



Description of Parameter Setting

S450S/S800S/S1600S/S2000S-SA

SUNGROW

GRID UNBALANCE PROTECTION

Grid Unbalance Protection

Protection Value
20 %

Tripping Time
5.00 s

ACTIVE ISLAND DETECTION

Active Island Detection

PASSIVE ISLAND DETECTION

Passive Island Detection

Off

Frequency Change Ratio
0.200 Hz/s

Phase Monitoring
12 *

Tripping Time
0.50 s

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LVRT PARAMETERS

LVRT Zero Power Mode

LVRT Switch

LVRT Grid Imbalance Support

LVRT Protection Level
2

LVRT K Factor
2.0

Voltage 1
184.0 V

Voltage 2
34.5 V

Time 1
3,000 ms

Time 2
150 ms

LVRT Power Priority Mode
Off

Limit Reactive Current

Maximum Reactive Current Value
100.0 %

Zero Current Trigger

Zero Current Trigger Voltage
50.0 %

LVRT Reactive Superposition

Voltage Mutation Triggers LVRT

LVRT Voltage Mutation Value
5.0 %

LVRT Exit

LVRT Exit Time
5 s

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HVRT PARAMETERS

HVRT Zero Power Mode

HVRT Switch

HVRT Grid Imbalance Support

HVRT Protection Level
2

HVRT K Factor
1.0

Voltage 1
264.5 V

Voltage 2
276.0 V

Time 1
5,000 ms

Time 2
100 ms

HVRT Power Priority Mode
Off

Limit Reactive Current

Maximum Reactive Current Value
100.0 %

Zero Current Trigger

Zero Current Trigger Voltage
120.0 %

HVRT Reactive Superposition

Voltage Mutation Triggers HVRT

HVRT Voltage Mutation Value
5.0 %

HVRT Exit

HVRT Exit Time
5 s

10-MIN OVERVOLTAGE PROTECTION

10-min Overvoltage Protection

Protection Value
253.0 V

Recovery Value
251.0 V

PROTECTION PARAMETERS

10-min Overvoltage Protection

Grid Unbalance Protection

Active Island Detection

Passive Island Detection

LVRT Parameters

HVRT Parameters

Grid Abnormal Protection

Grid Detection Before Connection

Other Parameters

OTHER PARAMETERS

Grid Voltage Adaptation
Close

SPI Mode
Not Configured

GRID DETECTION BEFORE CONNECTION

Grid Detection Before Connection

Grid Connection Minimum Frequency
47.50 Hz

Grid Connection Maximum Frequency
50.10 Hz

Grid Connection Minimum Voltage
85.0 %

Grid Connection Maximum Voltage
110.0 %

Grid Connection Detection Time
60 s

Active Power Rising Gradient
39 %/min

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GRID ABNORMAL PROTECTION

Protection Level
2

Undervoltage Level-1 Protection Value
184.0 V

Overvoltage Level-1 Protection Value
287.5 V

Underfrequency Level-1 Protection Value
47.50 Hz

Overfrequency Level-1 Protection Value
51.50 Hz

Undervoltage Level-1 Tripping Time
3.05 s

Overvoltage Level-1 Tripping Time
0.15 s

Underfrequency Level-1 Tripping Time
0.15 s

Overfrequency Level-1 Tripping Time
0.15 s

Undervoltage Level-2 Protection Value
103.5 V

Overvoltage Level-2 Protection Value
287.5 V

Underfrequency Level-2 Protection Value
47.50 Hz

Overfrequency Level-2 Protection Value
51.50 Hz

Undervoltage Level-2 Tripping Time
0.15 s

Overvoltage Level-2 Tripping Time
0.15 s

Underfrequency Level-2 Tripping Time
0.15 s

Overfrequency Level-2 Tripping Time
0.15 s

Lower Reconnection Voltage Limit
251.0 V

Upper Reconnection Voltage Limit
195.5 V

Lower Reconnection Frequency Limit
50.10 Hz

Upper Reconnection Frequency Limit
47.52 Hz

Restore Defaults

Start/Stop

Boot

Shutdown

SYSTEM PARAMETERS

Start/Stop
Boot

Date Setting
1900-01-01

Time Setting
00:51:23

Restore Defaults

SETTINGS

System Parameters

Protection Parameters

Operation Parameters

Power Regulation Parameters

Initial Grid

POWER REGULATION PARAMETERS

Active Power Regulation

Power Regulation at Grid Overvoltage

Reactive Power Regulation

ACTIVE POWER REGULATION

Active Power Soft Start after Fault

Active Power Soft Start Time after Fault
600 s

Active Power Soft Start

Active Power Soft Start Gradient
6,000 %

Active Power Gradient Control

Active Power Decline Gradient
39 %/min

Active Power Rising Gradient
39 %/min

Active Power Setting Persistence

Active Power Limit

Active Power Limit Ratio
100.0 %

Shutdown When Active Power Limit
to 0%

Active Overload Switch

