

文件名称Document Name:				
文件编号 Doc. No.		制订部门 Originating Dept.		
版本 Rev. No.		总页数 Total Pages		

文件发行批准页 Approval Records

	部门 Department	姓名 Name	签名 Signature	日期 Date
拟制 Authored By				
审批 Reviewed By				
标准化 Standardize				
批准 Approval By				

文件修订记录 Revision History

版本号 Rev. No.	修改内容及理由 Change Description	申请人 Author	审批人 Reviewed By	生效日期 Date
V1.0	First version	Zhengjian.zhou		2022-02-18

文件名称Document Name: AISWEICloud API				
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department	
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of	

1.	Brief Introduction	3
1.1	Purpose	3
1.2	Abbreviations and Definitions	3
1.3	Disclaimer	4
1.4	Reference.....	4
1.5	Limits.....	4
2.	API Description	4
2.1	Request.....	4
2.1.1	Request Path	4
2.1.2	Request Method	4
2.1.3	Request Body	5
2.1.4	Request Head	5
2.2	Response	6
2.2.1	Status Code.....	6
2.2.2	Response Head.....	6
3.	API List.....	7
3.1	getPlanListPro.....	8
3.2	getPlantOverviewPro.....	11
3.3	getPlantOutputPro.....	12

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

3.4	getPlantEventPro	14
3.5	getDeviceListPro.....	16
3.6	getLocationPro	18
3.7	getLastTsDataPro.....	19
3.8	getInverterDataPagePro.....	21
3.9	getInverterETodayPro	25
3.10	getInverterHisErrorPagePro.....	26
3.11	getInverterCurrentErrorPro	28
3.12	getInverterOverviewPro.....	29
3.13	getInverterRecoverStatusPro.....	31
3.14	createstationPro.....	33
4.	Request a signature	35
4.1	Domain Name	35
4.2	System level header	35
4.3	Signature verification	36
4.3.1	Prepare APPKey.....	36
4.3.2	The organization participates in the signature calculation of the string	36
4.3.3	Calculate the signature.....	37
4.3.4	Pass the signature.....	38
4.3.5	Signature error detection method.....	38

文件名称Document Name: AISWEICloud API				
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department	
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of	

4.3.6	Signature demo.....	38
5.	Event Code Description table	38

1. Brief Introduction

1.1 Purpose

AiSWEI cloud API supply access to get data of PV plant, you can get data from AiSWEI cloud by this API, and embed them in your application or website, to customize your personalized presentation.

This document will explain how to use the APIs, for developer and maintainer.

1.2 Abbreviations and Definitions

AiSWEI cloud --Visual monitoring system for customer's PV plant supplied by AiSWEI

API -- Application Programmer's Interface

JSON -- JavaScript Object Notation

HTTP -- Hypertext Transfer Protocol

RFC -- Request for Comment

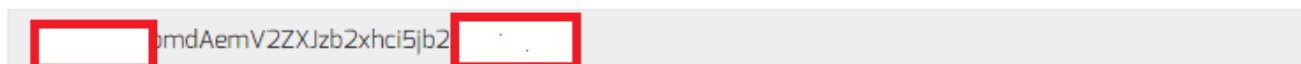
RPC -- Remote Procedure Call

APP key, APP secret

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

NMI National Metering Identifier。It is used to identify the request id of the plant. You can find in on the web page of the AiSWEI cloud. (Navigation bar: "Configuration" -> "Plant Configuration" ->"5. Api Key")

5 • Api Key



1.3 Disclaimer

AiSWEI API is supplied by AiSWEI, which is a free value-added service. You have to bear your own risk and loss associated with using this service.

There may be different between the content this document describe and actual use, because of version updating. We may update the version without prior notice, please pay your attention to our website. In use process, you can contact with us if any question.

1.4 Reference

- RFC 4627 :The application/json Media Type for JavaScript Object Notation (JSON)
- JSON-RPC 1.1 Working Draft August 2006<http://json-rpc.org/wd/JSON-RPC-1-1-WD-20060807.html>
- Introducing JSON<http://www.json.org/>

1.5 Limits

- API traffic limit : 100 times per minute

2. API Description

2.1 Request

2.1.1 Request Path

<http://e710888d3ccb4638a723ff8d03837095-cn-qingdao.aliapi.com/demo/post>

2.1.2 Request Method

POST

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

2.1.3 Request Body

FormParam1=FormParamValue1&FormParam2=FormParamValue2

2.1.4 Request Head

➤ **Host:** e710888d3ccb4638a723ff8d03837095-cn-qingdao.aliapi.com

➤ **Date:** Mon, 22 Aug 2016 11:21:04 GMT

➤ **User-Agent :** Apache-HttpClient/4.1.2 (java 1.6)

➤ **Content-Type :** application/x-www-form-urlencoded; charset=UTF-8

// request body type, please set according to the actual request body content.

