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Manual: N36300 Series

High Performance Benchtop Programmable DC Power Supply

Version: 27.01.2026

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1 Preface

Dear Customers

First of all, we greatly appreciate your choice of N36300 series wide range Programming DC Power Supply (N36300 for short). We are also honored to introduce our company, NGI Technologies Company Limited(NGI for short).

About Company

NGI is a professional manufacturer of intelligent equipment and test & control instruments, committed to developing, manufacturing battery simulators, power supplies, electronic loads, and many more instruments. The products can be widely used in the industries of battery, power supply, fuel cell, consumer electronics, new energy vehicle, semiconductor, etc.

NGI maintains close cooperation with many universities and scientific research institutions, and maintains close ties with many industry leaders. We strive to develop high-quality, technology-leading products, provide high-end technologies, and continue to explore new industry measurement and control solutions.

About User Manual

This manual is applied to N36300 series programmable DC power supply, including installation, operation, specifications and other detailed information. Due to the upgrade of instrument, this manual may be revised without notice in future versions.

This manual has been reviewed carefully by NGI for the technical accuracy. The manufacturer declines all responsibility for possible errors in this operation manual, if due to misprints or errors in copying. The manufacturer is not liable for malfunctioning if the product has not correctly been operated.

To ensure the safety and correct use of N36300, please read this manual carefully, especially the safety instructions.

Please keep this manual for future use.

Thanks for your trust and support.

2 Safety Instructions

2.1 Safety Symbols

The warning symbol indicates a hazard. It requires special attention when performing operational steps, pointing out conditions and actions that may endanger the life safety of operators. Read the relevant information carefully before executing the specified procedure

The caution symbol indicates a hazard. It requires attention when performing operational steps, pointing out conditions and actions that may lead to personal injury or equipment damage.

The note symbol indicates a reference. It provides operational tips or supplemental information that operators should review before performing the procedure.

Please refer to the following table for definitions of international symbols used on the instrument or in the user manual.

Symbol	Definition	Symbol	Definition
⎓	DC (direct current)	N	Null line or neutral line
~	AC (alternating current)	L	Live line
≂	AC and DC	I	Power-on
3~	Three-phase current	O	Power-off
⏚	Ground	⏻	Back-up power
⏚	Protective ground	⏻	Power-on state
⏚	Chassis ground	⏻	Power-off state
⏚	Signal ground	⚠	Risk of electric shock
WARNING	Hazardous sign	⚠	High temperature warning
Caution	Be careful	⚠	Warning

2.2 Safety Notes

In the operation and maintenance of the instrument, please strictly comply with the following safety instructions. Any performance regardless of attentions or specific warnings in other chapters of the manual may impair the protective functions provided by the instrument.
NGI shall not be liable for the results caused by the neglect of those instructions.

2.2.1 Personal Safety

Warning

- All connections must be made with the device power turned off to prevent personal injury or property damage due to improper operation.
- All operations must be performed by qualified personnel who are familiar with the associated risks, including professionals and trained personnel, as improper operation may result in fatal injury or equipment damage.
- Wearing conductive objects is strictly prohibited during the operation process to avoid electric shock burns.
- Special insulated tools must be used during the operation process to prevent electric shock injuries, and the insulation withstand voltage level must meet local laws, regulations, standards, and specifications.
- Special protective equipment must be used during the operation process, such as wearing protective clothing, insulated shoes, and insulating gloves.

2.2.2 Electrical Safety

- Do not use damaged equipment. Ensure that the equipment is free from damage before use, as damaged equipment may cause electric shock or fires.
- Before operating the equipment, make sure that the equipment's grounding terminal is properly grounded!
- The power cord is provided with the equipment upon shipment, and your equipment should be connected to a socket, junction box, or three-phase distribution box with protective grounding.
- During operation, prevent foreign objects from entering the interior of the equipment, as this may lead to equipment short-circuit failures, damage, and personal injury.
- Improper or incorrect operation may cause accidents such as fires or electric shocks.
- After using the equipment, turn off the power switch of the equipment before unplugging the power cord or disconnecting the terminal connectors, ensuring there is no dangerous voltage before touching the cables or terminal connectors.
- Cables are not allowed to pass through the equipment's intake or exhaust vents.

2.2.3 Environmental Safety

- Do not operate this equipment in environments containing explosive gases, vapors, or dust.
- Strictly prohibit the storage of flammable or explosive materials in the area where the equipment is located.
- Never place the equipment near heat sources or open flames, as exposure to heat may cause equipment damage or fires.
- During equipment operation, do not block the ventilation or cooling systems of the equipment, as this may damage the equipment or cause fires.

- Do not install the equipment near water pipes, air vents, air conditioning outlets, or other locations that are prone to condensation, to prevent liquid from entering the interior of the equipment and causing damage.

2.2.4 Mechanical Safety

Remark

- Do not use tools that are damaged, have failed inspection, or are beyond the inspection validity period to ensure tool reliability.
- When handling heavy objects, be prepared to bear the weight to avoid being crushed or injured by the heavy objects.
- Before installing equipment into a cabinet, first ensure that the cabinet is securely fastened to prevent the cabinet from tilting or collapsing due to instability, which could result in equipment damage or injury to the installer.
- Please do not install substitute parts on the instrument or make any unauthorized modifications.

3.1 Inspection

After receiving N36300, please check the instrument according to the following steps:

1. Check whether the instrument is damaged during transportation.
2. Check accessories.
3. Make sure the following accessories are attached.

Table 2

N36300 Accessories	PC	Definition
AC Power Cord	1	220V AC/10A to C13 power cord, L=1.8 m
RS232 Crossover Cable	1	RS232 Serial Crossover Cable Female to Female, L=1.5m
Ethernet Cable	1	Category 5 100Mbps 7*0.12 Oxygen Free Copper Wire Network Cable, Unshielded, Blue, 2m
USB flash drive	1	8G
Pluggable connector	1	RS485 CAN Port, 3.5mm, 10Pin, female, no ears
Test Report	1	Test report
Phillips Pan Head Combination Screw	2	M6*16, output wiring screws, with flange nuts
Quick Selection Guide	1	English version

Note

1: If any severe damage to the package, please contact our authorized distributor or NGI. Send it back after getting a positive response.
2: If no problem, please keep it carefully. Compliance with packing requirements when returning for service.

3.2 Connection to Power Cord

Before connecting the power cord, observe the following precautions to prevent electric shock and damage to the instrument:

- Make sure that the voltage matches the rated voltage of the instrument;
- Make sure the power switch is off;
- Please use the power cord supplied by our company
- Ensure correct wiring and avoid miswiring or missing any ground wires;
- Regularly check the integrity of the wiring parts and replace them if they are damaged or deteriorated.

Connect the power cord between the instrument's socket and the 3-pin protected earth outlet. Wiring should follow: right pin live (L), left pin neutral (N), top pin earth (PE). This ensures the device's metal casing quickly conducts electricity to the ground during faults, reducing electric shock risks.

3.3 Power-on Inspection

After receiving N36300 device, please check the device by following these steps:

- **Switch-On**

Press the POWER button on the front panel to turn on the device. If you find that the power supply cannot start normally, first check whether the power cable is connected, whether the power supply has been powered, and whether the power switch has been turned on.

Warning

When the power switch is off, some components inside the power supply may still have a high voltage. In order to avoid the risk of electric shock, do not open the cover.

- **Output voltage check**

Verify the basic voltage function of the power supply without load with the following steps:

1. Turn on the power switch.
2. Set the supply voltage value to 1V.
3. Turn the output ON.
4. Check that the voltage value displayed on the screen is close to the set voltage value.
5. Ensure that the voltage can be regulated from 0V to the maximum voltage in the range.

- **Check output current**

Use the following steps to verify the basic function of the power supply when the output is short-circuited:

1. Turn on the power switch.
2. Make sure the power output state is OFF.
3. Connect an insulated wire to the output of the power supply to short-circuit the positive and negative terminals. The wire should be able to withstand the maximum output current of the power supply.
4. Set the current value 1A.
5. Turn the output ON.
6. Check whether the current displayed on the screen is close to the set current value.

in the range.

3.4 Wiring

3.4.1 DUT Connection

N36300 series power supply does not come with a connection cable for the device under test, users need to choose their own wiring. The following points should be noted when selecting wiring:

- The maximum allowable current of the wires.
- The insulation level of the wire should not be lower than the maximum output voltage of the power supply.
- Maximum wire length and line voltage drop
- Noise and impedance effects on the load line.

Remark

The front and rear output lines cannot be used simultaneously, otherwise it will result in insufficient output voltage.

Remark

The N36300 series power supply has a rated output voltage exceeding the safety voltage. To protect users from accidental contact with these voltages, ensure the device and its connections have no accessible live parts. Also, make sure the insulation rating of the device's connection wires matches or exceeds the power supply's maximum output voltage.

3.4.1.1 Maximum Allowable Current

The following two factors should be considered when selecting the wire diameter:
1. The wire should be thick enough to avoid overheating when carrying rated current or short circuit current (whichever is greater).
2. The wire diameter should be reasonably selected so that the voltage drop on each wire is as small as possible to prevent excessive cable consumption, which affects the load regulation rate (although the N36300 series power supply can use the remote sense function to compensate for voltage, it is still recommended to minimise the voltage drop).

3.4.1.2 Influence of noise and impedance

In order to reduce noise or radiation, the DUT connection line and the remote sampling line should use twisted-pair cable with the shortest possible length. Shielded wires must be used in high noise environments. The shield is connected to the enclosure by a ground screw on the rear panel.

Even if the noise is not significant, the line and the remote sampling line should be twisted to reduce coupling and contribute to the stability of the power supply. The remote measurement line must be separated from the power input line.

Twisted-pair load lines reduce parasitic inductance in the cable and prevent high-frequency voltage spikes at the load terminal and power supply output caused by variations in load current.

The impedance between the power supply output and the load end makes the ripple noise at the load end greater than the ripple noise at the power supply rear panel terminals. If necessary, an additional filter loop with a bypass capacitor can be connected at the load side to limit the high-frequency load current.

3.4.1.3 Inductive Load

When powering inductive loads like motors, connect a diode across the power supply output to suppress harmful voltage spikes. The diode's voltage and current ratings must exceed the power supply's maximum output. Connect the diode's cathode to the positive terminal and anode to the negative terminal. For voltages below 100V and currents below 200A, use an MB200DU01FJ; for higher currents, parallel multiple diodes.

such as motor back EMF. Its breakdown voltage should be about 10% higher than the power supply's maximum output voltage.

3.4.2 Sense Connection

3.4.2.1 Local Sense

When using local sensing, adjust the output voltage at the power supply's output terminals. This method doesn't compensate for voltage drops across the load wires and is suitable for low-load current situations or when load regulation isn't critical. For local sense, short N+ to S+ and N- to S- with jumpers.

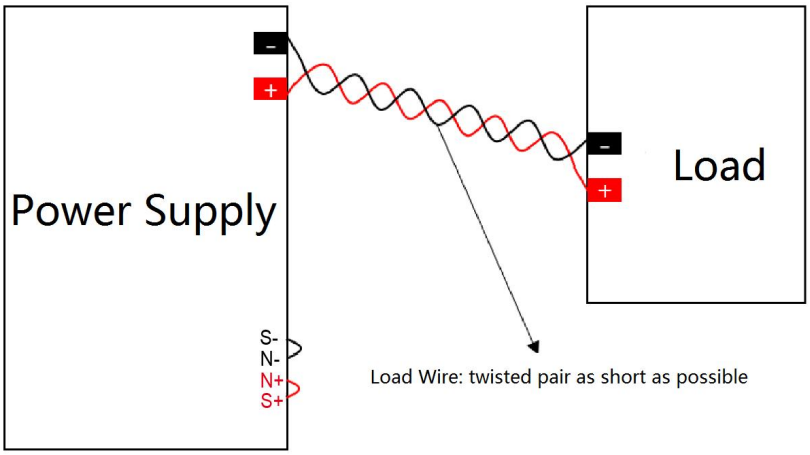


Figure 1 Two wire sense connection

3.4.2.2 Remote Sense

Due to wire resistance, the load's input voltage may be lower than the power supply's output voltage, affecting output accuracy. This series offers remote sense to compensate for the voltage drop between the power supply and load.

To use remote sensing: Connect SENSE+ to the load's positive input. Connect SENSE- to the load's negative input. This allows the power supply to adjust its output based on the actual voltage at the load.

