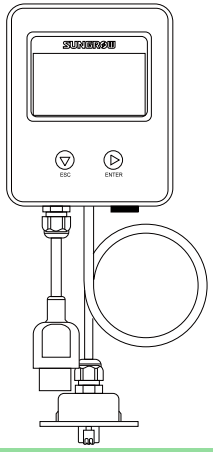
User Manual

eShow

LCD module



eShow V21-UEN-Ver11-201608 Version：1.1

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1 Installation and Connection

1.1 Connecting the eShow to the Inverter

The eShow is installed onto the inverter by means of the bracket and the M4 screw in the packaging.

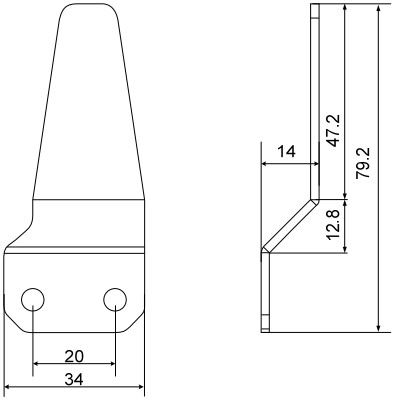


Fig. 1-1 Dimensions of the Bracket (unit: mm)

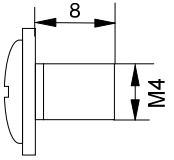
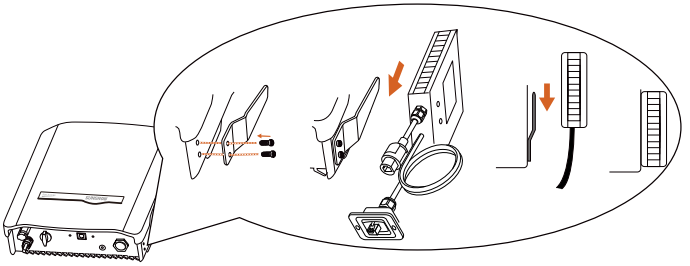


Fig. 1-2 Dimensions of the Fastener (unit: mm)

Procedure

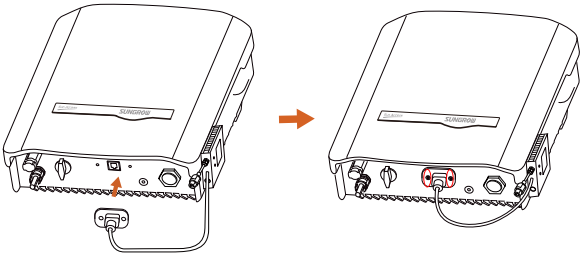
Step 1 Secure the bracket to the inverter with the supplied screws and then hang the eShow onto the bracket.



The eShow can also be mounted to the wall next to the inverter.

Make sure that the space between the eShow and the inverter is proper for the cable connection.

Step 2 Connect the RJ45 plug to the RJ45 port on the bottom of the inverter. Fasten the screws to secure the RJ45 plug to the inverter.



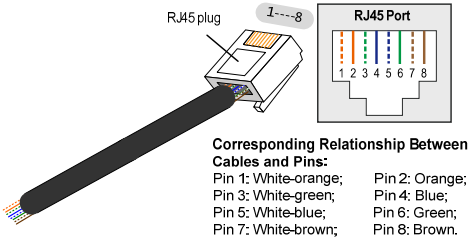
NOTICE

Do not extend the communication cable. The loss of any or all rights may follow if otherwise.

1.2 Connecting the eShow to the DRED

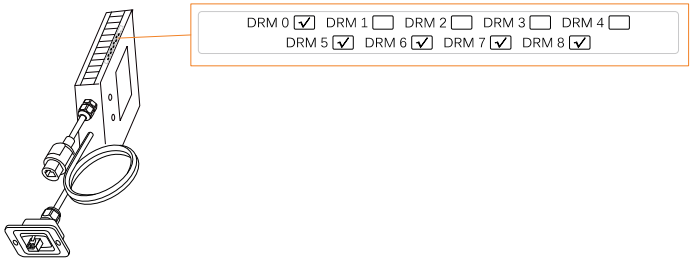
The eShow provides a DRM (Demand Response Mode) port for connecting to a demand response enabling device (DRED). The DRM port is a standard Ethernet port.

The following figure shows the DRM mode and the corresponding shorting pins of the RJ45 plug.



Mode	Asserted by shorting pins	
DRM0	5	6
DRM5	1	5
DRM6	2	5
DRM7	3	5
DRM8	4	5

The modes supported by the inverter are ticked on the label located on the left side of the module.



The components of the DRM connector are included in the delivery scope, as shown in the following figure.