➤ **Accept:** application/json

// Request response type, part of the API can be based on the specified response type to return to the corresponding data format, it is recommended to manually specify the request header, if not set, part of the HTTP client will set the default value * / *, resulting in a signature error.

➤ **X-Ca-Request-Mode:** debug

//Whether to open the Debug mode, case insensitive, do not set the default off, the general API debugging phase can open this setting.

➤ **X-Ca-Version:** 1

// API version number, all APIs currently only support version number "1", you can not set this request header, the default version number is "1".

➤ **X-Ca-Signature-Headers:** X-Ca-Request-Mode,X-Ca-Version,X-Ca-Stage,X-Ca-Key,X-Ca-Timestamp

//The client will participate in the signature of the custom request header, the server will be based on this configuration to read the request header to sign, where the settings do not contain Content-Type, Accept, Content-MD5, Date request header, these request head has been included in the basic signature In the structure, refer to the request signature documentation for details.

➤ **X-Ca-Stage:** RELEASE

// Request the API of the Stage, currently supports TEST, PRE, RELEASE three Stage, case insensitive, API providers can choose to release to which stage, only published to the designated stage after the API can be called, otherwise it will prompt the API can not find Or Invalid Url.

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

➤ **X-Ca-Key:** 60022326

// Request the AppKey, please go to the API Gateway console generated, only access to API authorization can be called after the cloud through the market and other channels to buy the API has been granted acquiescence APP, Ali cloud all cloud products share a set of AppKey system, remove AppKey Please be careful to avoid affecting other cloud products that have already been opened.

➤ **X-Ca-Timestamp:** 1471864864235

// The timestamp of the request is the number of milliseconds of the current time, that is, from January 1, 1970 to the present time, the time stamp is valid for 15 minutes.

➤ **X-Ca-Nonce:** b931bc77-645a-4299-b24b-f3669be577ac

// Request unique identifier, within 15 minutes AppKey + API + Nonce can not be repeated, combined with the timestamp to play a role in anti-replay.

➤ **X-Ca-Signature:** FJleSrCYPGCU7dMILTG+UD3Bc5Elh3TV3CWHtSKh1Ys=

// Request signature.

➤ **CustomHeader:** CustomHeaderValue

// Custom request header, here only as an example, the actual request can be set according to the API definition of multiple custom request header.

2.2 Response

2.2.1 Status Code

➤ 400

// Response status code, greater than or equal to 200 less than 300 means successful; greater than or equal to 400 less than 500 for the client error; greater than 500 for the server error.

2.2.2 Response Head

➤ **X-Ca-Request-Id:** 7AD052CB-EE8B-4DFD-BBAF-EFB340E0A5AF

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

// Request the unique ID, the request once the API gateway application, the API gateway will generate the request ID and return to the client through the response header, the proposed client and back-end services are recorded this request ID, can be used for troubleshooting and tracking.

➤ **X-Ca-Error-Message:** Invalid Url

// The API gateway returns an error message that the API gateway returns the error message to the client through the response header when an error occurs.

➤ **X-Ca-Debug-Info:** {"ServiceLatency":0,"TotalLatency":2}

// When you open the Debug mode will return to the Debug information, this information may be changed later, only for the FBI phase reference

When you call the API, you need to include the signature information in the request, whether you are using HTTP or the HTTPS protocol. AppKey is used to identify you, AppSecret is the key used to encrypt the signature string and the server-side validation signature string. For details on how to encrypt a signed signature, see the document [4.request signature](#).

3. API List

N O	Grouping	Key pair	API name	Description
1	OLD API	Please contact with the salesman or service.		
3				
5				
6				
7				
8				

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

➤ Traffic Control:

1) OLDAPI: 100 times/Minutes

3.1 getPlanListPro

➤ Request Path: <https://eu-api-genergal.aisweicloud.com/pro/getPlanListPro>

➤ HTTP Method: Get

➤ Request Parameters

Name	Type	Description
token	String	User token
order	Integer	0: order by luid 1: order by createTime 2: order by status
pageNum	Integer	Page number
pageSize	Integer	Size per page

➤ Response Type: JSON (application/json;charset=utf-8)

➤ Response Parameters

Name	Type	Description
status	Integer	200 means success. 10001 params is error 20006 user does not exist
Info	String	The message of status
time	String	The current time
data	Json	

文件名称Document Name: AISWEICloud API				
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department	
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of	

totalPages	Integer	Total Pages
totalElements	Integer	Total Elements
pageNum	Integer	Current page
pageSize	Integer	Size per page
result	Json	
country	Integer	Country code
totalpower	float	Total power of inverter
apikey	String	The key of plant
city	String	city
ludt	String	Last update time
etoday	float	Electricity generation today
createdt	String	Station creation time
wd	double	latitude
jd	double	Longitude
etotal	float	Annual power generation
imgurl	String	Background picture
province	Integer	State and province code
name	String	The name of plant
status	Integer	The status of plant 0-offline 1-normal 2-warning 3-error

