Meteo Station and Sensor Commissioning Guide

1. Integrated Meteo station and sensor

The parameters of the Meteo station and sensor listed in the following table have been integrated in the SUNGROW Logger1000. Please find the specific models in the following table, which are subject to change without notice.

Integrated Meteo stations and	sensors with Logger1000:
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No.	Brand	Model	Wiring
1	Supgrow	PC-4	
I	Sungrow	PC-4 PRO	
2	Lufft	WS601	
2	Kinn ^g Zonon	SMP10	PS485 Connection
3	κιρραζοπεπ	RT1	K3465 Connection
Л	Rainwise	PVMet75	
4	Kairiwise	PVMet200	
5	Ingenieurbüro	Si-RS485TC	
6	Meteo sensor	Meteo sensor	AI Connection

Table 1-1 Integrated list

2. Commissioning Guide

2.1. Limitations

The Meteo station and sensor that needs to be connected to Logger1000 must support Modbus protocol or analog signal output. Before starting work, please make sure that

Meteo station and sensor are properly connected to the power supply and connected to the Logger1000.

2.2. Connect the Meteo station and sensor

RS485 Connection:

The following figure shows the connection between the Logger1000 and the meteo station via RS485.



Figure 2-1 RS485 Connection

Connect the communication cable led from the meteo station to the RS485 port of the Logger1000. If multiple inverters are connected to the Logger1000 together with the Meteo Station, the Meteo Station should be connected on the end of the daisy chain.

AI Connection:

The following figure shows the connection between the Logger1000 and the meteo sensor via AI.



Figure 2-2 AI Connection

2.3. Logger1000 Login

WLAN Login:

Step 1: Open the WLAN network settings of the PC/Pad/Mobile phone, search the WLAN network "SG-XXXXX" of the Logger1000 and connect.

Step 2: Enter the IP address 11.11.11.1 of the Logger1000 in the browser to enter the general user login interface.

Step 3: Clike the button "Login" in the upper right corner, enter the default password "pw1111", and click "Login", to enter the O&M user interface.

Ethernet Login:

Step 1: Connect the Logger1000 to PC via ethernet cable.

Step 2: Setting the PC IP address and subnet mask, let PC and Logger1000 in the same LAN network. The Logger1000 ethernet default IP address and subnet mask are 12.12.12.12, 255.255.255.0. The PC IP address and subnet mask can set 12.12.12.XXX, 255.255.0.

Step 3: Enter the IP address 12.12.12.12 of the Logger1000 in the browser to enter the general user login interface.

Step 4: Click the button "Login" in the upper right corner, enter the default password "pw1111", and click "Login", to enter the O&M user interface.

Logger1000	and an		2 2012		te de de Se	O A	0 🕜 Help 🌐 I	Engli:
Overview	Data Index							Expand
General Information	Daily Yield		6	0.000 kW Real-time Active Power		D 1 Piece Offline Devi	ce	
Current Alarms	81937.8 kWh			0.0 kW		2 Piece		
	Total Yield			Max. Adjustable Active Pow	/er	Online Devi	ce	
System 🔫	Inverter Realtime Valu	es (Off-grid <mark>2</mark> , On-g	grid 0)					
About	Device Name	Device Model	User Login		aily Yield(kWh)	Active Power(kW)	Reactive P	ower(kvar)
	SG33CX(COM1-002)	SG33CX	Password		.5	0.000	0.000	
	SG33CX(COM1-003)	SG33CX	Password	2 🚿	3.1	0.000	0.000	
				Login 3				
			Forgot Passw	ord				

Figure 2-3 Login

2.4. Add the Meteo staion and sensor

2.4.1. RS485 type Meteo station

Set the RS485 port parameter:

Step 1: Click "System" -> "Port Parameter" -> "RS485" to enter the corresponding interface.

Step 2: Click the "Settings" icon of the port connected. According to the parameters of the meteo station (refer to the meteo station's user manual), select the values of "Baud Rate" "Parity Bit" and "Stop Bit" in the pop-up window, then click "Save".