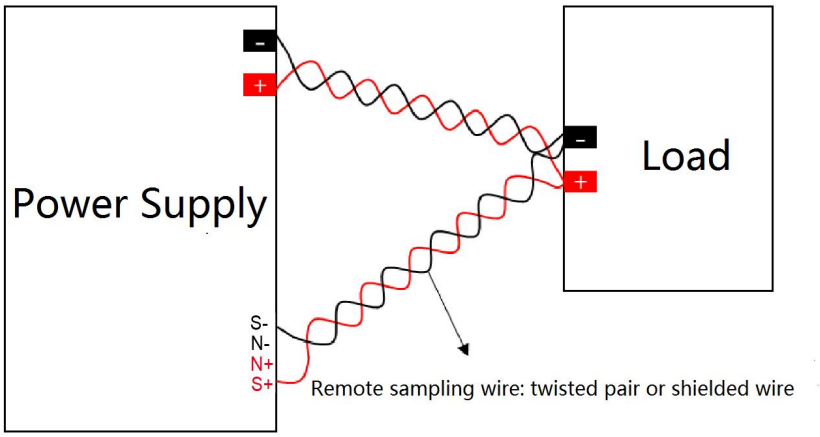


Figure 2 Four wire sense connection

Note

Before connecting remote sensing, remove the shorting caps.

Warning

Only connect the positive and negative terminals of the device under test to the power supply's output terminals, not to the sampling terminals "N+/+" and "N-/-", to avoid damaging the power supply.

3.4.3 Control Connection

Positive(+) and negative(-) of N36300 are connected to test object. Please pay attention to the wire diameter, length and polarity when connecting the test cable. Do not use wires with smaller diameter, which will affect measurement accuracy and cause overheating and danger.

N36300 can be connected to computer by Ethernet cable. Please make sure the cable connection and communication setting are correct before online operation.

Multiple N36300 devices can be controlled at the same time via LAN port. Please make sure the cable connection is correct and IP addresses of different N36300 devices are not repeated.

N36300 adopts UDP network communication. Users can modify IP address on LCD screen. The default port number is 7000. The default ID is 1. When RS232 communication is used, it is necessary to set baud rate. The baud rate options are 4800, 9600, 19200, 38400 and 115200. 115200 defaulted.When using CAN communication, users need to set the CAN ID and CAN rate, the range of CAN ID is 1~127, and the default is 1.

The below figure shows N36300 is under remote control.

Figure 3 Remote Sense

4.1 Brief Introduction

N36300 series is a DC power supply with desktop design, high performance and high power density. It offers high-speed dynamic response, precise output and measurement, and supports multiple communication options. Housed in a 2U height ½19-inch width chassis, the N36300 series ensures accurate, reliable, and efficient testing for lab, system integration, and production applications.

Features

- Max. output power: 1600 W
- Voltage range: 0–80 V
- Current range: 0–42 A
- Ultra-compact 2U height, ½ 19-inch width; wide-range operation with high power density
- User-selectable CC/CV priority
- Battery-charge test and internal-resistance simulation built-in
- Advanced 200-step SEQ editor for arbitrary dynamic waveforms
- Comprehensive protection: auto-shutdown on OV, OC, OP and OT faults
- Remote control interfaces: LAN, RS232, RS485, CAN
- Auto-start output on power-up; programmable start-up delay
- Modular architecture for easy system integration

4.2 Appearance & Dimension

N36316-80-42:

88.0mm(H)*214.0mm(W)*483.5mm(D) with output shield

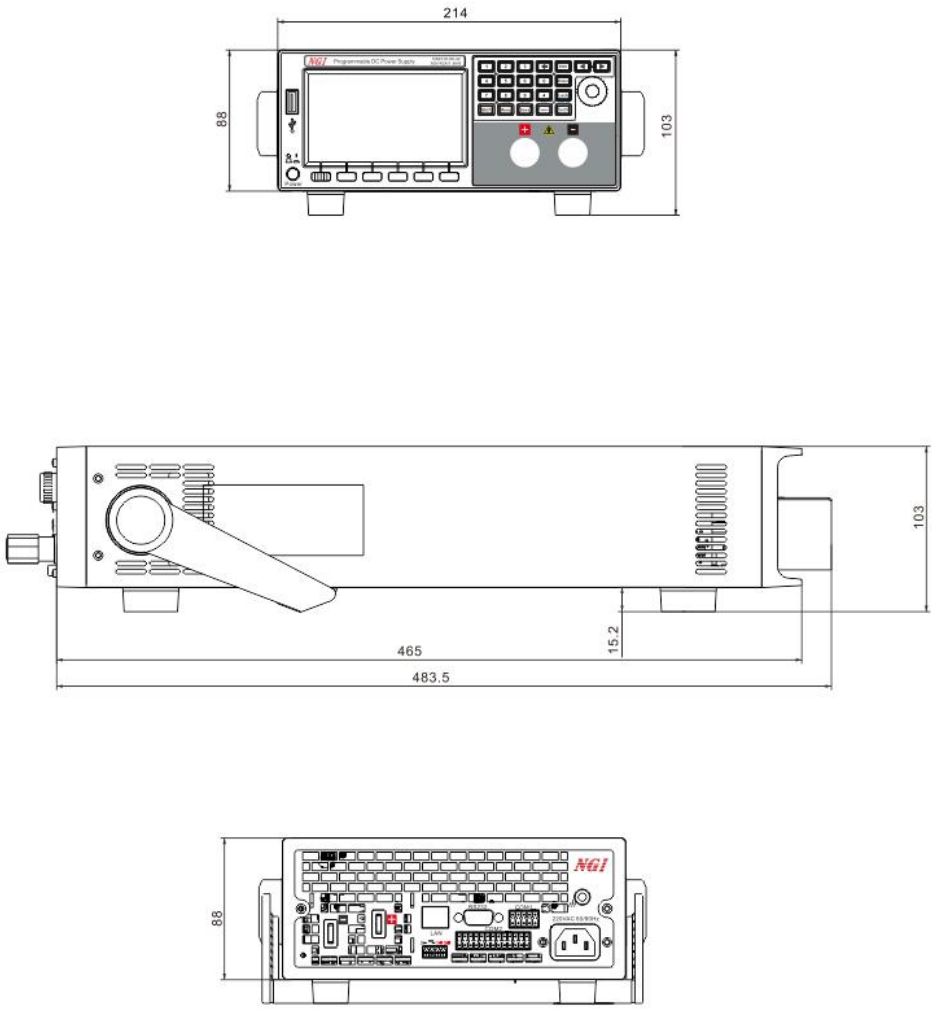


Figure 4 Dimension(mm)

:

88.0mm(H)*214.0mm(W)*413.5mm(D) with output shield

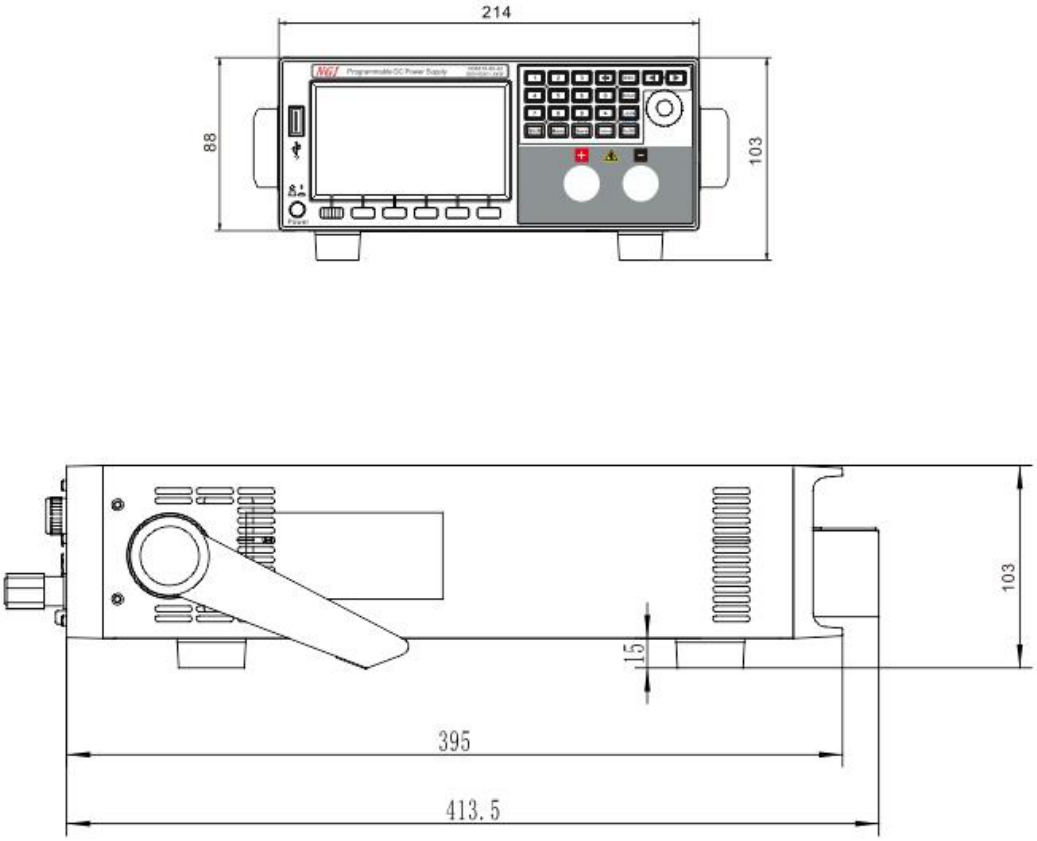


Figure 5 Dimension(mm)

4.3 Front Panel Introduction

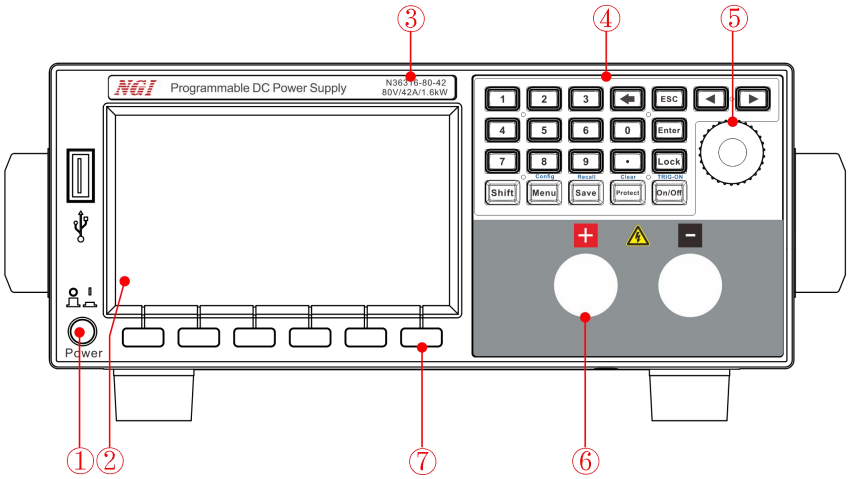


Figure 6 Front Panel Introduction

Table 3

Serial No.	Name	Description
1	Switch	Turn on/off
2	Screen	Displaying information
3	Device model	Name and model
4	Buttons	Operation mode
5	Knob	Parameter setting
6	Output terminal	To connect DUT
7	Functional button	CC/CV/CR/CP/TRAN

4.3.1 Function Button

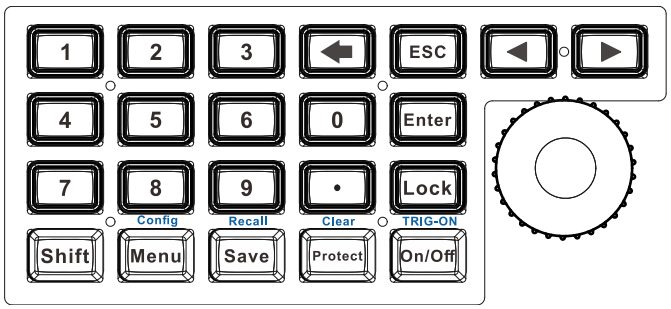


Figure 7 Function button

Table 4

Button	Function
[0]~[9]	Numeric button
[.]	Point
[←]	Clear input
[←][→]	Adjust the cursor to the specified position; Shift+[←][→] to switch page.
[ESC]	To return to previous menu level
[Enter]	To select a menu item or confirm the action performed
[Lock]	To lock/unlock
[Shift]	Compound button
[On/Off]	Turn on or Turn off
[Protect]	To clear the fault indication or protection message
[Save]	Save the parameters
[Menu]	Enter the main menu screen
Knob	Move the cursor to adjust the setting value
[Shift+On/Off] （TRIG-ON）	Trigger on
[Shift+Protect]	Clear fault information and protection information

（Clear）	
[Shift+Save] （Recall）	To recall parameters
[Shift+Menu] （Config）	To enter the system parameters

4.3.2 Knob

The knob has three functions: left-rotate, right-rotate, and enter (when pressed). In any configuration interface, rotating the knob quickly moves the cursor between options, faster than using the "◄►" keys. During static testing, when changing settings with the knob, the new value is applied immediately after each rotation, enabling real-time parameter adjustment and observation of the device under test. The knob can also be pressed, as shown in Figure 8.

