# EyeM4 (WiFi) Commissioning Quick Guide (SG30/50/110CX Inverters)

#### Disclaimer

The material in this document has been prepared by Sungrow Australia Group Pty. Ltd. ABN 76 168 258 679 and is intended as a guideline to assist solar installers for troubleshooting. It is not a statement or advice on any of the Electrical or Solar Industry standards or guidelines. Please observe all OH&S regulations when working on Sungrow equipment.

This quick guide is to be read in conjunction with the Sungrow's User Manuals and SG30/50/110CX inverters as example for demonstration.

For export control and load consumption, an energy meter (DTSD1352-C/1(6)A with external CT) needed to be connected.

The energy meter and inverters are connected via daisy-chain RS485 as per standard RS485 topology.

Up to 10 devices can be connected with an EyeM4 (WiFi) Dongle. The EyeM4 and an energy meter **only can be connected in the first or the last inverter** when inverters are connected together via daisy-chain.



Please use the following checklist for quick commissioning:

Procedures		Yes/No			
RS485 connection	RS485 communication cables installed correctly to inverters by terminal blocks?				
	RS485 communication cables installed correctly on the first or the last inverter to energy meter DTSD1352-C/1(6)A by terminal blocks?				
iSolarCloud App	Important: Enable RS485 Port for Inverter via iSolarCloud App				
Setup Online Monitoring	Create a solar plant via iSolarCloud APP via an installer account				
EyeM4 web	EyeM4 Setup via WLAN (11.11.11.1; password: pw1111)				
portal setup	Update to the latest firmware for export control feature (click here)				
	Auto search inverters				
	Add the energy meter and adjust CT Transformation Ratio				
	Set up export control if required				
Remote	Connect the customer's home WiFi network				
maintenance	Enable International Server				
	Update iSolarCloud serve domain				

### **Quick toturial**

EyeM4 (WiFi) Commissioning (click here)

Click here for Local Firmware Update Procedure, otherwise, you cannot add energy meter for export control.

Click here to download EyeM4 (WiFi) firmware

### **RS485 Connection**

Recommend that RS485 can be connected by terminal blocks for more than one inverter. All RS485 wiring is connected in "daisy-Chain" fashion where RS485A+ is A1 and RS485B- is B1.



Figure 1 The RS485 can be wired direct to terminal block

Optional: Ensure the termination resistors (120 Ohm) are **enabled ON (SW1) at each end of the RS485** in the inverter line (only the first and the last inverter) when more than 15 inverters are connected.



Figure 2 termination resistors (120 Ohm)

### **Energy Meter to Inverter Connection**

For installations where the supply is larger than 80 Amps - the site electrician will need to calculate the CT ratio required as per the installation. The CT ratios can be set within the EyeM4 interface.

(For supplies smaller than 80 Amps, use the DTSU666 with inbuilt CT's)

Default Modbus address is 1 and the secondary current of CT should be 5A.

Please refer Meter Selection Guide for reference.

Where RJ45 is used, the corresponding pinouts to RJ45 are Pin 3 (White-green) to RS485- B and Pin 6 (Green) to RS485+ A.

This colour code is the Sungrow default for 3-phase energy meters

If the communication cable is Shielded Ethernet cable, white-green cable 3 is defined as RS485- B cable and the green cable 6 as RS485+ A cable.





Meter side connection:

- Terminal 21 = RS485+ A (Green)
- Terminal 22 = RS485- B (White/Green)

## Terminal 21 to Green cable (RS485+ A) and terminal 22 to White / Green cable (RS485- B) on the DTSD1352 energy meter side.

The following figures shows the meter cable connection on the energy meter.



Figure 4 RS485 connections to the energy meter

**Important: Connect the energy meter RS485 to A2/B2 (RS485-2 Interface) terminals in the inverter that has the EyeM4 dongle.** (Communication PCB varies between inverter models – ensure to use A2/B2).





Figure 5 RS485 connections in the inverter (SG30/50CX and SG110CX)

#### Important: Enable RS485 Port for Inverter via iSolarCloud App

Access the iSolarCloud App via Bluetooth, once clicking Bluetooth, you will be prompted to select the Bluetooth device (Inverter SN). Click on the SN you wish to connect to and then login to the inverter. Please put in "admin" as the account and the password (pw8888).

Click "More" > "Settings" > "Operation Parameters" > "Other Parameters" > Enable" transparent transmission via standby RS485 port.

