9.1.2 Arc Fault Detection Self-test Fault

An auto-test circuit is included in the module design of the inverter's AFDI function.

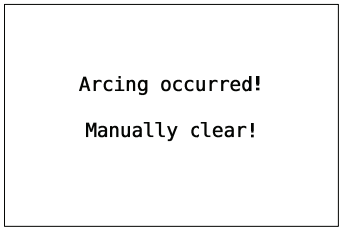
If a DC arc fault is detected, the corresponding fault code will display on the LCD screen.

NOTICE

Refer to "9.1.4 Troubleshooting of Faults in LCD Screen" for display fault code and description to remove fault and manually start-up the inverter.

9.1.3 DC Arc Fault

If a DC arc fault is detected during normal operations, the inverter will disconnect from the AC grid.



NOTICE

The DC arc fault is displayed on the inverter's LCD screen and the inverter is powered off. Please check the circuit and manually remove the fault by pressing ENTER.

9.1.4 Troubleshooting of Faults in LCD Screen

When faults occur, "Fault" state will be shown on the main screen. Press ➘ to view multiple "current fault" information pages.

Fault Code	Description	Troubleshooting
0002	The grid voltage has exceeded inverter allowable upper limit.	1. Check the voltage of the grid. 2. If the grid voltage exceeds the permissible range of inverter protective parameters, ask utility grid company for solution. 3. If the grid voltage is within the permissible range, contact Sungrow Service Dept..
0003	Inverter has checked that the instantaneous sample value of the grid voltage exceeds the allowable limit for some	1. This is a short-term fault due to grid condition. Wait a moment for inverter recovery. 2. If the fault still exists, please contact Sungrow Service Dept..

Fault Code	Description	Troubleshooting
	time.	
0004	The grid voltage has fallen below inverter's allowable lower limit.	1. Check the voltage of the grid. 2. If the grid voltage exceeds the permissible range of inverter protective parameters, ask utility grid company for solution. 3. If the grid voltage is within the permissible range, contact Sungrow Service Dept..
0005	The grid voltage is too low.	1. This is a short-term fault due to grid condition. Wait a moment for inverter recovery. 2. If the fault still exists, please contact Sungrow Service Dept..
0006	The AC output current exceeds inverter protective limit.	1. The inverter will resume if the output current falls below the protective value. 2. If the fault still exists, please contact Sungrow Service Dept..
0007	Inverter has checked AC overcurrent temporarily.	The inverter will self-recover after several seconds.
0008	The grid frequency has exceeded inverter allowable upper limit.	1. Check the frequency of the grid. 2. If the grid frequency exceeds the permissible range of inverter protective parameters, ask utility grid company for solution. 3. If the grid frequency is within the permissible range, contact Sungrow Service Dept..
0009	The grid frequency has fallen below inverter allowable lower limit.	
0010	Islanding	1. Check whether AC circuit breaker is triggered. 2. Check whether AC cables are all firmly connected. 3. Check whether AC fuses are blown out. 4. Check whether grid is not on service. 5. If all conditions are OK and this fault still occurs in the LCD screen, contact Sungrow Service Dept..
0011	The DC component of AC current has exceeded inverter limit.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0012	Inverter has detected that there is a failure current.	1. Check the PV strings for ground fault. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0013	Inverter has checked that the grid is abnormal	1. Wait a moment for grid recovery. 2. If the grid parameters exceed the permissible range of inverter protective parameters, ask utility grid company for

Fault Code	Description	Troubleshooting
		solution. 3. If the grid frequency is within the permissible range, contact Sungrow Service Dept..
0014	The average grid voltage over 10 minutes is not within the permissible range.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0015	Grid impedance has exceeded inverter's limit	1. Check AC cables for appropriate size. 2. Wait a moment for inverter recovery. 3. If the fault occurs repeatedly, contact Sungrow Service Dept..
0016	The AC output overloads.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0017	The inverter has checked that there is unbalance between the three phase voltages.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0019	The bus voltage is temporarily high.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0020	The bus voltage is high.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0021	Inverter has checked that there is overcurrent of PV1 input.	Check the layout and the wiring of PV1 input.
0022	Inverter has checked that there is overcurrent of PV2 input.	Check the layout and the wiring of PV2 input.
0023	PV configuration mode has changed during inverter running.	Check the PV input configuration mode and restart the inverter when necessary.
0024	Inverter has checked the deviation of neutral point voltage.	1. Inverter will recover if the deviation value falls below the protective limit. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0025	Inverter has checked out the unbalance of neutral point voltage temporarily.	1. Inverter will recover if the deviation value falls below the protective limit. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0026	There is high Bus fluctuation voltage.	1. This is a short-term fault. Wait a moment for inverter recovery. 2. If the fault still exists, please contact

