### Error 088 - Arc Fault on PV Side (Remote Access)

#### 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.

Arc Faults are usually a result of loose wiring / terminal or even damaged cables. Hence, to protect against such faults, Sungrow introduces a new feature on inverters.

The new Crystal G2 Premium Inverters come with the new in-built feature i.e. AFCI (Arc Fault Current Interrupter) function. This function allows the inverter to detect Arc Faults on the PV side (088 Fault) and stop the inverter from producing to prevent its consequences.

A new firmware has been released to improve sensitivity of detecting Arc Faults. This upgrade can be done remotely by the installer.

### **Remote Firmware Upgrading**

The firmware could also be upgraded remotely via installer accounts. Click Firmware upgrading under '**Advanced**'. After that, either plant name or serial number could be put in for searching the inverter that need to be upgraded. Then, click the box in front of the plant and check if the current version is the latest one, which could be shown as below.



TD\_202010\_G2 Premium\_088 Arc Fault on PV Side - Remote Access\_V1.0



		0		0	•					
ඊ	iSolarCloud	Richard Ha Q	Firmware U	lpdate						
08/N	1	Richard Haines	Inverter	V Device N	odel 🗸 Devic	e S/N	: Q	l	Firmware Upd	ate 🕔
ώ	Home			lant Nama Davia	Device	Device	Online	Current	Device	Oper
<u>\</u>	Fault	Check the Devi	ice Software Ve	ant Name Device	S/IN Type	Model	Status	Version	Name	ation
G	Report		ice software ve					^	SG5K- D_001_001	
I۵.	Curve	Module Name			Module Current	t Version				
0°	Advanced $\checkmark$	LCD			LCD_CrysG2D_V	31_V32				
	Settings	MDSP			MDSP_CrysG2D	V31_V61 7				
	Firmware Update Smart IV Curve Diagnosis	SDSP			SDSP_CrysG2D_	/31_V18				
FZ	Alarm Subscribe	AFD			AFD_06001.01.0	2				
	Remote Maintenance									
Info	_									
Ū	Message Center									
	Help >				Close					
Acco	unt			_	_					
	Me									

Figure 1 Searching for the plant and the inverter

Figure 2 Check the firmware version

If the firmware is not the latest one, click the '**Firmware Update**', and it will automatically show the latest firmware need to be uploaded to the inverter. Then click Update. After that, it will require to put in the log-in password to double confirm the firmware need to be upgraded as shown in below.

ඊ	iSolarCloud	Q	Fir	mware	e Update						0	
0&N	1	Richard Haines		nverter	~	Device Model	~ A200	08071179	: Q	(	Firmware Upd	ate 🕔
ώ	Home											
	Fault				Plant Name	Device S/N	Device Type	Device Model	Online Status	Current Version	Device Name	Oper ation
G	Report			<b>~</b>			Inverter	SG5K-D	Online	Check Version	SG5K- D_001_001	$\bigcirc$
	Curve											
Ø	Advanced $\checkmark$											
12	Settings											
	Firmware Update											
56	Smart IV Curve Diagnosis											
	Alarm Subscribe											
90	Remote Maintenance											
Info	Message 99+											
?	Center >											
Acco	unt											

#### Figure 3 Firmware Upgrade

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ඊ	iSolarCloud	Richard Ha Q	Firmwar	e Update							
080	1	Richard Haines	Inverter		Device Model	~ A200	8071179	: Q		Firmware Upd	ate 🕓
ណ៍	Home			Diant Name	Davisa S/N	Device	Device	Online	Current	Device	Oper
	Fault			Plant Name	Device S/IN	Туре	Model	Status	Version	Name	ation
G	Report			Richard Haines	A200807117 9	Inverter	SG5K-D	Online	Check Version	SG5K- D_001_001	0
	Curve		Upload th	e Undating P	skage -		- 9	×			
0°	Advanced 🗸 🗸		<ul> <li>Online U</li> </ul>	Ipdate Package							
23	Settings		S/N:   CrysG2D	V65 20201001	New update	e package det	ected. Update n	iow?			
	Firmware Update		<ul> <li>Local Up</li> </ul>	oate Pueltago							
55	Smart IV Curve Diagnosis		Select	a Firmware File							
	Alarm Subscribe		*Maximu	um package size	: 60M, package	format: x.zip,	package name i	must			
-	Remote Maintenance		correspo	ond to the desire	ed software vers	ion number.					
Info					Cancel	Update	10				
Ū	Message Center					$\overline{}$	•				
?	Help >										

Figure 4 The upgrading file confirmation

Enter the password (same password as your iSolarCloud account) and click 'Confirm'.

ඊ	iSolarCloud	Richard Ha Q	Firmware	e Update							
O&M		Richard Haines	Inverter		Device Model	~ A200	8071179	: Q		Firmware Upd	ate
	Home			Plant Name	Device S/N	Device	Device	Online	Current	Device	Oper
	Fault					Inverter	SG5K-D	Online	Check	SG5K-	Q
	Curve								version	D_001_001	
ø	Advanced 🗸		Upload the	Updating P	ackage			×			
26	Settings		<ul> <li>Online Up</li> <li>S/N: B200</li> <li>CrvsG2D</li> </ul>	08 VI Please e	nter login pa	ssword.	× <sup>ite n</sup>	ow?			
	Firmware Update Smart IV Curve Diagnosis		<ul> <li>Local Upc</li> <li>Select :</li> </ul>	la							
	Alarm Subscribe Remote		*Maximur correspor	m nd	Confi		me r	nust			
Info	Maintenance				Cancel	Update					
Ū	Message Center										
?	Help >										
Accou	int										

#### Figure 5 Log-in password confirmation

There will be a reminding popping up which shows that the upgrading will be finished in 2 hours. Click the '**Confirm and Update**', then the progress of the upgrading window will be shown on the screen. The steps could be shown as below.