POWER REGULATION AT GRID OVERVOLTAGE

Power Regulation at Grid Overvoltage

OPU_V1
243.8 V

OPU_V2
243.8 V

OPU_V3
243.8 V

OPU_V4
243.8 V

OPU_P1
0.0 %

OPU_P2
0.0 %

OPU_P3
0.0 %

OPU_P4
0.0 %

Regulation Time
60.0 s

Grid Overvoltage Derating Response Time
5.0 s

REACTIVE POWER REGULATION

Reactive Power Setting Persistence

Closed-loop Control Reactive Power Regulation

Reactive Power Regulation Mode
Off

PF
1.000

Reactive Power Ratio
0.0 %

Initial Grid

Country/Region
Germany(DE) VDE

Grid Type
VDE 4105

GRID VOLTAGE RISING SUPPRESSION

Grid Voltage Rising Suppression

Reactive Power Derating SetPoint
253.0 V

Active Power Derating SetPoint
263.0 V

OPERATION PARAMETERS

Grid Voltage Rising Suppression

Power Reduction at Overfrequency

Global MPPT Scanning

Power Increment at Underfrequency

Communication Interruption Configuration

Running Time

Fault Recovery

Other Parameters

OTHER PARAMETERS

Total Yield Adjustment
0 kWh

IV Scanning Mode
Limited IV Scanning

Relay Self-test

FAULT RECOVERY

Auto Fault Recovery

POWER REDUCTION AT OVERFREQUENCY

Power Reduction at Overfrequency

F1
50.20 Hz

F2
51.50 Hz

F3
51.55 Hz

F4
51.55 Hz

P1
100.0 %

P2
48.0 %

P3
0.0 %

P4
0.0 %

Recovery Frequency
50.18 Hz

Curve
A Curve

Power Derating Gradient
6,000 %/min

Power Recovery Time Delay
0.1 s

Power Recovery Gradient
10 %/min

Over Frequency Response Delay Time
0.00 s

Over Frequency Response Time
5.0 s

GLOBAL MPPT SCANNING

Global MPPT Scanning

Manual Scanning

Periodic Scanning

Scanning Period
180 min

Timing Scanning

Timing Scanning Time
Not Configured

POWER INCREMENT AT UNDERFREQUENCY

Power Increment at Underfrequency

F1
49.80 Hz

F2
47.50 Hz

F3
47.50 Hz

F4
47.50 Hz

P1
0.0 %

P2
92.0 %

P3
92.0 %

P4
92.0 %

Recovery Frequency
49.82 Hz

Curve
A Curve

Power Increasing Gradient
6,000 %/min

Power Recovery Time Delay
0.1 s

Power Recovery Gradient
10 %/min

Under Frequency Response Delay Time
0.00 s

COMMUNICATION INTERRUPTION CONFIGURATION

Communication Interruption Configuration
Close

Communication Interruption Tripping Time
180 s

Communication Interruption Recovery Configuration

Communication Recovery Time
1 s

Preset Power Limit Ratio
100.0 %

Preset Reactive Power Regulation Mode
Off

Preset Power Factor
1.000

Preset Reactive Power Ratio
0.0 %

RUNNING TIME

Connecting Time
60 s

Reconnecting Time
60 s

Country/Region

Brazil

Germany(DE) VDE

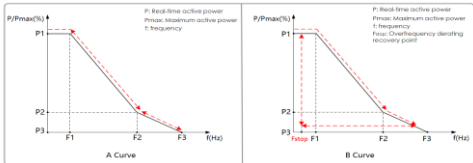
Grid Type

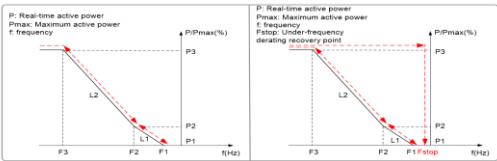
VDE 4105

No	Parameter Name	Description of Function	Default	Range	Applicable Scenarios	Relation with Other Parameters	Remarks
1	System Parameters						
1.1	Start/Stop	Send start/stop instruction to the inverter	Boot	Boot / Shutdown	Manual control of switching on and off, used during equipment maintenance	/	
1.3	Date Setting	Set inverter system date	/	YYYY - MM - DD	The correct system date is very important. Wrong system date will directly affect the data logging and power generation value.	/	
1.4	Time Setting	Set inverter system time	/	00:00:00 - 23:59:59	The correct system time is very important. Wrong system time will directly affect the data logging and power generation value. The clock is in 24-hour format.	/	
1.5	Restore Defaults	Switch to decide if history records will be cleared and parameters (except for country code and grid type) restore default values	/	Confirm / Cancel	Reset device to defaults values, except country code and grid type	/	
2	Protection Parameters						
2.1	10-min Overvoltage Protection						
2.1.1	10-min Overvoltage Protection	Switch for 10-minute overvoltage protection function	Off	On / Off	Grid companies request to be turned on by default (Australia, Italy)	2.1.2-2.1.3 can only be set when this switch is set to On	
2.1.2	Protection Value	10-minute overvoltage protection voltage threshold	242V	1.0Vn+0.1V ~ 1.4Vn Vn: Rated AC voltage	The value can be increased appropriately if frequent fault (fault code 14)	2.1.1 must be set to On in order for this parameter to be set successfully	
