

NJ-iot401

User Manual for Solar Street Light IoT Controller



Version Revision

The revision log accumulates notes for each document update

Number	Document Version	Revisionis	Release Date	Modification instructions
1	V1.0.0	LaiYongHao	2023.03.09	Adjust Image Color Temperature

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更新时间:20260309

I. Product Functions and Features

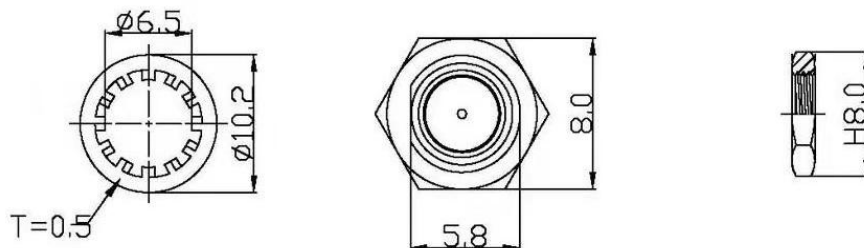
The NJ-iot401 solar IoT module is a communication module compatible with solar street light controllers. It supports 4G Cat.1 communication, enabling remote connection to cloud servers. Additionally, the module is equipped with serial (UART) TTL level / RS485 communication interfaces, allowing for the remote configuration and status reading of solar controllers.

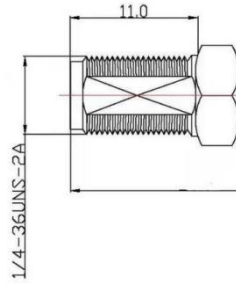
- 4G Cat.1 wireless communication;
- Compatible with 3.2V/12V/24V input voltages;
- The IoT controller communicates via serial (UART) TTL level / RS485, compatible with most mainstream solar controllers in China;
- Remote control and data access via PC interface and WeChat Mini Program on mobile devices;
- Remote on/off control and power adjustment for loads;
- Reads real-time voltage, current, and power data for the battery, load, and solar panel inside the controller;
- Fault alarm function, including fault alarms for the battery, solar panel, and load;
- Remotely configures and reads parameters for multiple or individual controllers;
- Built-in base station positioning function;
- Support for remote firmware upgrade.

II. Product Diagram and Dimensions



Product dimensions: Length*Width*Height 82*68*21 (mm)





Note: The antenna hole position diagram of the product is as follows; the recommended size of the antenna opening is 6.5-6.8 (mm)

III. Technical Parameters

Name	Parameter Content
NJ-iot401	Power supply: 12V/24V, with SMD mobile SIM card
NJ-iot401-3V	Power supply: 3V, with SMD mobile SIM card
NJ-iot401-zhaga	Power supply: 12V/24V, for use in Mainland China
NJ-iot401U-zhaga	Supported regions: Africa, Europe and Asia, with Zhaga interface
No-load loss	10mA(12V);6mA(24V)
Power supply	3.2V/12V/24V
Communication method	4G - Cat.1
Operator	Triple Network Compatible
Operating Temperature	-35°C ~ 65°C
Antenna Type	External
Protection Rating	IP68
Dimensions (mm)	82mm*68mm*21mm

IV. Device Indicator Light Status

Indicator Light	Status	Function Description
Network Indicator (Green)	Extremely slow flash (on for 0.3s, off for 5s)	SIM card not detected
	Slow flash (on for 0.3s, off for 2s)	Normal, powering on
	Medium flash (on for 0.3s, off for 1s)	Connecting to network
	Fast flash (on for 0.1s, off for 0.1s)	Network connected

V. Wiring Method



For safety, please follow the wiring sequence: Load → Battery → Photovoltaic Panel.

The antenna must avoid direct contact with metal (including items with shielding functions) and must not be placed in a fully enclosed metal container. In addition, it should be securely fixed during installation, and damage to wires and insulation must be avoided.

A) Connect the Load

At this stage, the controller has not started working, and there will be no response from the controller after the connection is completed.

B) Connect the Battery

Before connecting the battery, ensure the battery voltage is above 9V to start the controller. For a 24V system, ensure the battery voltage is no less than 18V. After the battery connection is completed, the controller will start operating.

C) Connect the Photovoltaic Panel

The controller is compatible with 12V or 24V standard solar modules, as well as solar cell modules whose open-circuit voltage does not exceed the specified maximum input voltage. The maximum power point voltage of the solar module must be no lower than the battery voltage.

D) Connect the Controller to the Module

Connect the 4-core wire of the controller to the 4-core wire of the module, then observe the module indicator light. Rapid flashing indicates successful network connection (online)

E) Connect the Antenna

Secure the antenna to the housing, then connect it to the all-in-one unit via the antenna extension cable.

VI. Technical Support

Note: The Nengjia Solar IoT Controller supports access via mobile APP and PC terminal.

Method 1: APP Download

① For Android Devices

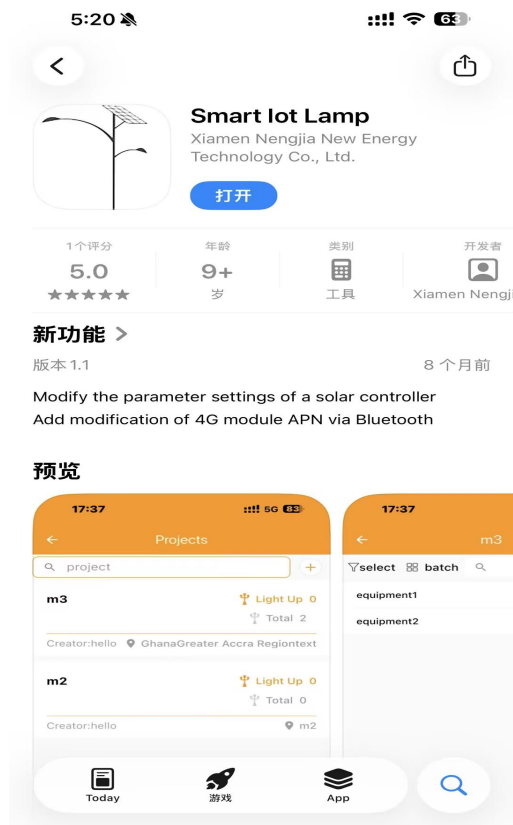
APP Download Link: <https://iot.xmnengjia.com/download/NetJoin.apk>

Or scan the QR code below:



② For iOS Devices

Please search for "Smart lot Lamp" in the App Store.



Method 2:PC Web Portal Access

<https://solar.xmnengjia.com/#/login>



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