

SolisCloud Platform API Document - Device Control

V2.0

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1 GLOBAL DESCRIPTION

- 1) All interface encryption is based on the HTTPS protocol.
- 3) All interface request methods are POST.
- 4) All interface request types are application/JSON;Charset=UTF-8.
- 6) All interface returned data is in JSON format.

2 INTERFACE INFORMATION

2.1 Interface Address and Key

Type	Content
API URL	https://www.soliscloud.com:13333/
API ID	Log in to www.soliscloud.com and go to "Account" - "Basic Settings" - "API Management" to obtain. Pay attention to confidentiality and prevent Data breach.
API Secret	

2.2 Request Standard Format

POST [API URL]

Content-MD5: [Content-MD5]

Content-Type: application/json;charset=UTF-8

Date: [Date]

Authorization: API {apiId}: [sign]

Body: [Body]

Name	Description	Example
API URL	Specific address of each interface.	https://www.soliscloud.com:13333/v1/api/inverterDetail
Content-MD5	<ol style="list-style-type: none"> 1. Perform MD5 encryption on the body; 2. Convert encrypted content into a 128 bit binary array; 3. Base64 encoding of binary arrays. 	<pre>public static String getDigest(String test) { String result = ""; try { MessageDigest md = MessageDigest.getInstance("MD5"); md.update(test.getBytes()); byte[] b = md.digest(); result = Base64.encodeBytes(b); } catch (NoSuchAlgorithmException e) { e.printStackTrace(); } return result; }</pre>
Content-Type	Fixed value	application/json;charset=UTF-8
Date	<ol style="list-style-type: none"> 1. Obtain the current time in the GMT time zone; 2. Convert the current time to a string in the following format. 	<pre>public static String getGMTTime(){ Calendar cd = Calendar.getInstance(); SimpleDateFormat sdf = new</pre>

	<p>Format: EEE, d MMM yyyy HH:mm:ss' GMT '</p> <p>Note: The Date time cannot exceed the current time by more than plus or minus 15 minutes, otherwise a call failure may occur.</p>	<pre>SimpleDateFormat("EEE, d MMM yyyy HH:mm:ss 'GMT'", Locale.US); sdf.setTimeZone(TimeZone.getTimeZone("GMT")); String str = sdf.format(cd.getTime()); return str; }</pre>
Authorization	<p>The legitimacy authentication information of the interface request, in the format shown in the example, is explained as follows:</p> <p><code>apiId</code> represents the visitor's identity ID.</p> <p><code>ApiSecret</code> represents the key required for signing.</p> <p><code>CanonicalizedResource</code> represents the API interface path that you want to access, such as <code>"/v1/api/inverterDetail"</code></p> <p><code>Sign</code> represents a digital signature, which is obtained by encrypting the HmacSHA1 key with base64 encoding.</p> <p><code>\n</code> represents a line break.</p>	<pre>Authorization : "API " + apiId + ":" + Sign Sign = base64(HmacSHA1(apiSecret,POST+ "\n" + Content-MD5 + "\n" + Content-Type + "\n" + Date + "\n" + CanonicalizedResource))</pre>
Body	Please refer to the request parameters for each business interface for details.	<pre>{ "id": "1308675217944611083", "sn": "120B40198150131" }</pre>

2.3 Standard format for returns

Content-Type: application/json;charset=UTF-8

Date: [Date]

Body: [Body]

Name	Description	Example
Content-Type	Fixed value	application/json;charset=UTF-8
Date	GMT time in string format	Fri, 26 Jul 2019 06:00:46 GMT
Body	<p>The body content includes: {success, code, msg, data}</p> <p>"Success": true represents success, while false represents failure.</p> <p>Code: 0 represents success, while others represent failure. Please refer to Appendix 1 for the failure code.</p>	<pre>{ "success": true, "code": "0", "msg": "success", "data": { } }</pre>

	<p>"Msg": Description of the code value.</p> <p>Data ": Please refer to the return parameters of each business interface for details.</p>	
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2.4 Interface Call Examples

Request parameters:

POST /v1/api/userStationList

Content-MD5: kxdxk7rbAsrzSIWgEwhH4w==

Content-Type: application/json

Date: Fri, 26 Jul 2019 06:00:46 GMT

Authorization: API {apiId}:nBYQWeuzy3Y+gp67BN8zXTmvSDk=

Body: {"pageNo":1,"pageSize":10}

Return parameters:

```
{
  "success": true,
  "code": "0",
  "msg": "success",
  "data": { }
}
```

JAVA example (please download directly):

<https://ginlong-product.oss-cn-shanghai.aliyuncs.com/templet/Authorization.java>

2.5 Encryption Tool Reference

Reference website <https://dinochiesa.github.io/hmacsha/index.html>

Content MD5 calculation example {"pageNo":1,"pageSize":10}

Calculate a SHA or MD5

function:

hmac?: ☐

message: {"pageNo":1,"pageSize":10}

Encoded result: (Computation is automatic)