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

position	String	The address of plant
accountName	String	User mobile or email

➤ Response Example

```
{
  "status": 200,
  "info": "success",
  "time": "2022-05-16 14:39:25",
  "data": {
    "totalPages": 24,
    "totalElements": 24,
    "pageNum": 1,
    "pageSize": 1,
    "result": [
      {
        "country": 86,
        "totalpower": 21.15,
        "apikey": "be9ca0323e4149758d0b02ea3310cxxx",
        "city": "",
        "accountName": "187xxxxxxxx",
        "ludt": "2022-05-16 14:35:08",
        "etoday": 101.2,
        "createdt": "2022-05-13 21:34:10",
        "wd": 34.174373,
        "etotal": 302.9,
        "imgurl": "https://www.zevercloud.com/upload/station/defaultBg.jpg",
        "province": 26,
        "name": "兴平 XYZL ",
        "jd": 108.40205,
        "position": "中国陕西省西安市周至县老大路",
        "status": 1
      }
    ]
  }
}
```

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

}

3.2 getPlantOverviewPro

- Request Path: <https://eu-api-genergal.aisweicloud.com/pro/getPlantOverviewPro>
- HTTP Method: Get
- Request Parameters

Name	Type	Description
apikey	String	The api key(NMI) of your plant
token	String	User token

- Response Type: JSON (application/json;charset=utf-8)
- Response Parameters

Name	Type	Description
status	Integer	200 means success. 10001 params is error 10012 Device does not exist 10403 Don't have permission to view this station 20006 user does not exist
info	String	The message of status
time	String	The current time
data	Json	
ludt	String	Last update time
apikey	String	The apikey of plant

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

status	String	The status of plant 0-offline 1-normal 2-warning 3-error
E-Month	Json	
unit	String	Numerical unit
value	float	value
CO2Avoided	Json	Carbon dioxide emission reduction
E-Today	Json	Electricity generation today
TotalYield	Json	Yield coefficient
E-Total	Json	Annual power generation
E-Year	Json	
Power	Json	Total power

➤ Response Example

```
{ "status" : 200, "info" : "success", "time" : "2022-05-09 15:28:22", "data" : { "E-Month" : { "unit" : "KWh", "value" : 42.1 }, "CO2Avoided" : { "unit" : "Kg", "value" : 6.0 }, "E-Today" : { "unit" : "KWh", "value" : 3.6 }, "TotalYield" : { "unit" : "", "value" : 3.2 }, "E-Total" : { "unit" : "KWh", "value" : 180.6 }, "E-Year" : { "unit" : "KWh", "value" : 201.0 }, "ludt" : "2022-04-09 14:22:53", "Power" : { "unit" : "W", "value" : 42.0 }, "apikey" : "sada34", "status" : "1" } }
```

3.3 [getPlantOutputPro](#)

➤ Request Path: <https://eu-api-genergal.aisweicloud.com/pro/getPlantOutputPro>

➤ HTTP Method: Get

➤ Request Parameters

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

Name	Type	Description
apikey	String	The apikey of plant
period	String	Values: bydays、bymonth、byyear、bytotal
date	String	bydays yyyy-MM-dd bymonth yyyy-MM byyear yyyy bytotal date is null
token	String	User token

➤ Response Type: JSON (application/json;charset=utf-8)

➤ Response Parameters

Name	Type	Description
status	Integer	200 means success. 10001 params is error 10012 Device does not exist 10403 Don't have permission to view this station
info	String	The message of status
time	String	Current time
data	Json	
apikey	String	The apikey of plant
dataunit	String	Numerical unit
result	Json	
no	String	code
time	String	Time of year

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

value	String	Generating capacity
-------	--------	---------------------

➤ Response Example

```
{
  "status": 200,
  "info": "success",
  "time": "2022-05-09 15:28:32",
  "data": {
    "result": [
      {
        "no": "1",
        "time": "2022",
        "value": "4.0"
      }
    ],
    "apikey": "asd124325",
    "dataunit": "KWh"
  }
}
```

3.4 getPlantEventPro

- Request Path: <https://eu-api-genergal.aisweicloud.com/pro/getPlantEventPro>
- HTTP Method: Get
- Request Parameters

Name	Type	Description
apikey	String	The apikey of plant
token	String	User token
sdt	String	Start time yyyy-MM-dd

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

edt	String	End stime yyyy-MM-dd
-----	--------	-------------------------

- Response Type: JSON (application/json;charset=utf-8)
- Response Parameters

Name	Type	Description
status	Integer	200 means success. 10001 params is error 10012 Device does not exist 10403 Don't have permission to view this station
info	String	success
time	String	Current time
data	Json	
apikey	String	The apikey of plant
result	List	Station event data
eventCode	String	Event code
eventTime	String	Time of occurrence
eventType	String	1-message 2-warning 3-error
ssno	String	Equipment serial number

