

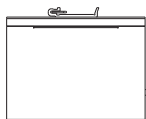
UBIBOT

Digital Power Line DPL1

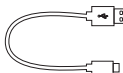
User Manual

This user manual serves as a general guidance for all types of UBIBOT® Digital Power Line. Some features, which are marked with asterisk, are available only for specific versions. Please refer to related instructions according to the version you purchased.

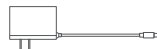
PACKAGE LIST



① Device



② Type-C USB cable*^①

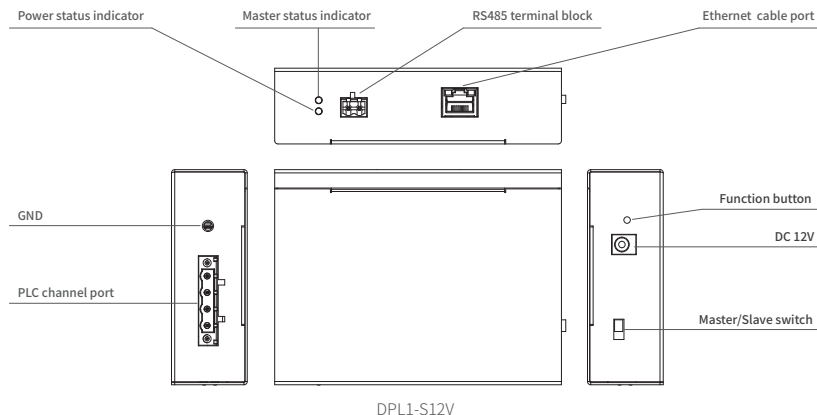


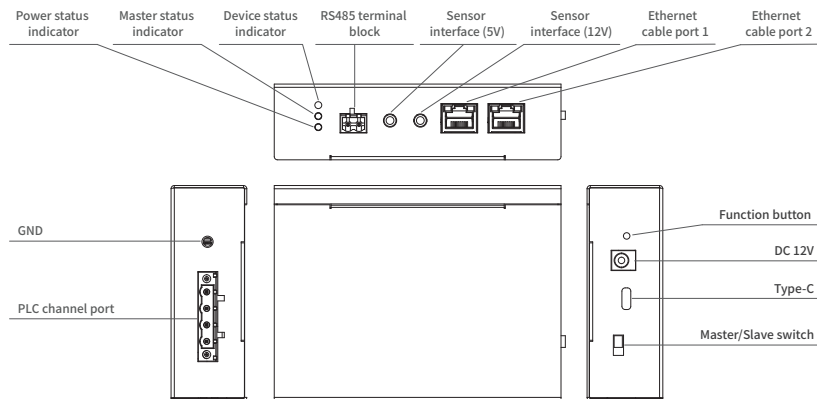
③ Adapter

① Note: The 4-prong data cable included with the device supports data transfer. Using other kinds of data cables to connect the PC tool may not work.

INTRODUCTION

1. Basic Features Introduction





DPL1-P12V2ETH

2. Device Operations

Switch On/Off

The device powers on or off automatically when input power is connected or removed.

Send data*

When powered on, press the function button briefly. The green status LED will flash once and the device will connect to the network and transmit data.

Reset to Default Settings

When powered on, press and hold the function button for 8 s until the status LED blinks rapidly, then release.

* for DPL1-P12V2ETH only

DEVICE SETUP OPTIONS*

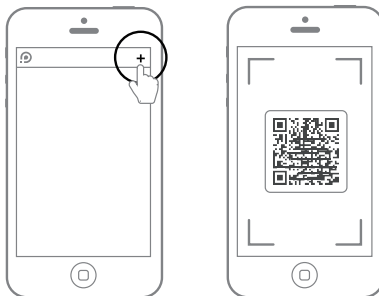
Option 1: Using Mobile App

Download the App from www.ubibot.com/setup, or search for 'Ubibot' on the AppStore or Google Play.



We recommend you try to use the PC Tools in case the App setup fails, because the failure may be due to mobile phone incompatibility. The PC Tools is much easier to operate and suitable for both Mac and Windows.

Launch the App and log in. On the home page, tap "+" to start adding your device. Then please follow the in-app instructions to complete the setup. You can also view the demonstration video at www.ubibot.com/setup for step by step guidance. App configuration only supports DHCP mode. For manual IP, please use PC tool to configure.

