

RENAC SEC API Documentation

Version	Updated Date	Note
1.0.0	2021-10-12	Initial Release
2.0.0	2022-08-08	Updated
2.0.1	2022-08-10	Added station interface
2.0.2	2022-09-01	Added Power Generation interface
2.0.3	2022-11-10	2.2.4 Add Return MODEL_ NAME
2.0.4	2022-11-18	Add interface in 2.2.11
2.0.5	2023-2-10	Add interface in 2.2.12
2.0.6	2023-3-31	2.2.4 Disable the station ID Add 2.2.13 Remote turn on/off inverter
2.07	2023-07-05	1) Add 2.2.14 Inverter parameters reading 2) Add 2.2.15 Inverter parameters setting 3) Modify 2.2.7 Alarm records, station_ Name can be empty

1、 Open Platform Overview

The platform interface is based on the http protocol

2、 Interface documentation

2.1 Overall Description

Use POST request, refer to the interface definition for details ,
and use UTF-8 encoding.

Both data request format and return format are json.

2.2 Interface Description

2.2.1 User login

Address: <http://153.le-pv.com:8082/api/user/login>

Request Parameters:

Parameter	Is it necessary?	Type of Data	Description
login_name	Yes	String	User Name
pwd	Yes	string	Password

Parameter Example:

```
{"login_name":"zhangsan","pwd":"123456"}
```

Back to instructions:

Parameter	Type of Data	Description
code	Int	1:Success; 400:Fail; 401:Unauthorized 500:Please contact the

		administrator
msg	String	0000:Success; 1001:User name does not exist; 1002:Wrong Password; 9001:Unauthorized operation;
data	Int	User ID

Return to Example:

```
{ "code": 1, "msg": "Successful operation", "data": 123 }
```

2.2.2 Plant list

Address: <http://153.le-pv.com:8082/api/station/list>

Request Parameters:

Parameter	Is it necessary ?	Type of Data	Description
user_id	Yes	int	User ID
offset	Yes	int	Pagination, the first page is 0
rows	Yes	int	Pagination, plant numbers
station_name	No	string	Plant Name

status	No	int	Plant status. 0:Online;1:Offline;2:Alarm
equ_sn	No	string	Device SN

Parameter example:

```
{“user_id”:111,“offset”:0,“rows”:10}
```

Return to instruction

Parameter	Type of Data	Description
code	Int	1:Success; 400:Fail; 401:Unauthorized 500:Please contact the administrator
msg	String	0000:Success; 9000:Missing Parameters;
data	object	Return to content
total	int	Total number of plants
list	object	Plant List
station_id	int	Plant ID
station_name	string	Plant Name
station_type	Int	Plant Type。 1:Residential;2:Ground-Mounted;

		3:Commercial rooftop; 4:Battery storage
station_capacity	double	Capability Size.kW
day_energy	double	Today Generation.kWh
sum_energy	double	Total Generation.kWh
status	int	Status.0:Online;1:Offline;2:Alarm
enduser_id	int	End User ID
enduser_name	String	End user name
installer_id	int	Installer ID
installer_name	String	Installer Name

Return to Example:

```
{
  "code": 1,
  "msg": "0000",
  "data": {
    "total": 2,
    "list": [{
      "sum_energy": 0,
      "station_name": "Storage inverter test station",
      "station_capacity": 5.0,
      "day_energy": 0,
      "station_type": 4,
      "station_id": 6,
      "grid_time": "2021-01-08",
      "status": 0
    }], {
```

```

    "sum_energy": 0,
    "station_name": "On grid inverter test station",
    "station_capacity": 500.0,
    "day_energy": 0,
    "station_type": 1,
    "station_id": 5,
    "grid_time": "2021-01-08",
    "status": 0
  }
}

```

2.2.3 Station Day/Month/Year/Total generation statistics

Address: <http://153.le-pv.com:8082/renac/station/energy>

Request Parameters:

Parameters	Is it necessary?	Type of Data	Description
station_id	Yes	Int	Station ID
time_type	Yes	Int	Type。 1:Day;

			2:Month; 3:Year; 4:Total;
time	Yes	String	Example, Day:"2022-08-10" Month:"2022-08", Year:"2022", Total:"0"

Parameter example:

```
{
  "station_id":222,
  "time_type":1,
  "time":"2022-08-08"
}
```

Return to Instructions:

Parameters	Type of Data	Description
------------	--------------	-------------

code	Int	1:Success; 400:Fail; 401:Unauthorized 500:Please contact the administrator
msg	String	0000:Success;
data	List	Data list
TIME	String	Time
ENERGY	Double	Generation (kWh)

Return to example:

```
{
  "code": 1,
  "msg": "0000",
  "data": [ {
    "ENERGY": 6.4,
    "TIME": "2022-08-08 23:50:00"
  }, {
    "ENERGY": 6.6,
    "TIME": "2022-08-08 23:55:00"
  }
]
```

2.2.4 Device list

address: <http://153.le-pv.com:8082/bg/equList>

Request Parameters:

Parameter	Is it necessary?	Type of Data	Description
user_id	Yes	int	User ID
station_id	No	int	Plant ID
offset	Yes	int	Pagination, the first page is 0
rows	Yes	int	Numbers in each page
equ_sn	No	string	Device SN

Parameter Example:

```
{“user_id”:111,“station_id”:12,“offset”:0,“rows”:10}
```

Return to instruction

Parameters	Type of Data	Description
code	Int	1:Success; 400:Fail; 401:Unauthorized 500:Please contact the administrator
msg	String	0000:Success; 9000:Missing Parameters;

data	Object	return data object
total	int	Total devices
list	object	Device List
INV_SN	string	Devisе SN
MODEL_NAME	String	Device model
STATUS	int	Device Status. 0:Normal;1:offline;2:alarm
STATION_NAME	string	Plant name
MONITOR_TIME	string	Last monitor time
REG_TIME	String	Register time

Return to example :

```
{
  "code": 1,
  "msg": "0000",
  "data": {
    "total": 561,
    "list": [{
      "REG_TIME": "2022-05-02 21:34:22",
      "STATUS": 1,
      "EQU_TYPE_ID": 1,
      "MONITOR_TIME": "2022-05-02 22:00:48",
      "INV_SN": "8701A31210738087",
      "STATION_NAME": "Test",
      "MODEL_NAME": "R1-10K5-DS"
    }]
  }
}
```

```
}

```

2.2.5 Get the latest data of the On-grid inverter

Address: <http://153.le-pv.com:8082/renac/grid/equData>

Request parameters :

Parameter	Is it necessary?	Type of Data	Description
equ_sn	Yes	string	Inverter SN

Parameter example :

```
{"equ_sn":"12345678"}

```

Return to instructions:

Parameter	Type of data	Description
code	Int	1:Success; 400:Fail; 401:Unauthorized 500:Please contact the administrator
msg	String	0000:Success;; 200004::Missing parameters
data	Object	return data object

inv_sn	String	Inverter SN
upload_time	String	Acquisition time
pv1_vol	Double	PV1 Voltage (V)
pv2_vol	Double	PV2 Voltage (V)
pv3_vol	Double	PV3 Voltage (V)
pv4_vol	Double	PV4 Voltage (V)
pv1_cur	Double	PV1 Current (A)
pv2_cur	Double	PV2 Current (A)
pv3_cur	Double	PV3 Current (A)
pv4_cur	Double	PV4 Current (A)
pv1_power	Double	PV1 Power (W)
pv2_power	Double	PV2 Power (W)
pv3_power	Double	PV3 Power (W)
pv4_power	Double	PV4 Power (W)
output_power	Double	Inverter output power (W)
day_energy	Double	Daily generation (kWh)
sum_energy	Double	Total generation (kWh)
r_vol	Double	R phase voltage (V)
r_cur	Double	R phase current (A)
r_fre	Double	R phase frequency (Hz)
r_power	Double	R phase power (W)
s_vol	Double	S phase voltage (V)

s_cur	Double	S phase current (A)
s_fre	Double	S phase frequency (Hz)
s_power	Double	S phase power (W)
t_vol	Double	T phase voltage (V)
t_cur	Double	T phase current (A)
t_fre	Double	T phase frequency (Hz)
t_power	Double	T phase power (W)
temp	Double	Heatsink Temperature (°C)
meter_power	Double	Meter Power (W)
alarm	String	Warning information. The form is ",10,283", of which 10 and 283 are alarm IDs. For details, please refer to the appendix for alarm information.

Return to example:

```
{  
  "code": 1,  
  "msg": "0000",  
  "data": {  
    "inv_sn": "8000531210409002",  
    "upload_time": "2021-10-12 08:26:56",  
    "pv1_vol": 224.8,  
    "pv2_vol": 265,  
    "pv3_vol": 265,  
    "pv4_vol": 265,  
    "pv1_cur": 2.6,  
    "pv2_cur": 1.5,  
    "pv3_cur": 1.5,  
    "pv4_cur": 1.5,  
    "pv1_power": 598,  
    "pv2_power": 400,  
    "pv3_power": 400,  
    "pv4_power": 400,  
    "output_power": 739,  
    "day_energy": 1,  
    "sum_energy": 154.2,  
    "r_vol": 238.5,  
  }  
}
```

```
"r_cur": 3.1,  
"r_fre": 49.91,  
"r_power": 739.35,  
"s_vol": 238.5,  
"s_cur": 3.1,  
"s_fre": 49.91,  
"s_power": 739.35,  
"t_vol": 238.5,  
"t_cur": 3.1,  
"t_fre": 49.91,  
"t_power": 739.35,  
"meter_power": 122,  
"alarm": "",  
"temp": 36.9  
}  
}
```

2.2.6 Get the latest data of the energy storage inverter

Address: <http://153.le-pv.com:8082/renac/storage/equData>

Request parameters:

Parameters	Is it necessary?	Type of Data	Description
------------	------------------	--------------	-------------

equ_sn	Yes	String	Inverter SN
--------	-----	--------	-------------

Parameter example:

```
{"equ_sn": "12345678"}
```

[Return to Instructions](#)

Parameters	Type of data	Description
code	Int	1:Success; 400:Fail; 401:Unauthorized 500:Please contact the administrator
msg	String	0000:Success; 200004:Missing parameters
data	Object	return data object
inv_sn	String	Inverter SN
upload_time	String	Acquisition time
pv1_vol	Double	PV1 voltage (V)
pv1_cur	Double	PV1 current (A)
pv1_power	Double	PV1 power (W)
pv2_vol	Double	PV2 voltage (V)
pv2_cur	Double	PV2 current (A)
pv2_power	Double	PV2 power (W)
pv_energy_day	Double	PV Daily generation

		(kWh)
pv_energy_total	Double	PV total generation (kWh)
inv_temperature	Double	Inverter Temperature (°C)
grid_vol	Double	Grid voltage (V)
grid_cur	Double	Grid current (A)
grid_power	Double	Grid power (W)
grid_fre	Double	Grid frequency (Hz)
meter_feedin_day	Double	Daily Feed in Energy (kWh)
meter_feedin_total	Double	Total Feed in Energy (kWh)
meter_consum_day	Double	Daily Consumption Energy (kWh)
meter_consum_total	Double	Total Consumption Energy (kWh)
run_mode	Int	Working Mode 1:Wait Mode 2: Check Mode 3: Normal Mode 4: Fault Mode 5: Permanent Mode 6: Update Mode 7: EPS Mode 8: Self Test Mode 9: Idel Mode
feedin_power	Double	Feed in Power (W)
energy_day	Double	Daily Feed in Energy (kWh)
energy_total	Double	Total Feed in Energy

		(kWh)
eps_vol	Double	EPS Voltage (V)
eps_cur	Double	EPS Current (V)
eps_power	Double	EPS Power (W)
eps_fre	Double	EPS Frequency (Hz)
eps_energy_day	Double	EPS Daily Energy (kWh)
eps_energy_total	Double	EPS Total Energy (kWh)
power_load	Double	Load Power (W)
energy_day_load	Double	Load Daily Power Consumption (kWh)
energy_total_load	Double	Load Total Power Consumption (kWh)
inv_fault_message	String	Inverter fault code. The form is ",10,283", of which 10 and 283 are alarm IDs., please refer to the appendix for details alarm information.
mgr_fault_message	String	Management board fault code. The form is ",10,283", of which 10 and 283 are alarm IDs. Please refer to the appendix for details alarm information.
battery_number	Int	Battery number
battery1_type	Int	Battery 1 type 0:lead acid 1:lithium
battery1_temp	double	Battery 1 temperature

battery1_vol	Double	Battery 1 voltage
battery1_cur	Double	Battery 1 current
battery1_power	Double	Battery 1 power (W)
battery1_capacity	Double	Battery SOC (%)
battery1_output_energy	Double	Battery charge/discharge energy (kWh) , positive or negative
battery1_charge_max_cur	Double	Max.battery charge current (A)
battery1_discharge_max_cur	Double	Max.battery discharge current (A)
battery1_limit_charge_vol	Double	Battery charge limit voltage (V)
battery1_limit_discharge_vol	Double	Battery discharge limi (V)
battery1_healthy	Double	SOH (%)
battery1_soc_max	Double	Max. soc
battery1_charge_energy_day	Double	Battery daily charge energy (kWh)
battery1_discharge_energy_day	Double	Battery daily discharge energy (kWh)

Return to example:

```
{
  "code": 1,
  "msg": "0000",
  "data": {
    "inv_sn": "820544453433456",
    "upload_time": "2021-10-12 15:07:54",
```

"pv1_vol": 0.0,
"pv1_cur": 0.0,
"pv1_power": 0.0,
"pv2_vol": 0.0,
"pv2_cur": 0.0,
"pv2_power": 0.0,
"grid_vol": 228.6,
"grid_cur": -0.9,
"grid_power": 0.0,
"grid_fre": 50.0,
"pv_energy_day": 0.0,
"pv_energy_total": 336.9,
"meter_feedin_day": 0.1,
"meter_feedin_total": 1167.1,
"meter_consum_day": 0.6,
"meter_consum_total": 543.8,
"inv_temperature": 43.0,
"run_mode": 2,
"feedin_power": -29.0,
"energy_day": 0.1,
"energy_total": 476.5,
"eps_vol": 0.0,
"eps_cur": 0.0,
"eps_power": 0.0,
"eps_fre": 0.0,
"eps_energy_day": 0.0,
"eps_energy_total": 0.7,
"power_load": 29.0,
"energy_day_load": 0.6,
"energy_total_load": 2346.1,
"inv_fault_message": "",
"mgr_fault_message": "",
"battery_number": 1,
"battery1_type": 1,
"battery1_temp": 27.0,
"battery1_vol": 53.11,
"battery1_cur": -0.61,
"battery1_power": -33.0,
"battery1_capacity": 94.0,
"battery1_output_energy": 103.6,
"battery1_charge_max_cur": 50.0,
"battery1_discharge_max_cur": 50.0,
"battery1_limit_charge_vol": 55.0,
"battery1_limit_discharge_vol": 46.0,

```

    "battery1_healthy": 1.0,
    "battery1_soc_max": 0.1,
    "battery1_charge_energy_day": 0.0,
    "battery1_discharge_energy_day": 0.4
  }
}

