Appendix A: Errors and Troubleshooting

This appendix describes general system problems, and how to troubleshoot them. For further assistance, contact SolarEdge Support.

Troubleshooting Communication

Troubleshooting Ethernet Communication

When using Ethernet communication, use the **Server Communication Status** window to identify the location of the error:

xxxxxxxx is a string of 1s and 0s showing an eight-bit communication connection status. 1 indicates OK and 0 indicates an error.

Bit Location	Error Message	Cause and Troubleshooting
1st	LAN Disconnected	Physical connection fault. Check the cable pin-out assignment and cable connection. Refer to *Creating an Ethernet (LAN) Connection* on page 47
2nd	DHCP Failed, or Invalid DHCP Config	IP settings issue. Check the router and configuration. Consult your network IT.
3rd	Gateway Ping Failed	Ping to router failed. Check the physical connection to the switch/router. Check that the link LED at the router /switch is lit (indicating phy-link). If OK - contact your network IT, otherwise replace the cable or change it from cross to straight connection.
4th	G Server Ping Failed	Ping to google.com failed. Connect a laptop and check for internet connection. If internet access is unavailable, contact your IT admin or your internet provider. For Wi-Fi networks, ensure that username and password are as defined in the internet provider AP/router.
5th	Server x Ping Failed	Ping or connection to SolarEdge server failed. Check the SolarEdge server address, under **LAN Conf** submenu: Address: prod.solaredge.com Port: 22222 Check with your network administrator whether a firewall or another device is blocking transmission.
6th		
7th		
8th	Tcp Connect. Failed	

Troubleshooting RS485 Communication

1. If the message **Master Not Found** appears, check the connections to the master device and fix if required.
2. If after slave detection the number of slaves displayed in the master under **RS485-X Conf → Slave Detect** is smaller than the actual number of slaves, use one of the following methods to identify missing slaves and troubleshoot connectivity problems:
   - Use the **Long slave Detect** to retry connecting to slaves
   - Analyze the **Slave List** to check for missing slaves, and check their connection

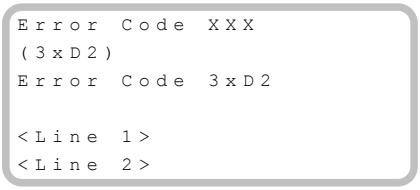
   Refer to https://www.solaredge.com/sites/default/files/troubleshooting_undetected_RS485_devices.pdf

Additional Troubleshooting

1. Check that the modem or hub/router is functioning properly.
2. Check that the connection to the internal connector on the communication board is properly done.
3. Check that the selected communication option is properly configured.
4. Use a method independent of the SolarEdge device to check whether the network and modem are operating properly. For example, connect a laptop to the Ethernet router and connect to the Internet.
5. Check whether a firewall or another type of network filter is blocking communication.

Error Codes

The error messages include an error number (in firmware version 3.18xx and before) or a code (in Firmware version 3.19xx and above) and a description:



XXX: The error number (firmware version 3.18xx and before).

(#-X#): A code indicating the source of error and the error information (firmware version 3.19xx and later).

Line 1-2: Error description

The error numbers/ codes may differ depending on the inverter type as described in the table below. For troubleshooting errors that are not listed, contact SolarEdge support.

Make sure to have this information at hand when contacting SolarEdge Support for advanced troubleshooting.