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	SG50CX	*			MORE	*		SETTINGS		< BACK	
2020/06/05 16:04				🔅 Settings				System Parameters	>	Running Time	
0 W	SN: SG33CX	()						Operation Parameters	>	Global MPPT Scanning	
<b></b>		-		Download Log	g			Power Regulation Parameters	>	Grid Voltage Rising Suppression	
Power	Today Yield	Total Yield		Firmware Upo	date			Protection Parameters	>	PID Parameters	
0.00 kw	0.0 kWh	0.0 kWh		🔓 Modify Passv	word			Ó-mensionation Decomptore		String Detection	
		P (3)						Communication Parameters	/	Fault Recovery	
P (%)										Power Reduction at Overfrequenc	y
100								Yield Coefficient		Power Increment at Underfrequen	cy >
60								Active Power Limit		Communication Interruption Configuration	
20								Apparent Power Limit		Grounding Detection	
05:00 09:00	13:00 17:00	21:00						55.0 KVA		AFD Parameters	
								Relay Self-test		Other Parameters	
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Home Ru	n information Records	BE						Transparent Transmission Via Standby RS485 Port		= 0 (	
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### **Create Plant in iSolarCloud**

The iSolarCloud is available for the EyeM4 online monitoring. You need to create an iSolarCloud account first, then you can create a plant to link with EyeM4 via the mobile APP.

#### Create Plant -> Commercial -> PV-> EyeM4 -> Scan the QR Code

SELECT PLANT TYPE

communication device

Select plant type to choose the right



Step 3

Step4

SELECT INVERTER TYPE

communication device.

Select inverter type to choose the right

Then you need to enter the customer's basic information, and the plant will be created in a few minutes.

After the account and plant are created successfully

TD\_202007\_EyeM4 (WiFi)\_Quick Guide for SG30-50-110CX Inverters\_V1.2

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### Access EyeM4 web interface

Use a smart device or laptop under Wi-Fi function to search for the  $SG^{*********}$  (10 digits number) network that corresponds to the Dongle serial number.



Figure 7 WiFi connection

Open a web browser and enter IP address (11.11.11.1) and password: **pw1111** to access below EyeM4 web page.



Figure 8 Connection options

Then you can log in the account (please contact Sungrow for password) via the right top corner login button. When you log in for the first time, a help window will pop up for instruction.



Figure 9 The Welcome Screen

### Overview of main interface

EyeM4	Ξ					<b>0</b> 0 <b>A</b> 0	O Help	C English	L O&M user
🚦 Overview 👻	Shortcut Menu								
Device Monitoring									
X Device 👻	Device Setup	Transfer Configuration	System Maintenance						
1 Power Control 👻									
🔹 History Data 🗸 👻	PV-Plant Value								Expand~
O System	26.2 kwh		👩 17.441 kw		D Piece				
Run Information	982.2 kWh		30.0 kW		2 Piece				
System Maintenance	Total Yield		Max. adjustable active Power		Online Device				
Remote Maintenance	Inverter Realtime Values ( o	ff-grid 0, On-grid 1 )							
Message Export	Device Name	Device Model	Status	Daily Yield(kWh)	Active Power(kW)		Reactive Pow	er(kvar)	
Transfer Configuration	SG30CX(COM1-001)	SG30CX	Dispatch Running	26.2	17.441		0.421		
Port Parameter 🔻									
About									

Figure 10 Overview screen

#### Scanning for devices (Inverters):

Navigate to **'Device'** and click **'Device List**' section and click **'Auto search'** (inverters only at this point). The connecting devices will be display under 'Device List' section if connection is correct. Sungrow's inverters will be automatically detected as long as they are correctly connected and energised. Allow the search to complete.

Meanwhile, you can confirm the communication status for each device under **Communication status** section. Green icon indicates the connection works and red icon means no connection between EyeM4 and other device.

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Device list										0	
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Inverter log	NO.	SN \$	Device model \$		Interface \$	1	Aodbus address 💠				
Power control	1	T20190116005	SG-Inverter	(	DDM1	4	2				
History data •	2	T20190118003	SG-Inverter 255		COM1	1					

Figure 11 Search device

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E Overview 👻	Auto search							Add device	Delete 🕞 🕞 🗸
Device monitoring	ND. \$	2N	Device name	Device model	Interface \$	Modbus address 🔅	Forwarding IP 💠	Communication status	Operation
X Device	1	T2D190116005	SG80KTL-M(COM1-002)	SG80KTL-M	COM1	2	2	<i>с</i> ,	0
Device list	2	T20190116003	SG80KTL-M(COM1-001)	SG80KTL-M	COM1	1	1	90	0
Firmware update									
Inverter log				Device	lict				
T Power control				Device	list				
🕑 History data 🛛 👻									



### Add Energy Meter

The energy meter needs to be manually added which is same as any other 3<sup>rd</sup> party equipment.

To add the energy meter, click '**Add device**' and select a device type in the pop-up window and fill in the required information (Select 'Meter' and auto add 'COM1' and 'DTSD1352' and the change device address to 254)

#### Ensure the Port is COM 1

Please Select		
Please Select		
String Inverter		
Meter		
2		
Device Type		
Meter	Ţ	
Port		
COM1	$\overline{\nabla}$	
Device Model		
DTSD1352	Ţ	
Beginning Address (1-255)		
254		
During Operation (1.40)		

Figure 13 Add meter information

Check that the meter is connected.