2.1.3	Recovery Value	10-minute overvoltage protection voltage recovery value	240V	1.0Vn ~ 1.4Vn-0.1Vn Vn: Rated AC voltage	Set the recovery value as required by the grid company		
2.2	Grid Unbalance Protection						
2.2.1	Grid Unbalance Protection	Switch for grid voltage unbalance protection	Off	On / Off	Used to shut down the inverter when there is unbalance between the three phases of the grid	2.2.2-2.2.3 can only be set when this switch is set to On	
2.2.2	Protection Value	The degree of grid unbalance	20%	2% - 50%	Supported range: 2%-50%	2.2.1 must be set to On in order for this parameter to be set successfully	
2.2.3	Tripping Time	The tripping time threshold for grid unbalance protection	5.00s	0.1s - 600s	When the protection value is reach for a period longer than the tripping time, grid unbalance protection will be enabled		
2.3	Active Island Detection						
2.3.1	Active Island Detection	Switch for passive island detection function	On	On / Off	When turned on the inverter will actively inject disturbance frequencies into the grid to detect islanding states. No setting is required by default, unless required by	/	
2.4	Passive Island Detection						
2.4.1	Passive Island Detection	Switch for passive island detection function	Off	Off / Frequency Monitoring / Phase Monitoring / Frequency and Phase Monitoring	Select passive island detection mode	2.4.2 - 2.4.4 can only be set when this switch is set to On	
2.4.2	Frequency Change Ratio	The value of frequency change per second. The software judges that if it exceeds this value, if so, it will be protected	0.200Hz/s	0.1Hz/s - 10Hz/s	This value can be set to determine grid islanding by detecting frequency change or frequency and phase change	2.4.1 must be set to On in order for this parameter to be set successfully	
2.4.3	Phase Monitoring	The value of grid phase change. The software judges that if it exceeds this value, if so, it will be protected	12°	3° - 18°	This value can be set to determine grid islanding by detecting phase change or frequency and phase change		
2.4.4	Tripping Time	Islanding detection time	0.50s	0.08s - 300s	Determine the time to trigger protection after islanding		
2.5	LVRT Parameters						
2.5.1	LVRT Zero Power Mode	Whether power is output during LVRT	Off	On / Off	After opening the LVRT Zero function, only crossing without reactive power 4.5.1 or 4.5.2 only one of selected	2.5.1 or 2.5.2 only one of selected	
2.5.2	LVRT Switch	LVRT function(Low voltage ride through: When faults of different types or disturbances in the power system cause voltage drop at the	On	On / Off	After turning on the LVRT function, perform as required by the standard No setting is required by default, unless required by the grid company.	2.5.3 - 2.5.12can only be set when this switch is set to On	
2.5.3	LVRT Grid Imbalance Support	When the grid voltage is unbalanced and drops, the switch can be turned on to send unbalanced current to support the grid	Off	On / Off	Set according to the standard requirements, when the LVRT is enabled to send unbalanced current	2.5.2 must be set to On in order for this parameter to be set successfully	
2.5.4	LVRT Protection Level	LVRT voltage protection level (1 to 5)	2	1 - 5	Grid company provides detailed setting values No setting required by default		
2.5.5	LVRT K Factor	The ratio of reactive current to voltage change	2.0	0 - 10.0			
2.5.6	Voltage N (N: 1~2)	N-level LVRT voltage. When the grid voltage exceeds this set value, the inverter sends reactive power according to the LVRT level and the	/	0 - 1.0 Rated voltage			
2.5.7	Time N (N: 1~2)	Specified time of N-level LVRT When the grid voltage is in the N-level LVRT voltage range and the duration exceeds this set value, the inverter	/	40ms - 14400000ms			
2.5.8	LVRT Power Priority Mode	/	Off	Reactive Priority/Off	Active priority: the inverter outputs active power as a priority during LVRT, and outputs reactive power as much as possible within the allowable output current range.		

