

Service – Modbus Issues



How to repair Modbus Issues:

Customer Calls in for a Modbus Communication issue.

1. Collect Information

- a. What is the HMI Firmware version?
 - i. In order to find the HMI firmware version go to Advanced Info – Version – The screen will show the model (63,65,66 etc) tell the customer to hold down + and – buttons (middle two buttons)
 - ii. Collect all 6 numbers aka 110228. The first 2 numbers is the HMI version (11) next 2 is Arc Fault Firmware (02) last 2 is dsp firmware (28)
- b. What is the datalogger used in the system? Solis? Power Logger? Acquisuite?
 - i. Typically, most of the CSI inverters are being connected with the Also Energy monitoring system. It's important to not just say Also Energy Datalogger but the actual datalogger model.
- c. How many inverters are communicating?
- d. How many inverters are not communicating?
 - i. Remember to collect HMI version of each inverter **not** communicating as well as the inverters that **are** communicating.
- e. If the customer is using Also Energy do the following:
 - i. Did the customer call Also Energy? If not please direct them too and have Also Energy use the correct driver.
 - ii. If the customer has a Sunspec only HMI firmware make sure they are using a Ginlong Sunspec Modbus driver.
- f. If the customer has Sunspec Only HMI version and wants an update then put in a request to send a firmware update tool.

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HMI Upgrade Document –

Pay attention to Version 10 on the three phase 50-66K. This version starts to have Sunspec. Versions 10 through 19 are Sunspec Only Modbus. These inverters do not have the normal Sunspec Modbus. However these inverters can be upgraded to a later version (currently 38) that have Normal Ginlong Modbus and “Updated Sunspec Modbus” to include all data points.

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Versions 0F and older can not be upgraded by a FIRMWARE UPDATE TOOL. These can only be updated via a J-Link update tool with Arm software. Currently Travis S. is the only person that is capable of doing this.

However, 0F works appropriately with Normal Ginlong Modbus. See the picture to the right. This is the driver in the Also Energy Portal that works with the 0F HMI firmware.

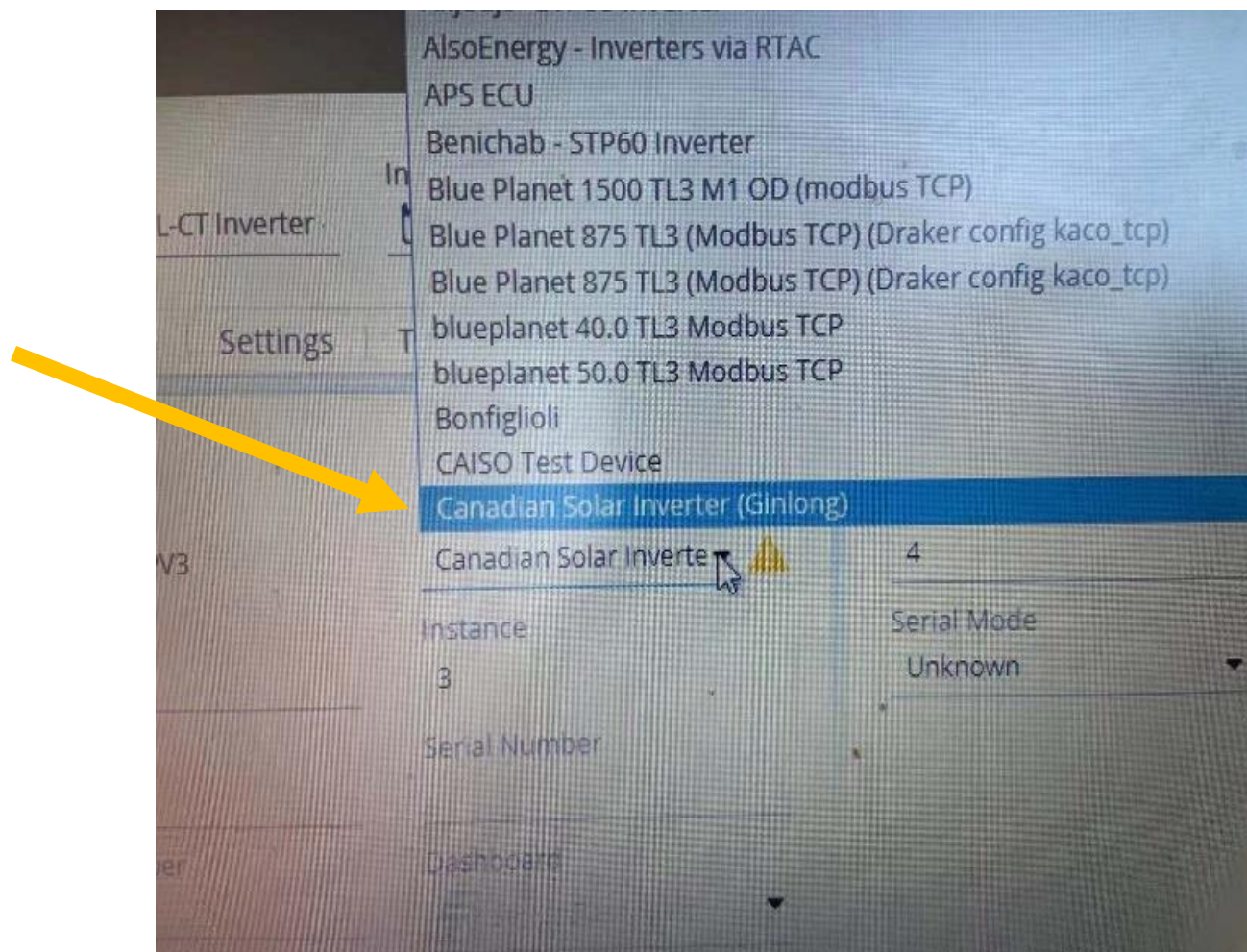
Product	Series	DSP (Open Cover upgrade)	DSP (Support external upgrade)		HMI (Open Cover Upgrade)	HMI (Support external upgrade) (Lower Version) (Not Support remote upgrade)	HMI (Support external upgrade) (Higher Version) (Support remote upgrade)
Single Phase	1P(2.5-6)K-4G-US	All Support	Initial DSP firmware support external upgrade	Rename the file to 28062APP.bin	All Support	Ver.15 and below	UL SUNSPEC Version Support remote upgrade Ver.16 and above
	1P(6-10)K-4G-US		Manufactured after Oct of 2017				
Three Phase	(25-40)K-US		If the right side of the inverter has a hole	Rename the file to 28335APP.bin		Below Ver.30	UL SUNSPEC Version Support remote upgrade Ver.30 and above This model requires special upgrade stick from Ver.30 to Ver 3A Rename file to HMI.bin (Travis has five)
	(50-66)K-US		Initial DSP firmware support external upgrade				
How to upgrade		Use laptop + J-link	Use external upgrade stick + cable + USB disk		Use laptop + J-link	Both old and new upgrade stick are OK, the file needs to be renamed to HMI.bin	Only new upgrade stick is OK, the file needs to be renamed to HMI_WIFI.bin