- Response Example

```
{
  "status": 200,
  "info": "success",
  "time": "2022-05-09 15:28:37",
  "data": {
    "result": [
```


文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

```

{
    "eventCode": "304",
    "ssno": "SX00040311440018",
    "eventTime": "2022-05-01 13:45:11",
    "eventType": "3"
},
{
    "apikey": "asd45642"
}
}

```

3.5 getDeviceListPro

- Request Path: <https://eu-api-genergal.aisweicloud.com/pro/getDeviceListPro>
- HTTP Method: Get
- Request Parameters

Name	Type	Description
apikey	String	The api key(NMI) of your plants
token	String	User token

- Response Type: JSON (application/json;charset=utf-8)
- Response Parameters

Name	Type	Description
status	Integer	200 means success. 10001 params is error 10012 Device does not exist 10403 Don't have permission to view this station
info	String	The message of status

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

time	String	The current time
data	Json	
psn	String	Pmu serial number
pstate	Integer	The state of pmu 0-offline 1-normal 9- not active
inverters	List	
isn	String	Inverter serial number
ludt	String	Last communication time
istate	Integer	The state of inverter 0-offline 1-normal 2- cache

➤ Response Example

```
{
  "status": 200,
  "info": "success",
  "time": "2022-05-09 15:28:40",
  "data": [
    {
      "pstate": 0,
      "inverters": [
        {
          "isn": "5.0NX12000010",
          "ludt": "2022-05-09 15:02:03",
          "istate": 0
        }
      ],
      "psn": "B3200A2305D7"
    }
  ]
}
```

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

3.6 getLocationPro

- Request Path: <https://eu-api-genergal.aisweicloud.com/pro/getLocationPro>
- HTTP Method: Get
- Request Parameters

Name	Type	Description
token	String	token
psno	String	Pmu serial number

- Response Type: JSON (application/json;charset=utf-8)
- Response Parameters

Name	Type	Description
status	Integer	200 means success. 10001 params is error 10012 Device does not exist 10009 Unable to resolve latitude and longitude 10010 Pmu is Unbound 20006 user does not exist
info	String	The message of status
time	String	Current time
data	Jsno	
address	String	Longitude and latitude address
jd	String	Longitude
wd	String	latitude

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

➤ Response Example

```
{
  "status": 200,
  "info": "success",
  "time": "2022-05-09 15:28:44",
  "data": {
    "address": "中国江苏省镇江市扬中市港兴路辅路长乐村北 272 米",
    "jd": "119.861289",
    "wd": "32.201583"
  }
}
```

3.7 getLastTsDataPro

➤ Request Path: <https://eu-api-genergal.aisweicloud.com/pro/getLastTsDataPro>

➤ HTTP Method: Get

➤ Request Parameters

Name	Type	Description
token	String	token
isnos	String	Inverter SN Eg 111,222

➤ Response Type: JSON (application/json;charset=utf-8)

➤ Response Parameters

Name	Type	Description	Data precision
status	Integer	200 means success. 10001 params is error 20006 user does not exist	
info	String	The message of status	

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

time	String	Current time	
data	Json		
sn	String	Inverter serial number	
tmstp	String	time stamp	
apikey	String	The apikey of plant	
tim	String	Update time	
pac	String	Active power	1W
prc	String	Reactive power	1W
sac	String	Apparent power	1W
pf	String	power factor	0. 01
etd	String	Daily power generation	0.1kwh
eto	String	Total power generation	0.1kwh
hto	String	Grid connection duration	1H
cf	String	Heat sink temperature	0. 1℃
tu	String	U phase temperature	0. 1℃
tv	String	V phase temperature	0. 1℃
tw	String	W phase temperature	0. 1℃
cb	String	Boost temperature	0. 1℃
bv	String	Bus voltage	0. 1V

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

er	String	ERROR	
wn0	String	warning	
v1~3	String	MPPT Voltage	0. 1V
i1~3	String	MPPT electric current	0. 01A
s1~3	String	String current	0. 1A
va1~3	String	AC voltage	0. 1V
ia1~3	String	AC current	0. 1A
fac	String	frequency	0. 01Hz

➤ Response Example

```
{ "status" : 200, "info" : "success", "time" : "2022-05-10 19:43:22", "data" : [ { "sn" : "SZ001786221B0635", "tmstp" : "1652182736000", "apikey" : "145371", "tim" : "2022-05-10 19:38:56", "pac" : "0", "prc" : "0", "sac" : "0", "pf" : "0", "etd" : "456", "eto" : "88273", "hto" : "1439", "cf" : "278", "tu" : "232", "tv" : "232", "tw" : "232", "cb" : "232", "bv" : "5850", "er" : "0", "wn0" : "0", "v1" : "1501", "v2" : "3527", "v3" : null, "v4" : null, "v5" : null, "i1" : "0", "i2" : "11", "i3" : null, "i4" : null, "i5" : null, "s1" : null, "s2" : null, "s3" : null, "s4" : null, "s5" : null, "s6" : null, "s7" : null, "s8" : null, "s9" : null, "s10" : null, "va1" : "2314", "va2" : "2361", "va3" : "2348", "ia1" : "10", "ia2" : "9", "ia3" : "8", "fac" : "4996" } ] }
```