Logger1000						 ⊗0 <u>∧</u> 0 .	Help	English	LO&M user
o System 🚹 🔺	Serial Port	Baud Rate		Parity Bit		Stop Bit			_
	COM1	9600		None		1			0
Run Information	COM2	19200		Even		1		•	0
System Maintenance	COM3	9600		None		1			0
Remote Maintenance		Advanced Settings			×				
Message Export		Serial Port COM2							
System Time		Baud Rate							
Transfer Configuration		9600			· ·				
Port Parameter 2		Parity Bit None 5			-				
RS485 3		Stop Bit							
Ethernet		1			~				
Mobile Network			Save	•					
WiFi									
AI		· ·							
DI									
About									
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Figure 2-4 Set RS485 port parameter

Add the Meteo station:

✓ **Type 1: Compatible Meteo station**

Step 1: Click "Device" -> "Device List" -> "Add Device" to enter the corresponding interface.

Step 2: In the pop-up window, select "Meteo Station" in the "Device Type".

Step 3: Select the corresponding Logger1000 COM "Port" which connect the Meteo Station

Step 4: Select the corresponding meteo station model in the "Device Model".

Step 5: Enter the value of "Beginning Address" and the "Device Quantity", then click "Save".

Logger1000	Ξ. A. A.						© 0 <u>∧</u> 0 . ⊘	Help	sh 💄 O&M user
😫 Overview 🔻	Auto Search Add De	wice 3							Delete
Device Monitoring	No.	SN	Device Name	Device Model	Port *	Device	Forwarding IP	Com Status	Operation
🗙 Device 🚺		A1906241592	SG33CX(COM1-002)	SG33CX	COM1	2	2	<u>е</u> р	0
Device List 2	2	A190624159	Add Device		×	3	3	8	0
Firmware Update			Device Type						
Inverter Log			Meteo Station		· · · · ·				
AFCI Activation			Port						
1 Power Control 👻			COM2		~				
🔇 History Data 🛛 👻			Device Model	4	a a car				
🗘 System 👻			RT1-Slope		~				
About			Beginning Address (1~255)						
			1		· · · · ·				
			Device Quantity (1~30)						
		L	1						
				Save 5					

Figure 2-5 Add the compatible meteo station

After completing the above steps will successfully add the compatible meteo station to the Logger1000.

Note:

The Modbus ID addresses of the devices connected in the same COM port of Logger1000 cannot be repeated.

✓ **Type 2: Third-party Meteo station:**

Step 1: Click "Device" -> "Device List" -> "Add Device" to enter the corresponding interface.

Step 2: In the pop-up window, select "Meteo Station" in the "Device Type".

Step 3: Select the corresponding Logger1000 COM "Port" which connect the Meteo Station

Step 4: Select the "Others" in the "Device Model".

Step 5: Select "Custom" in the "Configuration Method", then click "Next".

Logger1000	Ξ					x - x -	8 0 <u>∧</u> 0 . ⊘	Help 🌐 Englis	sh 💄 O&M user
Uverview 👻	Auto Search Add Dev	ice 3							Delete
Device Monitoring	No.	SN	Device Name	Device Model	Port 🌩	Device	Forwarding IP	Com Status	Operation
		A1906241592	SG33CX(COM1-002)	SG33CX	COM1	Address 🗢	÷ . 2	90	Ó.
Device List 2	2	A190624159	Add Device		×	3	3	с. С.	0
Firmware Update			Device Type						
Inverter Log			Meteo Station		· · · ·				
AFCI Activation			Port						
🛔 Power Control 🛛 👻			COM2		v				
History Data			Device Model						
System			Others	4	-				
About			Configuration Method						
			Custom		· · · · · · ·				
				Next 5					
					-				
r									

Figure 2-6 Add the Third-party meteo station

Step 6: Enter or select corresponding value of parameters in the pop-up window.

<u>Note:</u> The user can select up to 13 objects for setting. For the corresponding parameters(such as register address, register type, etc.), please refer to the user manual of the connected meteo station.