1. Remote upgradable HMI and non-remote upgradable HMI are not compatible with each other. Don't use upgrade stick to upgrade HMI firmware between each other. It will fail with black dots showing on the LCD

2. Laptop + J-link (open cover upgrade) can upgrade the between remote upgradable HMI and non-remote upgradable HMI

3. Sunspec HMI and non-sunspec HMI are not compatible with each other. Don't use upgrade stick to upgrade HMI firmware between each other. It will fail with black dots showing on the LCD

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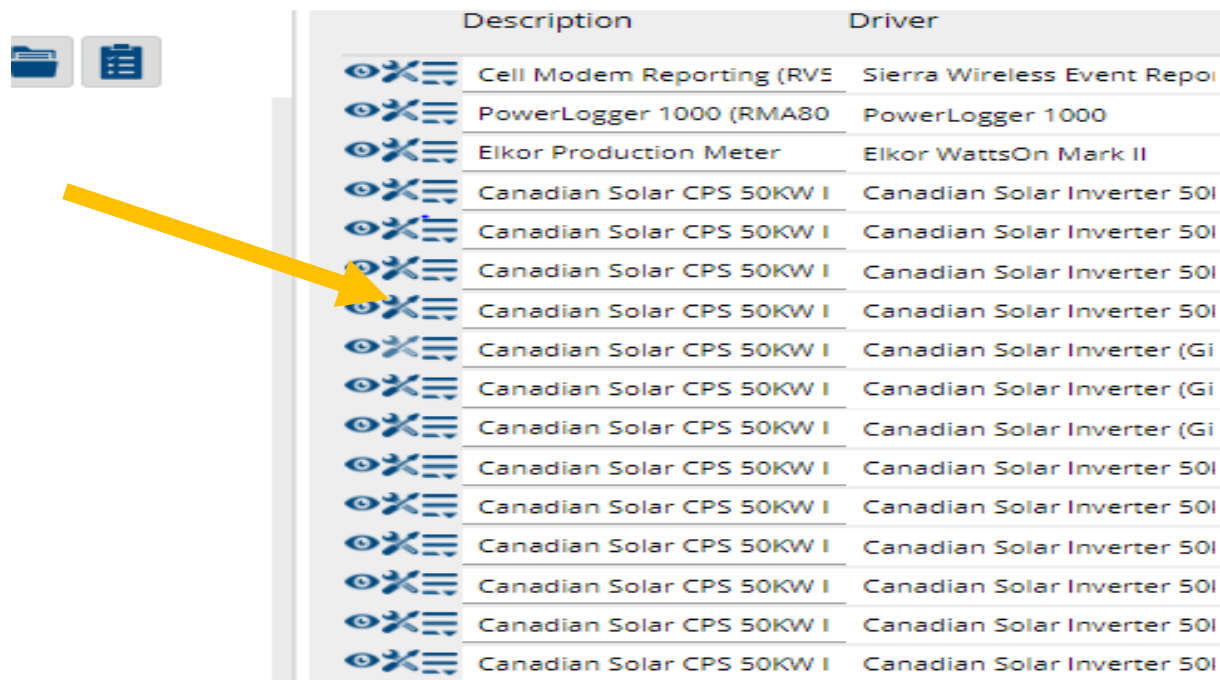
In order to change in the Also Energy Portal have the customer login:

















