3.8 [getInverterDataPagePro](#)

➤ Request Path: <https://eu-api-genergal.aisweicloud.com/pro/getInverterDataPagePro>

➤ HTTP Method: Get

➤ Request Parameters

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

Name	Type	Description	Must
token	String	token	Y
apikey	String	The api key(NMI) of your plants	Y
isnos	String	Inverter SN Eg 111,222	N
startDate	String	Query start time format yyyy-MM-dd HH:mm:ss	Y
endDate	String	Query end time format yyyy-MM-dd HH:mm:ss	Y
pageNum	Integer	The current page number	Y
pageSize	Integer	The size of each page	Y

➤ Response Type: JSON (application/json;charset=utf-8)

➤ Response Parameters

Name	Type	Description	Data precision
status	Integer	200	
info	String	success	
time	String	Current time	
data	Json		
totalPages	Integer	Total Page	
totalElements	Integer	Total Elements	
pageNum	Integer	The current page number	
pageSize	Integer	The size of each page	

文件名称Document Name: AISWEICloud API				
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department	
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of	

result	List	Query result	
apikey	String	The apikey of plant	
isno	String	The code of inverter	
dataList	List		
tu	String	U phase temperature	0.1℃
tv	String	V phase temperature	0.1℃
tmstp	String	time stamp	
tw	String	W phase temperature	0.1℃
insdt	String	Warehousing time	
fac	String	frequency	0.01Hz
psn	String	Collector serial number	
pac	String	Active power	1W
bv	String	Bus voltage	0.1V
etd	String	Daily power generation	0.1kwh
sac	String	Apparent power	1W
smp	String	sampling frequency	
ia1~3	String	AC current	0.1A
tim	String	Update time	
sn	String	Inverter serial number	

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

cb	String	Boost temperature	0.1℃
prc	String	Reactive power	1W
eto	String	Total power generation	0.1kwh
hto	String	Grid connection duration	1H
cf	String	Heat sink temperature	0.1℃
va1~3	String	AC voltage	0.1V
i1~3	String	MPPT electric current	0.01A
itv	String	Minutes	
er	String	ERROR code	
pf	String	power factor	0.01
v1~3	String	MPPT Voltage	0.1V
wn0	String	Warning code	
s1~6	String	String current	0.1A

➤ Response Example

```
{
  "status": 200,
  "info": "success",
  "time": "2022-06-20 15:14:16",
  "data": {
    "totalPages": 1,
    "totalElements": 1,
    "pageNum": 1,
    "pageSize": 3,
    "result": [
      {
        "apikey": "a25a6c9b9f3045e9b4105d1c5bd1fc8b",
        "dataList": [
          {
            "tu": "294",
            "tv": "294",
            "tmstp": "1655242295000",
            "tw": "294",
            "insdt": "2022-06-15 05:31:37",
            "fac": "4998",
            "psn": "xx00A230xx",
            "pac": "1251",
            "bv": "6029",
            "etd": "4",
            "sac": "227",
            "smp": "5",
            "ia1": "26",
            "tim": "2022-06-15 05:31:35",
            "ia3": "28",
            "sn": "xxx4000122300xx",
            "ia2": "26",
            "s1": "0",
            "cb": "297",
            "s2": "11",
            "prc": "0",
            "s3": "0",
            "eto": "101576",
            "s4": "0",
            "ht"
          }
        ]
      }
    ]
  }
}
```

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

```
o":"674","s5":"0","cf":"273","s6":"0","va2":"2213","va1":"2221","i1":"185","i2":"145","va3":"2218","i3":"100","itv":"331","er":"0","pf":"100","wn0":"0","v1":"4203","v2":"4286","v3":"4190"}]],{"isno":"xxx4000122300xx"}]]}}
```

3.9 getInverterETodayPro

- Request Path: <https://eu-api-genergal.aisweicloud.com/pro/getInverterETodayPro>
- HTTP Method: Get
- Request Parameters

Name	Type	Description	Must
token	String	token	Y
apikey	String	The api key(NMI) of your plants	Y
isnos	String	Inverter SN Eg 111,222	N
date	String	Query time format yyyy-MM-dd	Y

- Response Type: JSON (application/json;charset=utf-8)
- Response Parameters

Name	Type	Description
status	Integer	200
info	String	success
time	String	Current time
data	Json	

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

date	String	Query date
result	List	Query result unit: kwh

➤ Response Example

```
{"status":200,"info":"success","time":"2022-06-20
17:04:30","data":{"date":"2022-06-19","result":[{"SP00250022240383":145.3}]}}
```

3.10 [getInverterHisErrorPagePro](#)