Parameter Description:

No.	Item	Description								
1	Byte Order	Refer to the device Modbus map, parse the order of the ead byte stream								
2	Beginning Address	The beginning address of the device								
3	Quantity of Device	The number of the device								
4	Debug Address	The device address to be read when click "Read-back", the range is [("Beginning Address"), ("Beginning Address"+ "Quantity of Device"-1)]								

5	Read Type	With or without framing when send messages at this point, recommend to choose continuous type
6	Coefficient	Refer to the Modbus map of the device, the coefficient that multiplied the value
7	Read-back Value	The value of the selected measuring point read when click "Read-back"

Table 2-1 Parameter description

Step 7: Select the points to be measured, click "Read-back" to read the information from the meteo station in real-time to check the correctness of parameter setting.

	Step	8: After	confirming	that the	read-back	data is	correct,	then	click '	"Confirm".
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Logger10	00		Ξ					🔞0 🛕0	🕜 Help 🛛 🌐 English	L O&M user
Overview			Auto Search Add De	avice						Delete
Device Monitori			No.	SN De	evice Name	Device Model	Port 🗢	Device Forward	ing IP Com Status	Operation
X Device	Configure	e Mea	suring Point							
Device List	Byte or	der			Beginning Addre	55		Quantity of Device		
Firmware Upd	Big-er	ndian	for byte&nbs	sp;data, big-endia 🤝	1			1,		
Inverter Log AFCI Activatio	Debug	Addre	ess 1			0			Read-back Save Template	
1 Power Contro		No.	Measurement Point Name	Modbus Address 💠	Register Type	Data Type	Read Type	Coefficient	Read-back Value	Unit
History Data		1	Ambient Humidity	3000	0x4 -	U16 -	Continuous	1.0		°C n
System		2	Temp. (PV module)	3001	0x4 -	U16 -	Continuous ~	1.0		°C
 About 		3	Ambient Humidity	3002	0x4 -	U16 -	Continuous ~	1.0		%RH
		4	Atmospheric Pressure	3003	0x4 ~	U16	Continuous ~	1.0		hPa
		5	Transient Horizontal Irradiation	3004	0x4 -	U16 -	Continuous ~	1.0		W/m²
									88159E1D	lack Confirm

Figure 2-7 Configure measuring point

After completing the above steps will successfully add the Third-party meteo station to the Logger1000.

If need to modify the configuration parameters after adding the device can refer to the following steps.

Step 1: Click "Device" -> "Device List" -> "Configure Measuring Point" icon of the device which wants to change.

Logger1000	≡ 4.4							⊗0 <u>∧</u> 0 . ⊘	Help	LO&M user
🖬 Overview 👻	Auto Search Add Dev	ice								Delete
Device Monitoring	No.	SN	Device Name		Device Model	Port * \$	Device	Forwarding IP	Com Status	Operation
		A1906241592	SG33CX(COM1-	002) 5	G33CX	COM1	2	2	9,	0
Device List	2	A1906241595	SG33CX(COM1-	003) 5	G33CX	COM1	3	3	۵ ۵	0
Firmware Update	3,		EM(COM2-001)	E	ξM	COM2	1 .	4 .	\$3	0 🕂
Inverter Log	Configure Measuring Point						-			U
AFCI Activation		_							<u>ן</u> ר	
T Power Control 🗸	Big-endian for&nt	osp;byle dala,&n	bsp;big-endia 💌							
🕔 History Data 🛛 👻									Rcad-back Save	Templete
♦ System 👻	No. Measurem	ent Point Modbu	Is Address 💠	Register Type	Data Type	4 Read Type	e Co	efficient	Read-back Value	e Unit
About	1 Ambient H	umidity 3000		0r4 -	1116	Continuo	us v 1	1.0		°C
	2 Temp. (PV	module) 3001		0x4 -	U16	- Continuo	us – 1	1.0		°C
	3 Ambient H	umidity 3002		0x4 -	U16	- Continuo	us - 1	1.0		%RH
	4 Atmospher	ic		0x4	U16	- Continue	us 👻 1	1.0		hPa
	5 Transient H	Horizontal 3004		0x4 -	U16	- Continuo	us 👻 1	1.0		W/m'
ر اله ۱۵]	Back Confirm

Step 2: Modify the configuration parameters in the pop-up window, then click "Confirm".

