

Connection & Settings Instructions for SEVEN Sensors to Growatt ShineMaster



## 1. Introduction

This document is prepared for Growatt ShineMaster users. The steps are explained below to connect SEVEN Sensor Box to ShineMaster.

The following meteorological data can be provided by SEVEN Sensor Box. The communication is provided via RS485 with Modbus RTU protocol.

- 1. 3S-IS, Irradiance Sensor (W/m<sup>2</sup>)
- 2. 3S-MT-PT1000, Module Temperature Sensor (°C)
- 3. 3S-AT-PT1000, Ambient Temperature Sensor (°C)
- 4. 3S-WS-PLS, Wind Speed Sensor (m/s)
- 5. 3S-WD, Wind Direction Sensor (°)
- 6. 3S-RH&AT, Relative Humidity Sensor (%)

## 2. Cable Connection

Connect the green wire of the output cable of the Sensor Box to A2 (RS485 A / Data (+)) on the ShineMaster RS485 port, and connect the yellow wire of the output cable of the Sensor Box to B2 (RS485 B / Data (-)) on the ShineMaster RS485 port. Another free port also can be selected for same purpose.

White and brown wires of the output cable of the Sensor Box power up the Sensor Box as shown in Table 1.

Brown	Power (+)
White	Power (-)
Green	RS485 A / Data (+)
Yellow	RS485 B / Data (-)

Table 1: Communication and Power Cable Color Coding

It is recommended to use part A2/B2 when connecting SEVEN Sensor Box to the datalogger.

A communication and power cable with magnetic field protection must be used between sensor and datalogger. Please don't use CAT 6 cable.

SEVEN Sensors are supplied with a voltage of 12-30 VDC. The recommended voltage value is 24 VDC. A high quality power supply must be used for the sensor supply.

SEVEN has the right to make modifications on this documentation without notice.

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Ambient Temperature Sensor

Figure 1: Growatt Weather Station



The sensor model can be different as per the customer's request.



If your sensor model is 3S-2IS, 3S-3IS, 3S-4IS or 3S-CWS, enter each orientations module number to the configuration tool to monitor the total effective irradiance and total effective module temperature before configurating in Growatt Monitoring System.



### 3. ShineMaster IP Address

Connect the PC and the ShineMaster LAN port to the network port of the router through the network cable so that they will be in the same network.

Go to the router management page and check the "Internet host list" to request the IP address of the Shine-Master, with the serial number of the ShineMaster as device name. This IP address is the one assigned by the router to the ShineMaster.



In order for the router to assing an IP address to the ShineMaster, the automatically assignment (DHCP) must be enabled in the router.

After knowing the ShineMaster IP address, you can log in to the configuration interface by entering ShineMaster's IP address in the browser search bar.

### 4. Settings

**Step 1 :** Enter the Username and the Password (the default login Username: admin, Password: admin) then click on "Login" to access the Growatt ShineMaster system page.



Username : admin, Password : admin in the factory default.

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		ShineMaster Setting Center	简体中	× [	Englis	h
	Datalogger information Export limit & Datalogger setting Network setting					
	System management					
	Device state					
	Logout	Username Password Login				

Figure 2: Growatt ShineMaster Interface

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**Step 2 and 3 :** Open the "Datalogger information" page. Check the connection status of the ShineMaster in this page.

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	ShineMaster	Setting Center	简体中文	English
2 Datalogger information Export limit & Datalogger setting 3 Network setting	Datalogger information Connection status SN	Online EDF5CHM01W		
System management	Server IP Server port	server.growatt.com 5279 193 469 4 95		
Device state	Time Datalogger MAC	5 00:47:48:AD:FB:8A		
Logout	Hardware version Firmware version	V1.0 1.0.6.0		
	Datalogger type Device number	ShineMaster		
	Export limit enable	2 Disable 0		
	Baudrate	RS485_1: 9600;RS485_2: 9600		

Figure 3: Datalogger Information

**Step 5 :** Go to "Export Limit & Datalogger setting" page.

**Step 6 :** To add the SEVEN Sensor Box as shown in Figure 4, select the RS485 port which the SEVEN Sensor is connected to and select "SEVEN-3S-IS" for automatic configuration from "Add or delete devices section. Then enter the ID of the Sensor and select "Add " option.

Step 7 : Click on "Save" button.