➤ Request Path: <https://eu-api-genergal.aisweicloud.com/pro/getInverterHisErrorPagePro>

➤ HTTP Method: Get

➤ Request Parameters

Name	Type	Description	Must
token	String	token	Y
apikey	String	The api key(NMI) of your plants	Y
isno	String	Inverter SN	N
startDate	String	Query start time format yyyy-MM-dd HH:mm:ss	Y
endDate	String	Query end time format yyyy-MM-dd HH:mm:ss	Y
pageNum	Integer	The current page number	Y
pageSize	Integer	The size of each page	Y

➤ Response Type: JSON (application/json;charset=utf-8)

文件名称Document Name: AISWEICloud API				
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department	
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of	

➤ Response Parameters

Name	Type	Description
status	Integer	200
info	String	success
time	String	Current time
data	Json	
totalPages	Integer	Total Page
totalElements	Integer	Total Elements
pageNum	Integer	The current page number
pageSize	Integer	The size of each page
result	List	Query result
errorDate	long	Time of occurrence
errorCode	int	Error code
errorType	int	Error type 3-error
context	String	Error describe
isno	String	The code of inverter

➤ Response Example

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

```
{"status":200,"info":"success","time":"2022-06-21
11:06:27","data":{"totalPages":1,"totalElements":1,"pageNum":1,"pageSize":1,"result":[{"errorDate":16553261670
00,"errorCode":35,"errorType":3,"context":"35 - 电网丢失","isno":"AR80000112190001"}]}}
```

3.11 [getInverterCurrentErrorPro](#)

- Request Path: <https://eu-api-genergal.aisweicloud.com/pro/getInverterCurrentErrorPro>
- HTTP Method: Get
- Request Parameters

Name	Type	Description	Must
token	String	token	Y
apikey	String	The api key(NMI) of your plants	N
isno	String	Inverter SN	N

- Response Type: JSON (application/json;charset=utf-8)
- Response Parameters

Name	Type	Description
status	Integer	200
info	String	success
time	String	Current time
data	Json	
errorDate	long	Time of occurrence

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

errorCode	int	Error code
errorType	int	Error type 3-error
context	String	Error describe
isno	String	The code of inverter
faultCode	String	current error unique code

➤ Response Example

```
{
  "status": 200,
  "info": "success",
  "time": "2022-06-21 11:16:55",
  "data": [
    {
      "context": "35 - 电网丢失",
      "errorCode": 35,
      "errorType": 3,
      "faultCode": "xxx001xxx",
      "isno": "AR80000112190001",
      "errorDate": 1655758207000
    }
  ]
}
```

3.12 [getInverterOverviewPro](#)

➤ Request Path: <https://eu-api-genergal.aisweicloud.com/pro/getInverterOverviewPro>

➤ HTTP Method: Get

➤ Request Parameters

Name	Type	Description	Must
token	String	token	Y

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

apikey	String	The api key(NMI) of your plants	Y
date	String	yyyy-MM	N

➤ Response Type: JSON (application/json;charset=utf-8)

➤ Response Parameters

Name	Type	Description	Data precision
status	Integer	200 means success.	
info	String	The message of status	
time	String	Current time	
data	Jsno		
apikey	String	The apikey of plant	
result	List		
isno	String	The code of inveter	
e_today	String	Daily power generation	Kwh
e_month	String	Monthly electricity generation	kwh
e_total	String	Annual power generation	kwh
co2	double	Carbon dioxide emission reduction	
yield	double	Yield	
recvdate	String	Last update time	

➤ Response Example

```
{
```

AISWEI New Energy Co., Ltd

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

```

    "status": 200,
    "info": "success",
    "time": "2022-06-21 16:38:04",
    "data": [
      {
        "apikey": "xxx2bec7dfd4da69ef07b3783e43xxx",
        "result": [
          {
            "isno": "SP00200022252664",
            "e_today": "117.60",
            "e_month": "127.600",
            "e_total": "407.90",
            "co2": 326.32,
            "yield": 163.16,
            "recvdate": "2022-06-21 16:33:13.0"
          }
        ]
      }
    ]
  }
}

```

3.13 getInverterRecoverStatusPro

- Request Path: <https://eu-api-genergal.aisweicloud.com/pro/getInverterRecoverStatusPro>
- HTTP Method: Get
- Request Parameters

Name	Type	Description	Must
token	String	token	Y
faultCodes	String	error unique code Eg 111,222,333	Y

- Response Type: JSON (application/json;charset=utf-8)

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

➤ Response Parameters

Name	Type	Description
status	Integer	200 means success.
info	String	The message of status
time	String	Current time
data	Jsno	
recoverTime	long	Recover time
recover	int	Recover status 0- not recovered 1- restored
faultCode	String	error unique code