Code		Error Message	Troubleshooting
CPU v3.18xx and below	CPU v3.19xx and above		
44	3xB	No Country Selected	Select the country as described in *Country and Grid* on page 34
45	3x2	Inv. Comm. Error	No communication with the digital board. Contact SolarEdge support.
48	3xF	SW Error	Contact SolarEdge support.
176	3x6A	For info contact your installer	Inverter remotely locked. Contact your installer.
178	3x6D	Internal RGM Error	Check: • The wiring of the meter CTs • Connections to the inverter communication board.
185	3x6E	Meter Comm. Error	Refer to the meter troubleshooting in http://www.solaredge.com/sites/default/files/solaredge-meter-installation-guide.pdf
193	3x6A	OFF/ON to Reconnect	Turn the ON/OFF switch to ON to initiate production.
169	18xA9		RCD Sensor Error. Contact SolarEdge support.
166-168, 170	18xA6-A8 , 18xAA	HW error	Contact SolarEdge support.
171	18xAB	Over voltage Vin	Over voltage in DC input of the inverter. Check the strings' voltage.
12	18xC	ARC_ DETECTED	Refer to http://www.solaredge.com/sites/default/files/arc_fault_detection_application_note.pdf .
13	18xD	ARC_PWR_ DETECT	
55	18x37	V-Line Max	AC voltage too high ○ Verify that the inverter is set to the correct country. ○ Turn OFF the inverters in the site and verify AC grid voltage. ○ If the inverter is located far from the

Code		Error Message	Troubleshooting
CPU v3.18xx and below	CPU v3.19xx and above		
			connection point to the grid, use a larger gauge AC wire. ○ Consult the grid operator. ○ If permitted by local authorities, change the grid protection values. Refer to http://www.solaredge.com/files/pdfs/viewing_grid_protection_values.pdf
56	18x38	V-Line Min	AC voltage too low ○ Verify that the inverter is set to the correct country. ○ Consult the grid operator. ○ If permitted by local authorities, change the grid protection values. Refer to http://www.solaredge.com/files/pdfs/viewing_grid_protection_values.pdf
57, 59, 60	18x39/3B/3C	I-ACDC L1/L2/L3	AC overcurrent. Contact SolarEdge support.
61	18x3D	I-RCD STEP	Ground Current – RCD. Contact SolarEdge support.
62	18x3E	I-RCD MAX	
64-66	18x40-59/A-F	F-L1/L2/L3 **Max** 1/2/3	AC frequency too high (Line 1/2/3) ○ Verify that the inverter is set to the correct country. ○ Consult the grid operator. ○ If permitted by local authorities, change the grid protection values. Refer to http://www.solaredge.com/files/pdfs/viewing_grid_protection_values.pdf
67-69	18x40-59/A-F	F-L1/L2/L3 **Min** 1/2/3	AC frequency too low (Line 1/2/3) Handle as for the error above.
96,98	18x60/18x62	Islanding Trip1/2	AC grid voltage malfunction. When AC voltage returns the inverter should restart after the reconnection time. If the problem persists, consult with the grid operator.
100-102	18x64-66	TZ L1/L2/L3	AC overcurrent. Contact SolarEdge support.
111-113	18x6F/70/71	Vsrg L1/L2 /L3 Max	AC voltage surge. ○ Check the AC connection to inverter. ○ Verify that the inverter is set to the correct country. ○ Check with the grid operator if a large surge source or irregular load exists near the site. ○ Verify that the output wire size matches the distance between the inverter and the location of the grid connection. ○ Use a larger gauge wire for the AC output. ○ Refer to the *AC Wiring Application Note*

Code		Error Message	Troubleshooting
CPU v3.18xx and below	CPU v3.19xx and above		
			http://www.solaredge.com/files/pdfs/application-note-recommended-wiring.pdf
117	18x75	Overtemp	Temperature too high ○ Verify proper inverter clearances. ○ Make sure the heat-sink fins are clean and unobstructed.
118	18x76	Undertemp	Temperature too low Make sure the inverter is installed in a location with ambient temperatures within the range specified in the datasheet.
123	18x7B	MainError	Grid measurements are out of range. Contact the grid operator.
127	18x7F	IRCDMax	RCD current surge. Ground faults may occur due to insufficient insulation to the ground. **WARNING!** ELECTRICAL SHOCK HAZARD. Do not touch uninsulated wires when the inverter cover is removed. Only a qualified technician should handle this problem, and only after taking proper precautions. 1. Turn the inverter ON/OFF switch to OFF. 2. Wait five minutes for the input capacitors to discharge. 3. Disconnect the AC breaker. 4. Disconnect the DC inputs. 5. Connect each DC string separately, turn the AC and the inverter ON/OFF switch to ON, until the error appears for the faulty string. ○ Do not connect strings with a grounding fault to the inverter. A certified installer must fix the faulty string before connecting it to the inverter ○ For further documentation, contact SolarEdge Support.
133	18x85	Temp Sensor fault	Broken or unconnected temperature sensor. Contact SolarEdge Support.
134	18x86	Isolation	PV Isolation fault. The inverter has detected the PV solar array is not properly isolated from ground earth. The isolation is checked each time the inverter starts up. ○ Check the PV installation for isolation problems and ground leakage. ○ Only a certified PV installer must fix the faulty string before connecting it to the inverter. ○ Refer to www.solaredge.com/files/pdfs/applicatio