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🚼 Overview 🔻	Aut	to Search	Add Device									Delete	C+ C+
Device Monitoring		No.	SN	Device Name	Device	Port \$	Device	Forwardin	Com	Operatio			
X Device		1	ACTIONNELLE	SG110CX(COM1-002)	SG110CX	COM1	2	2	<b>%</b>	0			
Device List		2		DTSD1352(COM1-254)	DTSD1352	COM1	254	3	ବ୍ତ	¢			]
Firmware Update													
AFD Activation													
T Power Control ▼													
<ul> <li>History Data</li> </ul>													
♦ System 👻													
About													





### Add CT Transformation Ratio

Navigate to **'Device Monitoring'** and select DTSD1352. If the ratio is 200/5, then enter value 40.

	Ξ		😒 0 🛕 0 🕜 Help 🌐 English 💄 O&M user
Overview	All	Realtime Values Initial Parameter	
General Information	SG10KTL-M(COM1-001)		Save
Current Alarms		Name	Value
Device Monitoring		PT Transformation Ratio	1
X Device -		CT Transformation Ratio	Enter desired value
T Power Control		Access Type	Gateway Electricity Meter
History Data			
♦ System 👻			
About			
♠ G.			

Figure 15 Set CT ratio



### Setup Export Control if required

Select **Power Control -> Active Power.** Then you can set all the parameters as following figures. The **Fixed Value of Active Power** is the part to set the power limit.

Note: make sure to disable 'Feed-in stop'

If it is 50 kW inverter and need export control to 20 kW as an example, then enter 'Fixed Value of Active Power' to 20 kW.

	Ξ	😵 0 🛕 0 🕜 Help 🜐 English 💄 O&M u	ser
🖬 Overview 🔻	Active Control Mode		
Device Monitoring	Local Power Control		
Y Device 🔻	Communication abnormality output (%)		
	0.0		
Power Control	Control Method		
Active Power	Closed-loop Control		
Reactive Power	Select Meter		
Reactive Fower	DTSD1352(COM3-001)		
Emergency Button	Wiring mode		
🔍 History Data 🛛 🔻	Direct connection -		
🗘 Suctorn	Start after communication recovery		
• System	Enable		
<ul> <li>About</li> </ul>	Start delay after communication recovery (0-120)s		
	60		
	Ξ	😣 0 🛕 0 🕜 Help 🌐 English 💄 O&M t	user
	Feed-in stop		
• Overview •	Disable		
Device Monitoring	Control Cycle (5-60)S		
X Device -	5		
	Instruction Type		
	kW 👻		
Active Power			
Reactive Power		Clear Data	
Emorgonov Button	Start Time	Fixed Value of Active Power(kW)	
Emergency Button	00:00	20.0	
<ul> <li>History Data </li> </ul>	23:59	20.0	

Figure 16 Set the export limit

After the initial settings are finished, the remote monitoring and remote-control function are needed to be confirmed set correctly.

Select the **System** on the left tool bar, then click **Port Parameters**. There is an option for the WiFi, select WiFi and enable the WiFi On-off. It will pop up the available WiFi networks. **Choose the customer network and enter the password**, it will display Available WLAN Networks when it is connected successfully.



Figure 17 Set the WiFi connection

Select **System-> Remote maintenance**, enable the function and make sure the **Remote Service Address** is selected as **International Server** 

EyeM4	Ξ	<b>⊗</b> 0 <u>∧</u> 0	Help	English	LO&M user
Device	Remote Maintenance				
T Power Control -	Remote Service Address				
🔍 History Data 🛛 👻	International Server				
🗘 System 🔺	Save				
Run Information	Remote Service Has Reen Connected 2444 (1880-80), CUITECLISMATCHUU CUITLIN				
System Maintenance					
Remote Maintenance					
Message Export					
Transfer Configuration					
Port Parameter 🔻					
About					
al O					

Figure 18 Enable Remote Maintenance

Then go to **System-> Transfer Configuration**, click the **Setting gear** highlighted in red to change the **Server Domain**. Please make sure the domain address is international server **api.isolarcloud.com.hk** 



#### Figure 19 Confirm the domain is correct

After the above settings are finished, you can go back to the Remote Maintenance and check if there is an information indicating the EyeM4 connect with iSolarCloud server. Meanwhile, you can find a cloud icon at the bottom left corner, it means the EyeM4 is on iSolarCloud when the icon lights up.

EyeM4	Ξ	🔕 0 🛕 0 🕜 Help 🌐 English 🙎 O&M use
🗘 System 🔺	Remote Maintenance	
	Enable	
Run Information	Remote Service Address	
System Maintenance	International Server	
Remote Maintenance	Save	
Message Export	Remote Service Has Been Connected	
Transfer Configuration		
RS485		
Mobile Network		
WiFi		
• About		
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Figure 20 Check the system connecting with iSolarCloud

If you have any questions, please take photos testing on site and contact Sungrow Service Department on 1800 786 476 or email to service@sungrowpower.com.au, Monday- Friday 9am - 5pm (AEDT).