```

2.2.7 Alarm list

Address: <http://153.le-pv.com:8082/api/home/errorList2>

Request parameters:

Parameters	Is it necessary?	Type of Data	Description
user_id	Yes	int	User ID
begin_time	Yes	string	Start time, example:2022-07-08
end_time	Yes	String	End time, Example :2022-07-09
offset	Yes	int	Pagination
rows	Yes	int	Pagination ,Number of each page
station_name	No	string	Plant name
equ_sn	No	string	Device SN

Parameters example:

```
{
  "user_id":111,
  "begin_time":"2022-07-08",
  "end_time": "2022-07-09",
  "offset":0,
  "rows":50}
```

Return to instruction

Parameters	Type of data	Description
code	Int	1:Success; 400:Fail; 401:Unauthorized 500:Please contact the administrator
msg	String	0000:Success; 9000:Missing parameters
data	object	Return content
total	int	Number of record
result	object	Record list
EQU_SN	string	Device SN
STATION_NAME	string	Plant name
BEGIN_TIME	string	Alarm start time
END_TIME	string	Alarm end time
ERROR_CODE	string	Alarm brief description
ERROR_MSG_EN	string	Alarm description
STATUS	Int	Status: 0:on going; 1:ended

Return example:

```
{
  "code": 1,
  "msg": "0000",
  "data": {
    "total": 1,
    "results": [{
      "STATUS": 0,
      "BEGIN_TIME": "2021-12-07 15:45:00",
      "EQU_SN": "8100431210234021",
      "ERROR_MSG_EN": "Hardware protection
for Bus voltage over rating",
      "ERROR_CODE": "HwBusOVP",
      "SOLUTION_EN": "Turn off the DC switch ,
then turn it on in 5 minutes , if there is still a problem ,
please contact customer service."
    }]
  }
}
```

2.2.8 Address:

address: <http://153.le-pv.com:8082/bg/areainfo>

Request parameters:

Parameters	Is it necessary?	Type of data	Description
areaid	Yes	int	Address ID Default 0

Parameter Example:

```
{“areaid”:0}
```

Return to instructions:

Parameters	Type of Instruction	Description
code	Int	1:Success; 400:Fail; 401:Unauthorized 500:Please contact the administrator
msg	String	0000:Success;
data	Object	Return to content
id	Int	Address areaid
addr_en	String	Details address

Return to example:


```
{
  "code": 1,
  "msg": "0000",
  "data": [{
    "addr_en": "Africa",
    "id": 3
  }, {
    "addr_en": "Antarctica",
    "id": 156
  }, {
    "addr_en": "Asia",
    "id": 1
  }, {
    "addr_en": "Europe",
    "id": 2
  }, {
    "addr_en": "North America",
    "id": 4
  }, {
    "addr_en": "Oceania",
    "id": 6
  }, {
```

```
    "addr_en": "South America",  
    "id": 5  
  }  
}
```

2.2.9 Energy storage inverter historical power generation

query

Address: <http://153.le-pv.com:8082/renac/storage/equChart>

Request parameters :

Parameters	Is it necessary?	Type of data	Description
inv_sn	Yes	String	Device SN
chart_type	Yes	Int	Type of data. 1:Daily Generation; 2:Weekly Generation; 3:Monthly Generation; 4:Yearly Generation;

			5:Total Generation;
time	No	String	Inquiry time. chart_type=1or2, example"2022-09-01"; Chart_type=3, example"2022-09"; Chart_type=4, example"2022"; Chart_type=5, No need to pass parameters

Parameter Example:

```
{
  "inv_sn": "A111111111111111",
  "chart_type": 1,
  "time": "2022-09-01"
}
```

Return to Instruction:

Parameters	Type of data	Description
code	Int	1:Success; 400:Fail; 401:Unauthorized 500:Please contact the administrator
msg	String	0000:Success; 9000:Parameter error;
data	Int	

DAY_TIME	String	time
DAY_ENERGY_SOLAR	Double	Generation

Return to Example:

```
{
  "code": 1,
  "msg": "0000",
  "data": [ {
    "DAY_TIME": "2022-09-01 13:20:00",
    "DAY_ENERGY_SOLAR": 0.0
  }, {
    "DAY_TIME": "2022-09-01 13:25:00",
    "DAY_ENERGY_SOLAR": 0.0
  }, {
    "DAY_TIME": "2022-09-01 13:40:00",
    "DAY_ENERGY_SOLAR": 0.0
  }
]
```

2.2.10 On-grid inverter historical power generation query

Address: <http://153.le-pv.com:8082/renac/grid/equChart>

Request parameters.

Parameters	Is it necessary?	Type of data	Description
inv_sn	Yes	String	Device SN
chart_type	Yes	Int	Type of data. 1:Daily Generation; 2:Weekly Generation; 3:Monthly Generation; 4:Yearly Generation; 5:Total Generation;
time	No	String	Inquiry time. chart_type=1or2, example"2022-09-01"; Chart_type=3, example"2022-09"; Chart_type=4, example"2022"; Chart_type=5, No need to pass parameters

Parameter Example:

```
{
  "inv_sn": "A111111111111111",
  "chart_type": 1,
  "time": "2022-09-01"
}
```

Return to Instruction:

Parameters	Type of data	Description
code	Int	1:Success; 400:Fail; 401:Unauthorized 500:Please contact the administrator
msg	String	0000:Success; 9000:Parameter error;
data	Int	
DAY_TIME	String	Time
DAY_ENERGY_SOLAR	Double	Generation

Return to example:

```
{
  "code": 1,
  "msg": "0000",
  "data": [ {
    "DAY_TIME": "2022-09-01 13:20:00",
```

```

    "DAY_ENERGY_SOLAR": 0.0
  }, {
    "DAY_TIME": "2022-09-01 13:25:00",
    "DAY_ENERGY_SOLAR": 0.0
  }, {
    "DAY_TIME": "2022-09-01 13:40:00",
    "DAY_ENERGY_SOLAR": 0.0
  }
}

```

2.2.11 On grid inverter daily output power query

Address: <http://153.le-pv.com:8082/renac/grid/powerChart>

Request parameters.

Parameters	Is it necessary?	Data type	Description
inv_sn	Yes	String	Device SN
time	Yes	String	Query time, such as "2022-11-18"

Parameter Example:

```
{
  "inv_sn": "A111111111111111",
  "time": "2022-09-01"
}
```

Return to Instruction:

Parameters	Type of data	Description
code	Int	1:Success; 400:Fail; 401: Unauthorized 500: Please contact the administrator
msg	String	0000:Success; 9000: Parameter error;
data	object	
TIME	String	Time
POWER	Double	Power (W)

Return to example:

```
{
  "code": 1,
  "msg": "0000",
  "data": [ {
    "TIME": "2022-09-01 13:20:00",
    "POWER": 100.0
  }, {
```



```

    "TIME": "2022-09-01 13:25:00",

    "POWER": 200.0

  }, {

    "TIME": "2022-09-01 13:40:00",

    "POWER": 300.0

  ]
}

```

2.2.12 Remote change export limit value

Address: http://153.le-pv.com:8082/api/setting/setExport_limit_value

Request parameters :

Parameters	Is it necessary?	Type of data	Description
equ_sn	Yes	String	Device Series number
export_limit_mode	Yes	Int	0:No export limit 1:mode 1 2:mode 2
export_limit_value	Yes	Int	When export_limit_mode set as "0"时, the value is 0

Parameter Example:

```
{“equ_sn”:”80000000000000001”,”export_limit_mode”:”1”,”export_limit_value”:100}
```

Return to Instruction:

Parameters	Type of data	Description
code	Int	1:Success; 400:Fail; 401: Unauthorized 500: Please contact the administrator
msg	String	0000:Success; 9000:Parameter error; 9001:No permission to operate;
data	object	

Return to Example:

```
{ "code": 1, "msg": "success", "data": null }
```

2.2.13 Remote turn on/off inverter

Address: <http://153.le-pv.com:8082/bg/remote>

Request parameters:

Parameters	Is it necessary?	Type of data	Description
user_id	Yes	int	User ID

equ_sn	Yes	String	Device SN
status	Yes	Int	1:Turn off; 2:Turn on

Parameter Example::

```
{“user_id”:10,“equ_sn”:”8000000000000001”,“status”:”1”}
```

Return to Example:

Parameters	Type of data	Description
code	Int	1:Success; 400:Fail; 401: Unauthorized 500: Please contact the administrator
msg	String	0000:Success; 9000:Parameter error; 9001:No permission to operate;
data	object	

Return to Example:

```
{ "code": 1, "msg": " Operation successful ", "data": null }
```

2.2.14 (1) Read inverter parameters

Address: <http://153.le-pv.com:8082/api/setting/loadcodes>

Corresponding inverter:

R1-1K1-SS	R1-1K6-SS	R1-2K2-SS	R1-2K7-S S	R1-3K3-S S	R1-3K7-SS	
NAC4K-DS	NAC5K-DS	NAC6K-DS	NAC7K-D S	NAC8K-D S		
R1-7K-DS	R1-8K-DS	R1-9K-DS	R1-10K-D S	R1-10K5- DS		
R3-4K-DT	R3-5K-DT	R3-6K-DT	R3-8K-DT	R3-10K-D T	R3-12K-DT	R3-15K-DT
R3-10K-LV	R3-12K-LV	R3-15K-LV				
R3-10K-G5	R3-15K-G5	R3-17K-G5	R3-20K-G 5	R3-25K-G 5	R3-25K-G5 -P	
NAC20K-DT	NAC25K-DT	NAC30K-D T	NAC33K-D T			
NAC10K-LV	NAC12K-LV	NAC15K-L V	NAC20K-L V			

Request parameters:

Parameter Name	Is it necessary	Data Type	Instruction
equSn	Yes	String	Device SN
type	Yes	String	Type 2: Power up protect Type 3: Grid Voltage protection Type 4: Grid frequency protection Type 5: DCI

			protection Type 6: Active remote manage Type 8: Reactive power control Type 10: Grid vol.derating Type 11:Extension Settings Type 12: Basic Data Settings
--	--	--	--

Request Example:

```
{ "equSn": "8000532191106010"
  "type": "2" }
```

type=2:Power up protect

Return example:

```
{ "success": true, "messageCode": " 0000"message": "
Operation successful ",
  "results": {"FRE_PROTECTED_UPPER:60.1
              FRE_PROTECTED_LOWER:59.9
              STARTUP_TIME_INT:300
              VOL_PROTECTED_LOWER:180
              RECONNECTION_TIME_INT:300
              VOL_PROTECTED_UPPER:242
              RECONNECTION_RATE:19
              STARTUP_RATE:19"}
}
```

Return instructions:

Parameter name	Data type	Description
FRE_PROTECTED_UPPER	double	Frequency protection recovery upper limit (Hz)
FRE_PROTECTED_LOWER	double	Frequency protection recovery lower limit (Hz)
VOL_PROTECTED_LOWER	double	Voltage protection recovery lower limit (V)
RECONNECTION_TIME_INT	double	Reconnection time (s)
VOL_PROTECTED_UPPER	double	Voltage protection recovery upper limit (V)
RECONNECTION_RATE	double	Reconnection rate (%Pn/min)
STARTUP_RATE	double	Startup rate (%Pn/min)

type=3: Voltage protection

Return example:

```
{ "success": true, "messageCode": "0000", "message": "
Operation successful ",
"results": { "IDENT_BIT_3:1
IDENT_BIT_4:1
IDENT_BIT_1:1
IDENT_BIT_2:1
```

```

OVERVOL_PROTECTED_TIME_INT_2:40
OVERVOL_PROTECTED_TIME_INT_1:1600
UNDERVOL_PROTECTED_TIME_1:1600
UNDERVOL_PROTECTED_TIME_2:60
VOL_PROTECTED_10M:253
OVERVOL_PROTECTED_2:242
OVERVOL_PROTECTED_1:242
UNDERVOL_PROTECTED_2:176
UNDERVOL_PROTECTED_1:176"}

```

```

}
```

Return instructions:

Parameter name	Data type	Description
IDENT_BIT_3	int	Voltage protection module enable flag 3 (0: Primary undervoltage protection disable;1: Primary undervoltage protection enable)
IDENT_BIT_4	int	Voltage protection module enable flag 4 (0: Secondary undervoltage protection disable;1: Secondary undervoltage protection

		enable)
IDENT_BIT_1	int	state (0: normal;1: Upgrading)
IDENT_BIT_2	int	Voltage protection module enable flag 2 (0: Secondary overvoltage protection disable;1: Secondary overvoltage protection enable)
OVERVOL_PROTECTED_TIME_INT_2	double	Overvoltage protection 2 time
OVERVOL_PROTECTED_TIME_INT_1	double	Overvoltage protection 1 time (ms)
UNDERVOL_PROTECTED_TIME_1	double	Undervoltage protection 1 time
UNDERVOL_PROTECTED_TIME_2	double	Undervoltage protection 2 time
VOL_PROTECTED_10M	double	10 minute protection voltage (V)
OVERVOL_PROTECTED_2	double	Overvoltage protection 2
OVERVOL_PROTECTED_1	double	Overvoltage protection 1 (V)
UNDERVOL_PROTECTED_2	double	Undervoltage protection 2
UNDERVOL_PROTECTED_1	double	Undervoltage

		protection 1 (V)
--	--	------------------

type=4: Frequency protection

Return example:

```
{ "success": true, "messageCode": "0000"message": "Success",
"results": {"IDENT_BIT_3:1
IDENT_BIT_4:1
IDENT_BIT_1:1
LAST_OPERATED_TIME:"2023-07-18 05:20:37"
IDENT_BIT_2: 1
OVERFRE_PROTECTED_1: 62
OVERFRE_PROTECTED_2: 62
UNDERFRE_PROTECT_TIME_2: 40
UNDERFRE_PROTECT_1: 57.5
UNDERFRE_PROTECT_TIME_1: 40
STATUS: 0
UNDERFRE_PROTECT_2: 57.5
OVERFRE_PROTECTED_TIME_2: 40
OVERFRE_PROTECTED_TIME_1: 40"}
}
```

Return instructions:

Parameter Name	Data type	Description
IDENT_BIT_3	int	Frequency protection module enable flag bit (0: primary underfrequency protection disable; 1: primary underfrequency protection enable) ident_Bit_3