2.5.9	Limit Reactive Current	Switch to limit LVRT reactive current, as required by power grid standards	Off	On / Off	The user is not allowed to set		
2.5.10	Maximum Reactive Current Value	Set the maximum reactive current allowed during the LVRT, as required by the power grid standards, the user is not allowed to set.	100.0%	0 - 100%	Execute this function when enabled, otherwise it will not be executed		
2.5.11	Zero Current Trigger	The switch for enabling/disabling the LVRT zero current trigger.	Off	On / Off			
2.5.12	Zero Current Trigger Voltage	LVRT zero current trigger voltage.	50.0%	0 - 100.0%			
2.5.13	LVRT Reactive Superposition	When this switch is turned on, the reactive power before LVRT will be added to the reactive power during LVRT	Off	On / Off	Set this parameter as required by the grid company	/	
2.5.14	Voltage Mutation Triggers LVRT	When the voltage change within 1s exceeds the set value, the inverter will enter LVRT	Off	On / Off	Execute this function when enabled, otherwise it will not be executed	2.5.15 can only be set when this switch is set to On	
2.5.15	LVRT Voltage Mutation Value	/	5.0%	0% - 15%	Set this parameter as required by the grid company	2.5.14 must be set to On in order for this parameter to be set successfully	
2.5.16	LVRT Exit	Forced exit of LVRT	Off	On / Off	Set this parameter as required by the grid company	2.5.17 can only be set when this switch is set to On	
2.5.17	LVRT Exit Time	Set the time of forced exit for LVRT	5s	0s - 100s	Set this parameter as required by the grid company	2.5.16 must be set to On in order for this parameter to be set successfully	
2.6 HVRT Parameters							
2.6.1	HVRT Zero Power Mode	Whether power is output during HVRT	Off	On / Off	After opening the HVRT Zero function, only crossing without active power 4.6.1 or 4.6.2 only one of selected	2.6.1 or 2.6.2, only one can be selected	
2.6.2	HVRT Switch	HVRT function (High voltage ride through: When faults of different types or disturbances in the power system	On	On / Off	After turning on the HVRT function, perform as required by the standard No setting is required by default, unless required by the grid company.	2.6.3 - 2.6.12 can only be set when this switch is set to On	
2.6.3	HVRT Grid Imbalance Support	When the grid voltage is imbalanced and high voltage ride through occurs, the switch can be turned on to send unbalanced current to support the	Off	On / Off	Set according to the standard requirements, when the LVRT is enabled to send unbalanced current	2.6.2 must be set to On in order for this parameter to be set successfully	
2.6.4	HVRT Protection Level	HVRT voltage protection level (1 to 5)	2	1 - 5	Grid company provides detailed setting values No setting required by default		
2.6.5	HVRT K Factor	The ratio of reactive current to voltage change during HVRT	1.5	0 - 10.0			
2.6.6	Voltage N (N: 1~2)	N-level HVRT voltage. When the grid voltage exceeds this set value, the inverter sends reactive power according to the HVRT level and the	/	(1.0 - 1.4)* Rated voltage			
2.6.7	Time N (N: 1~2)	Specified time of N-level HVRT When the grid voltage is in the N-level HVRT voltage range and the duration exceeds this set value, the inverter	/	40ms - 1440000ms			
2.6.8	HVRT Power Priority Mode	/	Reactive Priority	Reactive Priority/Off			
2.6.9	Limit Reactive Current	Switch to limit reactive current during HVRT	Off	On / Off	Active priority: the inverter outputs active power as a priority during LVRT, and outputs reactive power as much as possible within the allowable output current range		
2.6.10	Maximum Reactive Current Value	Set the maximum allowable reactive current during HVRT	100.0%	0 - 100%	Execute this function when enabled, otherwise it will not be executed		
2.6.11	Zero Current Trigger	The switch for enabling/disabling the HVRT zero current trigger.	Off	On / Off			
2.6.12	Zero Current Trigger Voltage	HVRT zero current trigger voltage.	120.0%	100% - 150%			
2.6.13	HVRT Reactive Superposition	/	Off	On / Off	Execute this function when enabled, otherwise it will not be executed	/	
2.6.14	Voltage Mutation Triggers HVRT	When the voltage change within 1s exceeds the set value, the inverter will enter HVRT	Off	On / Off	Execute this function when enabled, otherwise it will not be executed	2.6.15 can only be set when this switch is set to On	
2.6.15	HVRT Voltage Mutation Value	/	5.0%	0% - 15%	Set this parameter as required by the grid company	2.6.14 must be set to On in order for this parameter to be set successfully	
2.6.16	HVRT Exit	Forced exit of HVRT	On	On / Off	Set this parameter as required by the grid company	2.6.17 can only be set when this switch is set to On	
2.6.17	HVRT Exit Time	Set the time of forced exit for HVRT	5s	0s - 100s	Set this parameter as required by the grid company	2.6.16 must be set to On in order for this parameter to be set successfully	
2.7 Grid Abnormal Protection							
2.7.1	Protection level	The level of protection of overvoltage/undervoltage and overfrequency/underfrequency	2	1 - 5	Protection parameters, which can be set from 1 to 5 levels Setting according to the requirements of the grid company	2.7.2 - 2.7.13	