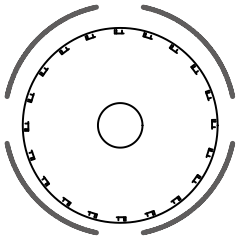


Figure 8 Knob

The knob has the following three functions:
1. Adjusting numerical settings.
2. Selecting menu or parameter items.
3. Confirming settings or selections.

Numerical Adjustment:
Turn clockwise to increase the value and counterclockwise to decrease it.

Menu/Parameter Selection:
In the menu interface, turning clockwise selects the next menu item; turning counterclockwise selects the previous one. In the parameter setting interface, turning clockwise selects the previous parameter option; turning counterclockwise selects the next.

Press the knob to confirm a setting or selection.

4.4 Rear Panel Introduction

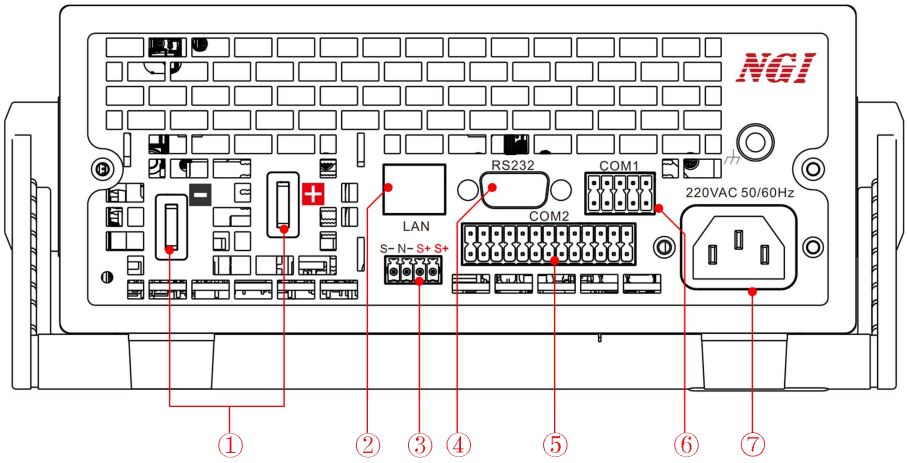


Figure 9 Rear Panel

Table 5

No.	Name	Definition
1	Output interface	DC power supply output
2	LAN port	Ethernet port communication control device
3	Voltage SENSE interface	Sense configuration terminal
4	RS232 interface	Serial port, for remote control
5	COM2(optional)	For analogue input programming, analogue output monitoring and digital input/output control
6	COM1	RS485 and CAN interface
7	AC Input	220V AC input interface

4.4.1 AC Input Port

Please pay attention to the following for N36300 series power input connection:

- AC input：Single phase, please refer to the voltage mark at the rear panel.
- Ensure reliable grounding;

4.4.2 DC Input Port

Please select the proper output test cable according to different specifications of N36300.

Table 6

I-Range/A	D/mm²	Model	Qty/Set
0＜X≤30	6	OT-30A	1
30＜X≤50	10	OT-50A	1
50＜X≤80	16	OT-100A	1
80＜X≤125	25	OT-200A	1
125＜X≤175	35	OT-200A	1
175＜X≤250	50	OT-300A	1
250＜X≤475	95	OT-600A	1
475＜X≤600	120	OT-600A	1
600＜X≤750	150	OT-600A	1
750＜X≤1200	120	OT-600A	2

4.4.3 LAN Port

The N36300 series uses a standard RJ45 (LAN) interface for easy wiring, operation and system integration.

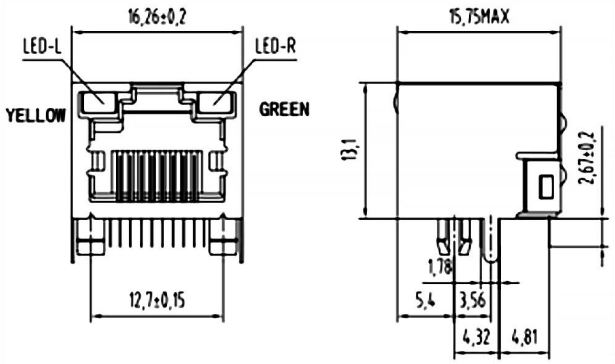


Figure 10 RJ45

The default connection to PC is via Ethernet. An Ethernet cable is provided as standard accessory in N36300 package. Default IP: 192.168.0.123.
Steps for connection to PC:

1. Check if N36300 is switched on properly.
2. Make sure the PC is switched on and its LAN port is working properly.
3. Connect one end of Ethernet cable to PC LAN port.
4. Connect another end of Ethernet cable to N36300 LAN port.
5. Check if the indicator light at LAN port on N36300 is flashing.

Note

If the green light is always on and the orange light is flashing, it means the hardware network connection has been established. Otherwise, please check whether the computer LAN port works properly, and make sure the computer is turned on properly.

Please check the following items when the PC cannot remote the instrument:

1. Please check whether the network cable connection between the PC side and the instrument is loose.

2. Make sure the Ethernet configuration information is correct.

4.Whether the IP address of the instrument and the IP address of the PC are in the same gateway.

4.4.4 RS232 Interface

On the rear panel, there is a male DB-9 interface with 9 pins. The default baud rate is 115200.

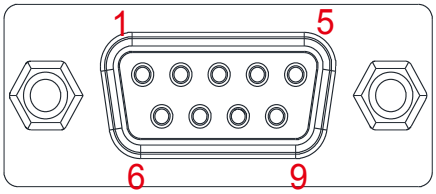


Figure 11 RS232 Interface

Table 7

Pin	Definition
①	NC
②	RXD, receive data
③	TXD, transmit data
④	NC
⑤	GND, ground
⑥	NC
⑦	NC
⑧	NC
⑨	NC

4.4.5 COM1 (RS485/CAN Interface)

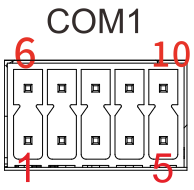


Figure 12 COM1

Table 8

Pin	Definition
1	RS485A
2	RS485B
3	GND
4	CANH1
5	CANL1
6	NC
7	NC

9	NC
10	NC

4.4.6 COM2 (Optional)

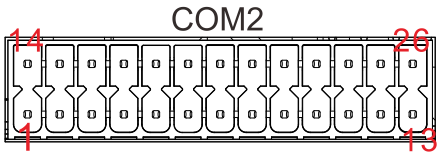


Figure 13 COM2

Table 9

Pin	Definition
1~13	GND
14	DI1, power supply output ON/OFF control/power supply failure status clear
15	DI2, power output ON/OFF control/power supply failure status clear
16	DI3, Reserved
17	DI4, Reserved
18	DO1, power output ON/OFF status indication/power failure/alarm indication
19	DO2, power output ON/OFF status indication/power supply failure/alarm indication
20	DO3, Reserved
21	DO4, reserved
22	AI1, power supply set voltage control/set current control
23	AI2, power supply set voltage control/set current control
24	+10V, 10V voltage reference provided to external
25	AO1, power supply output voltage monitoring/output current monitoring
26	AO2, power supply output voltage monitoring/output current monitoring

4.4.7 SENSE

Figure 14 4-wire interface

Sense terminals provide local and remote sense.

Table 10

Pin	Definition
S-	Remote sense negative
N-/-	Remote sense negative, internally connected to the negative power supply output terminal
N+/+	Remote sense positive, internally connected to power supply positive output terminal
S+	Remote sense positive

Remark

Each N36300 unit is shipped with a green 2-pole jumper.
If local sensing is used, this jumper must remain plugged into the SENSE connector.
The factory-installed jumper internally bonds:
- SENSE+ to the adjacent output terminal N+/+
- SENSE– to the adjacent output terminal N–/–

Removing or omitting the jumper leaves the sense inputs floating; the regulator loop will then drive the output above the programmed value and voltage accuracy will be lost.

follow the operation steps:

- Shut off the power supply
- Remove the wire jumper from the 4PIN green connector.
- Select the appropriate wire to connect S+ to the positive terminal of the load and S- to the negative terminal of the load.
- Plug the connector into the 4-wire connector on the back panel of the power supply.
- Connect the power supply output terminals to the load normally
- Turn on the power supply

Note:

The compensated voltage drop at the SENSE terminal should not exceed 3V maximum.

4.5 Screen

N36300 series adopts a 4.3 inch LCD with resolution 820*320.

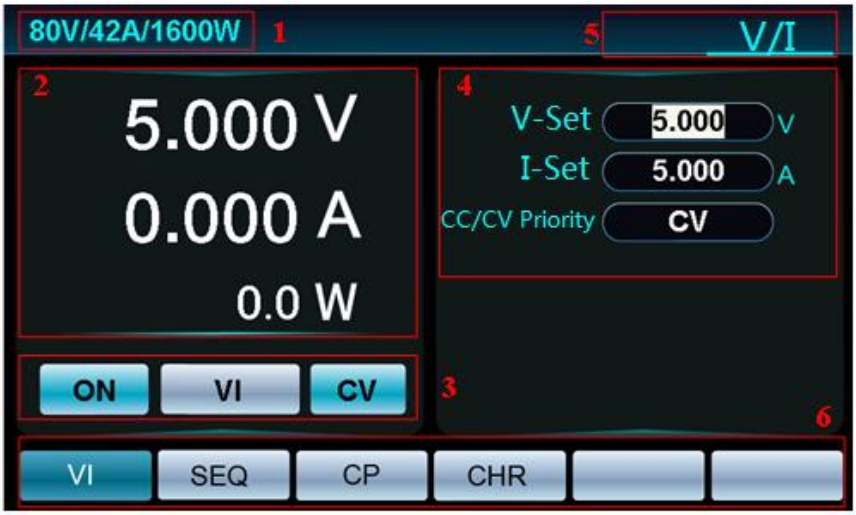


Figure 15 Screen

Table 11

Number	Name	Function
1	Device specification	To display rated current, voltage, power
2	Readback area	To readback current, voltage and power
3	Status	Display the operating status , including ON/OFF and functional mode etc.
4	Parameter setting area	To display the currently set parameters
5	Functional area	Functional mode
6	Function Selection	Include VI/SEQ/CP/CHR etc.

Figure 16 Status Information

The status information will be displayed according to the operation mode. This design can reduce the amount of information processing for the user and improve the efficiency of human-machine interaction.

Table 12

No.	Description
①	Power supply is under ON/OFF mode
②	Power supply is under VI/SEQ/CP mode
③	Power supply is under CV/CC mode
④	Power supply is under OCP, OVP, OPP, OTP etc.

After the device is switched on, it will enter **V/I** mode directly. Users can enter **Menu** by pressing [**Menu**]. There are eight options on the menu: **V/I, SEQ Test, SEQ Edit, CP, Protection, System, Charge, Application, Parallel, Car Wave, Factory Reset** and **About Us**. Users can enter the desired option by pressing the corresponding button. Parameter settings can be completed easily.