IDENT_BIT_4	int	Frequency protection module enable flag bit (0: secondary underfrequency protection disable; 1: secondary underfrequency protection enable) ident_Bit_4
IDENT_BIT_1	int	Frequency protection module enable flag bit (0: primary overfrequency protection disable; 1: primary overfrequency protection enable)
LAST_OPERATED_TIME	timestamp	Latest update time
IDENT_BIT_2	int	Frequency protection module enable flag bit (0: secondary overfrequency protection disable; 1: secondary overfrequency protection enable)
OVERFRE_PROTECTED_1	double	Over frequency protection 1 (Hz)
OVERFRE_PROTECTED_2	double	Over frequency protection 2 (Hz)
UNDERFRE_PROTECT_TIME_2	double	Underfrequency

		protection 2 time (ms)
UNDERFRE_PROTECT_1	double	Underfrequency protection 1 (Hz)
UNDERFRE_PROTECT_TIME_1	double	Underfrequency protection 1 time (ms)
STATUS	int	Status (0: Normal; 1: Upgrading)
UNDERFRE_PROTECT_2	double	Underfrequency protection 2 (Hz)
OVERFRE_PROTECTED_TIME_2	double	Overfrequency protection 2 time (ms)
OVERFRE_PROTECTED_TIME_1	double	Overfrequency protection 1 time (ms)

type=5: DCI protection

Return example:

```
{ "success": true, "messageCode": "0000", "message": "Success",
  "results": { "IDENT_BIT_1:0
               IDENT_BIT_2:1
               DCI_PROTECTED_2:1000
               DCI_PROTECTED_1:150
               DCI_INJECTION:0
               DCI_PROTECTED_TIME_2:16
               DCI_PROTECTED_TIME_1:80" }
}
```

Return instructions:

Parameter Name	Data	Description
----------------	------	-------------

	type	
IDENT_BIT_1	Int	Overvoltage protection 1 time (ms)
IDENT_BIT_2	int	Protection module enable flag bit (0: secondary protection disable; 1: secondary protection enable)
DCI_PROTECTED_2	double	DCI secondary protection (mA)
DCI_PROTECTED_1	double	DCI primary protection (mA)
DCI_INJECTION	double	DCI injection volume (mA)
DCI_PROTECTED_TIME_2	double	DCI secondary protection time (mS)
DCI_PROTECTED_TIME_1	double	DCI primary protection time (mS)

type=6:Active power remote manage

Return example:

```
{ "success": true, "messageCode": "0000", "message": "Success",
  "results": { "boot_dispatch": 0
               dispatch_speed: 1
               acpower_ratio: 1000
               acpower_dispatch: 150 }
}
```

Return instructions:

Parameter Name	Data type	Description
boot_dispatch	Int	Remote On/Off (0: Invalid/On; 1: Off)
dispatch_speed	int	Dispatch speed
acpower_ratio	double	Active power limit rated power

		percentage (%Pn)
acpower_dispatch	int	Active remote dispatch enable (0: disable; 1: enable)

type=8: reactive power control

Return example:

```
{ "success": true, "messageCode": " 0000" message": "Success",
"results": " TYPE1_COSPHI:1
          LAST_OPERATED_TIME:1
          TYPE4_U1S:108
          TYPE4_U2S:110
          DISPATCH_TYPE:0
          TYPE4_LOCKINP:50
          TYPE4_U2I:90
          TYPE3_LOCKINV:105
          TYPE3_P1:105
          TYPE4_QMAX:48.45
          TYPE2_Q:0
          TYPE3_COSPHI4:0.95
          TYPE4_LOCKOUTP:50
          TYPE3_LOCKOUTV:100
          TYPE3_COSPHI1:1
          TYPE3_P3:50
          TYPE3_P2:50
          TYPE3_COSPHI3:1
          TYPE3_COSPHI2:1
          TYPE3_P4:100
          TYPE4_U1I:92
          TYPE4_TIME:2" }
```

Return instructions:

Parameter Name	Data	Description
----------------	------	-------------

	type	
TYPE1_COSPHI	double	Reactive power control method - cosphi
TYPE4_U1S	double	Reactive power control mode 4 U1s (% Un)
TYPE4_U2S	double	Reactive power control mode 4 U2s (% Un)
DISPATCH_TYPE	int	Control mode (1: Reactive mode 1; 2: Reactive mode 2; 3: Reactive mode 3; 4: Reactive mode 4; 5: Reactive mode 5)
TYPE4_LOCKINP	double	Mode 4 LocknP (% Un)
TYPE4_U2I	double	Reactive power control mode 4 U2i (% Un)
TYPE3_LOCKINV	double	Reactive power control mode 3 LockingV (% Un)
TYPE3_P1	double	Reactive power control 3 P1 (% Pn)
TYPE4_QMAX	double	Mode 4 Qmax (% Un)
TYPE2_Q	double	Reactive power control method 2 Q value (% Pn)
TYPE3_COSPHI4	double	Reactive power control mode 3 cosphi4
TYPE4_LOCKOUTP	double	Mode 4 LockoutP (% Un)
TYPE3_LOCKOUTV	double	Reactive power control mode 3 LockoutV (% Un)
TYPE3_COSPHI1	double	Reactive power control mode 3 cosphi1
TYPE3_P3	double	Reactive power control mode 3 p3 (%Pn)
TYPE3_P2	double	Reactive power control mode 3 p2 (%Pn)
TYPE3_COSPHI3	double	Reactive power control mode 3 cosphi3
TYPE3_COSPHI2	double	Reactive power control mode 3 cosphi2
TYPE3_P4	double	Reactive power control mode 3 p4 (%Pn)
TYPE4_U1I	double	Reactive power control mode 4 U1i (%Un)
TYPE4_TIME	double	Mode 4 Time (s)

Type=10: Grid voltage derating

Return example:

```
{ "success": true, "messageCode": "0000", "message": "Success",  
  "results": {  
    "BACK_WAITING": 1  
    "BACK_RATE": 1  
    "DERATING_ENABLE": 108  
    "DERATING_START": 110  
    "DERATING_RATE": 0  
  }  
}
```

Return instructions:

Parameter Name	Data type	Description
BACK_WAITING	double	Waiting time of return power (s)
BACK_RATE	double	Return power rate (%Pn/V)
DERATING_ENABLE	int	high grid voltage power derating enable (0: disable; 1: enable)
DERATING_START	double	Starting of overvoltage derating (V)
DERATING_RATE	double	Power derating rate (%Pn/V)

type=11: Extension Settings

Return example:

```
{ "success": true, "messageCode": "0000", "message": "Success",  
  "results": {  
    "gfc_i_enable": 1  
    "ins_threshold": 1  
    "island_enable": 108  
  }  
}
```

```
ins_enable:110" }  
  
}
```

Return instructions:

Parameter Name	Data type	Description
gfc_enable	int	Leakage current enable flag GFCI (0: disable; 1: enable)
ins_threshold	double	Insulation impedance threshold (kiloohms)
island_enable	int	Island enable flag (0: disable; 1: enabled)
ins_enable	int	Insulation impedance enable flag (0: disable; 1: enabled)

Type=12: Basic Data Settings

Return example:

```
{ "success": true,"messageCode": " 0000"message": "Success",  
"results":{" DAY_HOURS:1  
TOTAL_HOUR:1  
IMPEDANCE:108  
EXPORT_LIMIT_VALUE:110  
MODBUS_ADDR  
EXPORT_LIMIT_MODE  
TOTAL_POWER  
UNCONVENTIONAL_STATE  
DAY_POWER  
MPPT" }  
}
```

Return instructions:

Parameter Name	Data type	Description
DAY_HOURS	double	Daily power generation time
TOTAL_HOUR	double	Total running time
IMPEDANCE	int	Impedance threshold
EXPORT_LIMIT_VALUE	double	Zero export power
MODBUS_ADDR	int	Modbus address
EXPORT_LIMIT_MODE	int	Zero export limit mode
TOTAL_POWER	double	total power
UNCONVENTIONAL_STATE	varchar	Country Regulation
DAY_POWER	double	Daily power generation
MPPT	int	MPPT mode (0: invalid; 1: independent; 2: parallel)

2.2.14 (2) Read inverter parameters

Address: <http://153.le-pv.com:8082/api/setting/loadcodes>

Corresponding inverter model:

R3-30K-G5 R3-40K-G5 NAC70K NAC75K NAC80K
NAC150k NAC50K NAC60K NAC120K

Request parameters:

Parameter Name	Is it necessary	Data type	Description
equSn	Yes	String	Device SN
type	Yes	String	Type2: Basic information Type4: Time

Parameter Example:

```
{“equSn”:”BC8957600164”  
  “type”:2}
```

Type=2: Basic information

Return example:

```
{ "success": true, "messageCode": "0000", "message": "Success",  
  "data": {  
    "power_factor_set": 1  
      "acpower_set": 100  
      "repower_set": 0  
      "repower_mode": 0  
      "over_fre_derating_pcd": 1  
      "over_fre_derating_threshold": 60.2  
      "over_fre_acpower_change_rate": 0  
      "acpower_set2": 44  
      "input_mode_set": 0  
      "grid_connected_standard_set": 15  
      "turn_on_vol_set": 350  
      "turn_on_delay_set": 60  
      "grid_vol_lower_limit_set": 184  
      "grid_vol_upper_limit_set": 276  
      "grid_fre_lower_limit_set": 58  
      "grid_fre_upper_limit_set": 62  
      "reverse_cur_power_limit_set": 0  
      "over_prs_derating_threshold": 0  
  
      "three_phase_mode": 0  
    }  
  }
```

Return instructions:

Parameter Name	Data type	Description
power_factor_set	varchar	Power factor setting
acpower_set	double	AC power setting
repower_set	int	Return power generation settings
repower_mode	int	Return power generation mode
over_fre_derating_pcd	int	Overfrequency derating percentage
over_fre_derating_threshold	double	Frequency derating

		percentage
over_fre_acpower_change_rate	int	Exceeding rated power change rate
acpower_set2	int	AC power setting2
input_mode_set	int	Input mode setting
grid_connected_standard_set	int	Grid standard setting
turn_on_vol_set	double	Turn on voltage setting
turn_on_delay_set	int	Turn on delay setting
grid_vol_lower_limit_set	double	Grid voltage lower limit setting
grid_vol_upper_limit_set	double	Grid voltage upper limit setting
grid_fre_lower_limit_set	double	Grid frequency lower limit setting
grid_fre_upper_limit_set	double	Grid frequency upper limit setting
reverse_cur_power_limit_set	int	Reverse current power limit setting
over_prs_derating_threshold	int	Overvoltage derating threshold
three_phase_mode	int	Three phase mode

type=4:Time

Return example:

```
{ "success": true, "messageCode": "0000", "message": "Success",
"results": "clock_info:2023-06-08 16:00:52" }
}
```

Return instructions:

Parameter Name	Data type	Description
clock_info	varchar	Time

2.2.14 (3) Read inverter parameters

Address: <http://153.le-pv.com:8082/api/setting/loadcodes>

Corresponding inverter model: R3-50K

Request parameters:

Parameter Name	Is it necessary	Data type	Description
equSn	Yes	String	Device SN
type	Yes	String	Type 1: Basic Type 3: Safety connect Type 4: Safety voltage Type 5: Safety frequency Type 6: P(f) Type 7: reactive power Type 8: UVRT/OVRT Type 9: P(u) Type 10: Power Dispatch

Parameter Example:

```
{“equSn”:”8805033230302021”  
  “type”:4}
```

Type=1: Basic

Return example:

```

{ "success": true, "messageCode": "0000" "message": "Success",
"results": {
    rtc_year: 2023
    rtc_month: 6
    rtc_day: 9
    rtc_hour: 8
    rtc_minute: 39
    rtc_second: 7
    Language: 0
    meter_dis: 0
    meter_addr: 1
    modbus_addr: 10
    password: 1
    drm0_dis: 1
    safety_type: 10
    iso_dis: 1
    gfc_i_dis: 1
    anti_islanding_dis: 0
    aci_dis: 0
    ground_connect_check_dis: 0
    system_status: 1
    pv_config: 2
    wifi485: 0
    pid_endis: 3}

```

Return instructions:

Parameter Name	Data Type	Description
rtc_year	int	Real-time clock - Year
rtc_month	int	Real-time clock month
rtc_day	int	Real-time clock - Day
rtc_hour	int	Real-time clock hour
rtc_minute	int	Real-time clock minute
rtc_second	int	Real-time clock Seconds
language	int	Language
meter_dis	int	Meter En/Dis
meter_addr	int	Meter address
modbus_addr	int	Modbus address
password	int	Password
drm0_dis	int	DRM0 state

safety_type	int	Country Regulation
iso_dis	int	ISO En/Dis
gfc_i_dis	int	GFCI En/Dis
anti_islanding_dis	int	Anti-islanding En/Dis
aci_dis	int	AFCI En/Dis
ground_connect_check_dis	int	Ground connect check En/Dis
system_status	int	System switch
pv_config	int	PV Config
wifi485	int	WiFi485
pid_endis	int	PID En/Dis

Type=3: Safety connect

Return example:

```
{ "success": true, "messageCode": "0000", "message": "Success",
"results": {
    "connect_connect_time": 2023
    "connect_power_gradient": 6
    "re_connect_connect_time": 9
    "re_connect_power_gradient": 8
    "connect_vol_high": 39
    "connect_vol_low": 7
    "connect_fre_high": 0
    "connect_fre_low": 0
    "re_connect_vol_high": 1
    "re_connect_vol_low": 10
    "re_connect_fre_high": 1
    "re_connect_fre_low": 1
    "pid_endis": 3
}
}
```

Return instructions:

Parameter Name	Data type	Description
----------------	-----------	-------------

connect_connect_time	int	Connect time
connect_power_gradient	int	Connect power gradient
re_connect_connect_time	int	Reconnect time
re_connect_power_gradient	int	Reconnect power gradient
connect_vol_high	int	Voltage high limit
connect_vol_low	int	Voltage low limit
connect_fre_high	int	Frequency high limit
connect_fre_low	int	Frequency low limit
re_connect_vol_high	int	Reconnect Voltage high limit
re_connect_vol_low	int	Reconnect Voltage low limit
re_connect_fre_high	int	Reconnect frequency high limit
re_connect_fre_low	int	Reconnect frequency low limit

Type=4: Safety voltage

Return example:

```
{ "success": true,"messageCode": " 0000"message": "success",
"results":{" vol_protect_enable:15
          vol_protect_level1_o:1
          vol_protect_level2_o:1
          vol_protect_level1_d:1
          vol_protect_level2_d:1
          vol_protect_10minute:0
          vol_high_limit1:253
          high_limit1_time:1960
          high_limit2_time:190
          vol_low_limit1:195.5
          low_limit1_time:1960
          vol_low_limit2:115
          low_limit2_time:190
          vol_high_10_min:253" }
}
```

Return instructions:

Parameter Name	Data type	Description
vol_protect_enable	int	Voltage protect enable
vol_protect_level1_o	int	Level1 high
vol_protect_level2_o	int	Level2 high
vol_protect_level1_d	int	Level1 low
vol_protect_level2_d	varchar	Level2 low
vol_protect_10minute	int	10min over voltage protect
vol_high_limit1	int	Voltage high limit1
high_limit1_time	int	Voltage high limit1 protect time
vol_high_limit2	int	Voltage high limit2
high_limit2_time	int	Voltage high limit2 protect time
vol_low_limit1	int	Voltage low limit1
low_limit1_time	int	Voltage low limit1 protect time
vol_low_limit2	int	Voltage low limit2
low_limit2_time	int	Voltage low limit2 protect time
vol_high_10_min	int	Voltage high 10 min protect