Base16:

☐ 93177193badb02caf34885a0130847e3

Base64:

☐ kxdxk7rbAsrzSIWgEwhH4w==

Base64Url:

☐ kxdxk7rbAsrzSIWgEwhH4w

Calculate an HMAC with SHA or MD5

function:

hmac?: ☒

secret key: 6680182547

key coding:

message: POST
kxdxk7rbAsrzSIWgEwhH4w==
application/json
Fri, 26 Jul 2019 06:00:46 GMT
/v1/api/userStationList

Encoded result: (Computation is automatic)

Base16:

☐ 9c161059ebb3cb763e829ebb04df335d39af4839

Base64:

☐ nBYQWeuzy3Y+gp67BN8zXTmvSDk=

Base64Url:

☐ nBYQWeuzy3Y-gp67BN8zXTmvSDk

3 DEVICE CONTROL INTERFACES

3.1 Remote control of a single inverter

Interface Name	Remote control of a single inverter
Interface Description	Issue instructions to control a single inverter. This interface can support all

	devices of Solis.		
Request URL	https://www.soliscloud.com:13333/v2/api/control		
Interface frequency limit	2 times/sec		
Request parameters [Body]			
Parameter Name	Data Type	Required	Description
inverterSn	String	Y	Control the specified inverter ID or inverter SN. ID and SN cannot be empty at the same time. Use "," to split multiple inverters
inverterId	String	Y	
cid	Long	Y	Instruction ID, used in conjunction with the value field, is invalid when used alone. Please refer to Appendix 2 for details
value	String	Y	Set value, used in conjunction with cid field, invalid when used alone
nmiCode	String	N	Designated device for controlling nmi codes, dedicated to the Australian region
Return parameters [Body]			
Parameter Name	Data Type	Required	Description
code	String	Y	0 represents success, while others represent failure. The failure code is detailed in Appendix 1
msg	String	Y	Description of code values
time	Long	Y	Return time, format timestamp
Code example			
Request parameters	POST /v2/api/control Connection: keep-alive token: token_bd95927f-32f8-459e-9194-265452cc4571 Date: Fri, 7 Jul 2023 07:40:05 GMT Content-MD5: 8rjUs3cEryAmW/DY8neXCA== Authorization:API 1300386381676644416:ZkwJ4P01v4V1ihZLOXq0C7QCjXc= Content-Type: application/json;charset=UTF-8 Content-Length: 54 Host: test.soliscloud.com:3333 User-Agent: Apache-HttpClient/4.5.13 (Java/11.0.17) { "inverterSn": "380205022C190102", "cid": 48, "value": 190 }		
Return parameters	{ "code": "0", "data": [{		

	<pre> "msg": "380205022C190102 Time: 1688744454
NO: 200
SN: 6490273190687805984
Result: 0
Inverter1:
send:
recv: 01060BBE00BE6BBA
", "code": 0, "recv": "01060BBE00BE6BBA", "command": "AT+TEST=GIN485:01 06 0b be 00 be 6b ba" }], "time": "1688715605600" }</pre>
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3.2 Reading parameter values from multiple devices

Interface Name	Reading parameter values from multiple devices		
Interface Description	Read the current parameter values of a single or multiple inverters. This interface can support all devices of Solis.		
Request URL	https://www.soliscloud.com:13333/v2/api/atRead		
Interface frequency limit	2 times/sec		
Request parameters [Body]			
Parameter Name	Data Type	Required	Description
inverterSn	String	Y	Specify the device for reading SN, multiple devices are split using ','
nmiCode	String	N	Specify the device for reading nmi codes, dedicated to the Australian region, multiple devices are used for segmentation
cid	Long	Y	Read the value of instruction ID, see Appendix 2 for details
Return parameters [Body]			
Parameter Name	Data Type	Required	Description
code	String	Y	0 represents success, while others represent failure. The failure code is detailed in Appendix 1
msg	String	Y	Description of code values
orderId	String	Y	After obtaining the orderId, obtain the specific results through the/v2/api/result interface
Code example			
Request parameters	POST /v2/api/atRead Connection: keep-alive token: token_bd95927f-32f8-459e-9194-265452cc4571 Date: Fri, 7 Jul 2023 07:40:07 GMT Content-MD5: 80b8a01LHsAxSY1WU0TosQ== Authorization:API 1300386381676644416:S2Ee70XLW6a2k3WZ0icaffuH1gU=		

	Content-Type: application/json;charset=UTF-8 Content-Length: 45 Host: test.soliscloud.com:3333 User-Agent: Apache-HttpClient/4.5.13 (Java/11.0.17) <pre>{ "inverterSn": "380205022C190102", "cid": "142" }</pre>
Return parameters	<pre>{ "msg": "success", "code": "0", "data": { "msg": "1", "yuanzhi": "-16143", "command": "AT+TEST=GIN485:01 03 a8 66 00 01 44 75", "needLoop": "false" }, "orderId": "1688715608012_769", "time": "1688715608012" }</pre>