➤ Response Example

```
{
  "status": 200,
  "info": "success",
  "time": "2022-06-24 16:56:36",
  "data": [
    {
      "recoverTime": 1656043923000,
      "recover": 1,
      "faultCode": "Q0gwMDUwMDAxMjI1MDA5MnwzNHwxNjU2MDQzNzMzMdAw"
    }
  ],
}
```

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

```
{
  "recoverTime": null,
  "recover": 0,
  "faultCode": "U1AwMDIzMDAyMjI1MDQwM3wzNXwxNjU1NzU4MDkwMDAw"
}
```

3.14 createstationPro

- Request Path: <https://eu-api-genergal.aisweicloud.com/pro/createstationPro>
- HTTP Method:Post
- Request Parameters

Name	Type	Description	Must
token	String	token	Y
psno	String	Pmu serial number	Y
registno	String	Pmu registration code	Y
name	String	Station name	Y
totalpower	Double	Total power of inverter Default 0KW	N
area	String	Power station type 1 household power station, 2 commercial power station	N

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

timezone	Long	Time zone China area Default 8	N
wkey	Long	Time zone code China area Default 7800	N
customerflag	Long	Daylight Saving Time Marker 0- Daylight saving time is not in effect 1- daylight saving time Default 0	N
co2xs	Long	CO2 reduction factor Default 0.7	N
gainxs	Long	Earnings calculation factor Default 0.8	N
country	Long	Country default 86	N
province	Long	Province default 0	N
city	String	city	N
jd	Double	Longitude default 0	N
wd	Double	Latitude default 0	N
locale	String	language code default zh_CN	N

➤ Response Type: JSON (application/json;charset=utf-8)

➤ Response Parameters

Name	Type	Description
status	Integer	200 means success.
info	String	The message of status
time	String	Current time
data	Jsno	
apikey	String	The key of plant

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

➤ Response Example

```
{
  "status" : 200,
  "info" : " success ",
  "time" : "2022-08-05 16:21:50",
  "data" : {
    "apikey":"XXXX"
  }
}
```

4. Request a signature

4.1 Domain Name

- Each API belongs to an API group, and each API group has a unique domain name. These independent domain names are bound by the service provider. API Gateway uses a domain name to locate an API group.
- The domain name is in the format of **www.[Independent domain name].com/[Path]?[HTTPMethod]**. At the public beta stage, the API user needs to obtain this domain name offline from the API service provider.
- Alibaba Cloud API Gateway uses the domain name to locate a unique API group, and then locate the unique API through Path+HTTPMethod.
- You must obtain API documentation in the deprecation environment from the API service provider. This documentation must include necessary parameter information, such as the domain name and path.

4.2 System level header

- [Required] X-Ca-Key: AppKey

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

- [Required] X-Ca-Signature: Signature string
- [Optional] X-Ca-Timestamp: The time stamp in milliseconds passed by the API caller, that is, the milliseconds of the time from January 1, 1970 until now. By default, it is valid within 15 minutes.
- [Optional] X-Ca-Nonce: The UUID generated by the API caller. This header is used with the time stamp to prevent replay.
- [Optional] Content-MD5: When the request body is not a Form, calculate the MD5 value of the body and send that value to the cloud gateway for checking.
- [Optional] X-Ca-Stage: The stage where the requested API belongs. Only test and release are supported, and the default value is release.

4.3 Signature verification

4.3.1 Prepare APPKey

Appkey, call the API identity, you can contact the service provider to apply

4.3.2 The organization participates in the signature calculation of the string

```

1. String stringToSign=
2. HTTPMethod + "\n" +
3. Accept + "\n" +
4. Content-MD5 + "\n"
5. Content-Type + "\n" +
6. Date + "\n" +
7. Headers +
8. Url

```

Each letter of the HTTPMethod value must be capitalized.

If Accept, Content-MD5, Content-Type, and Date are empty, add a linefeed (\n). If Headers is empty, a linefeed (\n) is not required. The specified Headers includes a linefeed (\n). For more information, see the headers organization method described as follows.

Content-MD5:

Content-MD5 indicates the MD5 value of the body. MD5 is only calculated when the body is not a Form. The calculation method is as follows:

```

1. String content-MD5 = Base64.encodeBase64(MD5(bodyStream.getBytes("UTF-8")));

```

The **bodyStream** indicates the byte array.

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

Headers:

Headers indicates the keys and values of the headers involved in signature calculation. Note that X-Ca-Signature and X-Ca-Signature-Headers are excluded in Headers signature calculation.

Headers organization method:

Rank the keys of all Headers involved in signature calculation in lexicographic order and then splice them in the following method:

```
1. String headers =
2. HeaderKey1 + ":" + HeaderValue1 + "\n"+
3. HeaderKey2 + ":" + HeaderValue2 + "\n"+
4. ...
5. HeaderKeyN + ":" + HeaderValueN + "\n"
```

Url

URL indicates the Form parameter in the Path+Query+Body. The organization method is as follows:

Rank the keys of Query+Form in lexicographic order and then splice them in the following method. If Query or Form is empty, the URL is equal to Path, and a question mark (?) is not required to be added.

```
1. String url =
2. Path +
3. "?" +
4. Key1 + "=" + Value1 +
5. "&" + Key2 + "=" + Value2 +
6. ...
7. "&" + KeyN + "=" + ValueN
```

Note that Query or Form may have multiple values. If multiple values exist, use the first value for signature calculation.