Type=5: Safety frequency

Return example:

```
{ "success": true,"messageCode": "0000"message": "Success",  
"results":{" fre_protect_enable:15  
    fre_protect_level1_o:1  
    fre_protect_level2_o:1  
    fre_protect_level1_d:1  
    fre_protect_level2_d:1  
    fre_protect_rocof:0  
    fre_high_limit1:50.2  
    high_limit1_time:200  
    fre_low_limit1:47.5
```



```

low_limit1_time:200
fre_high_limit2:50.2
high_limit2_time:200
fre_low_limit2:47.5
low_limit2_time:200

fre_protect_change_rate:4" }

}

```

Return instructions:

Parameter Name	Data type	Description
fre_protect_enable	int	Frequency protect enable
fre_protect_level1_o	int	Level1 high
fre_protect_level2_o	int	Level2 high
fre_protect_level1_d	int	Level1 low
fre_protect_level2_d	int	Level2 low
fre_protect_rocof	int	ROCOF Enable
fre_high_limit1	int	Frequency high limit1
high_limit1_time	int	Frequency high limit1 protect time
fre_low_limit1	int	Frequency high limit2
low_limit1_time	int	Frequency high limit2 protect time
fre_high_limit2	int	Frequency low limit1
high_limit2_time	int	Frequency low limit1 protect time
fre_low_limit2	int	Frequency low limit2
low_limit2_time	int	Frequency low limit2 protect time
fre_protect_change_rate	int	Frequency change rate

Type=6:P(f)

Return example:

```

{ "success": true, "messageCode": "0000" "message": "Success",
  "results": {
    "droop_enable": 0
    "fstop_mode": 0
    "pf_enter_delay": 1000
    "over_fre_start": 50.2
    "over_fre_droop": 40
    "over_fre_recover": 50.1
    "un_fre_start": 49.8
    "un_fre_droop": 400
    "un_fre_recover": 49.9
    "power_recover_gradient": 100
    "power_recover_delay": 2
  }
}

```

Return instructions:

Parameter Name	Data type	Description
droop_enable	int	Power drop enable
fstop_mode	int	F-stop mode
pf_enter_delay	int	Power factor entry delay
over_fre_start	int	Over frequency start
over_fre_droop	int	Over frequency drop
over_fre_recover	int	Over frequency recover
un_fre_start	int	Under frequency start
un_fre_droop	int	Under frequency drop
un_fre_recover	int	Under frequency recover
power_recover_gradient	int	Power recover gradient
power_recover_delay	int	Power recover delay

Type=7: Reactive power

Return example:

```

{ "success": true, "messageCode": "0000" message": "Success",
  "results": {
    "reactive_power_mode": 0
    "fixed_pf": 100
    "fixed_q": 0
    "cosphiP_lockinV": 218.5
    "conphiP_lockoutV": 207
    "cosphiPPF1": -90
    "cosphiPP1": 20
    "cosphiPPF2": -100
    "cosphiPP2": 50
    "cosphiPPF3": 98
    "cosphiPP3": 60
    "cosphiPPF4": 90
    "cosphiPP4": 100
    "qu_enter_delay": 1
    "qu_lockinP": 20
    "qu_lockoutP": 5
    "qu_v1": 213.9
    "qu_q1": -44
    "qu_v2": 223.1
    "qu_q2": 0
    "qu_v3": 236.9
    "qu_q3": 0
    "qu_v4": 246.1
    "qu_q4": 44" }
  }
}

```

Return instructions:

Parameter Name	Data type	Description
reactive_power_mode	int	Reactive power
fixed_pf	int	Fixed power factor
fixed_q	int	Fixed reactive power
cosphiP_lockinV	int	Power factor power locking voltage
conphiP_lockoutV	int	Power factor power lock unlock voltage
cosphiPPF1	int	PPF1 power factor

		curve
cosphiPP1	int	PP1 power factor curve
cosphiPPF2	int	PPF2 power factor curve
cosphiPP2	int	PP2 power factor curve
cosphiPPF3	int	PPF3 power factor curve
cosphiPP3	int	PP3 power factor curve
cosphiPPF4	int	PPF4 power factor curve
cosphiPP4	int	PP4 power factor curve
qu_enter_delay	int	Reactive power delay
qu_lockinP	int	Reactive power locking power
qu_lockoutP	int	Reactive power locking and unlocking power
qu_v1	int	V1 reactive power curve
qu_q1	int	q1 reactive power curve
qu_v2	int	v2 reactive power curve
qu_q2	int	q2 reactive power curve
qu_v3	int	v3 reactive power curve
qu_q3	int	q3 reactive power curve
qu_v4	int	v4 reactive power curve
qu_q4	int	q4 reactive power curve

Type=8: UVRT/OVRT

Return example:

```
{ "success": true, "messageCode": "0000", "message": "Success",
"results": {
  "ride_through_enable": 0
    "ride_through_enable_01": 0
    "ride_through_enable_02": 0
    "uvrt_v1": 15
    "uvrt_t1": 150
    "uvrt_v2": 15
    "uvrt_t2": 150
    "uvrt_t3": 85
    "ovrt_v1": 3000
  }
}
```

```

ovrt_t1:125
ovrt_v2:100
ovrt_v2:120
ovrt_t2:5000
ovrt_v3:115

ovrt_t3:60000" }

}

```

Return instructions:

Parameter Name	Data type	Description
ride_through_enable	int	Ride through enable
ride_through_enable_01	int	ride_through_enable_01
ride_through_enable_02	int	ride_through_enable_02
uvrt_v1	int	Voltage and time parameters V1 for Low voltage ride through
uvrt_t1	int	Voltage and time parameters t1 for Low voltage ride through
uvrt_v2	int	Voltage and time parameters V2 for Low voltage ride through
uvrt_t2	int	Voltage and time parameters t2 for Low voltage ride through
uvrt_v3	int	Voltage and time parameters V3 for Low voltage ride through
uvrt_t3	int	Voltage and time parameters t3 for Low voltage ride through
ovrt_v1	int	Voltage and time parameters V1 for over voltage ride through
ovrt_t1	int	Voltage and time parameters t1 for over voltage ride through
ovrt_v2	int	Voltage and time parameters V2 for over voltage ride through
ovrt_t2	int	Voltage and time parameters t2 for over voltage ride through
ovrt_v3	int	Voltage and time parameters

		V3 for over voltage ride through
ovrt_t3	int	Voltage and time parameters t3 for over voltage ride through

Type=9 :P(u)

Return example:

```
{ "success": true, "messageCode": "0000", "message": "Success",
  "results": {
    "pu_enable": 1
    v1: 230
    V2: 230
    V3: 253
    V4: 257.6
    p1: 0
    p4: 0
    pu_delay: 2
    power_decline_gradient: 33
  }
}
```

Return instructions:

Parameter Name	Data type	Description
pu_enable	int	Power unit enable
v1	int	v1 parameter
v2	int	V2 parameter
v3	int	V3 parameter
v4	int	V4 parameter
p1	int	P1 parameter
p4	int	P4 parameter
pu_delay	int	Power unit delay
power_decline_gradient	int	Power decrease slope

type=10:Power dispatch

Return example:

```
{ "success": true, "messageCode": "0000", "message": "Success",  
  "results": {  
    "power_limit_mode": 0  
    "limit_pwr": 5000  
    "pwr_limit_ratio": 100  
  }  
}
```

Return instructions:

Parameter Name	Data type	Description
power_limit_mode	int	Export power limit mode
limit_pwr	int	Export limit power
pwr_limit_ratio	int	Power limit ratio

2.2.15 (1) Modify the parameters of the inverter

Address: <http://153.le-pv.com:8082/api/setting/saveCodes>

Corresponding inverter model:

R1-1K1-SS	R1-1K6-SS	R1-2K2-SS	R1-2K7-S S	R1-3K3-S S	R1-3K7-SS	
NAC4K-DS	NAC5K-DS	NAC6K-DS	NAC7K-D S	NAC8K-D S		
R1-7K-DS	R1-8K-DS	R1-9K-DS	R1-10K-D S	R1-10K5- DS		
R3-4K-DT	R3-5K-DT	R3-6K-DT	R3-8K-DT	R3-10K-D	R3-12K-DT	R3-15K-DT

				T		
R3-10K-LV	R3-12K-LV	R3-15K-LV				
R3-10K-G5	R3-15K-G5	R3-17K-G5	R3-20K-G 5	R3-25K-G 5	R3-25K-G5 -P	
NAC20K-DT	NAC25K-DT	NAC30K-D T	NAC33K-D T			
NAC10K-LV	NAC12K-LV	NAC15K-L V	NAC20K-L V			

Request parameters:

Parameter Name	Is it necessary	Data type	Description
type	Yes	int	Type1:Reset Save Type2:Power up protect Type3:Voltage protect Type4:Frequency protect Type5:DCI protect Type6:Active power remote manage Type8: Reactive power control Type10: Over voltage power derating Type11: Extension Settings Type12: Basic Data Settings
equSn	Yes	string	Device SN
parameters	Yes	String	Parameter value

Type=1 Reset Save

Request example:


```
{“equSn ”:”8000532191106010”  
  “parameters”:"0,1,2,0,3,0”  
  “type”: “1”}
```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: Success; 1001: User does not exist; 1002: Password is wrong; 9001: No permission;
message	Int	Successful; Incomplete parameters Operation error; Parameter can't be empty; Incomplete request parameters;

Return example:

```
{ "success": true,“messageCode”:" 0000"message": "Success"}
```

Type=2 Power up protect

Request Example:

```
{“equSn ”:”8000532191106010”  
  “parameters”:"300,19,300,19,242,180,60.1,59.9”  
  “type”: “2”}
```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: success; 1001: User does not exist; 1002: Password is wrong; 9001: No permission;
message	Int	Successful; Incomplete parameters Operation error; Parameter can't be empty; Incomplete request parameters;

Return example:

```
{ "success": true, "messageCode": "0000" message": "Success" }
```

Type=3 Voltage protect

Request Example:

```
{ "equSn": "8000532191106010"  
  "parameters": "242,1600,242,40,176,1600,176.60,253"  
  "type": "3" }
```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: success; 1001: User does not

		exist; 1002: Password is wrong; 9001: No permission;
message	Int	Successful; Incomplete parameters Operation error; Parameter can't be empty; Incomplete request parameters;

Return example:

```
{ "success": true, "messageCode": "0000" message": "Success" }
```

Type=4 Frequency protect

Request Example:

```
{ "equSn ":"8000532191106010"
"parameters": "62,40,62,40,57.5,40,57.5.40"
"type": "4" }
```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: success; 1001: User does not exist; 1002: Password is wrong; 9001: No permission;
message	Int	Successful; Incomplete parameters Operation error; Parameter can't be

		empty; Incomplete request parameters;
--	--	---

Return example:

```
{ "success": true, "messageCode": "0000" message": "Success" }
```

Type=5 DCI protect

Request Example:

```
{ "equSn": "8000532191106010"
  "parameters": "150,80,1000,16,0"
  "type": "5" }
```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: success; 1001: User does not exist; 1002: Password is wrong; 9001: No permission;
message	Int	Successful; Incomplete parameters Operation error; Parameter can't be empty; Incomplete request parameters;

Return example:

```
{ "success": true, "messageCode": "0000" message": "Success" }
```

Type=6 Active power remote manage

Request Example:

```
{“equSn ”:”8000532191106010”
```

```
“parameters”:"300,19"
```

```
“type”: “6”}
```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: success; 1001: User does not exist; 1002: Password is wrong; 9001: No permission;
message	Int	Successful; Incomplete parameters Operation error; Parameter can't be empty; Incomplete request parameters;

Return example:

```
{ "success": true,“messageCode”:" 0000"message": "Success"}
```

Type=8 Reactive power control

Request Example:

```
{“equSn ”:”8000532191106010”
“parameters”:"1,0,1,50,1,50,1.50,0.95.100,105,100,108,110,92
90,50,50,48.45,2”
“type”: “8”}
```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: success; 1001: User does not exist; 1002: Password is wrong; 9001: No permission;
message	Int	Successful; Incomplete parameters Operation error; Parameter can't be empty; Incomplete request parameters;

Return example:

```
{ "success": true,“messageCode”:" 0000"message": "Success"}
```

Type=10 Over voltage power derating

Request Example:

```
{“equSn ”:”8000532191106010”
“parameters”:"270,10,0,0”
“type”: “10”}
```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: success; 1001: User does not exist; 1002: Password is wrong; 9001: No permission;
message	Int	Successful; Incomplete parameters Operation error; Parameter can't be empty; Incomplete request parameters;

Return example:

```
{ "success": true, "messageCode": "0000" message": "Success" }
```

Type=11: Extension Settings

Request Example:

```
{ "equSn": "8000532191106010"
  "parameters": "300"
  "type": "11" }
```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: success; 1001: User does not exist; 1002: Password is wrong;

		9001: No permission;
message	Int	Successful; Incomplete parameters Operation error; Parameter can't be empty; Incomplete request parameters;

Return example:

```
{ "success": true, "messageCode": "0000" message": "Success" }
```

Type=12: Basic Data Settings

Request Example:

```
{ "equSn": "8000532191106010"
  "parameters": "CEIO-21,Invalid,Mode1,0"
  "type": "12" }
```

Return instructions

Parameter Name	Data type	Description
code	Int	1:Success; 400: Fail; 401: Unauthorized 500: Please contact the administrator
msg	String	0000:Success; 1001: User does not exist; 1002: Password is wrong; 9001: No permission;
data	Int	User ID

Return example:


```
{ "success": true, "messageCode": "0000" message": "Success" }
```

2.2.15 (2) Modify the parameters of the inverter

Address: <http://153.le-pv.com:8082/api/setting/saveCodes>

Corresponding inverter model:

R3-30K-G5 R3-40K-G5 NAC70K NAC75K NAC80K
NAC150k NAC50K NAC60K NAC120K

Request parameters:

Parameter Name	Is it necessary	Data type	Description
type	Yes	int	Type2: Basic information Type3: Reset Type4:Time
ids	Yes	string	Parameter name
parameters	Yes	int	Parameter value
equ_sn	Yes	Int	Device SN

Type=2 Basic information

Request Example:

```
{ "equSn": "BC8957600164",  
  "ids": "power_factor_set,Active power set,Reactive power  
setting,Reactive power control mode setting,Active power  
setting,Input mode setting,Crid-connected standard setting,Turn on  
voltage setting,Turn on voltage setting,Grid voltage limit setting ,Grid  
voltage upper limit setting,Grid frequencylower limit setting,Grid
```

```
frequency upper limit setting,Three-phase mode"
"parameters": "270,10,0,Power factor control,.200,
Mixed mode,China,2,500,0,10,20,Enable"
"type":2}
```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: Success; 1001: User does not exist; 1002: Password is wrong; 9001: No permissions;
message	Int	Successful; Incomplete parameters Operation error; Parameter can't be empty; Incomplete request parameters;