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# SUNGROW

ඊා iSolarCloud	Richard Ha Q	Firmware U	lpdate							
O&M	Richard Haines	Inverter		Device Model	~ A200	8071179	: Q		Firmware Upd	ate 🕔
🔂 Home		DI	ant Name	Device S/N	Device	Device	Online	Current	Device	Oper
🛆 Fault				Device 3/14	Туре	Model	Status	Version	Name	ation
G Report					Inverter	SG5K-D	Online	Check Version	SG5K- D_001_001	0
└ <u>∧</u> Curve		Firmware Upo	date				×			
@ Advanced 🗸 🗸		Task Name		2020 10 27	4-20 SCEK D	Invertor Pomoto				
🔀 Settings		Task Name		2020-10-27	4.50 505K-D	inverter kemote	e opuate			
Firmware Update		Single Device Up Timeout	pdate	2 h			~			
Smart IV Curve Diagnosis										
Alarm Subscribe										
Remote Maintenance										
			Ca		nfirm and Upd	late				
⊥ Message 99+ Center					_					
Help >										

Figure 6 Upgrade confirmation

**	- olar Cloud	Richard Ha	a Q Fi	irmware Up	date							
	View Task Hi	story									×	0
о&м ☆ ⊦	2020-09-2	7 ~ 2020-10-2	27 Device	ſype ∨	Device Model	∨ Goal	Softwar	Q				r
∬ F ⊕ R	No.	Task Name	Device Type	Device Model	Task Start Time	Task End Time	Executor	Task Execution Status	Success Statistics	Task Progress	Operation	n
l∆. c @* A	1		Inverter	SG5K-D	2020-10-27 13:30:21			Executing	0/1	0/1	View	
	2		Communica tion Module	EyeM4	2020-10-27 12:57:05	2020-10-27 12:58:51		Operation Completed	1/1	1/1	View	l
	3		Inverter	SG5KTL-D	2020-10-27 12:50:39			Executing	0/1	0/1	View	I
(2) F Accoun	4		Inverter	SG8K-D	2020-10-27 12:41:19			Executing	0/1	0/1	View	
	gout	<< <u>1</u>	>		To	tal 986 10/p	oage 🗸 🤇	1 2	3 4 …	99 >	Go to 1	

Figure 7 Upgrading progress check

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Once the upgrade is completed, you can access the Settings via the iSolarCloud which showing as the following figure. Click **Settings**->Enter Plant name and search. Select the plant and click the **Common Parameter Settings**.

ல் iSolarCloud	- Q	Setting	s									
	₩	Inverte	a 🗸 🗌	Device Model	Country/Regi	<ul> <li>Grid Freque</li> </ul>	ncy V Device !	5/N Q				
OBM									Initial Grid Conne	ction Commo	n Parameter Settings	✓ Task List
🛆 Fault			Plant Name	Device Name	Initial Grid	Device S/N	Device Model	Country/Regio	Grid	Version No.	Device Interval	Operation
G Report				SG8K-	Almadu Cat	A2006060975	SCOK D	Australia	E0.Hz	CR0-1.0.5.0-	P2005202407	B B O
Curve				D_001_001	Already set	AZUMANANA	Crimk-D	Australia	SU HZ	AR0-1.0.15.0	B2005292407	DA INCOM
$^{\odot^{\rm P}}$ Advanced $\sim$												
🔀 Settings												
Firmware Update												
Automatic update settings												
Smart IV Curve Diagnosis												
Alarm Subscribe												
B Remote Maintenance												
Info												
Message Center 99+												
(7) Help >												

Figure 8 Access the remote settings

Once enter the Common Parameter Settings, Select **Power Control**->12 **Clear AFCI Alarms**, enable the function. Then the fault 088 will be cleared and the inverter will restart to work again.

em Parar	neters Protection Paramet	ers Power Control						Q Inverter Parameter Qu
No.	Parameter Name	Latest Value	Numerical Term	Data range (min.)	Data range (max.)	Coefficient	Unit	Remarks
1	Reactive Power Regulation Mode		Please Select $\sim$					
2	F-max Start			50.2	52	0.01	Hz	
3	Frq Stop			51	52	0.01	Hz	
4	F-max Derating Ramp			16.7	100	0.01	%	
5	Curve		Please Select $\sim$					
6	Recovery Frequency			50	52	0.01	Hz	
7	Power Recovery Time Delay			0	1,200	0.1	s	
8	Power Response Time			0	2	0.01	s	
9	DRM Switch Enable		Please Select $\sim$					
10	AFCI Self-test		Please Select V					
11	AFCI Activation		Please Select $\sim$					
12	Clear AFCI Alarm		Please Select V					

Figure 9 Clear the AFCI Alarms

If the issue persists, please take photos testing on site and contact Sungrow Service Department on 1800 786 476 or email to service@sungrowpower.com.au.