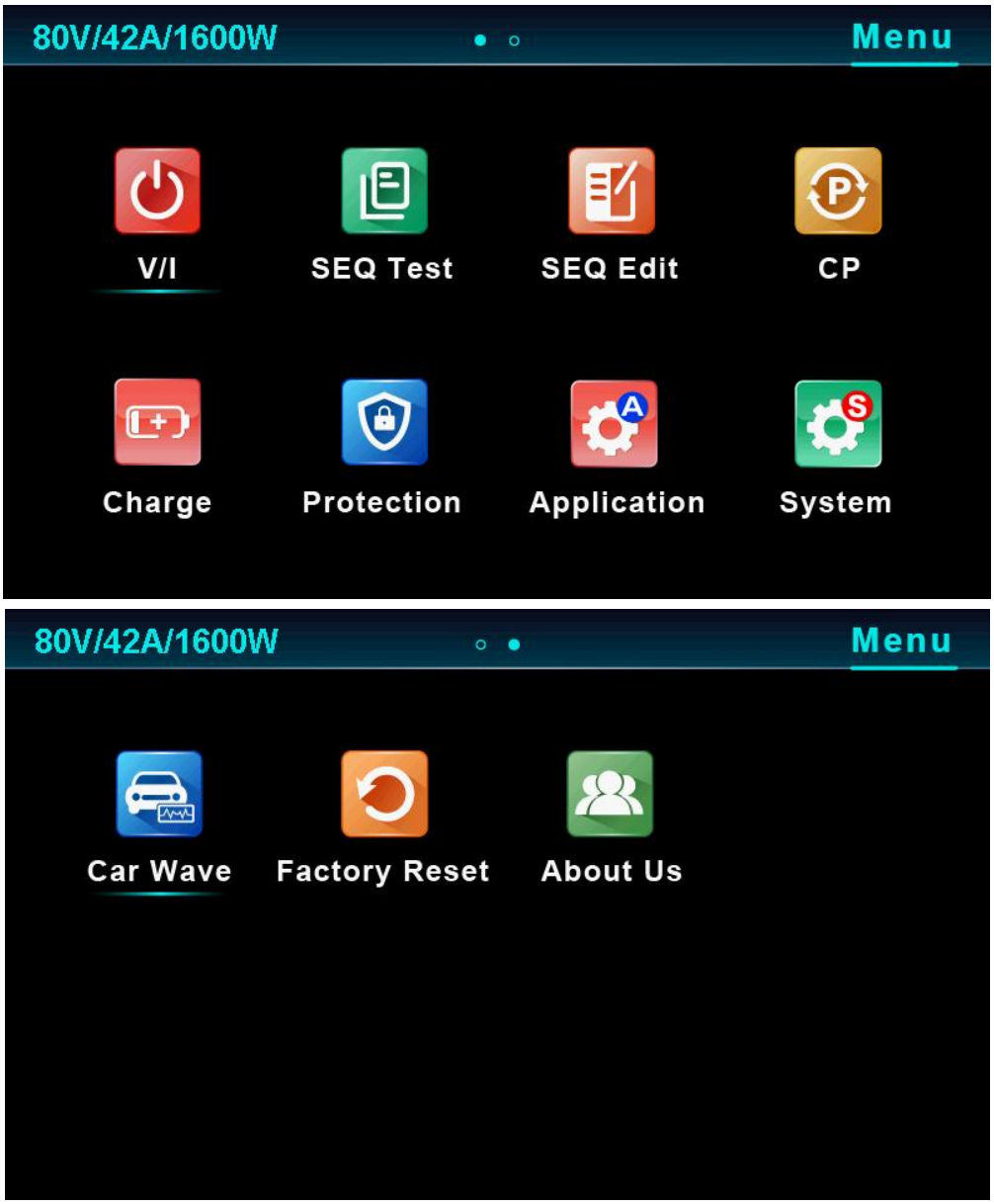


Figure 17 Menu

5.1 V/I

Methods to enter **V/I** mode:

Method 1: It will directly enter **V/I** mode after power-on.
Method 2: Press [**V-Set**] or [**I-Set**] on the front panel directly.
Method 3: Press [**Menu**]→ Select **V/I** by [◀][▶]or knob→ Press knob or [**Enter**].

Figure 18 V/I Mode

1. Setting the Voltage
Press V-Set.
- Push the rotary knob to move the cursor to the digit you want to change.
- Turn the knob to raise or lower that digit.
- Press Enter to store the value.

2. Setting the Current
Press I-Set.
- Push the rotary knob to move the cursor.
- Turn the knob to adjust the digit.
- Press Enter to confirm.

Under V/I mode, users can set required channel, output voltage and output current. N36300 will begin to output after setting is completed and [**On/Off**] is pressed.

> Remark
>
> The current setting value should be higher than load current to maintain CV mode for output. Otherwise the device will output at CC mode.

5.2 SEQ Edit

SEQ Edit allows the user to set the file No., total steps, cycle times, link to file, step No., voltage, current, and dwell.

N36300 power supply can output complex waveforms, store up to 10 sequence files, and store up to 200 test steps.

Press [Shift+SEQ] to enter the sequence editing interface, or press [Menu] to enter the main menu, use [◀]and [▶] to move the cursor, select the [SEQ Edit], and then press [Enter] to enter the Sequence Edit interface, as shown in Figure 19.

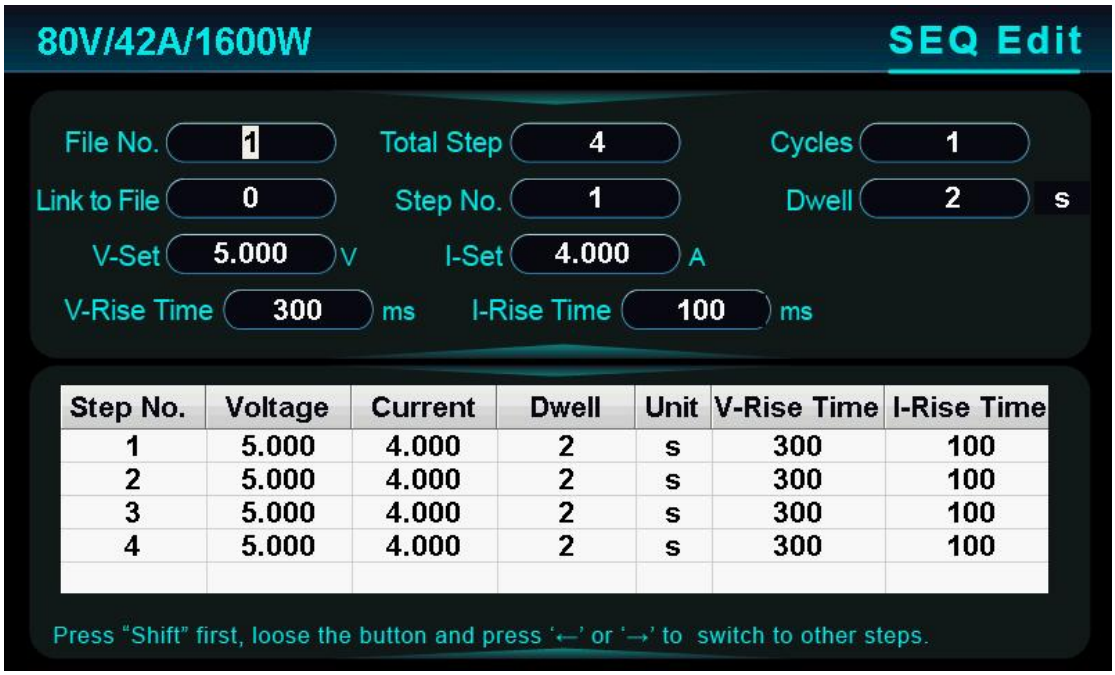


Figure 19 SEQ Edit

Rotate the knob to move the cursor between different items, press the knob to select the item under the cursor and set it. Rotate the knob to adjust the value under the cursor up or down. Press the knob to move the cursor under that item, and then press the "Enter" key to confirm the settings for that item.

Table 13

Parameter	Function
File No.	To set the sequence file number, max. 10
Total Steps	To set the total test steps for the SEQ file, up to 200
Cycles	To set the number of cycles
Link to File	Link to the required file after the present file is completed. 0 for no link.

V-Set	To set the output voltage for the present step
I-Set	To set the output current for the present step
Dwell	To set single step delay time, range 0~9999.0s
V-Rise Time	To set single step voltage rise time, range 10-2000ms
I-Rise Time	To set single step current rise time range 10-2000ms

5.3 SEQ Test

SEQ test (sequence test function) supports simulation of complex voltage & current waveform, which is frequently used for automotive electronics test, engine start-up test, etc.

The principle of sequence test is to output the voltage and current according to the test steps edited by the user. When dwell time reaches, it will switch to the next step.

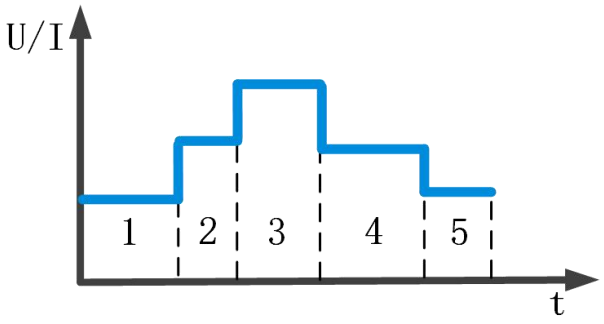


Figure 20 SEQ Test

Methods to enter **SEQ Test** mode:

Method 1: It will directly enter **SEQ Test** mode after power-on.

Method 2: Press [**Menu**]→ Select **SEQ Test** by [◀]and [▶]or knob→ Press knob or [**Enter**].

Figure 21 SEQ Test

value, file No., step No., dwell, output power readback value, and present status. The operable settings are sequence files, which are set as follows:

Press the knob to display the cursor position, rotate the knob to adjust the value under the cursor up or down, and press the "Enter" key to confirm the settings for the item.

Table 14

Parameter	Description
SEQ File No.	To select SEQ file No.
Step No.	Displaying the step No. under operation
Dwell	Displaying the dwell time for present step
Cycle	Displaying the cycle times for present step

Users select the file and presses the ON/OFF to start the SEQ Test. When all the test steps of the sequence file are completed, the system automatically closes the output and stops the SEQ Test.

5.4 Constant Power (CP)

In this mode, N36300 operates at the set power, if the input voltage increases, the input current will decrease and the power will be maintained at the set power.

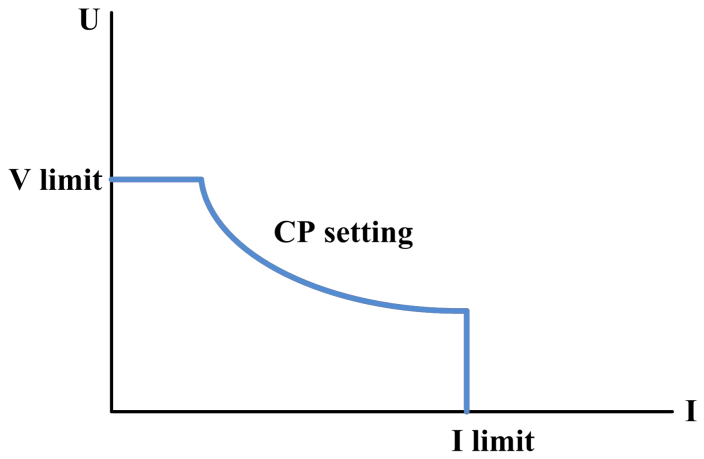


Figure 22 Constant Power Mode

In the constant power mode, the power supply continuously adjusts the output voltage or output current so that the output power is maintained at the set value as much as possible.

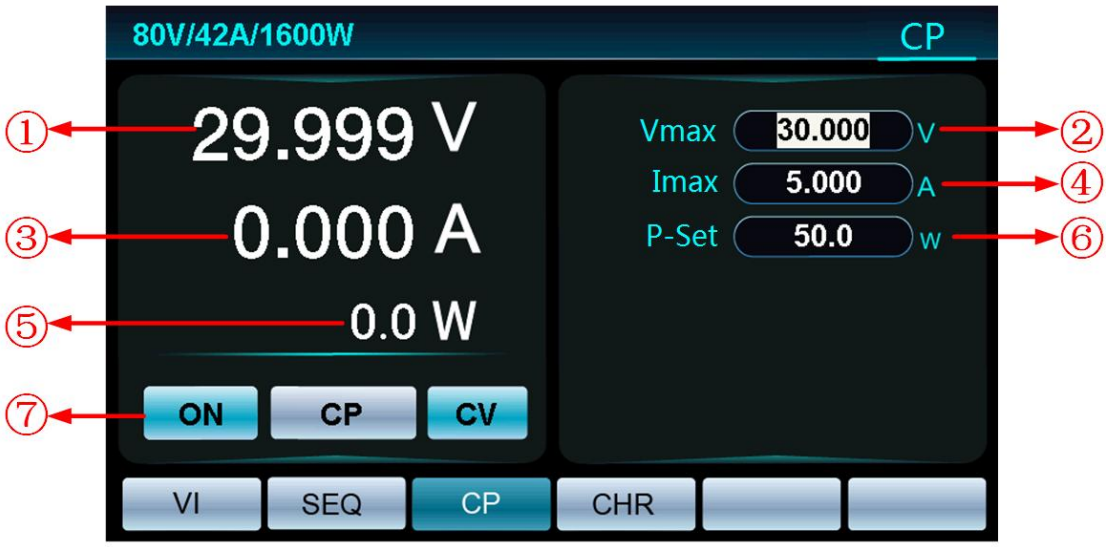


Figure 23 Constant Power Setting

Table 15

Parameter	Description
①	Output voltage readback value

③	Output current readback value
④	Output current setting value
⑤	Output power readback value
⑥	CP setting value
⑦	ON/OFF status

5.5 Protection

Users can press the "Menu" button and select "Protection" to enter the interface, the protection parameters can be set in the interface. Press Shift+ESC to clear protection information.