Fault Code	Description	Troubleshooting
		Sungrow Service Dept..
0027	The DC current is not balanced between the two PV inputs for parallel PV configuration mode.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0028	Inverter has checked the reverse polarity of PV connection.	1. Disconnect inverter. 2. Reconnect PV strings.
0036	The temperature of module is too high	1. Check whether AC output power exceeds norminal power too much. 2. Check whether fans work normally and whether there are some abnormal fans. Please replace broken fan, in necessary. 3. Clean air grills of outlet. 4. If the fault still exists, please contact with Sungrow.
0037	The ambient temperature is too high	
0038	The inverter has checked that there is a fault of relay.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0039	The insulation resistance is low. (ISO-flt)	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0040	AC or DC overcurrent fault, or DC overvoltage fault.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0041	There is a fault with sampling channel.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0042	Current imbalance.	If the fault occurs repeatedly, contact Sungrow Service Dept..
0043	The ambient temperature falls below -25°C	Disconnect inverter to stop. Wait for ambient temperature to rise above -25 ℃ and then start inverter again.
0044	There is a fault with DC/AC inversion circuit	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0045	There is a fault with PV1 boost circuit.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0046	There is a fault with PV2 boost circuit.	
0047	The PV configuration mode set on the display is not in accordance with the configuration in	1. Disconnect inverter. 2. Re-select PV configuration mode and re-connect PV strings. For more detailed information please refer to “6.4 Connecting

Fault Code	Description	Troubleshooting
	the combiner unit.	Inverter to PV Arrays".
0048	Phase-R current sampling channel fault.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0049	Phase-S current sampling channel fault.	
0050	Phase-T current sampling channel fault.	
0051	Hardware Overvoltage/ Overcurrent protection	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0070	Fans are defective.	Disconnect inverter and remove the broken fan.
0071	Fault with AC SPD	It is necessary to replace the SPD module. Contact Sungrow Service Dept..
0072	Fault with DC SPD	
0073	Fuse has blown out	Disconnect inverter and replace the fuses. Contact Sungrow Service Dept..
0074	Communication fault of LCD	A fault has occurred in the internal communication of the inverter. However, the inverter continues feeding into the grid. Contact Sungrow Service Dept..
0075	Solar irradiation is not sufficient for inverter operation.	1. Wait for higher irradiation. 2. If this recurs at medium irradiation, check the PV system design and correct the connection of PV inputs.
0076	PV1 overload	Check the PV system design and correct the connection of PV1 inputs.
0077	PV2 overload	Check the PV system design and correct the connection of PV2 inputs.
0078	PV1 power abnormal warning	1. Check whether the PV1 input not connected or loose. 2. If all PV1 input cables are firmly attached and the warning fault still exists, please contact Sungrow Service Dept..
0079	PV2 power abnormal warning	1. Check whether the PV2 input not connected or loose. 2. If all PV2 input cables are firmly attached and the warning fault still exists, please contact Sungrow Service Dept..
0087	There is a fault with the AFD block.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept..
0088	Arcing warning	Check the associated circuit and press ENTER to remove the fault.
0089	AFD disable warning	Remove the fault by reactivating the AFD function on the LCD screen.

Fault Code	Description	Troubleshooting
532-547	Reverse polarity warning of PVS connection.	1. Check the polarity of the PV inputs, if the polarity is reverse, please reconnect PV strings. 2. If the fault still exists, please contact with SUNGROW.
548-563	The output current of the PVS is obviously abnormal.	1. Check whether the PV array is shielded. If the PV array is clear and is not shielded, check whether the PV modules are faulty. 2. Check whether there is any DC input cable disconnected. If yes, refer to "10.13.1 PVS Detect Settings" to reset the inverter. 3. If the fault still exists, please contact with SUNGROW.

9.2 Maintenance

9.2.1 Routine Maintenance

Items	Methods	Period
Save data	Save the running data, parameters and log to a disk or a file. Refer to the manuals of the data logging devices.	Once a month
General state of system	Visual check any damage or deformation of the inverter. Check any abnormal noise during the running of the inverter. Check each parameter of inverter operation. Check if the temperature of the housing is normal. Monitor the system using the thermal imager.	Every 6 months
System clean	Check the temperature and dust of the inverter. Clean the inverter enclosure. Check the humidity and dust of the environment. Meanwhile check whether the filter function of the air inlet is ok. Clean the air inlet and outlet, when necessary.	Six months to a year (it depends on the dust contents in air.)
Electrical connection	Check whether cable connections are loose. Tighten the loose connections. Check whether there is injury in the cables, especially the surface in contact with metal. Check whether the wrap belt of the connection terminals is strip-off.	Six months after commissioning and then once or twice a year.