3.3 Obtain result information through the instruction orderId

Interface Name	Obtain result information through the instruction orderId		
Interface Description	Obtain result information through orderId		
Request URL	https://www.soliscloud.com:13333/v2/api/result		
Interface frequency limit	2 times/sec		
Request parameters [Body]			
Parameter Name	Data Type	Required	Description
orderId	String	Y	Obtain the result details of the specified orderId.
Return parameters [Body]			
Parameter Name	Data Type	Required	Description
code	Integer	Y	0 represents success, while others represent failure. The failure code is detailed in Appendix 1
msg	String	N	Description of code values
data	JsonString	Y	nmiCode: nmi code successNum: Number of successful devices notChangeNum: Number of unchanged devices *The number may change when calling the interface multiple times* errorMsg: error message

			<p>Result Data</p> <pre>[{ "nmiCode": "xxxxx", "successNum": "x", "notChangeNum": "x", "detail": [{ "sn": "123456", "time": time in long }], "errorMsg": "x" }, { "nmiCode": "xxxxx", "detail": [{ "sn": "123456", "time": time in long }], "successNum": "x", "notChangeNum": "x", "errorMsg": "x" }]</pre>
Code example			
Request parameters	<p>POST/v2/api/result</p> <p>Connection: keep-alive</p> <p>token: token_bd95927f-32f8-459e-9194-265452cc4571</p> <p>Date: Fri, 7 Jul 2023 07:40:09 GMT</p> <p>Content-MD5: 0lkJh5jiWBWYY5r7APKjNg==</p> <p>Authorization: 1300386381676644416:kg+94fpjgPiQQbuLCxcmM45fRr0=</p> <p>Content-Type: application/json;charset=UTF-8</p> <p>Content-Length: 31</p> <p>Host: test.soliscloud.com:3333</p> <p>User-Agent: Apache-HttpClient/4.5.13 (Java/11.0.17)</p> <p>{"orderId":"1688715608012_769"}</p>		
Return parameters	<pre>{ "success": true, "code": "0", "msg": "success", "data": null }</pre>		

3.4 Read the parameter values of multiple devices and directly return the results

Interface Name	Read the parameter values of multiple devices and directly return the results
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Interface Description	Read the current parameter values of a single or multiple inverters and directly return the results. Only devices with datalogger models S1-W4G-ST, S2-WL-ST, S3-GPRS-ST, S3-WiFi ST, and S4-WiFi ST are supported.		
Request URL	https://www.soliscloud.com:13333/v2/api/atReadSAPN		
Interface frequency limit	2 times/sec		
Request parameters [Body]			
Parameter Name	Data Type	Required	Description
inverterSn	String	Y	Specify the device for reading SN, multiple devices are split using ','
nmiCode	String	Y	Specify the device for reading nmi codes, dedicated to the Australian region, multiple devices are used for segmentation
cid	Long	Y	Read the value of instruction ID, see Appendix 2 for details
Return parameters [Body]			
Parameter Name	Data Type	Required	Description
code	String	Y	0 represents success, while others represent failure. The failure code is detailed in Appendix 1
msg	String	Y	Description of code values
data	Object	Y	Data identification
Code example			
Request parameters	POST /v2/api/atReadCommand Connection: keep-alive token: token_d9f421a7-1c85-451d-8f9e-703a0516d8fa Date: Fri, 7 Jul 2023 07:52:25 GMT Content-MD5: 9a9mB3XMU9H1lf91VPAe7w== Authorization:API 1300386381676644416:JXGuKj9qY1315xea2q3hEZPzHNM= Content-Type: application/json;charset=UTF-8 Content-Length: 36 Host: test.soliscloud.com:3333 User-Agent: Apache-HttpClient/4.5.13 (Java/11.0.17) { "nmiCode": "20025543400", "cid": "48" }		
Return parameters	{ "msg": "succcess", "code": "0", "data": [{ "nmiCode": "20025543400", "code": "0", "sn": "380205022C190102",		

	<pre>"value": "190", "cid": "48", "sendTime": "1688716346438" }], "time": "1688716345767" }</pre>
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APPENDIX 1 RETURN STATUS CODE

Return value	Description
0	Success
1	Fail
Z0001	Login has expired, please log in again
Z0002	Content MD5 is incorrect
403	No permissions
429	Frequent requests
I0013	Account or password error, please re-enter
B0020	Verification code error
I0012	Account or password error, please re-enter
B0053	This account is already bound to a third-party account
R0004	This feature is only available to some customers. Please contact after-sales
B0107	The collector model does not yet support this function
B0089	The equipment does not belong to the power station
B0063	The three elements of the equipment have not been stored in the warehouse
B0115	fail in send
B0124	The device SN does not exist
B0157	Request time exceeds five minutes
R0000	No permissions

APPENDIX 2 INSTRUCTION COMPARISON TABLE

https://oss.soliscloud.com/doc/SolisCloud_control_api_command_list.xlsx