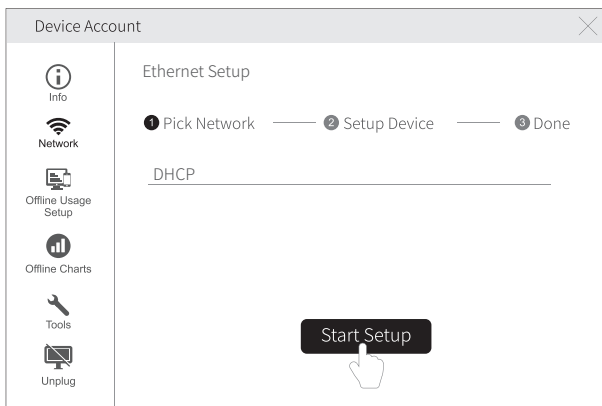


Option 2: Using PC Tools

Download the tool from www.ubibot.com/setup.

STEP 1. Launch the App and log in. With the device switched on, use the Type-C USB cable provided to connect your device to the computer. The PC Tools will automatically scan and recognize the product ID and enter the device page.

STEP 2. Click "Network" on the left menu bar. There, you are able to set up the device on Ethernet.



Electrical Installation

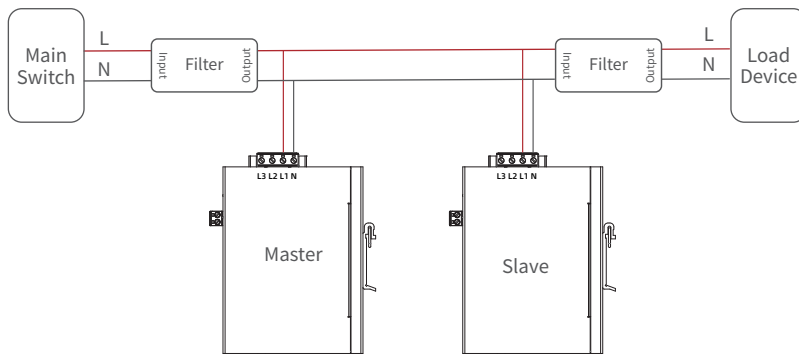
1. Power Line Communication

The device supports network and RS485 signal carrier communication over AC/DC 0~500V power lines or conductor rails.

- ① The master/slave mode must be set before powering on. Set the Master/Slave switch to "M" for master mode and "S" for slave mode.
- ② There must be only one master device on the network, while there can be one or multiple slave devices.

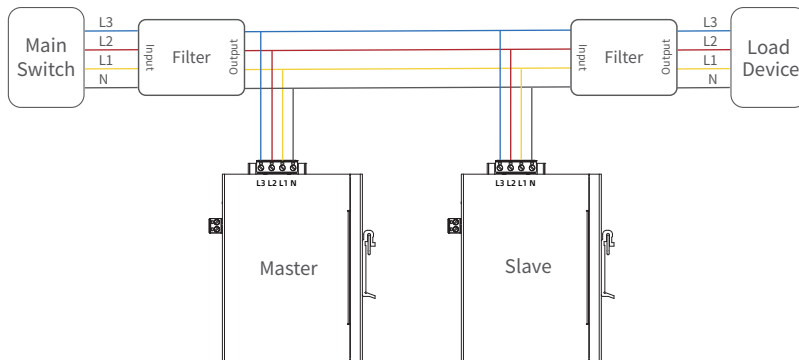
Warning: Do not perform any wiring or maintenance while the device is energized. Never touch or short-circuit the output terminals.

1. Single-phase/DC wiring: A filter must be connected in series at both ends of the power line. The channel terminals N and L1 should be connected in parallel to the power line, with no phase sequence requirements.



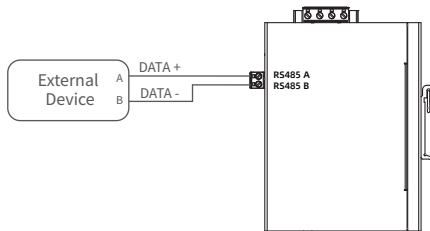
* N, L1 are mandatory phases, L2, L3 are left unconnected

2. Three-phase power line wiring: A filter must be connected in series at both ends of the power line. The channel terminals N, L1, L2, and L3 should be connected in parallel to the power line, with no phase sequence requirements.



2. RS485 Communication

The device supports RS485 transparent transmission and enables carrier communication over AC/DC 0~500V power lines or sliding conductor rails. It offers high communication speed, stable transmission, and bidirectional transparent data transfer. The default baud rate is 9600 bps and cannot be modified.