Service – Modbus Issues



1st. Select “Hardware”

2nd: Click The Wrench and screwdriver item in the middle



	Description	Driver
  	Cell Modem Reporting (RVE	Sierra Wireless Event Repoi
  	PowerLogger 1000 (RMA80	PowerLogger 1000
  	Elkor Production Meter	Elkor WattsOn Mark II
  	Canadian Solar CPS 50KW I	Canadian Solar Inverter 50I
  	Canadian Solar CPS 50KW I	Canadian Solar Inverter 50I
  	Canadian Solar CPS 50KW I	Canadian Solar Inverter 50I
  	Canadian Solar CPS 50KW I	Canadian Solar Inverter 50I
  	Canadian Solar CPS 50KW I	Canadian Solar Inverter (Gi
  	Canadian Solar CPS 50KW I	Canadian Solar Inverter (Gi
  	Canadian Solar CPS 50KW I	Canadian Solar Inverter (Gi
  	Canadian Solar CPS 50KW I	Canadian Solar Inverter 50I
  	Canadian Solar CPS 50KW I	Canadian Solar Inverter 50I
  	Canadian Solar CPS 50KW I	Canadian Solar Inverter 50I
  	Canadian Solar CPS 50KW I	Canadian Solar Inverter 50I
  	Canadian Solar CPS 50KW I	Canadian Solar Inverter 50I
  	Canadian Solar CPS 50KW I	Canadian Solar Inverter 50I

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Configuration Barrington Power ▾ Middleton Lumber ▾ Middleton Lumber ▾ Canadian Solar

Description: Canadian Solar CPS 50KW In Install Date: Oct 24, 2018 Gateway ID: 000CC6867C46

Basic | PV | Settings | Tags

General

Function PV syst ▾ PV2	Driver Canadian Solar Inverte ▾
Asset ID _____	Instance 2
Sort 13	Serial Number _____
Model Number _____	Dashboard Select Dashboard ▾

Communication

Address 3	Port 1
Serial Mode Unknown ▾	Baud 9600

Related Hardware

Inverter Group Select Hardware ▾	Meter Output Elkor Production ... Middleton Lumber x ▾
Weather Station 1 Weather Station (... Middleton Lumber x ▾	Weather Station 2 Select Hardware ▾



Switches

<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Validated
<input type="checkbox"/> Offline	<input type="checkbox"/> Report Exclude
<input type="checkbox"/> Limited Communication	

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After that is Completed verify the inverter is outputting the correct data. The below inverter has correct data.

Status			
Barrington Power > Middleton Lumber > Middleton Lumber > Canadian S			
Last Communication 10/28/2019, 6:03:08 PM EDT   Not uploading Last Attempt 10/28/2019, 6:03:15 PM EDT			
Registers: Measurements			
Name	Value	Units	
AC Power Output	0.020	kW	
AC Energy	8023.000	kWh	
AC Grid Frequency	60.010	Hz	
L1-L2 AC Voltage	283.800	V	
L2-L3 AC Voltage	282.900	V	
L1-L3 AC Voltage	289.000	V	
Phase A Current	0.000	A	
Phase B Current	0.000	A	
Phase C Current	0.000	A	
DC Voltage 1	211.100	V	
DC Current 1	0.100	A	
DC Voltage 2	211.700	V	
DC Current 2	0.100	A	
DC Voltage Avg	211.400	V	
AC Phase Current	0.000	A	
AC Line Voltage	283.800	V	
Inverter Status	3		
Inverter Temperature	68.540	°F	

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This is an example of incorrect inverter data.

Status			
Barrington Power ▾ > Middleton Lumber ▾ > Middleton Lumber ▾ > Canadian Solar CPS 50kW Inverter ▾			
Last Communication 10/28/2019, 6:02:57 PM EDT ⓘ ⚠ Not uploading Last Attempt 10/28/2019, 6:03:03 PM EDT			
Measurements Status Scale Factors Controls			
Registers: Measurements			
Name ▾	Value ▾	Units ▾	
AC Current	65535.000	A	
Phase A Current	0.000	A	
Phase B Current	0.000	A	
Phase C Current	0.000	A	
Phase AB Voltage	65535.000	V	
Phase BC Voltage	65535.000	V	
Phase CA Voltage	65535.000	V	
Phase AN Voltage	2831.000	V	
Phase BN Voltage	2834.000	V	
Phase CN Voltage	2872.000	V	
Active Power	0.000	kW	
Line Frequency	6003.000	Hz	
Apparent Power	6553.500	kVA	
Reactive Power	0.000	kVAR	
Power Factor	65.521	PF	
Total Energy	7676000.000	kWh	
DC Power	0.000	kW	
Internal Temperature	386.600	°F	