Figure 24 Protection

Under the protection parameter interface, there are 6 protection items and the control time setting for the corresponding protection items. Users can choose the following ways to operate each item: rotary knob can move the cursor between each item, press the knob to select the item under the cursor, and then make settings for the item. The rotary knob can be used to adjust the value under the cursor upward or downward, press the knob to move the cursor under the item, and then press the

Table 16

No.	Item	Function
1	UVP	Set UVP value
2	Ready	Set UVP ready time
3	OVP	Set OVP value
4	OCP	Set OCP value
5	OPP	Set OPP value
6	FDP	Set FDP between CV and CC
7	Dwell	To set delay time

- **UVP**

When the under voltage protection setting is non-zero, it indicates that the UVP is enabled, and the protection delay time and device ready time are set.

If the device status meets the following conditions, UVP will be triggered:

1. The UVP setting is non-zero;

2. The output time reaches the device ready time;

3. The output voltage is less than the set UVP point, and it lasts longer than the protection delay time.

When an output UVP occurs, the device responds as follows:

1. The device output is turned off;

2. The buzzer beeps intermittently, with a total of three beeps;

3. The interface status bar displays UVP in red background with black text.

- **OVP**

When the over voltage protection setting is non-zero, it indicates that the OVP is enabled, and the protection delay time are set.

If the device status meets the following conditions, OVP will be triggered:

1. The OVP setting is non-zero;

protection delay time.

When an output OVP occurs, the device responds as follows:

1. The device output is turned off;

2. The buzzer beeps intermittently, with a total of three beeps;

3. The interface status bar displays OVP in red background with black text.

- **OCP**

When the over current protection setting is non-zero, it indicates that the OCP is enabled, and the protection delay time are set.

If the device status meets the following conditions, OCP will be triggered:

1. The OVP setting is non-zero;

2. The output current is greater than the set OCP point, and it lasts longer than the protection delay time.

When an output OCP occurs, the device responds as follows:

1. The device output is turned off;

2. The buzzer beeps intermittently, with a total of three beeps;

3. The interface status bar displays OCP in red background with black text.

- **OPP**

When the over power protection setting is non-zero, it indicates that the OPP is enabled, and the protection delay time are set.

If the device status meets the following conditions, OPP will be triggered:

1. The OVP setting is non-zero;

2. The output power is greater than the set OPP point, and it lasts longer than the protection delay time.

When an output OPP occurs, the device responds as follows:

1. The device output is turned off;

2. The buzzer beeps intermittently, with a total of three beeps;

3. The interface status bar displays OCP in red background with black text.

- **FDP**

delay time is set.

If the device status meets the following conditions, FDP will be triggered:

1. The FDP is set to CC/CV;

2. The device working state changes to FDP state, and the duration is greater than the protection delay time.

For example, if the device's present working state is CV priority, and the FDP is set to CC, when the device is externally change into CC and lasts for a certain period, the FDP will be triggered.

When it occurs, the device responds as follows:

1. The device output is turned off;

2. The buzzer beeps intermittently, with a total of three beeps;

3. The interface status bar displays FDP in red background with black text.

- **OTP**

In order to prevent the high temperature inside the chassis from affecting the working performance of the device, make sure that the air around the device circulates normally, and do not cover all the heat dissipation holes of the chassis. The over-temperature protection setting parameters have been solidified in the equipment running program, no need to set.

Over-temperature protection is a protective measure implemented when the internal temperature of the device exceeds 85 degrees Celsius. When over-temperature protection occurs, the device responds as follows:

1. The device output is turned off;

2. The buzzer beeps intermittently, with a total of three beeps;

3. The interface status bar displays OTP in red background with black text.

5.6 System

In this interface, users can set IP, Device ID, AD Speed, Beeper, language, CAN ID, CAN Baud, COM Baud, Save.

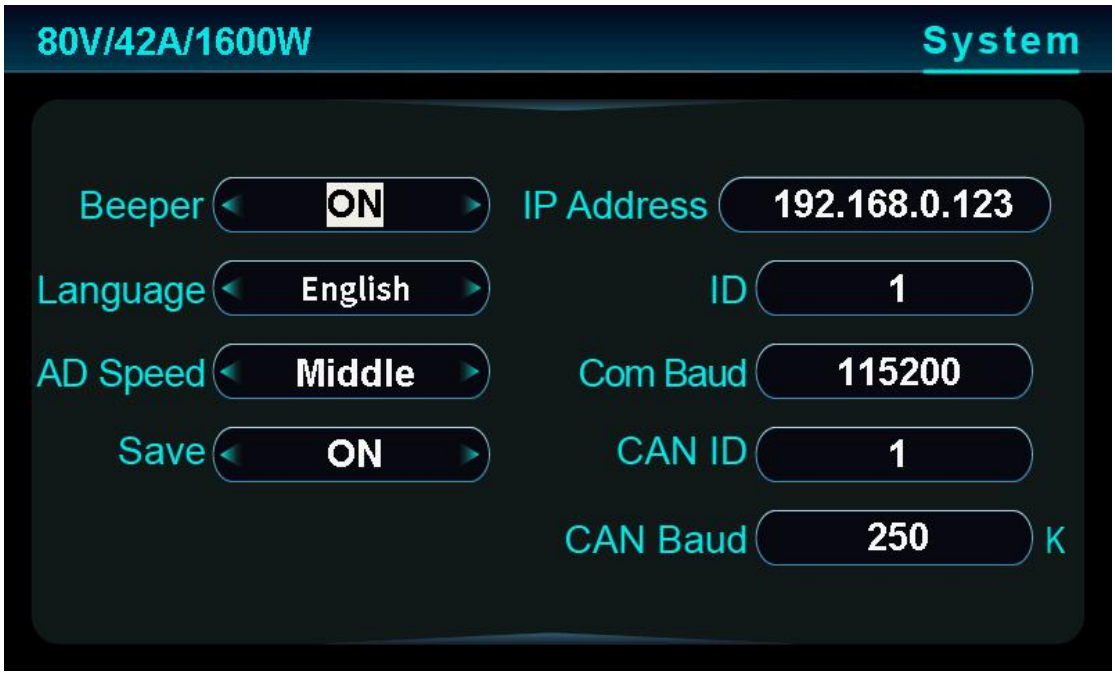


Figure 25 System

There are 9 items under the system parameter interface, users can choose the following ways to operate each item: rotary knob can move the cursor between the items, press the knob to select the item under the cursor, and make settings for the item. The rotary knob can be used to adjust the value under the cursor upward or downward, press the knob to move the cursor under the item, and then press the “Enter” key to confirm the setting of the item.

Table 17

No.	Item	Function
1	Beeper	Set sound ON/OFF
2	Language	Set language
3	AD Speed	Set sampling speed

5	IP Address	Set IP address
6	ID	Set device ID
7	COM Baud	Set series baud rate
8	CAN ID	Set CANopen communication D
9	CAN Baud	Set CANopen communication baud rate

5.7 Charge Test

The device has a battery charging function, which allows users to test the charging of batteries. Set the battery charging voltage and charging current, and turn on the output to charge the battery.

Move the cursor under the main menu and select [Charging Test] to enter the interface.

Figure 26 Charge Test

Under the Charge Test interface, users can set the conditions to stop battery charging, including charging time, end voltage, end current, end capacity, and the battery will stop charging if any of the conditions are met. For example, if the battery charging time reaches the set charging time, the power supply will automatically turn off, shut down the output, and the battery will stop charging.

5.8 Application

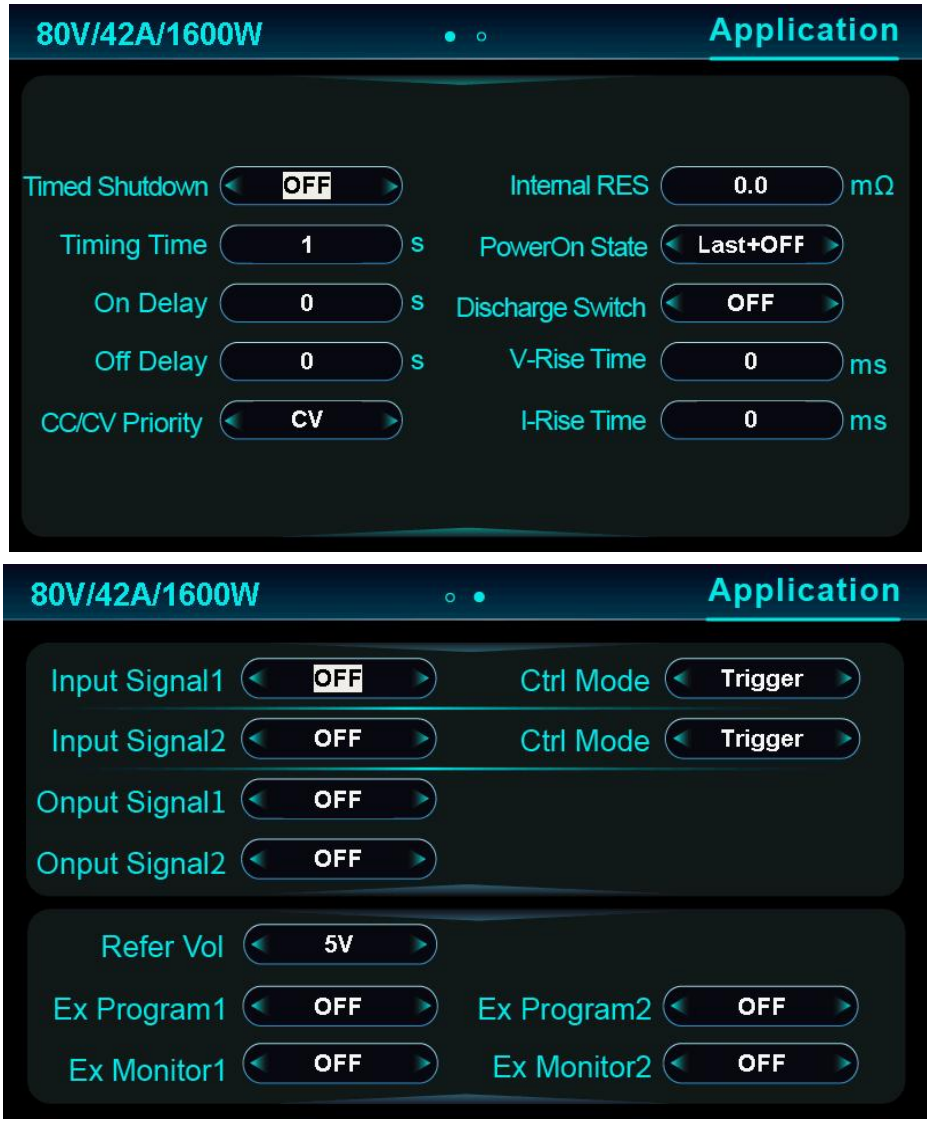


Figure 27 Application

No.	Item	Definition
1	Timed Shutdown	Default OFF
2	Timing Time	Range 1.0~86400.0s. For example, setting 5s means that the power output will be automatically OFF after 5s.
3	On Delay	Range 0.1~10s. After setting, press ONOFF, the power supply will delay the output accordingly.
4	Off Delay	Range 0.1~10s. After setting, press ONOFF, the power supply will delay the output accordingly.
5	PowerOn State	Last/Default/Reset Last means maintaining the last operation status before power on again; Last+OFF means maintaining the last OFF status if powered on again; Reset means resetting factory if powered on again.
6	Discharge Switch	Setting the drain circuit status ON/OFF (This function must be switched off in the charging test)
7	V-Rise Time	Range 10~2000ms
8	I-Rise Time	Range 10~2000ms
9	Internal RES	Range 0.0mΩ~1000.0mΩ
10	CV/CC Priority	If the user requires that voltage overshoot must be minimal, such as when biasing to a low voltage processor or FPGA core, it is recommended that the user use CV priority mode; CC priority mode should be used if the user has a low impedance component under test, such as when charging a battery or driving a system containing large capacitance.

No.	Item	Definition
1	Input Signal 1	Corresponding to DI1 of the I/O interface, OFF/ONOFF/Clear can be selected, setting ONOFF indicates power output ON/OFF control, and setting Clear indicates clearing of power failure status.
2	Ctrl Mode	Set the trigger mode of Input Signal 1, there are two modes, Trigger/Hold: Trigger means rising edge trigger, Hold means one action for one level change.
3	Input Signal 2	Corresponding to DI2 of the I/O interface, OFF/ONOFF/Clear can be selected, setting ONOFF indicates power output ON/OFF control, and setting Clear indicates clearing of power failure status.
4	Ctrl Mode	Set the trigger mode of Input Signal 2, there are two modes, Trigger/Hold: Trigger means rising edge trigger, Hold means one action for one level change.
4	Output Signal 1	Corresponds to DO1 of the corresponding I/O interface, OFF/ONOFF/Fault, setting ONOFF indicates power output ON/OFF status indication, setting Fault indicates power failure/alarm indication.
5	Output Signal 2	Corresponds to DO2 of the corresponding I/O interface, OFF/ONOFF/Fault, setting ONOFF indicates power output ON/OFF status indication, setting Fault indicates power failure/alarm indication.
6	Refer Vol	10V, Voltage reference provided to external
7	EX Program 1	Corresponds to AI1 of the corresponding I/O interface, and APG-V/APG-I/APG-P corresponds to the power setting Voltage/Current/Power control.
8	EX Program 2	Corresponds to AI2 of the corresponding I/O interface, and APG-V/APG-I/APG-P corresponds to the power setting Voltage/Current/Power control.
9	EX Monitor 1	Corresponds to V_MON of the corresponding I/O interface, IMONI-V/IMONI-I/IMONI-P corresponds to power output Voltage/Current/Power monitoring.
10	EX Monitor 2	Corresponds to I_MON of the corresponding I/O interface, IMONI-V/IMONI-I/IMONI-P corresponds to power output Voltage/Current/Power monitoring.