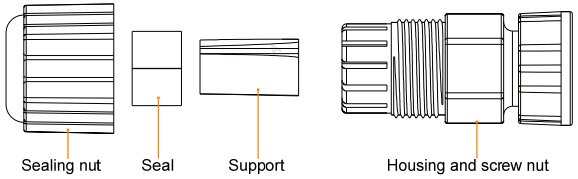
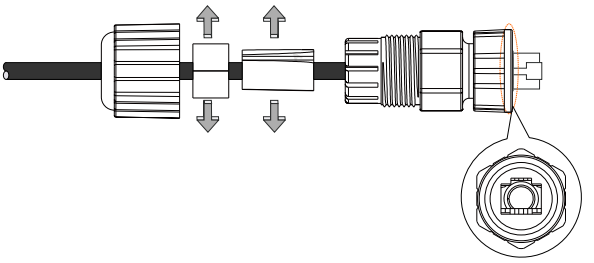


Fig. 1-3 DRM Connector Components

* The seal and the support are not closed. So, you can use the standard network cable with the RJ45 plug to assemble the DRM connector.

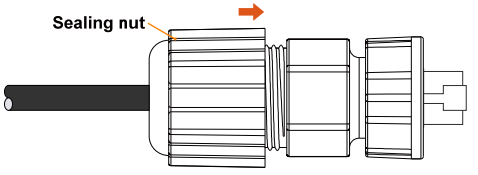
Procedure

Step 1 Lead the network cable through the components according to the following sequence. Align the RJ45 plug and the slot on the housing. The cable should be fully inserted until the RJ45 plug is positioned to the place.

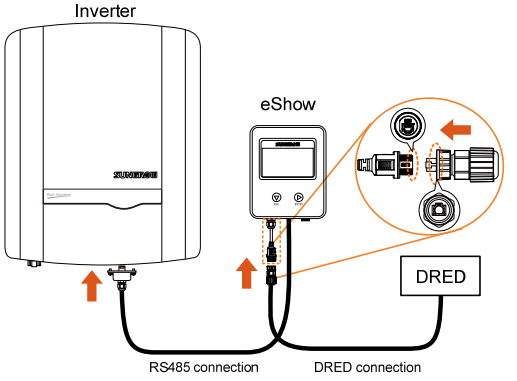


The seal and the support can be opened to place the cable body.

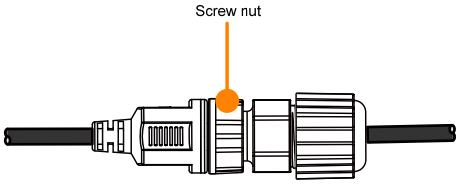
Step 2 Push the support and the seal into the housing. Then tighten the sealing nut to the housing.



Step 3 Align the DRM connector and the DRM terminal on the eShow. Plug the connector and make them engage perfectly.



Step 4 Tighten the screw nut of the connector to the DRM terminal.



2 LCD Operation

2.1 Description of Button Function

Inverter offers two buttons for users to look up the running information and configure parameters. The two buttons have multiple functions. Please refer to **Tab. 2-1** before any operation of the inverter.

Please wait about 15s for eShow startup after completing the connection.

Tab. 2-1 Button function

Button	Operation	Description
	≤1.2 s	Move upwards or downwards or scroll among set values. Hereinafter, it is referred to as "**Touch** ▽".
	> 1.2 s	Return to a previous menu or cancel the settings. Hereinafter, it is referred to as "**Press** ▽".
	≤1.2 s	Move left or right, or turn pages. Hereinafter, it is referred to as "**Touch** ▷".
	> 1.2 s	Enter the sub-menu or confirm the settings. Hereinafter, it is referred to as "**Press** ▷".

If there is no button operation for:

- 1 minute, LCD backlight will be automatically deactivated;
- 2 minutes, system will return to the default menu (main screen).