2.7.2	Undervoltage Level-N (N: 1~2) Protection Value	/	/	0.1Vn ~ (1.0Vn - 0.1V) Vn : Rated voltage	Grid company provides detailed setting values No setting required by default Set according to actual grid voltage, frequency range in diesel generator or microgrid scenarios	2.7.1 must be choose a number in order for this parameter to be set successfully	
2.7.3	Overvoltage Level-N (N: 1~2) Protection Value	/	/	(1.0Vn+0.2V) ~ 1.4Vn Vn : Rated voltage			
2.7.4	Underfrequency Level-N (N: 1~2) Protection Value	/	/	50Hz grid: 45.00Hz - 49.96Hz 60Hz grid: 55.00Hz - 59.96Hz 60Hz grid(Northern America): 50.00Hz - 59.96Hz			
2.7.5	Overfrequency Level-N (N: 1~2) Protection Value	/	/	50Hz grid: 50.04Hz - 55.00Hz 60Hz grid: 60.04Hz - 66.00Hz			
2.7.6	Undervoltage Level-N (N: 1~2) Tripping Time	/	/	50ms - 14400000ms			
2.7.7	Overvoltage Level-N (N: 1~2) Tripping Time	/	/	50ms - 14400000ms			
2.7.8	Underfrequency Level-N (N: 1~2) Tripping Time	/	/	50ms - 14400000ms			
2.7.9	Overfrequency Level-N (N: 1~2) Tripping Time	/	/	50ms - 14400000ms			
2.7.10	Lower Reconnection Voltage Limit	Overvoltage protection recovery value	240V	(1.0Vn+0.1V) - (1.4Vn-0.1V)			
2.7.11	Upper Reconnection Voltage Limit	Undervoltage protection recovery value	189V	(0.05Vn+0.1V) - 1.0Vn			
2.7.12	Lower Reconnection Frequency Limit	The frequency at which grid overfrequency fault is cleared	50.20Hz	50Hz grid: 50.02 ~ 54.98Hz 60Hz grid: 60.02 ~ 64.98Hz	Set the recovery point for grid underfrequency fault		
2.7.13	Upper Reconnection Frequency Limit	The frequency at which grid underfrequency fault is cleared	49.50Hz	50Hz grid: 45.02 ~ 49.98Hz 60Hz grid: 55.02 ~ 59.98Hz	Set the recovery point for grid underfrequency fault		
2.8 Grid Detection Before Connection							
2.8.1	Grid Detection Before Connection	Switch to enable or disable grid detection before grid connection	On	On / Off	A setting of On will require the inverter to do a on-grid condition check before grid connection.	2.8.2 - 2.8.7 can only be set when this switch is set to On	
2.8.2	Grid Connection Minimum Frequency	If the frequency is higher than the setting value, it can be connected to the grid.	49.50Hz	50Hz grid: 47.00 Hz - 49.98 Hz 60Hz grid: 57.00 Hz - 59.98 Hz	Grid companies or off-grid with diesel generator scenarios require the setting.	2.8.1 must be set to On in order for this parameter to be set successfully	
2.8.3	Grid Connection Maximum Frequency	If the frequency is lower than the setting value, it can be connected to the grid.	50.20Hz	50Hz grid: 50.02 Hz ~52.00 Hz 60Hz grid: 60.02 Hz ~62.00 Hz			
2.8.4	Grid Connection Minimum Voltage	If the voltage is higher than the setting value, it can be connected to the grid.	85.0%	50% - 100%			
2.8.5	Grid Connection Maximum Voltage	If the voltage is lower than the setting value, it can be connected to the grid.	110.0%	100% - 120%			
2.8.6	Grid connection detection Time	Time of voltage and frequency detection	60s	10s - 900s			
2.8.7	Active Power Rising Gradient	Rate of active power rise after initial grid connection	3%/min	1%/min - 6000%/min			
2.10 Other Parameters							
2.10.1	Grid Voltage Adaption	Switch to increase the threshold of grid overvoltage fault, and the three options are listed on the right. Level 1 voltage adaption will lift grid overvoltage threshold to 277V Level 2 voltage adaption will lift grid overvoltage threshold to 300V.	Close	Level 1 Voltage Adaption/Level 2 Voltage Adaption/Close	Enabled this function in the scenario where the inverter should work when the grid voltage is higher than the standard value	4.10.2 can only be set when this switch is set to On	
2.10.2	SPI Mode	/	Transient mode	/	Dedicated for Italy market. Grid company provides detailed setting values, and no additional setting is required by default.	/	
3 Operation Parameters							
3.1 Grid Voltage Rising Suppression							
3.1.1	Grid Voltage Rising Suppression	Switch to enabled grid voltage suppression	Off	On / Off	If 10min grid overvoltage protection is triggered frequently, you can enable this function. When the active/reactive derating setpoints are reached, the inverter will start derating. This function is disabled by default, and please follow the requirements of grid companies.	3.1.2 and 3.1.3 can only be set when this switch is set to On. 3.1.3 Active Power Derating SetPoint $\geq$ 3.1.2 Reactive Power Derating SetPoint	
3.1.2	Reactive Power Derating SetPoint	When 2.3.1 is enabled, the inverter will start to output reactive power from this voltage point to reduce the grid voltage	242V	1.0*rated grid voltage~1.4*rated grid voltage		3.1.1 must be set to On in order for this parameter to be set successfully	
3.1.3	Active Power Derating SetPoint	When 2.3.1 is enabled, the inverter will start to lower active power output from this voltage point to reduce the grid voltage	252V	1.0*rated grid voltage~1.4*rated grid voltage		3.1.1 must be set to On in order for this parameter to be set successfully	