Figure 2-8 Modify configure measuring point

In addition, the user can save the configuration parameters as a template(stored in the Logger) or export the configuration file (stored in the user's PC). Then if need to add the same type of meteo station in the future, it can be select the template or import the configuration ".xml" file directly through the logger1000.

Step 1: Click "Device" -> "Device List" -> "Configure Measuring Point" icon of the device which wants to save the template or export the configuration file.

Step 2: Click "Save Template", then enter the template name in the pop-up prompt window and click "Confirm" to save the configuration file as a template in Logger. Or click the "Export" icon and save the configuration file to the PC.

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Serview			Auto Search Add Devic	.e						te 📑 🖨
Device Monitoring							Dev	ice Forwarding	IP Our Otalina Con	
X Device	Configu	ire Mea	asuring Point		Prompt			×		×
Device List	Byte	order			Template Na	me				
Firmware Update	Big-	endiar	n for byte&nbs	p;data, big-endia 💌	Please Ente	er 💋				0
Inverter Log					It will be sele	cted in the configuration	n file after saving _ 3	Cancel	Read-back Save Templ	ate
AFCI Activation		No.	Measurement Point Name	Modbus Address 🗇	Register Type	Data Type	Read Type	Coefficient	Read-back Value	Unit
Power Control		1	Ambient Humidity	3000	0x4 -	U16 -	Continuous	1.0		°C
Sustem		2	Temp. (PV module)	3001	0x4 ~	U16 -	Continuous	1.0		°Ċ
About		3	Ambient Humidity	3002	0x4 -	U16 -	Continuous 💌	1.0		%RH
O Pasour		4	Atmospheric Pressure	3003	·0x4 ·	U16 💌	Continuous	1.0		hPa
		5	Transient Horizontal Irradiation	3004	0x4 ~	U16 -	Continuous	1.0		₩/m²
									Bac	k Confirm
								1	88159E1D	1

Figure 2-9 Save template or export configuration file

Step 3: Refer to "Type 2: Add the Third-party Meteo Station" Step 1-4

Step 4: Select "Import Files" in the "Configuration Method", then select the corresponding

template in the "Configuration File" drop-down lists or click the \uparrow icon to import the configuration file

Step 5: Enter the value of "Beginning Address" and the "Device Quantity", then click "Save".

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Logger1000				. O O <u>A</u> O . C	Help	sh 💄 O&M user
😫 Overview 👻	Auto Search Add Device 3		_			Delete
Device Monitoring	No. SN	Add Device	Device	Forwarding IP	Com Status	Operation
X Device	1 A190	Device Type	Address a	2	a,	0
Device List	2 A190	Meteo Station	3	3	°0	0
Firmware Update		Port				
Inverter Log		Device Model				
AFCI Activation		Others	-			
Power Control		Configuration Method				
Svstem		Import Files				
 About 		Configuration File	Ŧ			
		11_test_20201204.xml				
		Beginning Address (1~255)				
		Quantity of Device				
		1				
		Save				

Figure 2-10 Add the Third-party meteo station based on template or import configuration file

Note:

The template name should be a combination of numbers, letters, dashes and underscores starting with English letters, with a maximum length of 32 bits.

The Modbus ID addresses of the devices connected in the same COM port of Logger1000 cannot be repeated.

2.4.2. Al type Meteo Sensor

Set the AI port parameter:

Step 1: Click "System" -> "Port Parameter" -> "AI" to enter the corresponding interface.

Step 2: According to the parameters of the sensor connected (Refer to the sensor's user manual), select the "Input Type" of the corresponding AI port and enter the "Lower Limit" and "Upper Limit" (meteo sensor output analog signal like 0 to 10V or 4 to 20mA) values,

then click 峝 icon to save.