2.2 Menu Tree

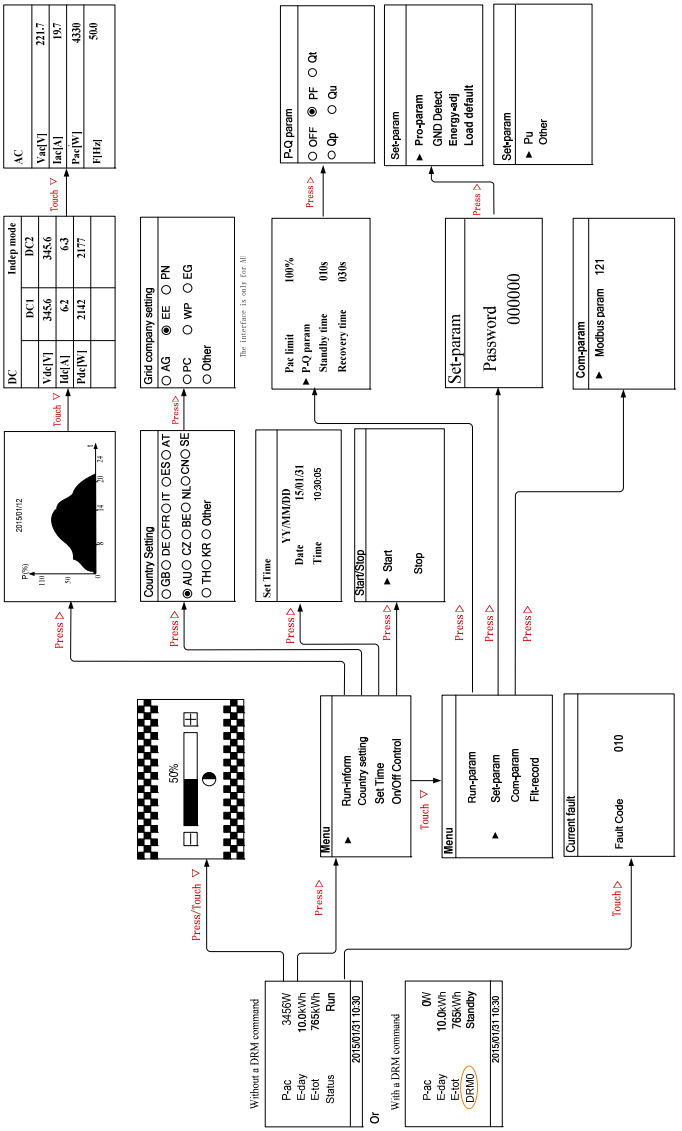


Fig. 2-1 Menu tree

2.3 Main Screen

The LCD display will enter the main screen after successful commissioning, as shown in Fig. 2-2.

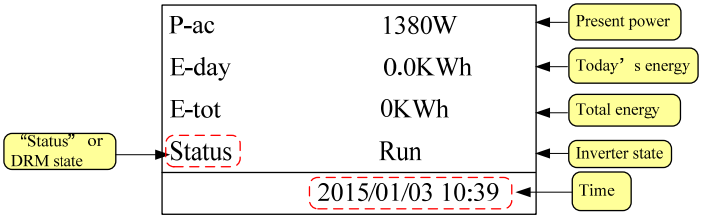


Fig. 2-2 Main screen

Tab. 2-2 Descriptions of the status on the main screen

Status	Description
Run	After being energized, inverter tracks the PV arrays' maximum power point (MPP) and converts the DC power into AC power. This is the normal operation mode.
Standby	Inverter enters Standby mode when DC input is insufficient or with the DRM0 command from the DRED. In this mode inverter will wait within the Standby duration (set by user, refer to "**2.9 Setting the Running Parameters**").
Key-stop	Inverter will stop running by manual "stop" via the LCD menu. In this way, inverter internal DSP stops. To restart the inverter, manually start via the LCD menu.
Startup	The inverter is initializing and synchronizing with the grid.
Dispatch	Inverter output power can be adjusted via the LCD menu. The value of Pac limit is lower than 100%.
Derating	Output derating is a way to protect the inverter form overload or potential faults. Situations require inverter power derating are too high internal temperature, too low grid voltage and so on.
Fault xxx	If a fault occurs, inverter will automatically stop running, disconnect the AC relay, and display the fault information on the LCD display with the "FAULT" indicator on. "xxx" is the fault code, e.g. "010". Once the fault is removed in recovery time (set by user, refer to "**2.9 Setting the Running Parameters**"), inverter will automatically resume running.
Warn xxx	Warning information is detected. "xxx" is the warning code, e.g. "070".

If a DRED is connected to the eShow and the DRED activates a DRM command, the DRM state will be shown on the main screen, as shown in the figure.

P-ac	0W
E-day	7.0KWh
E-tot	100KWh
DRM0	Standby
	2015/01/03 10:39

Tab. 2-3 Demand Response Modes (DRMs)

Mode	Explanation
DRM0	The inverter is in the state of standby.
DRM5	The export power to the grid is 0%.
DRM6	The export power to the grid is no more than 50% of the rated power.
DRM7	The export power to the grid is no more than 75% of the rated power.
DRM8	The export power to the grid is 100%, but subject to the constraints from other active DRMs.

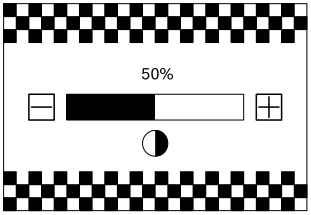
Viewing Current Fault

If inverter is in "Fault" state, touch ▷ to view "Current fault" information. To know the meaning of the fault code, please refer to "**3.1 Troubleshooting**".

Current fault	
Fault Code	010

2.4 Contrast Adjustment

Step 1 **Press/touch** ▽ on the main screen to enter the contrast adjustment screen.



Step 2 **Touch** ▷ to increase the setting value and **touch** ▽ to decrease the value.

Step 3 **Press** ▷ to confirm the contrast setting.

Contrast adjustment range: 0…100%

Recommended value: 50% or 60%.

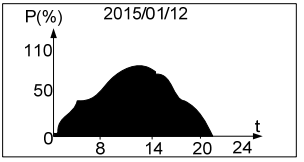
2.5 Checking Running Information

The main screen displays some basic information about the inverter. For more detailed information, please operate as follows:

Main Screen (Press ▷)→Menu→Run-inform (Press ▷)

Scroll pages by touching ▷.

The power curve shows the daily power output. Each point in the curve is the percentage of the present power to the nominal power.



If the inverter has two pairs of DC terminals, the DC information will be as shown in the figure.

Vdc[V]: DC voltage of each input.
Idc[A]: DC current of each input.
Pdc[W]: DC power of each input.
Indep mode/Paral mode:
The PV configuration mode of the two PV inputs.

DC		Paral mode
	DC1	DC2
Vdc[V]	345.6	345.6
Idc[A]	6.2	6.3
Pdc[W]	2142	2177

If the inverter has a pair of DC terminals, the DC information will be as shown in the figure.
Vdc[V]: DC voltage.
Idc[A]: DC current.
Pdc[W]: DC power.

