaces

o Demo 💌		[	Overview	Real Time	History	Alert	Report	Settings
								Alerts: 4 items
Report								
Daily Report	Year: 2013 💌 M	Month: 09 💌	Day: 24	12			Previ	ew Export
Weekly Report	From 2013-09-24	to 2013-09-24					Previ	ew Export
Monthly Report	Year: 2013 💌 M	Month: 09 💌					Previ	ew Export
Yearly Report	Year: 2013 💌						Previ	ew Export
Alerts Report	From 2013-09-24	to 2013-09-24					Previ	ew Export

Picture 2.7.8 Report Interfaces

	Real Time	History	Alert	Report	Settings
				۸	Alerts: 4 ite
demo					
Demo		*Maximum 20 Letters			
Default.jpg					
-	*				
AN LOSS					
	174				
	demo Demo Default.jpg	demo Demo Default.jpg	demo Demo *Maximum 20 Letters Default.jpg	demo Demo *Maximum 20 Letters Default.jpg	demo Demo *Maximum 20 Letters Default.jpg

Picture 2.7.9 System Setting Interface

en	10 💌		Overview Real Time	History	Alert	Report	Settings
Site	Device	Alert				۸	Alerts: 4 it
	Datalogger S/N	Datalogger Type	Inverter S/N	Inverter Type	Status	Last Upa	adated
1			NLSN1330134R3001 🗓 🕅	OXYGEN	0	2013-09-11	11:13:41
2	501752936 🗓 7	WiFi/Ethernet Collector	CNDN4020136L2502 🗓 🕅	OXYGEN	O	2013-09-11	11:03:07
3			CNDN4020136L2501 🗓 🕅 OXYGEN		2013-09-11		11:03:07
			Add				
		Add					
		Datalogger S	S/N				
			ок				

Picture 2.7.10 System Setting Interface



## 3. Contact

If you have any technical problems about our products , please contact us , you should confirm the follow things before contact us:

- Device model
- Data collector serial number
- The number of connected inverter

### **SOLEOS Solar GmbH**

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