Return example:

```
{"code":1,"msg":"0000","data":null}
```

Type=3 Reset

Request Example:

```
{"equSn:BC8957600164
"ids": "Clear statistics,Remote shutdown,Unlock remote
shutdown,Clear fault record,Reset"}
```

```
“parameters”:"1,1,1,1,1"
```

```
“type”:3}
```

Return example:

```
{"code":1,"msg":"0000","data":null}
```

Type=4 Time

Request Example:

```
{“equSn:BC8957600164
```

```
ids”:"clock_information”
```

```
“parameters”:"2023-06-19 16:03:49"
```

```
“type”:4}
```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: Success; 1001: User does not exist; 1002: Password is wrong; 9001: No permissions;
message	Int	Successful; Incomplete parameters Operation error; Parameter can't be empty; Incomplete request parameters;

Return example:

```
{"code":1,"msg":"0000","data":null}
```

2.2.15 (3) Modify the parameters of the inverter

Address: <http://153.le-pv.com:8082/api/setting/saveCodes>

Corresponding inverter model: R3-50K

Request parameters:

Parameter Name	Is it necessary	Data type	Description
equSn	Yes	String	Device SN
type	Yes	Int	Type 1:Basic Type 3:Safety connect Type 4:Safety voltage Type 5:Safety frequency Type 6:P(f) Type 7:Reactive power Type 8:UVRT/OVRT Type 9 :P(u) Type10:Power dispatch Type11:Command
ids	Yes	String	Parameter name
parameters	Yes	String	Parameter

Type=1 RTC

Request Example:

```
{“equSn”:”8805033230302021”  
  
“ids”:”rtc_year,rtc_month,rtc_day,rtc_hour,rtc_minute,rtc_second,  
language, meter_dis, meter_addr, modbus_addr, password,  
drm0_dis, safety_type, iso_dis, gfc_i_dis, anti_islanding_dis, aci_dis,  
aci_dis, ground_connect_check_dis, system_status, pv_config,  
wifi485, pid_endis, pv_i_disp”  
  
“parameters”:”2023-07-04 00:00:00,English,Enable,1,1,0,  
Disable,China,Enable,Enable,Disable,Disable,Disable,  
On,Parallel,0,Enable,Disable”  
  
”type” = 1}
```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: Success; 1001: User does not exist; 1002: Password is wrong; 9001: No permissions;
message	Int	Successful; Incomplete parameters Operation error; Parameter can't be empty; Incomplete request parameters;

Return example:

```
{"code":1,"msg":”0000”,”data”:null}
```

Type=3 Safety connect

Request Example:

```
{“equSn”:”8805033230302021”  
“ids”:”connect_connect_time,connect_power_gradient,re_co  
nnect_connect_time,re_connect_power_gradient,connect_v  
ol_high,connect_vol_low,connect_fre_high,connect_fre_low,  
re_connect_vol_high,re_connect_vol_low,re_connect_fre_hi  
gh,re_connect_fre_low”  
“parameters”:”30,100,30,100,253,195.5,50.2,49.5,253,195.5,50.2,4  
9.5”  
“type ”= 3}
```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: Success; 1001: User does not exist; 1002: Password is wrong; 9001: No permissions;
message	Int	Successful; Incomplete parameters Operation error; Parameter can't be empty; Incomplete request parameters;

Return example:

```
{"code":1,"msg":"0000","data":null}
```

Type=4 Safety voltage

Request Example:

```
{“equSn”:"8805033230302021"  
“ids”:"vol_protect_level1_o,vol_protect_level2_o,vol_protect  
_level1_d,vol_protect_level2_d,vol_protect_10minute,vol_hi  
gh_limit1,high_limit1_time,vol_high_limit2,high_limit2_time,  
vol_low_limit1,low_limit1_time,vol_low_limit2,low_limit2_tim  
e,vol_high_10_min"  
“parameters”:"253,1960,282,190,195.5,1960,115,190,253"  
“type ”= 4}
```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: Success; 1001: User does not exist; 1002: Password is wrong; 9001: No permissions;
message	Int	Successful; Incomplete parameters Operation error; Parameter can't be empty; Incomplete request

		parameters;
--	--	-------------

Return example:

<pre>{"code":1,"msg":"0000","data":null}</pre>
--

Type=5 Safety frequency

Request Example:

<pre>{“equSn”:”8805033230302021” “ids”:”fre_protect_level1_o,fre_protect_level2_o,fre_protect_l evel1_d,fre_protect_level2_d,fre_protect_rocof,fre_high_limi t1,high_limit1_time,fre_low_limit1,low_limit1_time,fre_high_l imit2,high_limit2_time,fre_low_limit2,low_limit2_time,fre_pro tect_change_rate” “parameters”:”50.200,47.5,200,50.2,200,47.5,200,4” “type = 5”}</pre>

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: Success; 1001: User does not exist; 1002: Password is wrong; 9001: No permissions;
message	Int	Successful;

		Incomplete parameters Operation error; Parameter can't be empty; Incomplete request parameters;
--	--	--

Return example:

```
{"code":1,"msg":"0000","data":null}
```

Type=6 P(f)

Request Example:

```
{
  "equSn": "8805033230302021"
  "ids": "droop_enable,fstop_mode,pf_enter_delay,over_fre_start,over_fre_droop,over_fre_recover,un_fre_start,un_fre_droop,un_fre_recover,power_recover_gradient,power_recover_delay"
  "parameters": "Enable,fstop activated,1000,50.2,40,50.1,49.8,400, 49.9, 100, 2"
  "type " = 6}

```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: Success; 1001: User does not exist; 1002: Password is wrong; 9001: No permissions;
message	Int	Successful;

		Incomplete parameters Operation error; Parameter can't be empty; Incomplete request parameters;
--	--	--

Return example:

```
{"code":1,"msg":"0000","data":null}
```

Type=7 Reactive power

Request Example:

```
{
  "equSn": "8805033230302021"
  "ids": "reavtive_power_mode, fixed_pf, fixed_q, cosphiP_lockinV, conphiP_lockoutV, cosphiPPF1, cosphiPP1, cosphiPPF2, cosphiPP2, cosphiPPF3, cosphiPP3, cosphiPPF4, cosphiPP4, qu_enter_delay, qu_lockinP, qu_lockoutP, qu_v1, qu_q1, qu_v2, qu_q2, qu_v3, qu_q3, qu_v4, qu_q4"
  "parameters": "None, 100, 0, 0, 218.5, 207, -90, 20, -100, 50, 98, 60, 90, 100, 1, 20, 5, 213.9, -44, 223.1, 0, 236.9, 0, 246.1, 44"
  "type" = 7}

```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: Success; 1001: User does not exist; 1002: Password is wrong; 9001: No permissions

message	Int	Successful; Incomplete parameters Operation error; Parameter can't be empty; Incomplete request parameters;
---------	-----	---

Return example:

```
{"code":1,"msg":"0000","data":null}
```

Type=8 UVRT/OVRT

Request Example:

```
{
  "equSn": "8805033230302021"
  "ids": "ride_through_enable_01,ride_through_enable_02,uvrt_v1,uvrt_t1,uvrt_v2,uvrt_t2,uvrt_v3,uvrt_t3,ovrt_v1,ovrt_t1,ovrt_v2,ovrt_t2,ovrt_v3,ovrt_t3"
  "parameters": "15,150,15,150,85,3000,125,100,120,5000,115,60000"
  "type " = 8}

```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: Success; 1001: User does not exist; 1002: Password is wrong; 9001: No permissions
message	Int	Successful; Incomplete parameters Operation error; Parameter can't be

		empty; Incomplete request parameters
--	--	--

Return example:

```
{"code":1,"msg":"0000","data":null}
```

Type=9 P(u)

Request Example:

```
{
  "equSn": "8805033230302021"
  "ids": "pu_enable,v1,v2,v3,v4,p1,p4,pu_delay,power_decline_gradient"
  "parameters": "Enable,230,230,253,257.6,2,33"
  "type " = 9}

```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: Success; 1001: User does not exist; 1002: Password is wrong; 9001: No permissions;
message	Int	Successful; Incomplete parameters; Operation error; Parameter can't be empty; Incomplete request parameters;

Return example:

```
{"code":1,"msg":"0000","data":null}
```

Type=10 Power dispatch

Request Example:

```
{“equSn”:"8805033230302021”  
“ids”:"power_limit_mode,limit_pwr,pwr_limit_ratio”  
“parameters”:"None,5000,100”  
“type ”= 10}
```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: Success; 1001: User does not exist; 1002: Password is wrong; 9001: No permissions
message	Int	Successful; Incomplete parameters Operation error; Parameter can't be empty; Incomplete request parameters;

Return example:

```
{"code":1,"msg":"0000","data":null}
```

Type=11 Command

Request Example:

```
{“equSn”:"8805033230302021"  
“ids”:"frq_protect_rest,afci_fault_reset,clear_event,clear_his_energy"  
“parameters”:"270"  
“type ”= 11}
```

Return instructions

Parameter Name	Data type	Description
success	Int	True/false
messageCode	String	0000: Success; 1001: User does not exist; 1002: Password is wrong; 9001: No permissions
message	Int	Successful; Incomplete parameters; Operation error; Parameter can't be empty; Incomplete request parameters;

Return example:

```
{"code":1,"msg":"0000","data":null}
```

3、 Appendix

3.1 Alarm

Alarm ID	Alarm code	Chinese description	Description
1	GFCI device fault	接地电流设备故障	GFCI Device is Failure
2	HCT device fault	霍尔元件故障	AC Current Sensor Fault
3	Ref voltage fault	参考电压故障	The reference voltage inside are abnormal
4	DCI_ConFailure	DCI 一致性故障	Different value between Master and Slave for output
5	GFCI_ConFault	GFCI 一致性故障	GFCI Consistent Fault
6	BusVoltLow	母线电压低	DC Bus volt is low
7	BusVoltHigh	母线电压高	DC Bus volt is high
8	Device fault	器件故障	Device fault
9	BusSoftStarting Fault	母线软启动故障	Bus soft-starting fault
10	No utility	无市电故障	Grid voltage is zero
11	GFCI fault	接地电流故障	GFCI fault
12	Current over fault	逆变过流故障	Current over fault
13	Current hardware fault	硬件逆变过流故障	Current hardware fault
14	Over temp fault	过温故障	Over temp fault
15	Auto test fault	自动测试故障	Auto test fault
16	PV over voltage fault	输入过压故障	Pv input voltage is over the tolerable maximum value
17	Fan fault	风机故障	The internal fan in case failure
18	Grid voltage fault	电网电压超范围	Grid Voltage Out of Range
19	IsoFault	绝缘检测故障	IsoFault
20	Dci out range fault	DCI 故障	Dci out range fault
21	VF_ConFault	一致性 VF 故障	VF Consistent Fault
22	ConsistentFault	一致性故障	ConsistentFault
23	FreqConFault	频率一致性故障	Frequency Consistent Fault
24	VoltConFault	电压一致性故障	Voltage Consistent Fault
25	relay failure fault	接触性故障	relay failure fault
26	RelayCheckFailure	接触器检测故障	RelayCheckFailure
27	HCT failure	霍尔故障	AC Current Sensor Fault

28	GFCI device failure	接地电流设备故障	GFCI device failure fault
29	MS version fault	主从芯片软件版本故障	MS version fault
30	Grid frequency fault	电网频率超范围	Grid Frequency Out of Range
31	Eeprom fault	EEPROM 故障	EEPROM cannot be read or written
32	SPI fault	SPI 通讯故障	SPI communication fault
33	FanA Lock	风扇 A 转速低	FanA Lock
34	FanB Lock	风扇 B 转速低	FanB Lock
35	FanC Lock	风扇 C 转速低	FanC Lock
36	Zero Power	零功率报警	Zero Power
37	RemoteOff	远程关机	Remote shutdown machine
38	GFCI over fault	接地电流过高	Ground current is too high
39	BusVoltUnbalance	母线电压不平衡	Bus volt unbalance
40	SinkTempOver	散热器温度高	Sink Temperature Over
41	AC-RelayFault	交流继电器异常	AC Relay Fault
42	PV cur High	输入直流过流故障	PV cur High
43	InvDcCurOver	逆变电流直流量过高	Inverter Dc Current Over
44	Clock Error	时钟错误	Clock Error
45	comm faults between	CPU 通讯故障	Communication between main cpu and slave is failin
46	DC sensor fails	输出传感器检测失效	DC sensor fails
47	DC inj.differs for M	主副 CPU 检测出的输出直流分量不一致	Different value between Master and Slave for output
48	Ground I differs for	主副 CPU 检测出的残余电流不一致	Ground I differs for M-S
49	Deltn Z high	电网阻抗过高	Deltn Z high
50	Ground I high	接地电流过高	Ground current is too high
51	DC BUS fails	母线电压故障	Dc bus is too high
52	M-S Version fail	固件版本不匹配	M-S Version fail
53	FanLock-Warning	风扇锁定	FanLock-Warning
54	Vac out of range	输出电压超范围	Grid voltage out of tolerable range
55	LowInsulation	绝缘阻抗过低	Insulation impedance is low
56	Fac,Zac,Vac differs	主副 CPU 检测的数据不一致	Fac,Zac,Vac differs for M-S
57	Zac differs for M-S	主副 CPU 检测的输出阻抗不一致	Zac differs for M-S
58	Fac Consistency Fail	主副 CPU 检测的输出频率不一致	Different value between Master and Slave for grid