DC	
Vdc[V]	345.6
Idc[A]	6.2
Pdc[W]	2142

Vac[V]: AC output voltage.
Iac[A]: AC output current.
Pac[W]: AC output power.
F[Hz]: Frequency of AC output.

AC	
Vac[V]	221.7
Iac[A]	19.7
Pac[W]	4330
F[Hz]	50.0

Country: Country code.
Temp: The internal temperature of the inverter.

Country	AU
Temp	45.2℃

Inverter shows detailed device information, including the SN and the firmware version.
The firmware version information is read only.

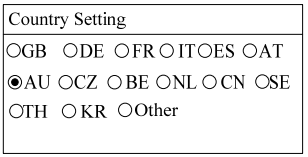


2.6 Setting the Country Code

To make the protection parameters setting convenient, inverter provides in-built protection parameters for certain countries.

Main Screen (Press ▷)→Menu (Touch ▽×1)→Country setting (Press ▷)

Touch ▽/▷ to choose countries and **press** ▷ to confirm.
If the country selected is not in the list, please choose Other and then input the protection parameters manually.

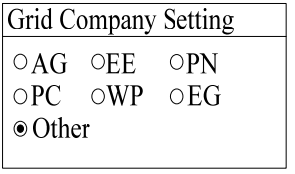


- After setting the Country, please set other parameters of the inverter in accordance with the specific requirements of the local grid. Check the parameters thoroughly before commissioning.
- SUNGROW assumes no liability for direct or indirect damage arising from the parameters exceeding the permissible range of the utility grid.

Tab. 2-4 Country code description

Country Code	Country	Language
GB	Great Britain	English
DE	Germany	
FR	France	
IT	Italy	
ES	Spain	
AT	Austria	
AU	Australia	
CZ	Czech	
BE	Belgium	
NL	Netherlands	
CN	China	Chinese
SE	Sweden	English
TH	Thailand	
KR	Korea	
Other	Country not mentioned above	

If the country code is set to AU, the grid company setting will appear. **Touch** ▽/▷ to choose grid code and **press** ▷ to confirm.



Tab. 2-5 Grid company code description

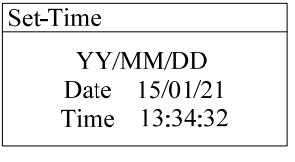
Grid company Code	Company
AG	AusGrid, NSW
EE	Ergon Energy, QLD
PN	SA Power Networks,SA
PC	Powercor,VIC
WP	Western Power,WA
EG	Energex, QLD
Other	Company not mentioned above

2.7 Setting the Time

The correct system time is very important. If there is deviation between the system time and the local time, the inverter will not operate normally. The clock is in 24-hour format. Proceed as follows to set the correct time.

Main Screen (Press ▷)→Menu (Touch ▽×2)→Set Time(Press ▷)

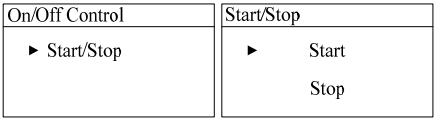
Touch ▷ to move the cursor and **touch** ▽ to change value. **Press** ▷ to confirm setting.



2.8 Starting/Stopping the Inverter

Main Screen (Press ▷)→Menu (Touch ▽×3)→On/Off Control (Press ▷)

Touch ▽ to choose and **press** ▷ to confirm the choice.



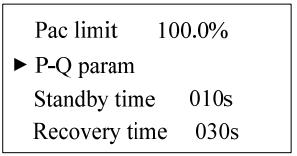
Press ▷ to confirm.

Start/Stop	Start/Stop
Confirm start inverter?	Confirm stop inverter?

2.9 Setting the Running Parameters

Main Screen (Press ▷)→Menu (Touch ▽×4)→Run-param (Press ▷)

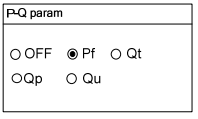
On the "Run-param" screen, **touch** ▽ to select one item and **press** ▷ to enter the setting interface. For each item, **touch** ▷ to move the cursor and **touch** ▽ to set the appropriate value. Confirm settings by **pressing** ▷.

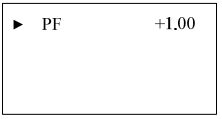


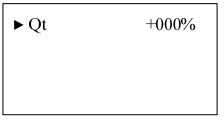
Tab. 2-6 Description of Running Parameters

Parameter	Description	Default	Settable Range
Pac limit	Inverter active power limitation	100.0%	0...100.0%
P-Q param	Reactive power regulating mode setting	OFF	OFF, Pf, Qt, Qp, Qu
Standby time	Time from inverter standby to startup	10s	10 s...255 s
Recovery time	Time from inverter fault is removed to standby	30s [IT: 300s]	0...900 s

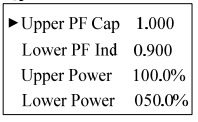
Select **P-Q param** and **touch** ▷ to select the mode. **Press** ▷ to enter the submenu.