3.2	Power Reduction at Overfrequency						
3.2.1	Power Reduction at Overfrequency	Setting switch for over-frequency derating function	On	On / Off	When the function is enabled, and the grid frequency exceeds the derating threshold, the inverter performs active derating at a specific slope. F1~F2~F3	3.2.2 - 3.2.15 can only be set when this switch is set to On	
3.2.2	F1	Active derating start point	50.03HZ	50Hz grid: 50.02Hz - 55Hz 60Hz grid: 60.02Hz - 65Hz			
3.2.3	F2	Active derating point 2	50.53HZ				
3.2.4	F3	Active derating end point	51.5HZ				
3.2.5	F4	/	/				
3.2.6	P1	Active power corresponding to the derating start point	100.00%	0 - 100.0%	No setting required by default Set by grid derating rate		
3.2.7	P2	Active power corresponding to the derating point 2	80.00%				
3.2.8	P3	Active power corresponding to the derating end point	80.00%				
3.2.9	P4	/	/				
3.2.10	Recovery Frequency	The point at which the frequency recovers after active derating	50Hz	50Hz grid: 50.00Hz - 55.00Hz 60Hz grid: 60.00Hz - 65.00Hz		3.2.1 must be set to On in order for this parameter to be set successfully	
3.2.11	Curve	Curve that shows active power changing with frequency. Three different curves are provided. Select one according to local grid standards	A Curve	Curve A / Curve B / Curve C*	Curve A: The active power of the inverter changes with the frequency in real time after over frequency derating occurs. Curve B: After overfrequency derating occurs, the		
3.2.12	Power Derating Gradient	The decline rate of active power when overfrequency derating occurs	6000%/min	1% /min - 6000% /min	Set according to the requirements of the grid company		
3.2.13	Power Recovery Time Delay	Waiting time from the moment at which the overfrequency derating occurs to the moment at which the active power begins to recover	0.1s	0s - 1200s			
3.2.14	Power Recovery Gradient	The recovery rate of active power after overfrequency derating occurs	6000%/min	1% /min - 6000% /min			
3.2.15	Over Frequency Response Delay Time	The response time after over frequency derating occurs	0.10s	0 - 10.00s			
3.2.16	Over Frequency Response Time	/	/	/	/		
	 Overfrequency Derating Curve				F1~F3 and P1~P3 are shown in the left picture.		
3.3	Global MPPT Scanning						
3.3.1	Global MPPT Scanning	The global MPPT scanning function.	On	On / Off	This switch can be selectively turned on when shadow blocking occurs, can improve power generation efficiency.	3.3.3 and 3.3.5 can only be enabled when this switch is set to On	
3.3.2	Manual Scanning	Switch for enable/disable manual scanning; When enabled, inverter will start MPPT scanning after receiving code	/	Confirm / Cancel	Used in field equipment maintenance testing	/	
3.3.3	Periodic Scanning	Switch for enabling/disabling periodic scanning; When it is enabled, the inverter will start MPPT scanning timely according to the parameter "	Off	On / Off	Consider turning on in scenarios where the modules are shaded by periodic shadows. For example, the shadow of a chimney will shade the PV module at a fixed time	3.3.4 can only be set when this switch is set to On	
3.3.4	Scanning Period	Time period between two MPPT scanning	180min	30min - 720min	The recommended MPPT scan period is 240min	3.3.3 must be set to On in order for this parameter to be set successfully	
3.3.5	Timing Scanning	Switch for enable/disable timing scanning	Off	On / Off	Start MPPT scan at the specified time	3.3.6 can only be set when this switch is set to On	
3.3.6	Timing Scanning Time	The time for MPPT scanning	00:00	00: 00 - 24: 00		3.3.5 must be set to On in order for this parameter to be set successfully	
3.4	Power Increment at Underfrequency						
3.4.1	Power Increment at Underfrequency	Switching of the grid frequency below a preset value to increase active power	off	On / Off	When the function is enabled, and the grid frequency is lower than the uprating threshold, the inverter performs active uprating at a specific slope. F1~F2~F3	3.4.2 - 3.4.15 can only be set when this switch is set to On	