59	Vac Consistency Fail	主副 CPU 检测的输出电压不一致	Different value between Master and Slave for grid
60	MemFull-Warning	内存满警告	MemFull-Warning
61	Zac-Slave out of range	输出阻抗超范围(从)	Zac-Slave out of range
62	Zac-Master out of range	输出阻抗超范围(主)	Zac-Master out of range
63	Fac-Slave out of range	输出频率超范围 (从)	Fac-Slave out of range
64	Fac-Master out of range	输出频率超范围 (主)	Fac-Master out of range
65	PV1 isolation fault	PV1 隔离故障	PV1 isolation fault
66	PV2 isolation fault	PV2 隔离故障	PV2 isolation fault
67	AFCI ARC Fault	电弧故障分断器故障	AFCI ARC Fault
68	PV1 over fault	PV1 过载	PV1 over fault
69	PV2 over fault	PV2 过载	PV2 over fault
70	Grid volt over rating	输出电压超出额定	Grid volt over rating
71	Grid volt under rating	输出电压低于额定	Grid volt under rating
72	Grid freq over rating	输出频率超出额定	Grid freq over rating
73	Grid freq under rating	输出频率低于额定	Grid freq under rating
74	GFCI over 30MA fault	GFCI 超过 30MA 故障	GFCI over 30MA fault
75	GFCI over 60MA fault	GFCI 超 60MA 故障	GFCI over 60MA fault
76	GFCI over 150MA fault	GFCI 超过 150MA 故障	GFCI over 150MA fault
77	GFCI over 300MA fault	GFCI 超过 300MA 故障	GFCI over 300MA fault
78	PV1 input current hi	PV1 输入电流过高	Pv-1 input current is too high
79	PV2 input current hi	PV2 输入电流过高	Pv-2 input current is too high
80	AC-CurrentHigh SCI	输出电流过高	AC-CurrentHigh
81	communication lo	SCI 通讯中断	SCI communication fault
82	DSP EEPROM	DSP EEPROM 写错误	EEPROM cannot be written

	write fail		
83	DSP EEPROM read fail	DSP EEPROM 读错误	EEPROM cannot be read
84	Grid mode lose fault	电网模式丢失故障	Grid mode lose fault
85	AFCI To Dsp Fault	AFCI 至 DSP 故障	AFCI To Dsp Fault
86	Flash Check Fault	FLASH 检查故障	Flash Check Fault
87	GFCI Over 4 Times	GFCI 触发 4 次	GFCI Over 4 Times
88	SPS AUX Fault	SPS AUX 故障	SPS AUX Fault
89	TempSensorErr	温度传感器故障	Temperature sensor failure
90	NTC Fault	NTC 故障	NTC Fault
91	AFCIDeviceFault	AFCI 设备故障	AFCIDeviceFault
92	Fan1 Fault	风扇 1 故障	Fan-1 fails
93	HMI EEPROM Write Fault	HMI 写 EEPROM 错误	HMI EEPROM Write Fault
94	HMI EEPROM Read Fault	HMI 读 EEPROM 错误	HMI EEPROM Read Fault
95	HMI SCI Failure	HMI 与 SCI 通讯故障	Communication fails between HMI and Ctrl board
96	EEPROM TimeOut	EEPROM 超时	EEPROM TimeOut
97	The output current is abnormal	输出电流侦测异常	The output current sensor is abnormal
98	Utility Loss	市电异常	Utility Loss
99	Ground Fault	接地故障	Ground Fault
100	The output current sensor is abnormal	PV 输入电压超过接受范围	The output current sensor is abnormal
101	PV1 input voltage high	PV1 输入电压过高	Pv-1 input volt is too high
102	PV2 input voltage high	PV2 输入电压过高	Pv-2 input volt is too high
103	PV1 input voltage low	PV1 输入电压过低	Pv-1 input volt is too low
104	PV2 input voltage low	PV2 输入电压过低	Pv-2 input volt is too low
105	PV1 input error	PV1 输入极性反接	PV1 input error
106	PV2 input error	PV2 输入极性反接	PV2 input error
107	Inverter AC relay failure	逆变 AC 继电器故障(4)	Inverter AC relay failure(4)
108	Inverter hardware overcurrent	逆变硬件过流	Inverter hardware overcurrent

	hardware ov		
109	DC-BUS Software Brow	DC-BUS 软件欠压	DC-BUS Software Brown
110	Islanding	孤岛状态	Islanding
111	Grid undervoltage (2	电网电压欠压(2 段)	Grid undervoltage (2 Section)
112	Grid overfrequent (1	电网电压过频(1 段)	Grid overfrequent (1 Section)
113	Grid overfrequent (2	电网电压过频(2 段)	Grid overfrequent (2 Section)
114	IsolFault	绝缘阻抗错误	Isolation Fault
115	Temperature -Fail	内部温度过高	Amb Overtemperature too high
116	HoleSenseDeviceFault	直流分量检测设备不正常	HoleSenseDeviceFault
117	DC inj High	直流分量过高	The DC injection to grid is too high
118	GridOverloadFault	输出过载	Over Load in EPS Mode.
119	I Inductor TOverLimit	T 相电感电流过高	I Inductor TOverLimit
120	I Inductor SOverLimit	S 相电感电流过高	I Inductor SOverLimit
121	I Inductor ROverLimit	R 相电感电流过高	I Inductor ROverLimit
122	IGridTOverRating	T 相过流	Tphase Grid Current RMSvalue Over Rating
123	IGridSOverRating	S 相过流	S phase Grid Current RMSvalue Over Rating
124	IGridROverRating	R 相过流	R phase Grid Current RMSvalue Over Rating
125	VGridTRUnderRating	T-R 线电压过低	VGridTRUnderRating
126	VGridSTUnderRating	S-T 线电压过低	VGridSTUnderRating
127	VGridRSUnderRating	R-S 线电压过低	VGridRSUnderRating
128	VGridTROverRating	T-R 线电压过高	VGridTROverRating
129	VGridSTOverRating	S-T 线电压过高	VGridSTOverRating
130	VGridRSOverRating	R-S 线电压过高	VGridRSOverRating
131	DCI Inductor	T 相电感电流直流量过	DCI Inductor TOverLimit

	TOverLi	高	
132	DCI Inductor SOverLi	S 相电感电流直流量过 高	DCI Inductor SOverLimit
133	DCI Inductor ROverLi	R 相电感电流直流量过 高	DCI Inductor ROverLimit
134	FreGridTUnder Rating	T 相欠频	T phase Grid frequency Under Rating
135	FreGridTOverR ating	T 相过频	T phase Grid frequency Over Rating
136	FreGridSUnder Rating	S 相欠频	S phase Grid frequency Under Rating
137	FreGridSOverR ating	S 相过频	S phase Grid frequency Over Rating
138	FreGridRUnder Rating	R 相欠频	R phase Grid frequency Under Rating
139	FreGridROverR ating	R 相过频	R phase Grid frequency Over Rating
140	DCIGridTOverLi mit	T 相直流分量过大	T phase DC injection check for grid Current is ove
141	DCIGridSOverLi mit	S 相直流分量过大	S phase DC injection check for grid Current is ove
142	DCIGridROverLi mit	R 相直流分量过大	R phase DC injection check for grid Current is ove
143	VGridTUnderRa ting	T 相欠压	T phase Grid Volt Under Rating
144	VGridTOverRati ng	T 相过压	T phase Grid Volt Over Rating
145	VGridTOverRati ng	S 相欠压	S phase Grid Volt Under Rating
146	VGridSOverRati ng	S 相过压	S phase Grid Volt Over Rating
147	VGridRUnderRa ting	R 相欠压	R phase Grid Volt Under Rating
148	VGridROverRati ng	R 相过压	R phase Grid Volt Over Rating
149	IGridOverLimit	电网电流超范围	IGridOverLimit
150	Fan2 Fault	风扇 2 故障	Fan-2 fails
151	Fan3 Fault	风扇 3 故障	Fan-3 fails
152	Fan4 Fault	风扇 4 故障	Fan-4 fails
153	Fan5 Fault	风扇 5 故障	Fan-5 fails
154	KeyEmergency Stop	紧急停机	KeyEmergencyStop
155	LcdEmergencyS top	手动关机	LcdEmergencyStop

156	Door_Open_Fault	门打开故障	Door_Open_Fault
157	Comm_485_Lose_Warning	485 通讯故障	Comm_485_Lose_Warning
158	Fault_Feedback_Warning	故障锁定告警	Fault_Feedback_Warning
159	Module4OverTempFault	模块 4 过温	Module 4 over temperature
160	Module3OverTempFault	模块 3 过温	Module 3 over temperature
161	Module2OverTempFault	模块 2 过温	Module 2 over temperature
162	Module1OverTempFault	模块 1 过温	Module1 over temperature
163	DCFuseOpenFault	直流侧保险断开故障	Fuse of DC is open
164	DCAirSwitchFault	直流侧空开故障	AirSwitch of DC is abnormal
165	DCFeedbackFault	直流侧反灌错误	Feedback of DC is abnormal
166	DCInsulationFault	PV 绝缘阻抗错误	Isolation resistance of PV-plant is abnormal
167	PV overload	输入侧过载	PV overload
168	PV3 input current hi	PV3 输入电流过高	Pv-3 input current is too high
169	Pv3IsoFault	输入电压 3 绝缘阻抗错误	Isolation resistance of PV1-plant is abnormal
170	Pv2IsoFault	输入电压 2 绝缘阻抗错误	Isolation resistance of PV2-plant is abnormal
171	Pv1IsoFault	输入电压 1 绝缘阻抗错误	Isolation resistance of PV3-plant is abnormal
172	PV3 input voltage lo	PV3 输入电压过低	Pv-2 input volt is too low
173	PV3 input voltage hi	PV3 输入电压过高	Pv-3 input volt is too high
174	InductorOverTempFault	电感温度过高	InductorOverTempFault
175	InductorLowTempFault	电感温度过低	InductorLowTempFault
176	TransformerOverTempF	变压器温度过高	TransformerOverTempFault
177	TransformerLowTempFa	变压器温度过低	TransformerLowTempFault
178	IGBTModuleCF	IGBT 模块 C 错误	IGBTModuleCFault

	ault		
179	IGBTModuleBFault	IGBT 模块 B 错误	IGBTModuleBFault
180	IGBTModuleAFault	IGBT 模块 A 错误	IGBTModuleAFault
181	LVRTFault	低压穿越失败	LVRTFault
182	ContactorPower2_Fault	接触器电源 2 故障	ContactorPower2_Fault
183	ContactorPower1_Fault	接触器电源 1 故障	ContactorPower1_Fault
184	AuxPower2_Fault	辅助电源 2 错误	Auxiliary power 2 fails
185	AuxPower1_Fault	辅助电源 1 错误	Auxiliary power 1 fails
186	SlaveContactorFault	AC 辅助交流接触器错误	SlaveContactorFault
187	MainContactorFault	AC 主交流接触器错误	MainContactorFault
188	HeatsinkLowTempFault	散热器温度过低	HeatsinkLowTempFault
189	GridAirSwitchFault	交流主路空开故障	GridAirSwitchFault
190	unrecoverBoost3_OCP	Boost-3 过流保护	unrecoverBoost3_OCP
191	unrecoverBoost2_OCP	Boost-2 过流保护	unrecoverBoost2_OCP
192	unrecoverBoost1_OCP	Boost-1 过流保护	unrecoverBoost1_OCP
193	uHwOCP_Boost	输出端硬件过流保护 (不可恢复)	Hardware protection for Boost current over rating(
194	unrecoverBus_OVP_Fault	Bus 硬件过压保护 (不可恢复)	unrecoverBus_OVP_Fault
195	HW_BusOVP_Fault	Bus 硬件过压保护	HW_BusOVP_Fault
196	PhaseSequenceFault	电网相序错误	Sequence of Phase is incorrect
197	LCDCCommFault	显示通讯故障	Communication fails between HMI and Ctrl board
198	ACBackFeedFault	交流反灌 PV 电池板	ACBackFeedFault
199	OCP_AC_RMS	输出端过流	OCP_AC_RMS
200	HW_OCP_Boost	Boost 硬件过流保护	Hardware protection for Boost current over rating
201	HW_OCP_AC	电网电流过高	Grid Current Over Rating

202	unrecoverSW_OC CP_AC	输出端过流（瞬时值） （不可恢复）	Output current over rating(unrecover)
203	Output voltage is un	输出电压不平衡	Output voltage is unbalance
204	PLL-Fault	锁相错误	PLL fails
205	GFDIFault	GFDI 错误	GFDI fault
206	DC_Inverse_Fai lure	PV 板接反	DC_Inverse_Failure
207	IGBT Fault	IGBT 错误	IGBT Fault
208	AuxPowerBoard Failure AC	辅助电源错误	Auxiliary power fails
209	MainContactor Fai	AC 主交流接触器错误	AC MainContactor Failure
210	AC SlaveContactor Fa	AC 辅助交流接触器错 误	AC SlaveContactor Failure
211	INT_AC_OverC urr Faul	瞬间交流电流过高	INT_AC_OverCurr Fault
212	INT_DC_OverC urr Faul	瞬间直流电压过高	INT_DC_OverCurr Fault
213	INT_DC_OverV olt Faul	瞬间直流电压过高	INT_DC_OverVolt Fault
214	Output short circuit	输出端短路	Output short circuit
215	Inverter PE disconne	逆变器接地保护断开	Inverter PE disconnect
216	Output current is un	输出电流不平衡	Output current is unbalance
217	HWADFault_GF CI	采集漏电流的 AD 口错 误	HWADFault_GFCI
218	HWADFault_DC I	采集直流分量的 AD 口 错误	HWADFault_DCI
219	HWADFault_Igri d	采集输出电流的 AD 口 错误	HWADFault_Igrid
220	HWADFault_Vgr id	采集输出电压的 AD 口 错误	HWADFault_Vgrid
221	unbalancePVCu rrentFa	输入端两路电流不平衡	unbalancePVCurrentFault
222	VisoPowerFault	绝缘阻抗辅助电源错误	VisoPowerFault
223	RelayOpen	继电器无法闭合	RelayOpen
224	RelayShort	继电器无法断开	RelayShort
225	RTCRWFault	继电器无法断开	RTCRCWFault
226	PvConfigSet_Wr	输入模式选择错误	PV settings is wrong

	ong		
227	RChipFault	副 CPU 错误	Slave CPU fails
228	GridLVRT	低电压穿越故障	GridLVRT
229	HwBoostOCP	输入电流硬件保护	HwBoostOCP
230	HwAcOCP	输出电流硬件保护	HwAcOCP
231	SwOCPIInstant	输出过流软件保护	RSTphase Grid Current RMSvalue Over Rating
232	SwBOCPIInstant	输入过流软件保护	SwBOCPIInstant
233	OverTempFault_Boost	升压过温错误	OverTempFault_Boost
234	OverTempFault_Env	环境过温错误	OverTempFault_Env
235	unrecoverHwAcOCP	输出硬件过流永久性故障	unrecoverHwAcOCP
236	unrecoverBusOVP	Bus 过压永久性故障	unrecoverBusOVP
237	unrecoverIacRmsUnbal	输出电流不平衡永久性故障	unrecoverIacRmsUnbalance
238	unrecoverIpvUnbalanc	输入电流不平衡永久性故障	unrecoverIpvUnbalance
239	unrecoverVbusUnbalanc	Bus 电压不平衡永久性故障	unrecoverVbusUnbalance
240	unrecoverOCPIInstant	输出瞬时过流永久性故障	unrecoverOCPIInstant
241	unrecoverPvConfigSet	输入模式设置错误永久性故障	unrecoverPvConfigSetWrong
242	unrecoverIPVInstant	输入瞬时过流永久性故障	unrecoverIPVInstant
243	unrecoverWRITEEEPROM	写 EEPROM 永久性故障	unrecoverWRITEEEPROM
244	unrecoverREADEEPROM	读 EEPROM 永久性故障	unrecoverREADEEPROM
245	unrecoverRelayFail	继电器永久性故障	unrecoverRelayFail
246	HwADFaultIGrid	电网电流采样错误	HwADFaultIGrid
247	HwADFaultDCI	直流分量采样错误	HwADFaultDCI
248	HwADFaultVGrid	电网电压采样错误	HwADFaultVGrid
249	GFCIDeviceFault	漏电流采样错误	GFCIDeviceFault
250	MChip_Fault	主芯片错误	MChip_Fault
251	BusVoltZeroFault	Bus 电采样错误	BusVoltZeroFault
252	slave initial fault	从机初始化错误	slave initial fault