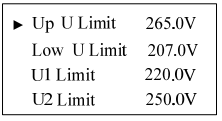


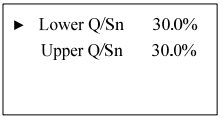


Qp



Qu





Tab. 2-7 Description of P-Q param

Parameter		Description	Default	Settable Range
OFF		Disable the function of reactive power regulating.	-	-
Pf		Inverter output power factor	+1.000	-1.000...-0.800/ +0.800...+1.000
Qt		The maximum ratio of reactive power to rated apparent power as %.		-060%...+060%
Qp	Upper PF Cap	Power factor of point P1 in the Qp mode curve	1.000	0.9…1
	Lower PF Ind	Power factor of point P2 in the Qp mode curve	0.900	0.9…1
	Upper Power*	Output power of point P2 in the Qp mode curve (in %)	100.0%	50%...100%
	Lower Power*	Output power of point P1 in the Qp mode curve (in %)	050.0%	0%...50%
Qu	Up U Limit	Grid voltage reference value 4	265.0 V	244 V...265 V
	Low U Limit	Grid voltage reference value 1	207.0 V	-
	U1 Limit	Grid voltage reference value 2	220.0 V	216 V... 230 V
	U2 Limit	Grid voltage reference value 3	250.0 V	235 V... 255 V
	Upper Q/Sn	Q/Sn value of voltage V1	30.0%	0%...60%
	Lower Q/Sn	Q/Sn value of voltage V4	30.0%	0%...60%

*Lower Power <Upper Power

"+": Lagging, the inverter is sinking reactive power from the grid.

"-": Leading, the inverter is sourcing reactive power to the grid.

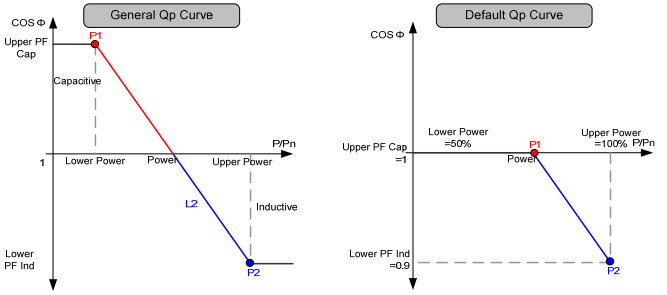


Fig. 2-3 Reactive Power Regulation Curve in Q(p) Mode

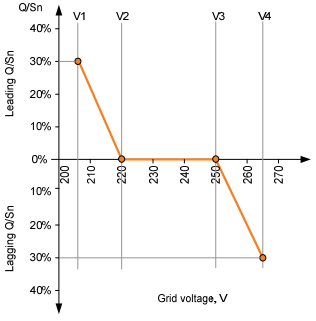


Fig. 2-4 Reactive Power Regulation Curve in Q(u) Mode

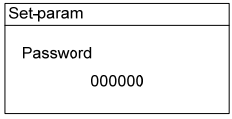
2.10 Advanced Settings

Main Screen (Press ▷)→Menu (Touch ▽×5)→Set-param (Press ▷)

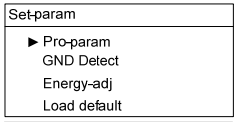
2.10.1 Password Entry

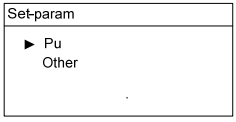
Set-parameter setting is password-protected. To set the parameters, you should input the correct password.

Step 1 A password confirmation screen will occur. **Touch** ▷ to move cursor right and **touch** ▽ to input the password 111111.



Step 2 **Press** ▷ to confirm the password and enter the "Set-param" submenu.

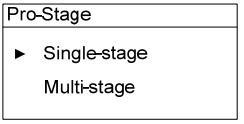




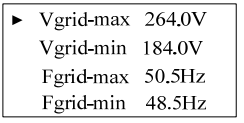
2.10.2 Setting the Protective Parameters

Protective parameters are designed for the threshold values that can trigger the protection function of the inverter.

The single-stage and multi-stage protection parameter setting interface will appear.

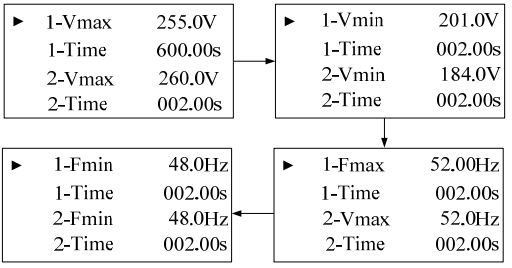


Single-stage Protection Parameter Setting:
Touch ▽ to select parameter, **touch** ▷ to move the cursor and **touch** ▽ to set the appropriate value. Confirm settings by pressing ▷.



Multi-stage Protection Parameter Setting:

Touch ▽ to select parameter, **touch** ▷ to move cursor and **touch** ▽ to set the appropriate value. Confirm settings by pressing ▷.