3.4.2	F1	Underfrequency uprating start point	49.80Hz	50Hz grid : 45Hz - 49.98Hz 60Hz grid : 55Hz - 59.98Hz	No setting required by default Set by grid derating rate	3.4.1 must be set to On in order for this parameter to be set successfully	
3.4.3	F2	Underfrequency uprating point 2	47.80Hz				
3.4.4	F3	Underfrequency uprating end point	47.80Hz				
3.4.5	F4	/	/	/			
3.4.6	P1	Active power corresponding to the uprating start point	0.0%	0 - 100%			
3.4.7	P2	Active power corresponding to the uprating point 2	0.0%				
3.4.8	P3	Active power corresponding to the uprating end point	92.0%				
3.4.9	P4	/	/	/			
3.4.10	Recovery Frequency	The point at which the frequency recovers after active derating	49.82Hz	50Hz grid: 45.00 Hz - 50.00Hz 60Hz grid: 55.00Hz - 60.00Hz			
3.4.11	Curve	Curve that shows active power changing with frequency. Three different curves are provided. Select one according to local grid standards	A Curve	Curve A / Curve B / Curve C*	Curve A: The active power of the inverter changes with the frequency in real time after over frequency derating occurs. Curve B: After overfrequency derating occurs, the active power of the inverter does not recover until the frequency reaches the overfrequency derating recovery stop point. Curve C:It is reserved and consistent with Curve A currently.		
3.4.12	Power Increasing Gradient	The decline rate of active power after underfrequency uprating occurs	6000%/min	1%/min - 6000%/min	Set according to the requirements of the grid company		
3.4.13	Power Recovery Time Delay	Waiting time from the moment at which the underfrequency uprating occurs to the moment at which the active power begins to recover	300s	0s - 1200s			
3.4.14	Power Recovery Gradient	The recovery rate of active power after underfrequency uprating occurs	9%/min	1%/min - 6000%/min			
3.4.15	Under Frequency Response Delay Time	Response time after under frequency uprating occurs	1.00s	0.00 - 10.00s			
 Underfrequency Uprating Curve					F1~F3 and P1~P3 are shown in the left picture.		
3.5	Communication Interruption Configuration						
3.5.1	Communication Interruption Configuration	Switch to enable inverter configuration during communication interruption	Off	On / Off	Used to configure inverter generation required by the grid company after communication interruption	3.5.2 can only be set when this switch is set to On	
3.5.2	Communication Interruption Tripping Time	Judgement basis for communication interruption	180s	180-36000s	The time-out threshold for communication interruption. When the interruption time exceeds this value, communication interruption will be reported	3.5.1 must be set to On in order for this parameter to be set successfully	
3.5.3	Communication Interruption Recovery Configuration	Choose whether to restore generation after communication interruption	Off	On / Off	Choose whether to restore generation after communication recovery. Set it according to grid company requirements	3.5.4 can only be set when this switch is set to On	
3.5.4	Communication Recovery Time	Set communication recovery time	1s	1s - 36000s	Used to set the time it takes for the inverter to resume normal operation after communication recovery	3.5.3 must be set to On in order for this parameter to be set successfully	
3.5.5	Preset Power Limit Ratio	Set the power limit ratio	110.0%	0 - 110%	The inverter will operate according to these preset value after it recovers from communication interruption	/	
3.5.6	Preset Reactive Power Regulation Mode	/	Off	On / Off		3.5.7-3.5.8 can only be set when this switch is set to On	
3.5.7	Preset Power Factor	Set the power factor	1.000	(-1,-0.8) or (0.8,1)		3.5.6 must be set to On in order for this parameter to be set successfully	
3.5.8	Preset Reactive Power Ratio	Set the reactive power ratio	0.0%	-100% - 100%		3.5.6 must be set to On in order for this parameter to be set successfully	
3.6	Running Time						
3.6.1	Connecting Time	The time that the inverter takes to enter the running mode from the standby mode in fault-free state	60s	10s - 900s	The time taken by the inverter to go from standby to operation in a fault-free state. National standard, no setting is required by default.	/	