253	driver over current	驱动过流	driver over current
254	GirdPhaseLoss	电网缺相	Gird Phase Loss
255	VGridConsistent Fault	网压不对称	VGrid Consistent Fault
256	PhaseLockFault	同步相位错误	Phase Lock Fault
257	ISO_Fault	硬件中断	Hardware interruption
258	IsoPowerFault	绝缘电源故障	IsoPowerFault
259	OCP_AC_RMS	输出有效值过流	OCP_AC_RMS
260	HWADFault	内部 AD 故障	HWADFault
261	PVBrkerOpen	PV 开关断开	PVBrkerOpen
262	InvCurOffsetFAULT	逆变电流偏置	Inverter current offset fault
263	SW_Start_Timeout	逆变软启超时	SW_Start_Timeout
264	BusSWStartTimeout	Bus 软启超时	BusSWStartTimeout
265	VbusDifferenceTooHig	Bus 电压差高	VbusDifferenceTooHigh
266	VBusSumLOW	Bus 电压和低	VBusSumLOW
267	VBusSumHigh	Bus 电压和高	VBusSumHigh
268	InvBridgeProtect	逆变桥保护	InvBridgeProtect
269	PowerModuleProtect	功率模块保护	PowerModuleProtect
270	EmergencyButtonClose	紧急按钮闭合	EmergencyButtonClosed
271	MCU Protect	MCU 保护	MCU Protect
272	FrequencyFault	频率选择异常	FrequencyFault
273	DCI Offset Fault	DCI 电路偏置	DCI Offset Fault
274	Vinv Offset Fault	逆变电压偏置	Vinv Offset Fault
275	VbusDifferenceTooHig	Bus 差高故障	VbusDifferenceTooHigh
276	VBusSumLOW	Bus 和低故障	VBusSumLOW
277	VBusSumHigh	Bus 和高故障	VBusSumHigh
278	GFCI_OverFault	漏电流高	Ground current is higher
279	GFCI_DeviceFault	漏电流自检失败	Leakage current self-criticism failure
280	ENSFacFail	电网频率采样故障	ENSFacFail
281	illumination detecti	系统光照检测	illumination detectioning fault
282	PV Lose Efficacy	组串 PV 失效	PV Lose Efficacy
283	PV input power	PV 输入功率低	PV input power low

	low		
284	GridVoltLow	电网电压低	Grid Volt Under Rating
285	NoUtility	电网掉电	NoUtility
286	GridUnbalanceFault	电网电压不一致	Different value between Master and Slave for grid
287	GridFreqLow	电网频率低	Grid Frequency Under Rating
288	PvIsoFault	组串绝缘故障	Ground insulation impedance of PV string is too lo
289	SwOCP	组串过流	SwOCP
290	Consist GFCI	AC 漏电流不一致	Consist GFCI
291	uHW_GFCI	GFCI 硬件故障	GFCI sense device is filed
292	INV OV Temp	逆变温度高	INV Module over temperature
293	BST OV Temp	升压温度高	Boost Module over temperature
294	MChipFault	主 CPU 故障	Master CPU fails
295	HwM_ADVGrid	主电网电压 AD 故障	HwM_ADVGrid
296	HwM_ADVInv	主逆变电压 AD 故障	HwM_ADVInv
297	HwM_ADIGrid	主输出电流 AD 故障	HwM_ADIGrid
298	HwM_AD_DCI	主直流分量 AD 故障	HwM_AD_DCI
299	HwM_AD_GFCI	主漏电流 AD 故障	HwM_AD_GFCI
300	HwM_ADVGrid	副电网电压 AD 故障	HwM_ADVGrid
301	HwM_ADVInv	副逆变电压 AD 故障	HwM_ADVInv
302	HwM_ADIGrid	副输出电流 AD 故障	HwM_ADIGrid
303	HwM_AD_DCI	副直流分量 AD 故障	HwM_AD_DCI
304	HwM_AD_GFCI	副漏电流 AD 故障	HwM_AD_GFCI
305	LightingAlarm	防雷报警	LightingAlarm
306	AC UnderVoltage	交流欠压故障	AC UnderVoltage
307	AC OverVoltage	交流过压故障	AC OverVoltage
308	GridFreqFault	电网频率故障	GridFreqFault
309	DC OverVoltage	直流过压故障	DC OverVoltage
310	IsoAlarm	绝缘检测警告	IsoAlarm
311	Fuse Protector Fault	快熔失效警告	Fuse Protector Fault
312	Parameter Fault	参数配置错误	Parameter Fault
313	Container threshold	集装箱门限开关	Container threshold Fault
314	Container SmokeSenso	集装箱烟感信号	Container SmokeSensor Fault
315	GFCI Device Fault	漏电流侦测设备不正常	The GFCI detection circuit is abnormal
316	Firmware version mis	软件版本不匹配	Firmware version mismatch

317	BMS error	BMS 警告	BMS failure and either charge or discharge is allo
318	BoostDriver warning	Boost 驱动警告	Check Step is Boost DriverCheck,Check the first ro
319	BatteryVoltLow	电池电压低	Battery voltage lower
320	Bat-T-Outrange	电池温度超范围	Bat-T-Outrange
321	CT Open	CT 开路	CT Open
322	NoDataReceived	SP-CT 或电表通讯失败	NoDataReceived Communication between
323	InternalCommFailure	内部通讯失败	Communication between Comm
324	PairingTimeOut	配对超时	PairingTimeOut
325	CT LN Reversed	CT 反接	CT LN Reversed
326	BMS COM Fault	BMS 通讯失败	BMS COM Fault
327	BMS Error	BMS 报错	BMS Error
328	Over-current protect	过流保护	Over-current protected
329	PV Voltage High	PV 过压保护	PV Voltage High
330	PV Short-circuit	PV 短路保护	PV Short-circuit
331	Battery reversed	电池反接	Battery reversed
332	PV Access Wrong	PV 接入错误	PV Access Wrong
333	PV Reversed	PV 反接	PV Reversed
334	L-N Reversed	LN 反接	L-N Reversed
335	No AC Connection	无 AC 接入	No AC Connection
336	NTC Open	NTC 开路	NTC Open
337	Battery Open	电池开路	Battery Open
338	MPPT Trouble	模拟 MPP 失败	MPPT Trouble
339	SS Timeout	软启失败	SS Timeout
340	High-pass Breaker Fault	高通断路器异常	High-pass Breaker Fault
341	DC Current Low	直流小电流	DC Current Low
342	DC UnderVoltage	直流欠压	DC UnderVoltage
343	MagneticDevice TempTooHigh	磁性器件过热	MagneticDeviceTempTooHigh
344	AC output2 fault	输出交接 2 异常	AC output2 fault
345	Dc Fuse Fault	直流侧熔断器异常	Dc Fuse Fault
346	Surge Protector	浪涌保护器异常	Surge Protector Fault

	Fault		
347	Grid Current Trackin	电网电流跟踪故障	Grid Current Tracking Fault
348	DC Input Fault	直流输入扰动	DC Input Fault
349	TempratureToo Low	欠温保护	TempratureTooLow
350	GFCI Selftest Protec	漏电流自检保护	GFCI Selftest Protect
351	12V UnderVoltage	12V 欠压保护	12V UnderVoltage
352	DSP_B protect	DSP_B 保护	DSP_B protect
353	Relay Fail	Relay 检测保护	Relay Fail
354	GFCI Protect	漏电流保护	GFCI Protect
355	DSP Initialize Prote	DSP 初始化保护	DSP Initialize Protect
356	Grid Disturbance	电网扰动	Grid Disturbance
357	IGBT OverCurrent	IGBT 过流	IGBT OverCurrent
358	ARC Selftest Protect	电弧自检保护	ARC Selftest Protect
359	TzProtectFault	硬件保护	Hardware protection
360	MainsLostFault	电网丢失	Grid lost
361	GridVoltFault	电网电压故障	Grid voltage fault
362	GridFreqFault	电网频率故障	Grid Frequency fault
363	PLL-LostFault	锁相失败	The Grid is Not Good.
364	BusVoltFault	电压故障	Bus voltage high
365	Inv_OCP_Fault	逆变过流保护	Invert over current protect
366	Dci_OCP_Fault	直流分量过大	DCI over current protect
367	ResidualCurrent Fault	残余电流故障	ResidualCurrentFault
368	PvVoltFault	电压过高	Pv voltage high
369	Ac10Mins_Voltage_Fault	10 分钟电压过高	10 minutes avg of grid voltage hight
370	IsolationFault	绝缘阻抗故障	Isolation resistance of PV-plant out of tolerable
371	TemperatureOverFault	温度过高	Temperature is too high
372	Fan1SpeedFault	风扇 1 速度故障	Fan1Speed Fault
373	Fan2SpeedFault	风扇 2 速度故障	Fan2Speed Fault
374	SPI-CommsFault	内部通信故障	SPI communication fault
375	SCI-CommsFault	串口通信故障	SCI communication fault

	t		
376	CanCommsFault	CAN 通信故障	CAN communication fault
	t		
377	InputConfigFault	输入配置错误	InputConfigFault
378	EepromFault	逆变存储故障	EepromFault
379	RelayFault	逆变器继电器故障	RelayFault
380	SampleConsistenceFau	不一致故障	Sample consistence fault
381	ResidualCurrent_Devi	漏电流设备故障	ResidualCurrent_DeviceFault
382	Fan1_DeviceFault	风扇 1 故障	Fan1_DeviceFault
383	Fan2_DeviceFault	风扇 2 故障	Fan2_DeviceFault
384	HCT_AC_DeviceFault	HCT 交流装置故障	HCT_AC_DeviceFault
385	Overload Fault	过载	Overload Fault
386	EPS OCP	过流	EPS OCP Fault
387	DCI_DeviceFault	DCI 硬件故障	DCI Device Fault
	t		
388	Other Device Fault	其他硬件故障	Other Device Fault
389	Eps Relay Fault	EPS 继电器故障	EPS Relay Fault
390	Charger_OCP_Boost	BUS2 过流	Boost over current
391	Charger_OCP_Charger	电池过流	Battery over current
392	Charger_OVP_BAT	电池过压	Battery over volt
393	Charger_OVP_Boost	BUS2 过压	Boost over volt
394	Charger_FANFault	变流器风扇故障	Charger_FANFault
395	EPS OverLoad	电池 EPS 过载	Over Load in EPS Mode.
396	Charger_Temp_High_ER	变流器温度过高	Charger_Temp_High_ERR
397	Charger_Temp_Lower_E	变流器温度过低	Charger_Temp_Lower_ERR
398	Battery_awaken_Faile	电池唤醒失败	Battery_awaken_Failed
399	Charger_Current_Sens	BUS2 电流传感器故障	Charger_Current_Sensor_Boost_Fault
400	Charger_Current_Sens	电池电流传感器故障	Charger_Current_Sensor_Bat_Fault

401	Charger_EEPR OM_WR_Fa	变流器 eeprom	Charger_EEPROM_WR_Fault
402	Charger_UnRec over_FA	变流器不可恢复风扇故障	Charger_UnRecover_FANXFault
403	Spi ERR	变流器内部通信故障	Spi ERR
404	Charger_CanER R	变流器 can 通信故障	Charger_CanERR
405	DM9000 Error	网卡故障	Internet IC have trouble
406	RtcError	时钟故障	Real Time IC have trouble
407	E2promError	存储故障	EEPROM IC have trouble EMS
408	CanCommsErro r	通信故障	Inter communication have trouble Ems Can
409	BMS_Disconnec ted	通信丢失	Bms communication lost BMS
410	BMS_Alarm	报警	Bms alarm error BMS
411	BMS_OverVolta ge	电池过压	Batter voltage too high BMS
412	BMS_LowerVolt age	电池欠压	Batter voltage too low BMS
413	BMS_ChargeOv erCurren	充电过流	Batter charge current too high BMS
414	BMS_Disharge OverCurr	放电过流	Batter charge current too low BMS
415	BMS_TemHigh Warning	温度过高	Batter temperature too high BMS
416	BMS_TemLow Warning	温度过低	Batter temperature too low BMS
417	BMS_CellImbla nce	BMS 电芯不平衡	BMS_CellImblance
418	AFCICheckFailu re	AFCI 自检失败	AFCICheckFailure
419	upgrade_fails	升级失败	Failure to upgrade
420	FlashFault	Flash 故障	Flash Fault
421	String 1 exceptions	组串 1 异常	String 1 exceptions
422	String 2 exceptions	组串 2 异常	String 2 exceptions
423	String 3 exceptions	组串 3 异常	String 3 exceptions
424	String 4 exceptions	组串 4 异常	String 4 exceptions
425	String 5 exceptions	组串 5 异常	String 5 exceptions
426	String 6	组串 6 异常	String 6 exceptions

	exceptions		
427	SystemFailure	系统故障	System failure
428	AbnormalDC_Circuit	直流电路异常	Abnormal DC circuit
429	String 1 reverse	组串 1 反向	String 1 reverse
430	String 2 reverse	组串 2 反向	String 2 reverse
431	String 3 reverse	组串 3 反向	String 3 reverse
432	String 4 reverse	组串 4 反向	String 4 reverse
433	String 5 reverse	组串 5 反向	String 5 reverse
434	String 6 reverse	组串 6 反向	String 6 reverse
435	AbnormalInvCircuit	逆变电路异常	Abnormal inverter circuit
436	AbnormalDCArc	直流电弧故障	DC arc fault
437	GFCI Check Failure	GFCI 检测电路异常	The GFCI detecting circuit is abnormal
438	AC HCT Check Failure	输出电流传感器异常	The AC current sensor is abnormal
439	RefVoltage Failure	1.5V 重启失败	1.5V REF is Failure
440	External Fan Failure	外部风机故障	The external fan failure
441	Relay Check Failure	继电器检查故障	Relay check is Failure
442	Auto Test Failure	自动测试失败	Auto test failure
443	AC Output Fault	输出交接异常	AC Output Fault
444	DC Polarity Wrong	直流极性反接	DC Polarity Wrong
445	ZeroSequenceCurrent Bus	直流侧逆流	ZeroSequenceCurrent Too High
446	UnderVoltage Fast	零序电流超限	Bus UnderVoltage Fast Protect
447	InvCurrentUnbalanceF	直流母线快速欠压保护	InvCurrentUnbalanceFAULT
448	InvCurUnbalance	逆变电流不平衡故障	InvCurUnbalance
449	HW Fault	硬件故障	Device Fault
450	InputMode Changed Wh	光伏输入配置在逆变器运行时改变	InputMode Changed When Running
451	Temperature Too Low	环境温度低	Low ambient temperature
452	InputMode Fault	光伏输入配置模式设置与实际连接不符	InputMode Fault