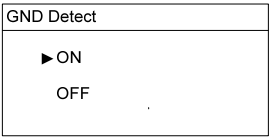
Tab. 2-8 Multi-stage Protection Parameters Explanation

Parameter	Explanation
Max-V. prot	Over-voltage protection
1-Vmax	Stage 1 Grid over-voltage (U>)
1-Time	Stage 1 Grid over-voltage (U>) tripping time
2-Vmax	Stage 2 Grid over-voltage (U>>)
2-Time	Stage 2 Grid over-voltage (U>>) tripping time
Min-V. prot	Under-voltage protection
1-Vmin	Stage 1 Grid under-voltage (U<)
1-Time	Stage 1 Grid under-voltage (U<) tripping time
2- Vmin	Stage 2 Grid under–voltage (U<<)
2-Time	Stage 2 Grid under–voltage (U<<) tripping time
Max-F. prot	Over-frequency protection
1- Fmax	Stage 1 Grid over-frequency (f>)
1- Time	Stage 1 Grid over-frequency (f>) tripping time
2- Fmax	Stage 2 Grid over-frequency (f>>)
2- Time	Stage 2 Grid over-frequency (f>>) tripping time
Min-F. prot	Under-frequency protection
1- Fmin	Stage 1Grid under-frequency (f<)
1- Time	Stage 1 Grid under-frequency (f<) tripping time
2- Fmin	Stage 2 Grid under-frequency (f<<)
2- Time	Stage 2 Grid under-frequency (f<<) tripping time

2.10.3 GND Detection

Touch ▽ to select **ON**/**Off** and confirm settings by **pressing** ▷.

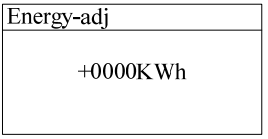
Select **ON** to enable the GND Detection. If the enclosure of the inverter is not grounded, the fault code 106 will be shown on the main screen. The buzzer inside will sound at the same time.



2.10.4 Total Energy Deviation Adjustment

If the accumulative value "E-total" in the inverter is different from the value in the external metering device, you should adjust energy by "Energy-adj" setting.

Touch ▷ to move the cursor and **touch** ▽ to change the value. **Press** ▷ to confirm the setting.
The "+" can be changed to "-".
The adjustment rangs from -9999 to +9999 kWh.
(Energy-adj value)=(Real measured value) - (E-tot reading value).

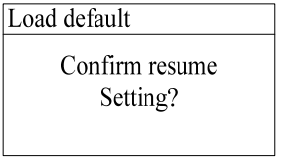


2.10.5 Load Default

NOTICE

All history information will be unrecoverable and all parameters will return to the default value except the protective parameters and time once the "load default" operation is performed.

Press ▷ to confirm "load default".



2.10.6 Setting the Power Derating Parameters

Set four grid voltage reference values. The output power of the inverter varies in response to the grid voltage.

Touch ▷ to move the cursor and **touch** ▽ to change value. **Press** ▷ to confirm setting.

►	Up U Limit	265.0V
	Low U Limit	207.0V
	U1 Limit	220.0V
	U2 Limit	250.0V

Tab. 2-9 Description of Power Derating Parameters

Parameter	Description	Default	Settable Range
Up U Limit	Grid voltage reference value 4	265.0 V	244 V...265 V
Low U Limit	Grid voltage reference value 1	207.0 V	Not applicable
U1 Limit	Grid voltage reference value 2	220.0 V	216 V... 230 V
U2 Limit	Grid voltage reference value 3	250.0 V	235 V... 255 V

* The default values are the factory settings.

The response curve is defined by the voltage reference values and corresponding power levels.

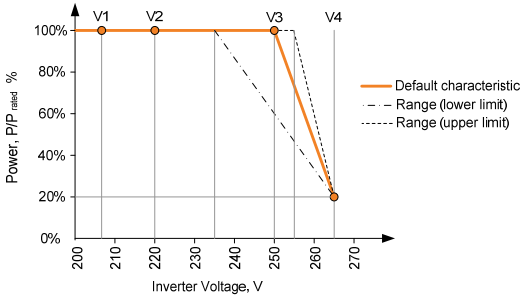


Fig. 2-5 Power Response Curve in P(u) Mode

2.10.7 Setting Other Parameters

Touch ▷ to move the cursor and **touch** ▽ to change value. **Press** ▷ to confirm setting.

►	10min ovtg	255.0V
	PRampRate	16.67%
	Fre Stop	52.00Hz
	Fre Start	50.25Hz

Tab. 2-10 Description of Other Parameters

Parameter	Description	Default	Settable Range
10min ovtg	10-minute overvoltage protective value	255.0 V	244 V...258 V
PRampRate	The ramp rate of power variation	16.67%	5%...100%

Parameter	Description	Default	Settable Range
Fre Stop	The Stop frequency value for over-frequency derating	52.00 Hz	51.00 Hz...52.00 Hz
Fre Start	The Start frequency value for over-frequency derating	50.25 Hz	50.25 Hz...52.00 Hz

* The default values are the factory settings.

Response to an increase in grid frequency:

When there is an increase in grid frequency which exceeds the *Fre Start* value (*50.25 Hz*), the inverter will reduce the power output linearly with an increase of frequency until the *Fre Stop* value (*52.00 Hz*) is reached. When the frequency exceeds the End value, the inverter output shall be ceased (i.e. 0 W).

The output power will remain at or below the lowest power level reached in response to an over-frequency event between 50.25 Hz and 52 Hz. This is to provide hysteresis in the control of the inverter.