5.9 Wave

5.9.1 Carwave

5.9.1.1 ISO-16750-2

N36300 series products have four types of analog waveforms for vehicle electrical and electronic equipment immunity testing, which is convenient for customers to quickly call. The output pulse waveform is fully compliant with ISO-16750-2 international standard.

<table>
<tr><td>ISO16750-2</td><td colspan="4">Simulation of "Environmental conditions and tests for electrical and electronic equipment for road vehicles", Part 2: "Electrical loads" curves.</td></tr>
<tr><td rowspan="10"></td><td>Short-Drop</td><td colspan="3">Car voltage short time drop waveform</td></tr>
<tr><td rowspan="2"></td><td>12V</td><td colspan="2">Select 12V car voltage short time drop waveform</td></tr>
<tr><td>24V</td><td colspan="2">Select 24V car voltage short time drop waveform</td></tr>
<tr><td>Reset-Test</td><td colspan="3">Car Voltage Reset Test Waveform</td></tr>
<tr><td></td><td>Usmin</td><td colspan="2">Minimum supply voltage</td></tr>
<tr><td>Starting</td><td colspan="3">Car start-up waveform</td></tr>
<tr><td rowspan="4"></td><td>12V</td><td colspan="2">Select 12V car start-up waveform</td></tr>
<tr><td rowspan="3"></td><td>LEVEL1</td><td>Voltage/duration of the 12V waveform corresponding to level 1</td></tr>
<tr><td>LEVEL2</td><td>Voltage/duration of the 12V waveform corresponding to level 2</td></tr>
<tr><td>LEVEL3</td><td>Voltage/duration of the 12V waveform</td></tr>
</table>

			LEVEL4	Voltage/duration of the 12V waveform corresponding to level 4	
		24V	Select 24V car start-up waveform		
			LEVEL1	Voltage/duration of the 24V waveform corresponding to level 1	
			LEVEL2	Voltage/duration of the 24V waveform corresponding to level 2	
			LEVEL3	Voltage/duration of the 24V waveform corresponding to level 3	
	Load-Dump	Load Dump Waveform			
		Test A	Select decentralization load dump suppression pulse		
			12V	Select 12V Voltage System	
				Td	Pulse Width
				U_S	Peak Voltage
			24V	Select 24V Voltage System	
				Td	Pulse Width
				U_S	Peak Voltage
		Test B	Select Centralization load dump suppression pulse		
			12V	Select 12V Voltage System	
				Td	Pulse Width
				U_S	Peak Voltage
			24V	Select 24V Voltage System	
				Td	Pulse Width
				U_S	Peak Voltage

				U_S*	Clamp Voltage

5.9.1.1.1 Car Start-up Short Time Voltage Drop Waveform

This waveform simulates a momentary drop in supply voltage when starting a car.

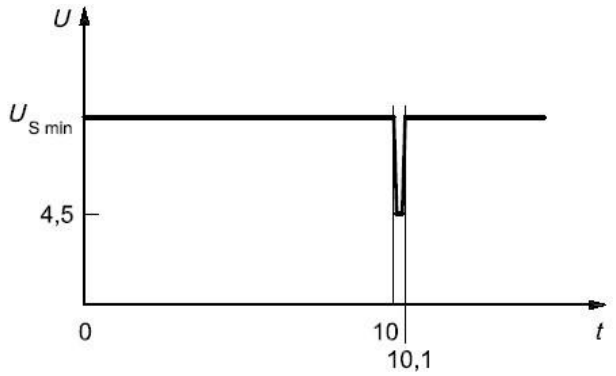


Figure 28 12V Waveform

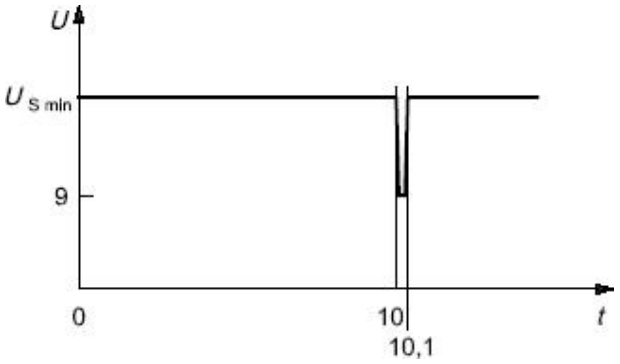


Figure 29 24V Waveform

5.9.1.1.2 Voltage Reset Test Waveform

The simulated waveform is suitable for testing devices with a reset function.This voltage profile simulates the supply voltage dropping from Us min to 0.95 Us min at a rate of 5%, holding it for 5s, then rising to Us min and holding it for at least 10s for a functional test. The voltage is then stepped down to 0.9 Us min and continued in a 5% gradient as shown in the graph until it drops to 0 V and then rises again to Us min. The waveform is as follows.

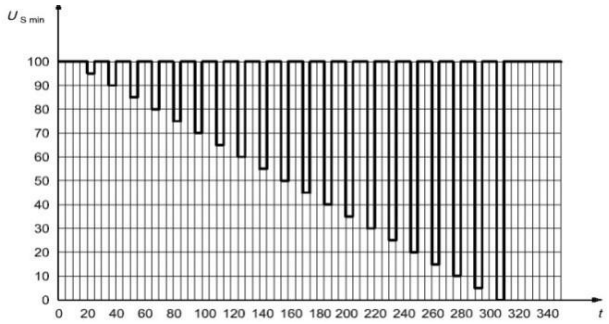


Figure 30 Car Voltage Reset Test Waveform

5.9.1.1.3 Car Start-up Waveform

To simulate the effect of DC voltage with ripple under DC power supply when starting a car, the voltage curve in the t8 time period is upgraded from the original constant voltage straight line in the standard DIN40839 voltage waveform to a curve containing a superimposed AC voltage waveform with a frequency of 2Hz, and the curve should be selected according to the actual test requirements.

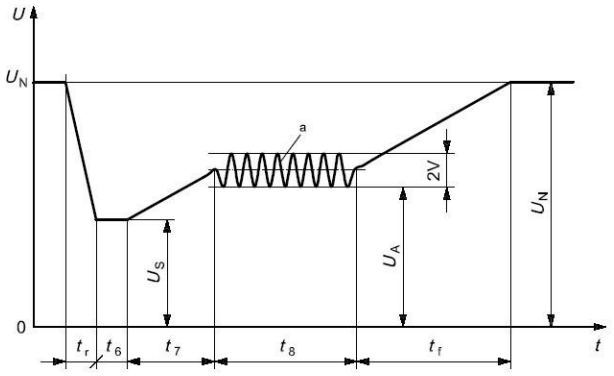


Figure 31 Car Start-up Waveform

Levels/voltages/duration of starting profile				
I	II	III	IV	Tolerances
U_S = 8 V	U_S = 4,5 V	U_S = 3 V	U_S = 6 V	+ 0,2 V
U_A = 9,5 V	U_A = 6,5 V	U_A = 5 V	U_A = 6,5 V	
t_r = 5 ms				± 10 %
t_6 = 15 ms				
t_7 = 50 ms				
t_8 = 1 s	t_8 = 10 s	t_8 = 1 s	t_8 = 10 s	
t_f = 40 ms	t_f = 100 ms	t_f = 100 ms	t_f = 100 ms	

Figure 32 12V Built-in Waveform Setup Standard

Levels/voltages/duration of starting profile			
I	II	III	Tolerances
U_S = 10 V	U_S = 8 V	U_S = 6 V	+ 0,2 V
U_A = 20 V	U_A = 15 V	U_A = 10 V	
t_r = 10 ms			± 10 %
t_6 = 50 ms			
t_7 = 50 ms			
t_8 = 1 s	t_8 = 10 s	t_8 = 1 s	
t_f = 40 ms	t_f = 100 ms	t_f = 40 ms	

Figure 33　24V Built-in Waveform Setup Standard

5.9.1.1.4 Car Load Dump Characteristic Curve

Inside most newer alternators, the magnitude of the load dump is suppressed (clamped) by the addition of a limiter diode. Load dump can occur due to corroded cables, poor contact or intentional disconnection from the battery while the engine is running.

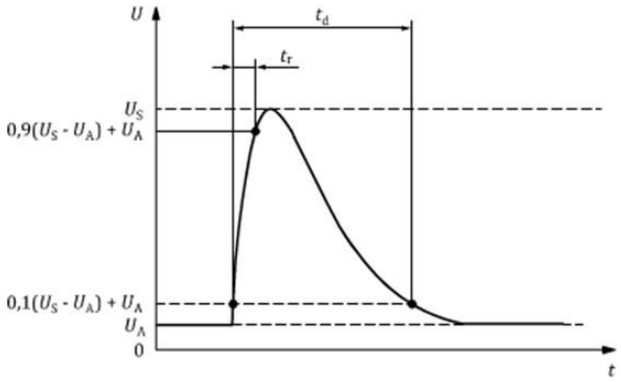


Figure 34　Test A

t：Time.

U：Test Voltage.

td：Pulse Duration.

tr：Time Unit

U_A：Supply voltage of operating generators：(12V)U_A=14V; (24V)U_A= 28V

U_S：Peak Voltage

Table 20

Parameter	Type		Minimum Test Requirement
	12V	24V	
U_S[a](V)	79≤U_S≤101	151≤U_S≤202	10 pulses every 1 minute
R_i[a](Ω)	0.5≤Ri≤4	1≤Ri≤8	
t_d(ms)	40≤t_d≤400	100≤t_d≤350	
t_r(ms)	–	–	
[a]If not otherwise agreed, use a higher voltage level with higher internal resistance or a lower voltage level with lower internal resistance.			

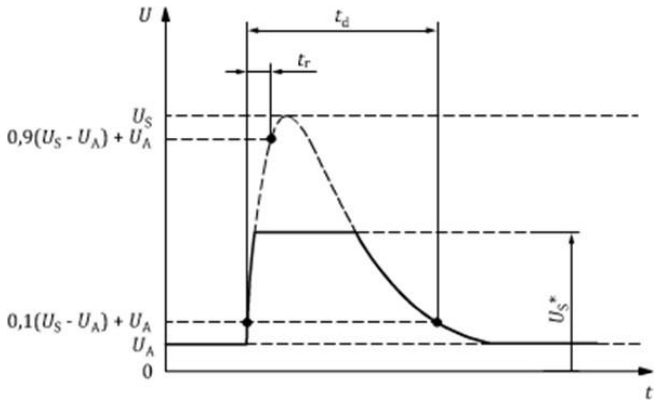


Figure 35 Test B

t：Time.

U：Test Voltage.

td：Pulse Duration.

tr：Time Unit

U_A：Supply voltage of operating generators：(12V)U_A=14V; (24V)U_A= 28V

U_S：Peak Voltage

U_S*：Voltage with load dump suppression (clamp voltage)

Parameter	Type		Minimum Test Requirement
	12V	24V	
U_S[a](V)	79≤U_S≤101	151≤U_S≤202	5 pulses every 1 minute
U_S*(V)	Fixed at 35V, not settable.	Specified by customer (default: 58)	
R_i[a](Ω)	0.5≤Ri≤4	1≤Ri≤8	
t_d(ms)	40≤t_d≤400	100≤t_d≤350	
t_r(ms)	–	–	
[a]If not otherwise agreed, use a higher voltage level with higher internal resistance or a lower voltage level with lower internal resistance.			

5.9.1.2 LV124

LV124 provides curves that meet the experimental items, experimental conditions and experimental requirements for electrical and electronic components of automobiles under 3.5 tons.

Table 22

LV124	LV124 Waveform Protocol		
	E-04	Jump-start Experiment Pulse	
	E-07	Experimental parameters for slow drop and slow rise of supply voltage	
		Ubmax	Start-up Voltage
		Ubmin	Holding Voltage
		Ubmin Holding Time	Holding time of voltage at Ubmin

This waveform simulates the pulses generated during external startup of a car.The maximum experimental voltage is generated from the operating car and its raised chassis harness voltage. The waveform is shown below.