453	Short Of Illuminatio	光照不足	Short Of Illumination
454	AFD Module Fault	AFD 模块异常告警	AFD Module Fault
455	AFD Module Closed	AFD 关闭告警	AFD Module Closed
456	SDfault	SD 卡故障	SDfault
457	InValidCountry	无效安规国家	InValidCountry
458	Remote PowerDown	远程降载报警	The remote load shedding alarm T2 bright
459	OverFreq PowerDown	过频降载报警	Over Frequency alarm T2 flash
460	PEConnectFault	没有接地线	PEConnectFault
461	PV-FuseBlow	PV 接地熔丝断	PV-Grounding Fuse Blow
462	TransformerOver-temp	取电变压器过温	Over temperature of power transformer
463	RadiatorOver-temp	配电柜散热器过温	Over temperature of radiator of distribution cabin
464	HarmonicCurrentOverr	谐波电流超限	Harmonic current overrun
465	MainContactorContact	主接触器触点故障	Main Contactor Contact Fault
466	Abnormal-2.5V	2.5V 参考电压不正常	The reference 2.5 voltage inside are abnormal
467	FanFault	风扇故障	Fan alarm
468	VacRmsUnbalance	电网电压不平衡	The voltage of Tree phase are unbalance
469	IacRmsUnbalance	电网电流不平衡	The Current of Tree phase are unbalance
470	BusUnbalance	Bus 电压不平衡	Bus voltage is unbalance
471	CommError	监控 ARM 通讯异常	CommError
472	RelayOpen	继电器开路	RelayOpen
473	RelayShort	继电器短路	RelayShort
474	UnrecoverSW_OCP_AC	过压过流太久	UnrecoverSW_OCP_AC
475	GridFreqQuiver	电网频率抖动	Frequency quiver of grid
476	BUS-OverProt	BUS 过压保护	BUS overvoltage protection
477	MPPT Trouble	模拟 MPP 失败	MPPT Trouble
478	GridVoltHigh	电网电压高	Grid Volt Over Rating
479	GridFreqHigh	电网频率高	Grid Frequency Over Rating
480	HardInvCurOver	硬件逆变电流高	Hard Inverter Current Over
481	InvCurOver	逆变电流高	Inverter Current Over
482	HighAmbTemp	环境温度高	High ambient temperature

483	RMCU fault	辅助 MCU 故障	Auxiliary MCU fault
484	Bus-OVP-Fault	硬件母线过压	Bus-OVP-Fault
485	DCIGridOverLimit	直流注入偏高	DCI Grid Over Limit
486	HWADFault	控制板故障	HWAD Fault
487	EelayProtection	并网继电器保护	Grid relay protection
488	Boost-High-current	Boost 电流高	Boost high current
489	DCInjHigh	DCI 高	DIC is high
490	GroundIFault	GFCI 传感器故障	GFCI Sensor failure
491	PrechargeFault	预充电故障	Precharge fault
492	IslandingProtection	逆变器孤岛效应保护	Inverter islanding protection
493	Out of sync	逆变器不同步	Inverter not synchronized
494	OverloadTimeout	逆变器过载超时	Inverter overload timeout
495	AbnormalShutdown	电网异常关机	Abnormal shutdown
496	Overload limit	过载次数限制	Too many overload times
497	Abnormal Shutdown	直流电压异常关机	Shutdown due to abnormal DC voltage
498	Fan failure	MW 房风扇故障	MW room fan failure
499	Smoke sensor alarm	烟雾传感器报警	Smoke sensor alarm
500	Anti-discharge protection	防反放电保护	Anti-discharge protection
501	Reverse power protection	逆向功率保护	Reverse power protection
502	Inv cable failure	逆变驱动线缆故障	Inverter driven cable failure
503	Fan cable failure	风扇驱动线缆故障	Fan drive cable failure
504	Grid LVRT limit	低电压穿越次数限制	Grid LVRT limit
505	Normal shutdown	正常停机	Normal shutdown
506	Failure shutdown	故障停机	Failure shutdown
507	DSP Fault protection	DSP 故障保护	DSP Fault protection
508	Total fault protection	逆变器总故障保护	Inverter total fault protection
509	Alarm working	总告警标运行	Alarm working
510	temperature alarm	逆变器温度报警	Inverter temperature alarm

511	Output grounding fault	输出接地故障	Output grounding fault
512	Sampling fault	采样故障	Sampling fault
513	PDP protection	PDP 保护	PDP protection
514	Inductor OverTemp	电抗器过温	Inductor over temperature
515	Detects Fuse Fault	检测熔断器故障	Detects Fuse Fault
516	Overvoltage	逆变过压	Overvoltage
517	InvSelfFailure	逆变器自身故障保护	InvSelfFailure
518	Circuit-breakerOpen	直流断路器开路	DC Circuit-breaker is open
519	OverheatProtection	过热保护	Overheat protection
520	MoreDriverOverCur	5 分钟内连续 5 次驱动过流	More driver over cur
521	SoftStarting Fault	软启动故障	SoftStarting Fault
522	Amplitude error	逆变幅值错误	Amplitude error
523	InterruptPhaseRecognition	相位识别未完	Interrupt Phase Recognition
524	Amplitude loss	电网幅值丢失	幅值丢失 Amplitude loss
525	Active power to 0	有功功率调度至 0	Active power to 0
526	Temperature to 0	温度降额至 0	Temperature to 0
527	Point voltage fault	电容中点电压故障	Point voltage fault
528	HwADFaultInv	逆电流采样故障	HwADFaultInv
529	InvCurrentOverrun	逆流直分超限	InvCurrentOverrun
530	Reactance1Switch	电抗 1 温开关	Reactance1Switch
531	Reactance2Switch	电抗 2 温开关	Reactance2Switch
532	Reactance3Switch	电抗 3 温开关	Reactance3Switch
533	Switch fault	T 温开关故障	Switch fault
534	Fuse 1 fault	熔断器 1 故障	Fuse 1 fault
535	Fuse 2 fault	熔断器 2 故障	Fuse 2 fault

536	Fuse 3 fault	熔断器 3 故障	Fuse 3 fault
537	DC Lighting-protecti	直流侧防雷故障	DC Lighting-protection fault
538	AC Lighting-protecti	交流侧防雷故障	AC Lighting-protection fault
539	InternalFault	机器内部故障	internal machinery fault
540	BusVoltHigh	直流母线过压	DC Bus volt is high
541	BUS Ground fault	阵列母线接地故障	BUS Ground fault
542	Cur Mutation	漏电流突变	Leakage current mutation
543	Temp switch failure	温度开关故障	Temperature switch failure
544	Voltage failure	逆变器电压失效	Inv voltage failure
545	ENS-DCI- Fault	主从 MCU 侦测的输出直流分量差异过大	Different value between Master and Slave for output
546	ENS-GFCI-Fault	主从 MCU 侦测的对地漏电流差异过大	Different value between Master and Slave for GFCI
547	Device Fault	未知错误	Device Fault
548	ENS-Mess-Fail	主从侦测输出变化量差异过大	Different value between Master and Slave for dl, F
549	ENS-Fac-Fail	主从侦测电网频率差异过大	Different value between Master and Slave for grid
550	ENS-Vac-Fail	主从侦测电网电压差异过大	Different value between Master and Slave for grid
551	Fac-Slave-Fail	从 MCU 侦测频率异常	The slave-frequency is out of tolerable range
552	Fac-Master-Fail	主 MCU 侦测频率异常	The master-frequency is out of tolerable range
553	Master-Slave-Fail	主从 MCU 之间通信失败	Communication between microcontrollers is failing
554	MemFull-Warning	SD 卡内存已满	memory space is full
555	Unbalanced load	负载不平衡	Unbalanced load
556	CPLD version error	CPLD 版本错误	CPLD version does not match
557	Heartbeat loss	生命信号丢失	Transport connection interrupt
558	OMAP version error	OMAP 版本错误	OMAP version does not match
559	AC VolDistortion	电网电压畸变超出限值	Grid voltage distortion exceeding limits
560	Abnormal wiring	电网接线异常	Abnormal grid connection
561	IGBT OverTemp	IGBT 过温	IGBT OverTemp
562	Low output	输出功率过低	Low output power

	power		
563	LVRT Timeout fault	LVRT 超时故障	LVRT Timeout fault
	SCI		
564	communication fa	SCI 通讯故障	SPI communication fault
565	Module address confl	模块地址冲突	Module address conflict
566	String 7 reverse	组串 7 反向	String 7 reverse
567	String 8 reverse	组串 8 反向	String 8 reverse
568	String 9 reverse	组串 9 反向	String 9 reverse
569	String 10 reverse	组串 10 反向	String 10 reverse
570	String 11 reverse	组串 11 反向	String 11 reverse
571	String 12 reverse	组串 12 反向	String 12 reverse
572	String 13 reverse	组串 13 反向	String 13 reverse
573	String 14 reverse	组串 14 反向	String 14 reverse
574	String 15 reverse	组串 15 反向	String 15 reverse
575	String 16 reverse	组串 16 反向	String 16 reverse
576	String 7 exceptions	组串 7 异常	String 7 exceptions
577	String 8 exceptions	组串 8 异常	String 8 exceptions
578	String 9 exceptions	组串 9 异常	String 9 exceptions
579	String 10 exceptions	组串 10 异常	String 10 exceptions
580	String 11 exceptions	组串 11 异常	String 11 exceptions
581	String 12 exceptions	组串 12 异常	String 12 exceptions
582	String 13 exceptions	组串 13 异常	String 13 exceptions
583	String 14 exceptions	组串 14 异常	String 14 exceptions
584	String 15 exceptions	组串 15 异常	String 15 exceptions
585	String 16	组串 16 异常	String 16 exceptions

	exceptions		
586	Other_DeviceFault	其他机器故障	Other_DeviceFault
587	Converter System Fault	变流器系统故障-1	Internal Faults of Converter System
588	Converter System Fault	变流器系统故障-2	Internal Faults of Converter System
589	IGBT OverCurrent	IGBT 硬过流	IGBT OverCurrent
590	IGBT-A OverCurrent	IGBT 硬过流-A	IGBT-A OverCurrent
591	IGBT-B OverCurrent	IGBT 硬过流-B	IGBT-B OverCurrent
592	IGBT-C OverCurrent	IGBT 硬过流-C	IGBT-C OverCurrent
593	AC Current Hard Over	交流电流硬过流	AC Current Hard Overcurrent
594	DC Current Hard Over	直流电流硬过流	DC Current Hard Overcurrent
595	DC Current Reflux Fault	直流电流反流故障	DC Current Reflux Fault
596	DC Bus Voltage Hard	直流母线电压硬过压	DC Bus Voltage Hard Overvoltage
597	Precharge fault	预充电故障	Precharge fault
598	Three-phase current	三相电流不平衡	Three-phase current imbalance
599	Polarity reversal fault	池板极性反接故障	Polarity reversal failure of pool plate
600	Hard Overvoltage of	电池板输出电压硬过压	Hard Overvoltage of Output Voltage of Battery Plat
601	AC current soft over	交流电流软过流	AC current soft overcurrent
602	DC Current Soft Over	直流电流软过流	DC Current Soft Overcurrent
603	The circuit breaker	断路器未闭合	The circuit breaker is not closed
604	DC bus voltage soft	直流母线电压软过压	DC bus voltage soft overvoltage
605	AC main contactor fault	交流主接触器故障	AC main contactor failure
606	Grid frequency does	电网频率不符	Grid frequency does not match
607	Grid voltage soft over	电网电压软过压	Grid voltage soft overvoltage

608	Grid voltage soft un	电网电压软欠压	Grid voltage soft undervoltage
609	PV panel voltage soft	光伏池板电压软过压	PV panel voltage soft overvoltage
610	Transformer over tem	变压器超温	Transformer over temperature
611	AC inductor over tem	交流电感超温	AC inductor over temperature
612	IGBT-A OverTemp	IGBT 超温-A	IGBT-A OverTemp
613	IGBT-B OverTemp	IGBT 超温-B	IGBT-B OverTemp
614	IGBT-C OverTemp	IGBT 超温-C	IGBT-C OverTemp
615	Emergency stop butto	急停按钮动作	Emergency stop button action
616	Lightning failure	防雷器故障	Lightning protection device failure
617	Boost fault	升压故障	Boost fault
618	Screen not connected	设备与液晶未连接	device is not connected to the screen
619	ADC anomaly	ADC 异常	ADC anomaly
620	IPM fault	IPM 故障	IPM fault
621	Circuit-breakerOpen	交流断路器开路	AC Circuit-breaker is open
622	EEPROM R/W Failure	EEPROM 读/写 故障	EEPROM cannot be read or written
623	Limit Power	调度限功率	Limit power scheduling
624	Grid Dispatch	电网调度	power grid dispatch
625	Short-Circuit	母线短路	Bus short-circuit
626	Short-Circuit	主接触器短路故障	Short circuit fault of main contactor
627	ControlPowerSupply	控制电源异常	Abnormal control power supply
628	BackupPower supply i	后备电源异常	Backup power supply is abnormal
629	AC fuse failure	交流熔断器故障	AC fuse failure
630	DC slow start fault	直流缓启故障	DC slow start fault
631	PID Power abnormal	防 PID 电源异常	PID Power abnormal
632	Drive board failure	驱动板故障	Drive board failure
633	Midpoint	中点电位偏移	Midpoint potential shift

	potential s		
634	Machine code repeat	机器码重复故障	Machine code repeat fault
635	Parallel communicati	并机通信故障	Parallel communication failure
636	Carrier synchronizat	载波同步故障	Carrier synchronization failure
637	Vac differs for M-S	主副市电电压不一致	Consistent Fault :Vac differs for M-S
638	Fac differs for M-S	主副市电频率不一致	Consistent Fault :Fac differs for M-S
639	Groud I differs for	主副残余电流不一致	Consistent Fault :Groud I differs for M-S
640	DC inj. Differs for	主副直流分量不一致	Consistent Fault :DC inj. Differs for M-S
641	Fac,Vac differs for	主副市电频率不一致且市电电压不一致	Consistent Fault :Fac,Vac differs for M-S
642	Average volt of ten	十分钟市电电压平均值过高	Average volt of ten minutes Fault
643	PV4 input voltage hi	组串 4 过压	PV4 input voltage high
644	PV5 input voltage hi	组串 5 过压	PV5 input voltage high
645	PV6 input voltage hi	组串 6 过压	PV6 input voltage high
646	PV7 input voltage hi	组串 7 过压	PV7 input voltage high
647	PV8 input voltage hi	组串 8 过压	PV8 input voltage high
648	License overdue	License 过期	License overdue
649	Abnormal equipment	设备异常	Abnormal equipment
650	Abnormal configurati	电池板配置异常	Abnormal configuration of battery board
651	External device port	外部设备端口短路	External device port short circuit
652	Passive Island	被动孤岛	Passive Island
653	Active island	主动孤岛	Active island
654	Power collector fail	功率采集器故障	Power collector failure