When the grid frequency has decreased back to 50.15 Hz or less for at least 60 s, the power level will be increased at a rate no greater than the power ramp rate (*PRampRate*) limit.

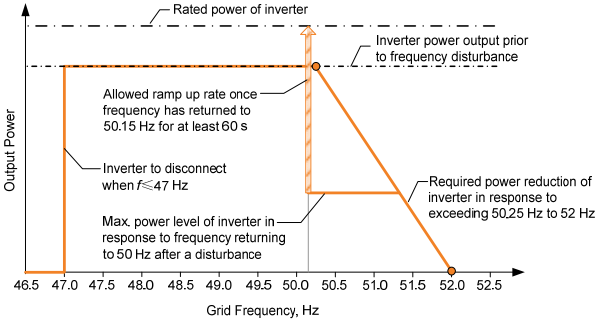
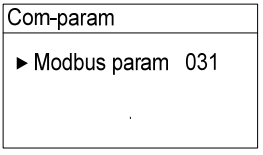


Fig. 2-6 Frq-Watt Mode for Over-frequency Conditions

2.11 Setting the Communication Parameters

Main Screen (Press ▷)→Menu (Touch ▽×6)→Com-param (Press ▷)

Touch ▷ to move the cursor and **touch** ▽ to set the appropriate value. Confirm settings by pressing ▷. Device address range: 1-247.



2.12 Viewing Fault Records

Main Screen (Press ▷)→Menu (Touch ▽×7)→Flt-record (Press ▷)

Inverter shows fault record pages.
Scroll pages by touching ▽.

Flt-record		P1/2
1	15/01/21 09:10:12	[010]
2	15/01/21 09:10:08	[004]
3	15/01/21 09:10:00	[009]
4	15/01/20 15:13:18	[010]

The inverter can only store at most 20 latest fault records.

3 Appendix

3.1 Troubleshooting

When the data on the screen of eShow cannot be refreshed on time, please follow the procedure below for a solution.

Step 1 Disconnect the external AC circuit breaker firstly.

Step 2 Turn off the upstream DC circuit break or pull off the MC4 terminal.

Step 3 check whether the communication cable of the eShow is firmly connected

Step 4 If the fault still exists, contact Sungrow Service Dept.

When faults occur, the "Fault" state will be shown on the main screen.

Fault Code	Description	Troubleshooting
002	The grid voltage exceeds the inverter allowable upper limit.	1. Check the voltage of the grid. 2. If the grid voltage exceeds the permissible range of inverter protection parameters, ask the local utility grid authority for solution. 3. If the grid voltage is within the permissible range, contact Sungrow Service Dept.
003	Grid transient voltage exceeds the permissible range.	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.
004	The grid voltage is below inverter's allowable lower limit.	1. Check the grid voltage. 2. If the grid voltage exceeds the permissible range of inverter protection parameters, ask utility grid company for solution. 3. If the grid voltage is within the permissible range, contact Sungrow Service Dept.
005	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.
006	The AC output current exceeds inverter allowable upper limit.	1. The inverter will resume if the output current falls below the protection value. 2. If the fault still exists, please contact Sungrow Service Dept.

Fault Code	Description	Troubleshooting
007	Transient AC over-current.	1. The inverter will self-recover after several seconds. 2. If the fault still exists, please contact Sungrow Service Dept.
008	The grid frequency exceeds inverter allowable upper limit.	1. Check the grid frequency. 2. If the grid frequency exceeds the permissible range of inverter protection parameters, ask utility grid company for solution. 3. If the grid frequency is within the permissible range, contact Sungrow Service Dept.
009	The grid frequency is below the inverter allowable lower limit.	
010	Islanding.	1. Check whether AC circuit breaker is triggered. 2. Check whether AC cables are all firmly connected. 3. Check whether grid is not in service. 4. If all conditions are OK and this fault still occurs in the LCD screen, contact Sungrow Service Dept.
011	The DC component of AC current exceeds inverter limit.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept.
012	The leakage current exceeds the upper limit.	1. Check the PV strings for ground fault. 2. If the fault occurs repeatedly, contact Sungrow Service Dept.
014	The average grid voltage exceeds the permissible range for over 10 minutes.	1. Check whether the inverter selected country code is the country you are in. 2. Wait a moment for inverter recovery. 3. Check the voltage of the grid. If the grid voltage exceeds the permissible range of inverter protection parameters, ask utility grid company for solution. 4. If the fault occurs repeatedly, contact Sungrow Service Dept..
015	The grid voltage exceeds the permissible range.	1. Check the model of the AC cables. 2. Wait a moment for inverter recovery. 3. If the grid voltage exceeds the permissible range, ask utility grid company for solution. 4. If the fault occurs repeatedly, contact Sungrow Service Dept.
016	The bus voltage is high after grid-connection.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept.
019	The transient bus voltage is high.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept.