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	Netwo	ork set	ling	Meter address	0				
	Netwo	ork set	<u></u> 9	Monitor mode	● NONE ○ Export limitation ○ Storage Parallel □				
	<u>Syste</u>	m man	<u>agement</u>	Reactive power regulation	○ On ® Off				
	Devic	e state		Add or delete devices	RS485_2 V SEVEN-3S-IS V 1 @ Add O Del				
				SCADA to Vietnam	○ On <sup>®</sup> Off				
				Update firmware	○ Yes ● No				
	Lo	ogout		Reboot	○ Yes ® No	~			
					Save Cancel	6			

Figure 4: Export Limit&Datalogger Setting

In case more than one device is connected to the port you have connected the sensor to, device ID's must be different while baudrate and parity values must be some. You can change the device ID via SEVEN configuration tool.

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**Step 8 and 9 :** To check if the sensor connection is successful, open the "Device State" page and check the "Device State" section in the table. If the sensor connection is successful, this section will be "Normal". If the sensor connection is not successful, it will be "Suspend".

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	ShineMaster Setting Cente	er	简体中文 English
Datalogger information Export limit & Datalogger setting	Address         Device type         Device           001         SEVEN-3S-IS	e SN Device state Channel Normal RS485_1	
Network setting System management Device state			
8 Logrant			

#### Figure 5: Sensor Connection State

## 5. ShineServer Interface

To access the Growatt ShineServer monitoring system enter the server address on the browser of your PC. (server.growatt.com)

**Step 10 :** Enter the Username and Password then click on "Sign In" button.



Figure 6: ShineServer Monitoring System



**Step 11 :** In the "Dashboard" screen, choose your PV plant then go to "All Devices" in "My Photovoltaic Devices" section as shown in Figure 7.



Figure 7: ShineServer Dashboard

**Step 12 and 13 :** Click on "Data Logger". Then click on "Add" to add the ShineMaster datalogger to the ShineServer.

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		Dashboard	Energy	Log	Setting			
tovoltaic Device	e oun conge		1 <sup>106</sup> -				Ba -	
🦉 P	ower		- Gen	neration			Revenue	
0 Current Power(kW)	0 Rated Power(kW)	<b>O</b> Today(kWh)	0 This Mon	th(kWh)	0 Total(kWh)	O Today(\$)	<b>O</b> This Month(\$)	0 Total(\$)
Data Logger Inverter weather								12
						Davice Cortal Number (	e Allac	13

Figure 8: ShineServer Device Screen

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**Step 14 and 15 :** On the page that opens, write the serial number of the datalogger in the "Datalogger Sn" section and the check code written on the back surface of the datalogger in the "Check Code" section. Finally, select your PV Plant from "Assigned Plant" drop-down list then click on "Yes" button.

Add Data Logger	×
14 Data Logger Sn	•
Check Code	•
Assigned Plant	
Third Par	ty Device
	15 Yes Cancel

Figure 9: Adding ShineMaster Datalogger Information

**Step 16 and 17 :**After adding the device, device information will appear in "Data Logger" menu as shown in Figure 10.

			Dashboard	Energy Log	Setting			
nt Location: Dashboard>	Photovoltaic Device>Data Logger							
tovoltaic Device								
	Power			Generation			Revenue	
0	0		0	0	0	0	0	0
Current Power	(KW) Rated Power(k	W)	Today(kWh)	This Month(kWh)	Total(kWh)	Today(\$)	This Month(\$)	Total(\$)
Current Power	(kW) Rated Power(k	W)	Today(kWh)	This Month(kWh)	Total(kWh)	Today(\$)	This Month(\$)	Total(\$)
Current Power	(kW) Rated Power(k er weather	w)	Today(kWh)	This Month(kWh)	Total(kWh)	Today(\$)	This Month(\$)	Total(\$)
Current Power	(kW) Rated Power(k er weather	w	Teday(kWh)	This Month(kWh)	Total(KWh)	Today(5) Device Serial Number O	This Month(\$)	Total(\$) Search Add
Current Power	(MM) Rated Power(k	W	Today(kWh)	This Month(KWh)	Total(KWh)	Today(1) Device Serial Number O	This Month(5)	Total(\$) Search Add
Current Power Data Logger Inverte DYD2938068 2 (1)	(MA) Rated Powerk	w	Today(kWh)	This Month(kVM)	Total(kWh)	Today(1) Device Serial Number O	r Alias	Total(5) Search Add
Current Power Data Logger Inverte DYD2938068 / (1)	(kan) Rated Power(k er weather Data Logger: DYD123456A ①	wy Status: Connecti	Today(kWh)	This Month(400h)	Teta(kWh)	Today(S) Device Serial Number O	r Alias	Total(5) Search Add
Current Power	(kon) Rated Power(k er weather Data Logger: DYD123456A ① User Name: SevenSensor	wy Status: Connecti Plant Name: Arg	Today(kWh)	This Month(Wh) te Time: 2021-11-01 14:53:44 te Type: ShineMaster	Tetul(kWh)	Device Serial Number O	r Allas	Total(3) Sourch Add
Current Power Data Logger Inverte DYD2938068 < (1)	(kan) Rated Power(k er weather Data Logger : DVD123456A ① User Name: SevenSensor Ip & Port:	w) Status: Connecti Plant Name: Arg Data Update Inte	Today(KVM)	This Month(Wh) te Time: 2021-11-01 14:5344 e Type: ShineMaster are Version: 1.0.5.9	Tota(0044)	Today(I) Device Serial Number O	r Allas	Tota(3) Sourch Add