DEVICE SPECIFICATION

⚡ Operating Voltage: DC 12V

⚡ PLC Channel: AC/DC 0~500V power lines and sliding conductor rails

📡 Modulation Method: OFDM modulation

📡 Carrier Frequency: 2~28 MHz

📡 Transmission Distance: Up to 500 m point-to-point, up to 3~5 km with 10 relays max

🕒 Data Latency: Less than 10 ms

🔒 Encryption Algorithm: AES-128 bit

📶 Ethernet Bandwidth: 10M/100Mbps adaptive

🔌 Device Interfaces: Type-C*, RS485 terminal block, Sensor interface*, RJ45 port

💾 Built-in Storage: Up to 300,000 data records*

📏 Device Dimensions: 134 x 100 x 36 mm (excluding terminals)

🌡 Operating Environment: -40°C to +85°C, 20% to 85% RH, non-condensing

FAQ

1. Ethernet network configuration failure (for DPL1-P12V2ETH only)

- ① Please check whether the network cable is properly connected to the equipment;
- ② whether the network cable is intact;
- ③ whether the connected network can access the Internet;

If the above points are not abnormal, and you still cannot activate the device, you need to check whether the network environment allows DHCP (automatic IP allocation) devices to access the network.

2. Power Line Communication Not Connected or Communication Unstable

- ① Check wiring connections. Ensure that the wiring is correct according to the connection diagram. All terminals must be firmly secured. Incorrect or loose wiring will result in network failure.
- ② Check master/slave settings. The Master/Slave switch should be set to "M" for the master device and "S" for slave devices. Power on the system only after correctly setting the master and slave roles. If master/slave settings are changed while powered, the entire network must be restarted. Make sure there is one and only one master device on the network, while multiple slave devices are allowed.
- ③ Check the power filter wiring. The carrier communication device must be used with a dedicated power filter, and no power filters should be placed between carrier devices. The power filter has a specific direction: the input terminal should connect to the power source or load, and the output terminal should connect to the carrier device. For filters on the load side, reverse wiring is required: the output terminal connects to the carrier device, and the input terminal connects to the load.
- ④ Check if the power lines for carrier communication are on the same circuit. Carrier devices must be used under the same transformer, and the master and slave devices must be connected to the same circuit. Fewer circuit branches are preferred. Avoid passing through electricity meters, circuit breakers, contactors, or other devices as much as possible.
- ⑤ Check for strong interference sources on the power line. If there are strong interference sources such as frequency converters or large capacitors on the line, it is recommended to use shielded cables for both power lines and data signal lines. These cables should not run parallel to or cross with interference sources and should be kept as far away from them as possible.

TECHNICAL SUPPORT

The UbiBot team is glad to hear your voice of our products and services.

For any questions or suggestions, please feel free to create a ticket in the UbiBot app. Our customer services representatives respond within 24 hours and often in less than an hour. You can also contact the local distributors in your country for localized service. Please go to our website to view their contacts.

WARRANTY INFORMATION

1. The warranty period for this product is one year from the date of purchase. The buyer is required to submit a valid proof of purchase. During the warranty period, free repair will be provided for any failure caused by the quality of the product under normal use. The mailing cost of the returned product is the responsibility of the sender (one way).

2. The following cases are not covered by the warranty:

- ① The product is out of warranty;
- ② product failure or damage caused by incorrect or improper operation not in accordance with the product use instructions, configuration instructions, and product maintenance instructions;
- ③ accidental or man-made damage to the product, such as exceeding the temperature and humidity range of the equipment, water-caused damage, including natural water, such as water vapor, etc., fall, abnormal physical force, deformation, cable breakage, etc.;
- ④ damage due to natural wear and tear, consumption and aging, etc. (including shells, cables, etc.);
- ⑤ failure or damage caused by unauthorized dismantling of the product without permission;
- ⑥ failure or damage caused by force majeure, such as earthquake, fire, lightning strike, tsunami, etc.;
- ⑦ other non-product design, technology, manufacturing, quality and other issues caused by the failure or damage.

PRODUCT MAINTENANCE INSTRUCTIONS

-  Please always follow the instructions contained in this manual.
-  Always mount the device on a stable surface.
-  Keep away from acidic, oxidising, flammable or explosive substances.
-  When handling the device, avoid using excessive force and never use sharp instruments to try and open it.
-  Please use common USB Cable or original charger, Otherwise, It may result to danger. When you use a charger for charging, adapter shall be installed near the equipment and shall be easily accessible.

Manufacturer of Power adapter: Huizhou Guoatong Technology Co., Ltd.

Parameters of Power adapter: Input: AC 110~240V, 600mA, 50/60Hz. Output: DC 12V, 2000mA.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

V1.0.0