Fault Code	Description	Troubleshooting
020	The bus average voltage is high.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept.
021	PV1 input over-current is detected.	Check the layout and the wiring of PV1 input.
022	PV2 input over-current is detected.	Check the layout and the wiring of PV2 input.
028	Reverse polarity of the PV1 connection.	1. Disconnect the DC switch. 2. Check the polarity of the PV inputs. 3. Reconnect the PV strings if the polarity is incorrect.
029	Reverse polarity of the PV2 connection.	
036	The temperature of radiator is too high.	1. Check whether the placement of inverter is correctly. 2. Check whether the inverter operating ambient temperature is more than the range indicated in the specification. 3. Check whether AC output power exceeds the nominal power. 4. If the fault still exists, please contact Sungrow.
037	The internal temperature of inverter is too high.	
038	Relay fault is detected.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept.
039	The insulation resistance is low. (ISO-fault)	1. Check whether there is a reliable inverter grounding line. 2. Check whether the positive and negative of PV panels is short-circuited with ground lead. 3. Wait a moment for inverter recovery. 4. If the fault occurs repeatedly, contact Sungrow Service Dept.
041	Leakage current sensor fault.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept.
043	Ambient under-temperature protection.	1. 1. Stop the inverter. 2. 2. Wait a moment for the temperature recovery. Restart the inverter when the temperature is in the permissible range. 3. If the fault occurs repeatedly, contact Sungrow Service Dept.
044	Open-loop inverter self-test fault.	3. 1. Check the drive circuit. 2. If the fault occurs repeatedly, contact Sungrow Service Dept.
045	Boost 1 self-test fault.	
046	Boost 2 self-test fault.	

Fault Code	Description	Troubleshooting
048	AC current sampling channel fault.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept.
053	Slave DSP detects that the grid voltage exceeds the protection range.	1. Check the grid voltage. 2. If the grid voltage exceeds the permissible range of inverter protection parameters, ask utility grid company for solution. 3. If the grid voltage is within the permissible range, contact Sungrow Service Dept.
054	Slave DSP detects that the grid frequency exceeds the protection range.	1. Check the grid frequency. 2. If the grid frequency exceeds the permissible range of inverter protection parameters, ask utility grid company for solution. 3. If the grid frequency is within the permissible range, contact Sungrow Service Dept.
056	Slave DSP detects that the leakage current exceeds the protection range.	1. Check whether there is a grounded fault of the PV string. 2. If the fault occurs repeatedly, contact Sungrow Service Dept.
059	Master DSP and slave DSP communication fault.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept.
061	The inverter type is not set.	Contact Sungrow Service Dept.
070	Fan warning.	Stop the inverter and disconnect the AC & DC cables. Check whether the fan duct has been blocked. If not, replace fans.
074	Communication fault between the LCD and DSP.	1. Check whether communication cable of the eShow is firmly connected. 2. If the communication cable is firmly connected, a fault has occurred in the internal communication of the inverter. However, the inverter continues feeding into the grid. Contact Sungrow Service Dept.
100	The AC output current exceeds inverter protection limit.	1. The inverter will resume if the output current falls below the protection value. 2. If the fault still exists, please contact Sungrow Service Dept.
106	The inverter is not grounded. Neither the PE terminal on the AC connection block nor the second PE terminal on the enclosure is reliably connected.	Check whether there is a reliable inverter grounding line. If there is access to the ground, and the fault still exists, please contact Sungrow Service Dept.

Fault Code	Description	Troubleshooting
200	The bus voltage is high.	1. Wait for inverter recovery after bus voltage lower. 2. If the fault occurs repeatedly, contact Sungrow Service Dept.
201	The bus voltage is too low.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept.
202	PV hardware over-current.	1. Wait for inverter recovery after DC current is reduced. 2. If the fault occurs repeatedly, contact Sungrow Service Dept.
203	The PV input voltage exceeds the bus voltage.	Check the functionality of the PV connection terminals.
205	AC output relay abnormal.	1. Wait a moment for inverter recovery. 2. If the fault occurs repeatedly, contact Sungrow Service Dept.
306	Mismatch of input and output power.	Contact Sungrow Service Dept.
315	Faults detected in the PV1 current sampling channel.	Restart the system.
316	Faults detected in the PV2 current sampling channel.	
409, 503-506	Temperature sensor warnings.	1. Inverter can normally be connected to the grid. 2. Restart the system.

3.2 Exclusion of Liability

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- installing or operating the product in unintended environment;

- installing or operating the product without observing relevant safety regulations in the deployment location;
- ignoring the safety warnings or instructions contained in all documents relevant to the products;
- installing or operating the products under incorrect safety or protection conditions;
- altering the products or supplied software without authority;
- the product malfunctions due to operating attached or neighboring devices running out of the allowed limit values; and
- damage caused by the natural environment beyond the rated operating range of the inverter.

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- SolarInfo software used for commercial purposes is prohibited.
- Decompiling, decoding or destroying the original program, including SolarInfo software and the embedded software, is prohibited.

3.3 About Us

SUNGROW is a China-leading manufacturer of various power electronic products for renewable energy generation systems. Our products include converters, inverters, battery chargers and other power supplies for distributable generation systems in both grid-connected and stand-alone applications. The power rating of SUNGROW products covers from hundred watt to mega-watt systems.

The vision of SUNGROW is to help our customers acquire stable and clean power with minimum cost, maximum reliability and enhanced safety.

Contact Information

Should you have any problems, please contact us through the following information. We will be more than happy to assist you!

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