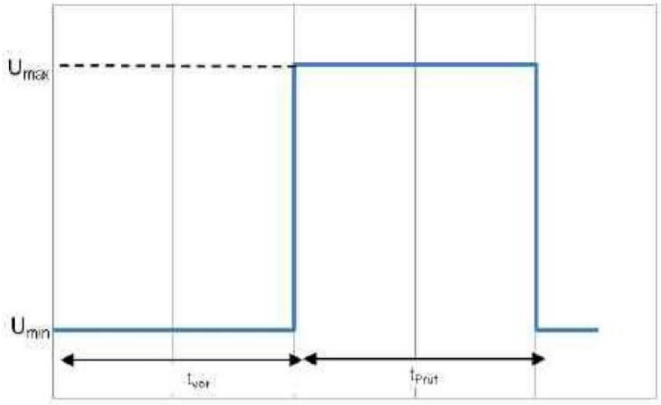


Figure 36 E-04 Jump Start

5.9.1.2.2 Supply voltage Slow Drop and Rise

Simulates the waveform of slow drop and slow rise of the supply voltage, such as the process of slow discharge and slow charge of a car battery. The waveform is shown below.

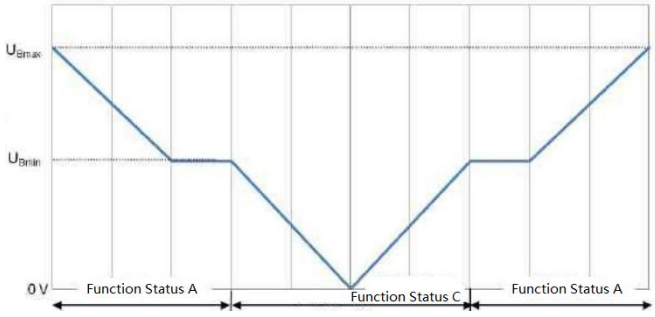


Figure 37 E-07 Supply voltage Slow Drop and Rise

Take the waveform when the car starts as an example, the operation steps to call up the test waveform are as follows (take the 24V voltage waveform as an example).

1. Enter the menu page and select Car Waveform;

2. "Location 1": use the knob to select ISO16750 and press "Enter" to confirm;

4. "Location 3": use the knob to select Test-A, press "Enter" to confirm;

5. "Location 4": use the knob to select 12V, press "Enter" to confirm;

6. "Set 1": Pulse duration, setting range 40~400ms, press "Enter" to confirm;

7. "Set 2": Peak voltage, setting range 79.000~101.000V, press "Enter" to confirm;

8. Press "On/Off" on the front panel to turn on the output, and the status bar shows that the status has changed from "Idle" to "Ready".

Figure 38 Car Waveform

9. Press "Shift+On/Off" to trigger the wave output, and the status bar shows running.

5.10 Factory Reset

Users press the "Menu" key to enter the menu, select "Factory Reset" to enter the interface, and press the "Enter" key to restore factory settings. The "Factory Reset" interface is displayed as shown in Figure.

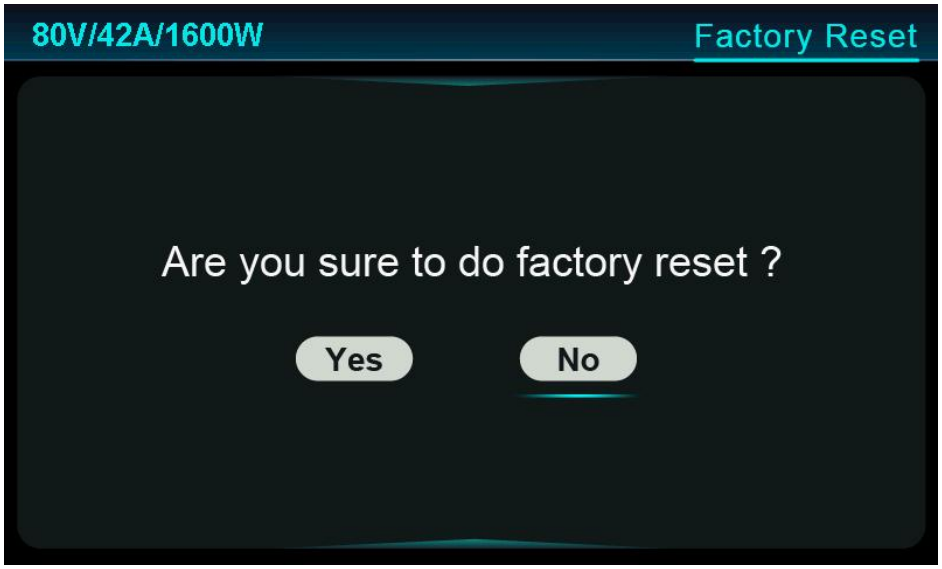


Figure 39 Factory Reset

Remark

Restart after factory settings reset.

5.11 About Us

Users press the "Menu" button and select "About Us" to enter the interface, and it is shown in the figure 40.

Figure 40 About Us

6 Application Software Installation & Configuration

6.1 PC Software Configuration

To make better use of the system performance, the following computer configuration is recommended:

- CPU: 2.0G, dual-core and above
- Memory: 4G and above
- Hard disk: 80G and above
- Port: Ethernet port
- Operating system: Microsoft Windows 7 and above

6.2 Application Software Installation and Uninstallation

6.2.1 Installation

1) Find the installation program "setup.exe" from the USB flash drive in accessory bag.

2) Make double-click on the file and begin installation.

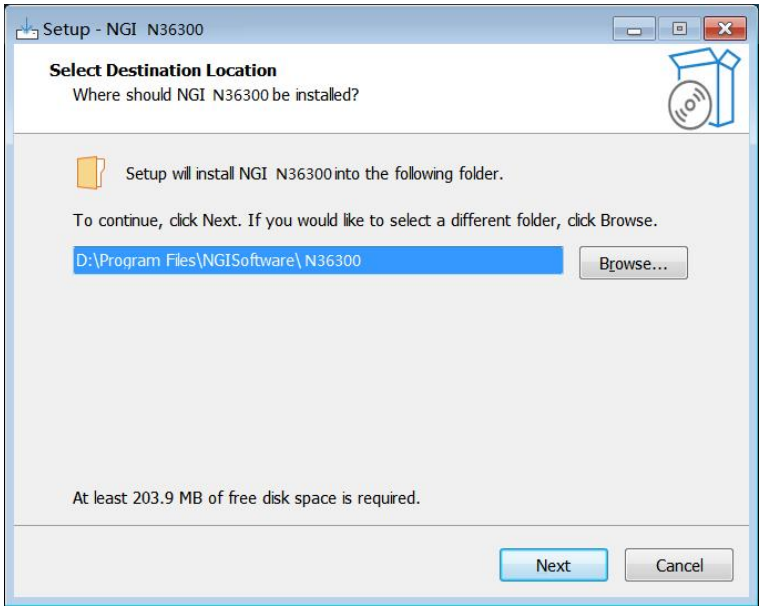


Figure 41 Program Installation

3) Click Next as prompted until the installation is completed. The software will automatically create a shortcut on the desktop.

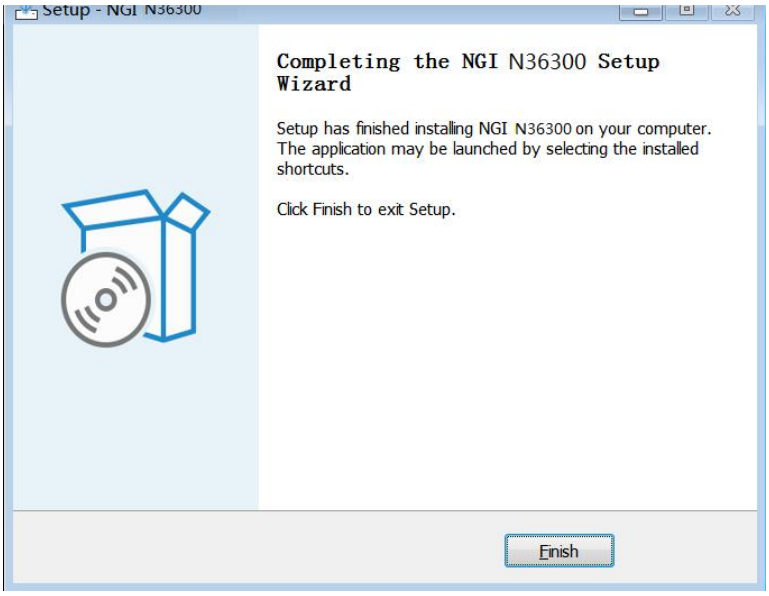


Figure 42 Installation Completed

6.2.2 Uninstallation

Methods for uninstallation:
Method 1: Program uninstallation can be completed through **Uninstall Program** in **Control Panel** of the operating system, or by right-clicking the shortcut and selecting uninstall.

Method 2: Find the setup program in your computer disk and delete.

6.3 PC Connection

6.3.1 Port Connection

Please plug the Ethernet cable to PC Ethernet port and the other side to N36300 LAN port. After N36300 series is turn on, enter the system configuration interface to check the network IP. PC needs to keep the same network segment with N36300 in

system parameters in the device interface , as shown in the following figure 41.

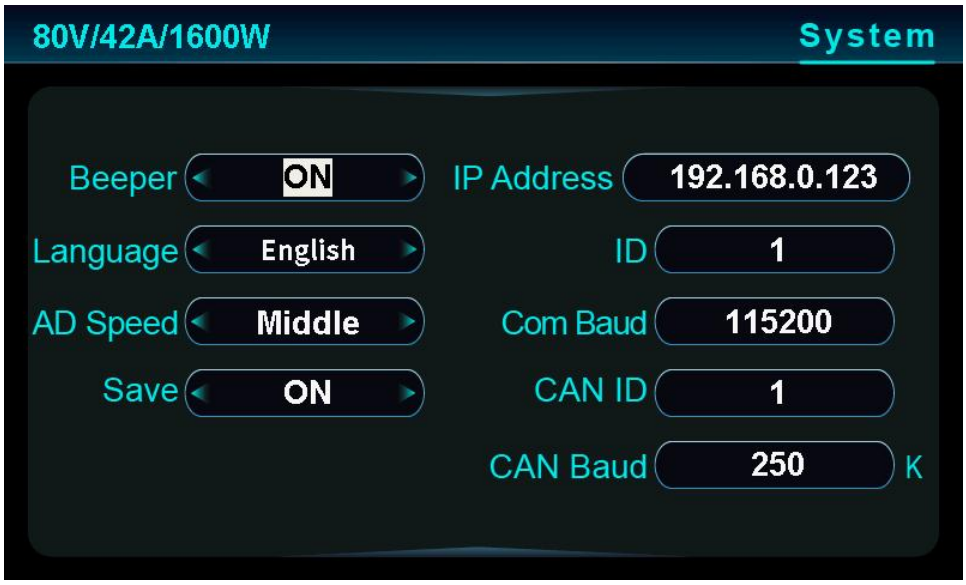


Figure 43 System interface

After the master computer is disconnected, wait for 3s-5s, and then press the **LOCK** to release the remote mode.

6.3.2 Disabling operating system standby mode

■ Windows 7 settings

Click **Start**→Click **Control Panel**→Click **Power Options**→Click **Change Computer Sleep Time**.