Logger1000	=					0 2 Help	alish 💄 O&M user
X Device -							-
T Power Control 🗸	AI	Input Type		Lower Limit	Upper Limit		6
🕓 History Data 🛛 👻	Al1 ,	Voltage (V) Current (mA)		0	10		
System 1	AI2	O Voltage (V) O Current (mA)		4	20		
Run Information	AI3	Voltage (V) Current (mA)	4	0	10		8
System Maintenance	Al4 .	Voltage (V) Current (mA)		0 ,	10		
Remote Maintenance				,	 		
Moonage Export							
wessage export							
System Time							
Transfer Configuration							
Port Parameter 2							
RS485							
Ethernet							
Mobile Network							
WIFI							
AI 3						88159E1	D
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Figure 2-11 Set AI port parameter

Add the Meteo sensor:

Step 1: Click "Device" -> "Device List" -> "Add Device" to enter the corresponding interface.

Step 2: In the pop-up window, select "Virtual Weather Station" in the "Device Type", then click "Save".

Logger1000	E a a						× ⊗0 <u>∧</u> 0 . ⊘	Help	sh 💄 O&M user
• Overview -	Auto Search Add De	rice 3							Delete
Device Monitoring	No.	SN	Device Name	Device Model	Port * \$	Device	Forwarding IP	Com Status	Operation
X Device		A1906241592	SG33CX(COM1-002)	SG33CX	COM1	2	2	<u></u> ъ	0
Device List	2	A190624159	Add Device		×	3	3	8	0
Firmware Update			Device Type			1.1.1			
Inverter Log			Virtual Weather Station	4					
AFCI Activation				Save 5					
1 Power Control 👻									
History Data									
🗢 System 👻									
About									
🔿 🛋 II. 🤝									

Figure 2-12 Add the meteo sensor

Step 3: Click "Device Monitoring" -> "Meteorological Station" -> "Initial Parameter", select the "AI" ports to which the sensors connected and enter the "Min." and "Max." (meteo sensor converted sample data like 0 to 1500 W/m² or -40 to +90°C) values, then click "Save".

Logger1000					80 <u>A</u> 0 . 2 He	lp 🌐 English 💄 O&M user
🚼 Overview 👻	All	~	Realtime Values Initial Paramet	er 3		
Device Monitoring	% SG33CX(COM1-002)					5 Save
X Device 🔻	S Meteorological Station	2	Name	AI	Min.	Max.
1 Power Control 👻			Plane instantaneous irradiation (W/m ²)		0	0
History Data			Bevel instantaneous irradiation	Al1	0	1500
System			Ambient Temperature (°C)	-	0	0
• About			Module Temperature (°C)	Al2 -	-40	ed
						· · · · ·
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Figure 2-13 Meteo sensor initial parameter setting

Step 4: Click "Realtime Values" to read the information from the meteo sensor in real-time to check the correctness of parameter setting.

After completing the above steps will successfully add the meteo sensor to the Logger1000.

2.5. Delete the Meteo staion and sensor

Step 1: Click "Device" -> "Device List", then select the device which wants to delete and click "Delete".

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Logger1000	æ v v						⊗ 0 <u>∧</u> 0 , ⊘	Help	h 💄 O&M user
• Overview •	Auto Search Add Dev	ice						4	Delete
Device Monitoring	No.	SN	Device Name	Device Model	Port 🗧	Device	Forwarding IP	Com Status	Operation
X Device	1	A1906241592	SG33CX(COM1-002)	SG33CX	COM1	2	2	90	0
Device List 2	2	A1906241595	SG33CX(COM1-003)	SG33CX	COM1	3	3	90	0
Firmware Update	3.3		Meteorological Station	EM		- ,	249	\$3	
Inverter Log									
AFCI Activation									
T Power Control 🗸									
🔇 History Data 🛛 👻									
🗢 System 👻									
About									
e e e									
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Figure 2-14 Delete the meteo station and sensor

The End