3.6.2	Reconnecting Time	The time that the inverter takes to restore from the fault state to normal state (the inverter is not running)	60s	0s - 3600s	The additional waiting time required for the inverter to recover from a fault state to standby.	/			
3.7	Fault Recovery								
3.7.1	Auto Fault Recovery	Automatic restart for the inverter after a fault occurs	On	On / Off	Activate this switch to enabled automatic restart for the inverter, otherwise, manual interference is required for restart. This function should be disabled for some scenarios in Japan	/			
3.8	Other Parameters								
3.8.1	Total Yield Adjustment	According to the deviation of total power generation, the compensation value is issued to correct the total power generation.	0kWh	-200000000kWh - 200000000kWh	There may be some deviation in the measurement of total power generation. For example, when the difference between the meter measurement and the actual yield is large, or the inverter is replaced, this function is required for yield calibration. After this function is enabled, the inverter will send compensation value and add it to the total power generation value, and correct the total power generation to the correct value. Total power generation after compensation ≥ 0	/			
3.8.2	IV Scanning Mode	/	Limited IV Scanning	Limited IV Scanning/	Used to obtain string health status, disabled by default	/			
3.8.3	Relay Self-test	Switch to enable self-test of the relay	On	On / Off	No setting required by default. Used for Sungrow services engineers on site	/			
4	Power Regulation Parameters								
4.1	Active Power Regulation								
4.1.1	Active Power Soft Start after Fault	The switch for enabling/disabling the soft start function after a fault occurs	off	On / Off	If you want to save 3.1.2 to 3.1.5 parameters, you need to set it to On	4.1.2 can only be set when this switch is set to On			
4.1.2	Active Power Soft Start Time after Fault	Time that the soft start takes to raise the power from 0 to 100% rated power	60s	0.1s - 1200s	Set up according to the requirements from the grid company	4.1.1 must be set to On in order for this parameter to be set successfully			
4.1.3	Active Power Soft Start	/	/	/		/			
4.1.4	Active Power Soft Start Gradient	/	/	/		/			
4.1.5	Active Power Gradient Control	Switch for enabling/disabling the active power rate settable function	On	On / Off		4.1.6-4.1.7 can only be set when this switch is set to On			
4.1.6	Active Power Decline Gradient	The decline rate of inverter active power per minute	10%/min	1% /min - 6000% /min		4.1.5 must be set to On in order for this parameter to be set successfully			
4.1.7	Active Power Rising Gradient	The rise rate of inverter active power per minute	10%/min	1% /min - 6000% /min		4.1.5 must be set to On in order for this parameter to be set successfully			
4.1.8	Active Power Setting Persistence	Switch for enabling/disabling the function of active power setting persistence	Off	On / Off	If you want to save 3.1.2 to 3.1.8 parameters in power off, you need to set it to On	if you want to save 4.1.2 to 4.1.10 parameters in power off, you need to set it to On.			
4.1.9	Active Power Limit	The switch for limiting active power	On	On / Off		4.1.10 can only be set when this switch is set to On			
4.1.10	Active Power Limit Ratio	The ratio of limit active power to rated power in percentage	110.0%	0 - 100.0%	Set the active power limit, the PPC or EMS scheduling use No setting required by default	4.1.9 must be set to On in order for this parameter to be set successfully			
4.1.11	Shutdown When Active Power Limit to 0%	Whether to perform shutdown when the active power limit is 0	On	On / Off	Set this parameter according to grid company requirements. No setting required by default	/			
4.1.12	Active Overload Switch	Switch to enabled power dispatch when the active power ratio is too high	Off	On / Off	Enabled this function when the active power ratio for the inverter is too high When this switch is turned off, the inverter will control its active power within the range of 0-100% rated power. When this swithc is turned on, the inverter will control its active power within the range of 0-100% apparent power	/			
4.2	Power Regulation at Grid Overvoltage								
4.2.1	Power Regulation at Grid Overvoltage	The switch for enabling/disabling the grid overvoltage active regulation	Off	On / Off	If you want to save 3.2.2 to 3.2.10 parameters, you need to set it to On	4.2.2 - 4.2.10 can only be set when this switch is set to On			
4.2.2	OPU_V1	Starting point voltage of grid overvoltage active derating	233.2V	0.8Vn - 1.4Vn Vn: Rated AC voltage	Output active based on grid overvoltage regulation, grid company provides detailed setting values No setting required by default V1≤V2≤V3≤V4 P1≥P2≥P3≥P4	4.2.1 must be set to On in order for this parameter to be set successfully			
4.2.3	OPU_V2	2nd point voltage of grid overvoltage active derating							
4.2.4	OPU_V3	3rd point voltage of grid overvoltage active derating							
4.2.5	OPU_V4	The 4th point voltage of grid overvoltage active derating							
4.2.6	OPU_P1	Active power value corresponding to the starting point voltage of grid overvoltage active derating	0.0%	0 - 100.0%					
4.2.7	OPU_P2	Active power value corresponding to the 2nd point voltage of grid overvoltage active derating							
4.2.8	OPU_P3	Active power value corresponding to the 3rd point voltage of grid overvoltage active derating							
4.2.9	OPU_P4	Active power value corresponding to the 4th point voltage of grid overvoltage active derating							
4.2.10	Regulation Time	The time required to reach the target value	60.0s	0.1s - 600.0s					
4.2.11	Gird Overvoltage Derating Response Time	/	/	/			/	/	
4.3	Reactive Power Regulation								
4.3.1	Reactive Power Setting Persistence	Switch for enabling/disabling the power-off function	On	On / Off	Power-off save parameters of reactive power parameters	4.3.3-4.3.5			

4.3.2	Closed-loop Control Reactive Power Regulation	Switch to enable closed-loop control reactive power regulation	On	On / Off	If there is a meter, this function can be enabled to achieve high-accuracy reactive power control. Applicable for only single inverter scenarios	/	
4.3.3	Reactive Power Regulation Mode	Reactive power regulation mode selection	Qt	Off / PF / Qt / Q(P) / Q(U)	Grid company provides detailed setting values No setting required by default	4.3.1 must be set to On in order for this parameter to be set successfully	
4.3.4	PF	/	/	/	/		
4.3.5	Reactive Power Ratio	Value of reactive power ratio in Qt mode	0.0%	-100% - 100%	Grid company provides detailed setting values	4.3.4 must be set to On in order for this parameter to be set successfully	
5 Communication Parameters							
5.1.1	Country/Region	Select your country	/	/	Select the country corresponding to your installation site	/	
5.1.2	Grid Type	/	/	/	/	/	

*** Note: The default values are for reference only, and there are significant differences in actual default parameters compared to different models and national standards.**