4.3.3 Calculate the signature

```
1. Mac hmacSha256 = Mac.getInstance("HmacSHA256");
2. byte[] keyBytes = secret.getBytes("UTF-8");
3. hmacSha256.init(new SecretKeySpec(keyBytes, 0, keyBytes.length, "HmacSHA256"));
4. String sign = new String(Base64.encodeBase64(hmacSha256.doFinal(stringToSign.getBytes("UTF-8")), "UTF-8"));
```

The **secret** indicates the key corresponding to an app..

AISWEI New Energy Co., Ltd

文件名称Document Name: AISWEICloud API			
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of

4.3.4 Pass the signature

Put the calculated signature in the Header of the Request. The key is X-Ca-Signature.

Separate the keys of all Headers involved in signature calculation by commas and put them in the Header of the Request regardless of the order. The key is X-Ca-Signature-Headers.

For more information about the demo of signature calculation, click [here](#).

4.3.5 Signature error detection method

When the signature verification fails, the API gateway will be the server's StringToSign into the HTTP Response Header to return to the client, Key: X-Ca-Error-Message, only the local calculation of the StringToSign and the server back to the StringToSign To be able to find a problem;

If the server is consistent with the client's StringToSign, check that the key used for the signature calculation is correct;

Because the HTTP Header can not represent a newline, the string break in StringToSign is filtered out, and the line breaks are ignored when compared.

4.3.6 Signature demo

Signature demo detailed demo (JAVA).

Please refer to the link: <https://github.com/aliyun/api-gateway-demo-sign-java>.

5. Event Code Description table

Error Code	Error Description
101	SCI Fault
102	EEPROM R/W Fault
103	RLY-Check Fault
104	DC INJ. High
105	AUTO TEST FAILED
106	High DC Bus
107	Ref.Voltage Fault
108	AC HCT Fault
109	GFCI Fault

文件名称Document Name: AISWEICloud API				
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department	
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of	

110	Device Fault
111	M-S version unmatched
112	Reserve
132	Reserve
133	Fac Fault
134	Vac Fault
135	Utility Loss
136	Ground fault
137	PV Over voltage
138	ISO Fault
139	Reserve
140	Over Temp.
141	Vac differs for M-S
142	Fac differs for M-S
143	Groud I differs for M-S
144	DC inj. differs for M-S
145	Fac,Vac differs for M-S
146	High DC Bus
147	Consistent Fault
148	Average volt of 10 minutes Fault
149	Reserve
150	Reserve
151	
152	Fuse Fault
153	ISO check: before enable constant current, ISO voltage> 300mV
154	ISO check: after enable constant current, ISO voltage out of range (1.37v +/- 20%)
155	ISO check: N P relay change, ISO voltage sudden below 40mV

文件名称Document Name: AISWEICloud API				
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department	
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of	

156	GFCI protect fault :30mA lever
157	GFCI protect fault :60mA lever
158	GFCI protect fault :150mA lever
159	PV1 string current abnormal
160	PV2 string current abnormal
161	DRED Communication Fails (S9 open)
162	Operate the disconnection device (S0 close)

country name	country code	province code	province name
China	86.00	1	Anhui
China	86.00	2	Beijing
China	86.00	3	Chongqing
China	86.00	4	Fujian
China	86.00	5	Gansu
China	86.00	6	Guangdong
China	86.00	7	Guangxi
China	86.00	8	Guizhou
China	86.00	9	Hainan
China	86.00	10	Hebei
China	86.00	11	Heilongjiang
China	86.00	12	Henan
China	86.00	13	Hong Kong
China	86.00	14	Hubei
China	86.00	15	Hunan
China	86.00	16	Jiangsu
China	86.00	17	Jiangxi
China	86.00	18	Jilin
China	86.00	19	Liaoning
China	86.00	20	Macau
China	86.00	21	Inner Mongolia

文件名称Document Name: AISWEICloud API				
文件编号 Doc. No.		制订部门 Originating Dept.	Application and network department	
版本 Rev. No.	V1.1	页数 Page	第 页/共 页 Page of	

China	86.00	22	Ningxia
China	86.00	23	Qinghai
China	86.00	24	Shandong
China	86.00	25	Shanxi
China	86.00	26	Shanxi
China	86.00	27	Shanghai
China	86.00	28	Sichuan
China	86.00	29	Taiwan
China	86.00	30	Tianjin
China	86.00	31	Tibet
China	86.00	32	Sinkiang
China	86.00	33	Yunnan
China	86.00	34	Zhejiang