Code		Error Message	Troubleshooting
CPU v3.18xx and below	CPU v3.19xx and above		
			n_note_isolation_fault_troubleshooting.pdf
137	18x89	RCD Test	Contact SolarEdge support.
158	18x9E	Controller 3 Err	Contact SolarEdge support.
163	18xA3-5	Tz Over current 1/2/3	Contact SolarEdge support.
166-168	18xA6-8	Tz Over voltage cap1/2/3	○ Verify that the inverter is set to the correct country. ○ Turn OFF the inverters in the site and verify AC grid voltage. ○ If the inverter is located far from the connection point to the grid, use a larger gauge AC wire. ○ Consult the grid operator. ○ If permitted by local authorities, change the grid protection values. Refer to http://www.solaredge.com/files/pdfs/viewing_grid_protection_values.pdf
169	18xA9	Tz Over current Rcd	Contact SolarEdge support.
178-180	18xB2-4	Vf1/2/3 surge	Ground current surge. ○ Check the AC connection to the inverter ○ Check with the grid operator if a large surge source or irregular load exists near the site. ○ If the grid does not have problems contact SolarEdge support.
199	18xC7	RSD Error	Rapid Shutdown hardware error. Contact SolarEdge support.

Power Optimizer Troubleshooting

If the inverter status screen indicates that not all power optimizers are paired or not all are reporting (P_OK xxx/yyy, and x<y), those optimizers can be identified through the LCD. Refer to https://www.solaredge.com/sites/default/files/non_reporting_power_optimizers.pdf

Problem	Possible cause and troubleshooting
Pairing failed	Power optimizers are shaded. If you connected the inverter to the monitoring platform, retry pairing remotely (during sunlight). Make sure to leave the inverter ON/OFF switch ON and that S_OK appears in the status screen.
String voltage is 0V	Power optimizer (s) output is disconnected. Connect all power optimizer outputs.
String voltage not 0V but lower than number of optimizers	Power optimizer(s) not connected in the string. Connect all power optimizers
	Module(s) not connected properly to power optimizer inputs (not applicable to smart modules). Connect the modules to the optimizer inputs
	String reverse polarity. Check string polarity using a voltmeter and correct if needed.

Problem	Possible cause and troubleshooting
String voltage is higher than number of optimizers  **WARNING!** If the measured voltage is too high, the installation may not have a safe low voltage. PROCEED WITH CARE! A deviation of ±1% per string is reasonable.	Extra power optimizer(s) connected in the string (not applicable to smart modules). Check if an extra power optimizer is connected in the string. If not – proceed to next solution.
	A module is connected directly to the string, without a power optimizer (not applicable to smart modules). Verify that only power optimizers are connected in the string and that no module outputs are connected without a power optimizer. If the problem persists, proceed to the next step.
	Power optimizer(s) malfunction. ○ Disconnect the wires connecting the power optimizers in the string. ○ Measure the output voltage of each power optimizer to locate the power optimizer that does not output 1V safety voltage. If a malfunctioning power optimizeris located, check its connections, polarity, module, and voltage. ○ Contact SolarEdge Support. Do not continue before finding the problem and replacing the malfunctioning power optimizer. If a malfunction cannot be bypassed or resolved, skip the malfunctioning power optimizer, thus connecting a shorter string.