Figure 10: Added Datalogger Devices

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Step 18 and 19: In "Weather" menu, all meteorological data will appear as shown in Figure 11.

**Step 20 :** Click on "History Data" to view the history of meteorological data as shown in Figure 11. You can watch the old data of sensors as shown in Figure 12.

ROWATT ArgesimGE	S <del>-</del>			👕 Switch them	ne   😌 Add Plant   🔶 Add	d Data Logger 👘 Add Optimiz	er 🚺 SevenSensor
vice		Dashboard	Energy Log	Setting			
nt Location: Dashboard>Photovolta	ilc Device>weather						
	Power		Generation			Revenue	
<b>O</b> Current Power(kW)	0 Rated Power(kW)	<b>O</b> Today(kWh)	<b>O</b> This Month(kWh)	0 Total(kWh)	0 Todsy(\$)	<b>O</b> This Month(\$)	0 Total(\$)
TURKEY_ENV_DEVICEZ	ogger: EDF5CHM01W Status: Normal	Update Time: 2023-0	2-09 12:56:59 Mailing A	ddress: 10 Úsi	Device Seria er Name: SevenSensor	I Number Or Alias:	20 Search
Plant N Environ	Iame:         ArgesimGES         Wind Speed(M/S): 1           ument Temp(°C):         11.8         Backplane Temp(°C):	0         Wind Direction(*): 10           4.9         Solar Radiation(kWh)	9 environm 0.0	ent humidity(%): 43.0 Sol	lar Irradiance(W/m²): 734		
					Total 1	Item Denimon 1 Next	
							To First 1 Page 1

Figure 11: Added Weather Station

GROWATT ArgesimGES -							👕 Switch theme			
Device			D	7/h ashboard	LII Energy Log	Setting				
Current Location: Dashboard>Photovoltaic Device>weather Photovoltaic Device										
Power	•	listory Data(TURKE	Y_ENV_DEVICE)		-578 Generation	ate: (2021-11-01 - 2021-	11-01 Search	Export	Revenue	
0	No.	Time	Wind speed(M/S)	Wind direction(")	Solar irradiance (W/m)	Environment temp. (°C)	Backplane temp. ("C)	Environment h	0	0
Current Power(kW)	Ratec 1	2021-11-01 14:56:12	0.0	0	3	21.0	21.6	0.0	This Month(\$)	Total(\$)
	2	2021-11-01 14:51:14	0.0	0	3	21.0	21.6	0.0		
Data Logger Inverter weather	3	2021-11-01 14:36:18	0.0	0	3	0.0	0.0	0.0		
	4	2021-11-01 14:31:21	0.0	0	4	0.0	0.0	0.0	ice Serial Number Or Alias:	Search
	5	2021-11-01 14:26:24	0.0	0	3	0.0	0.0	0.0		
TURKEY_ENV_DEVICE	6	2021-11-01 14:21:31	0.0	0	3	0.0	0.0	0.0		
(1) Data Logger: DYD2938068	St 7	2021-11-01 14:16:29	0.0	0	33	0.0	0.0	0.0		History Data
User Names SevenSenser	8	2021-11-01 14:11:31	0.0	0	0	0.0	0.0	0.0		
User realite. Sevenseison	9	2021-11-01 14:06:34	0.0	0	1	0.0	0.0	0.0		
Solar Irradiance(W/m <sup>2</sup> ): 3	Er 10	2021-11-01 14:01:21	0.0	0	0	0.0	0.0	0.0		
	11	2021-11-01 13:56:46	0.0	0	0	0.0	0.0	0.0	Total 1 Item Previous 1 Next To First	1 Page Ves
	12	2021-11-01 13:53:53	0.0	0	2	0.0	0.0	0.0		
							More	Cancel		

Figure 12: Weather Station History Data

After completing all the steps, you can monitor the data provided by SEVEN Sensor in the monitoring system.

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## **Contact Informations:**

Please feel free to contact our technical team if you face any difficulties during settings.

# Can GÜNDÜZ

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