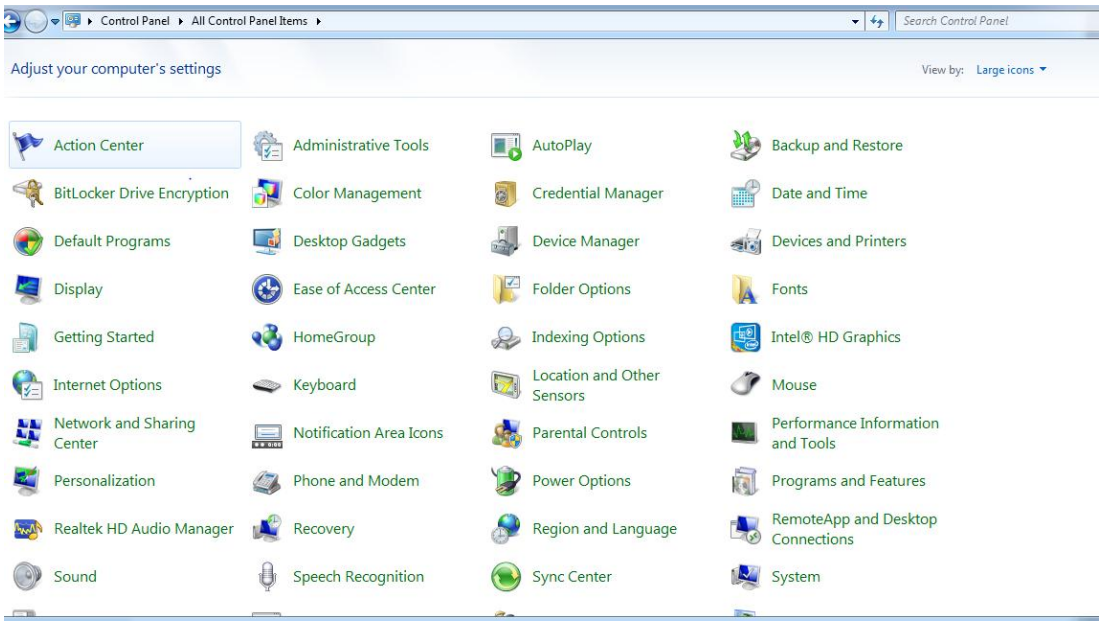


Figure 44 Windows 7 settings

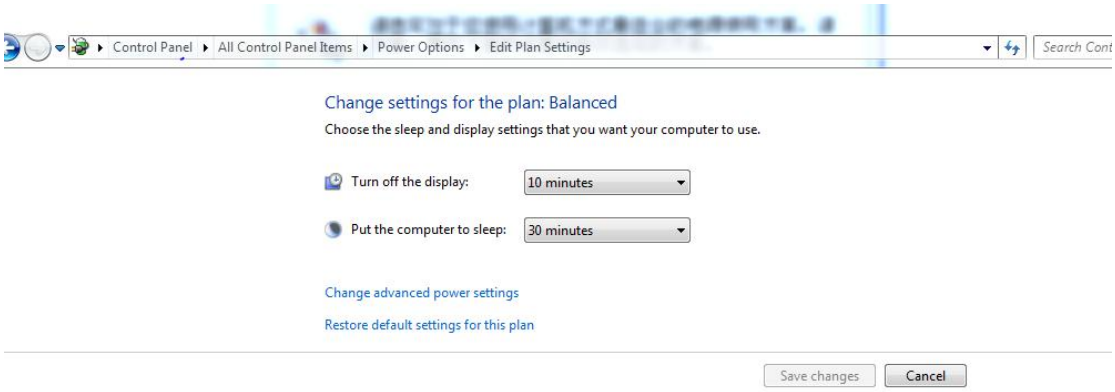
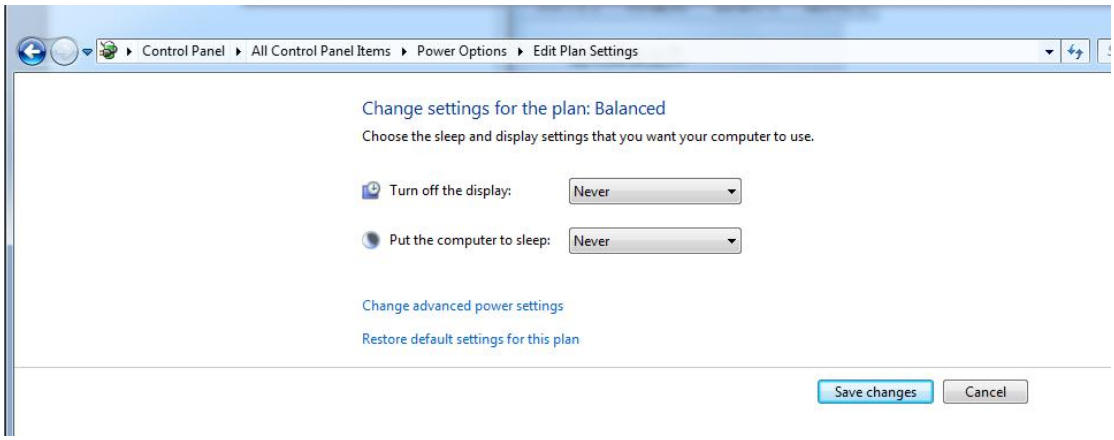


Figure 45 Windows 7 settings

Set **Turn off the display** and **Put the computer to sleep** to Never.



■ Windows 10 settings

Click **Start**→Click **Settings**.

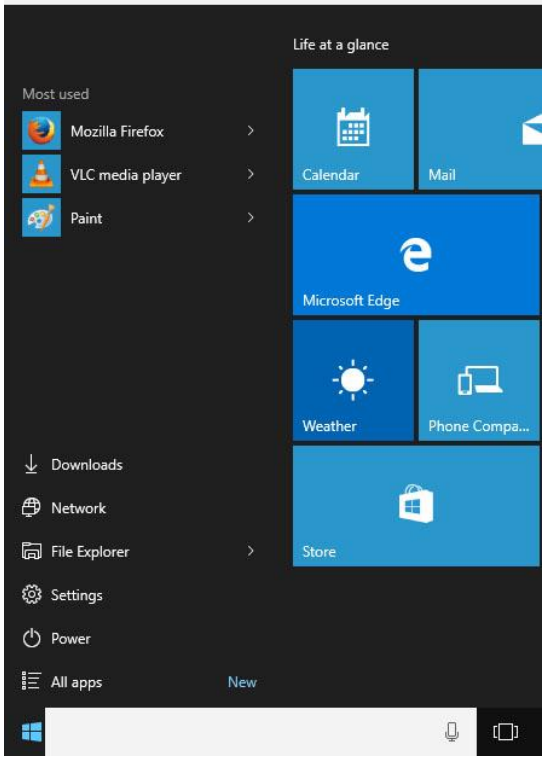


Figure 47 Windows 10 settings

Click **System**.

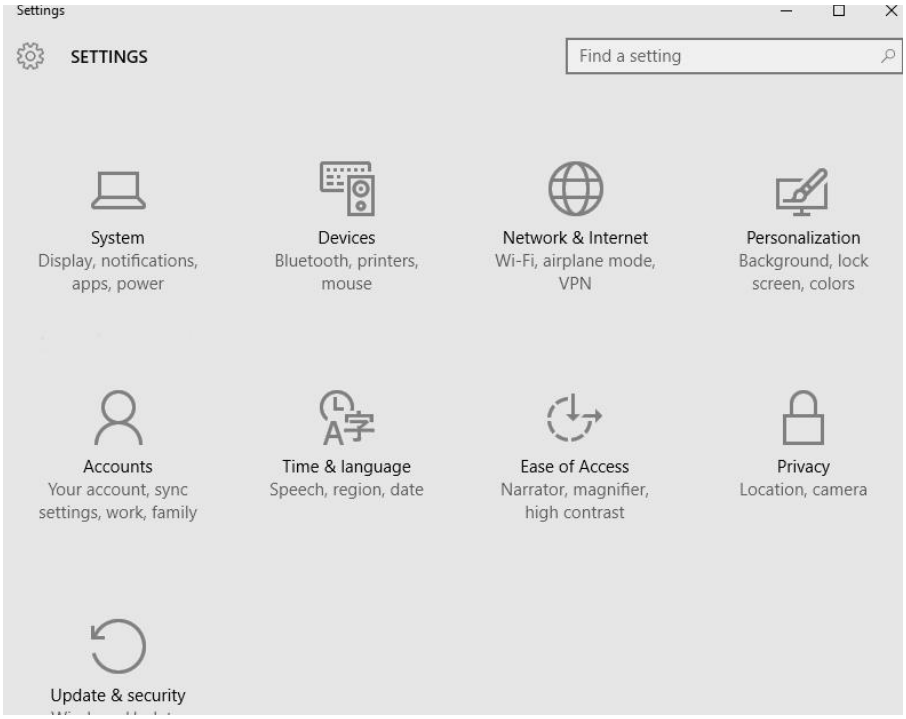


Figure 48 Windows 10 settings

Click **Power & sleep**.

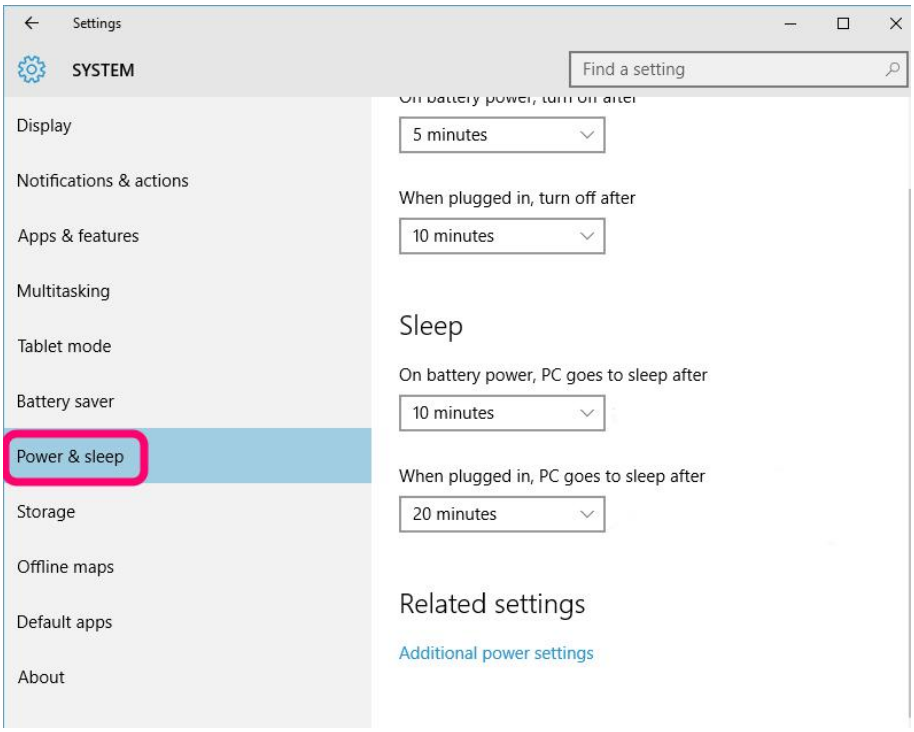


Figure 49 Windows 10 settings

Select **Never** for both options under **Sleep**.

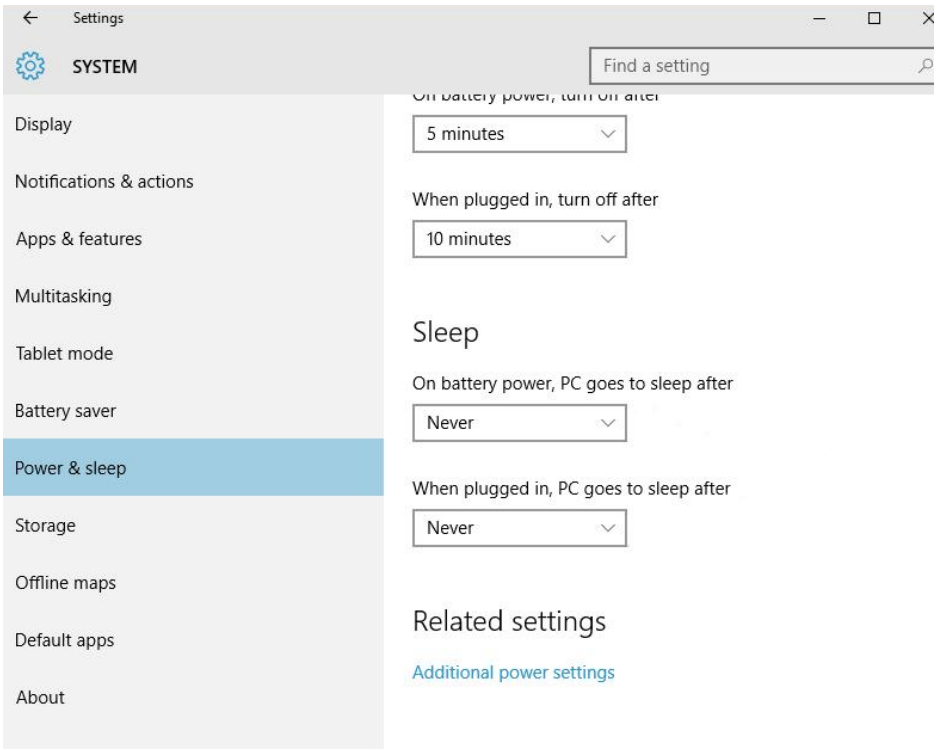


Figure 50 Windows 10 settings

6.3.3 Network IP Address Setting

The default IP of LAN port is 192.168.0.XXX (range from 0 to 255). Before operation, the computer IP should be assigned to the same network segment of N36300. But IP addresses should be different.

Click **Start**→Click **Control Panel**→Click **Network and Sharing Center**.

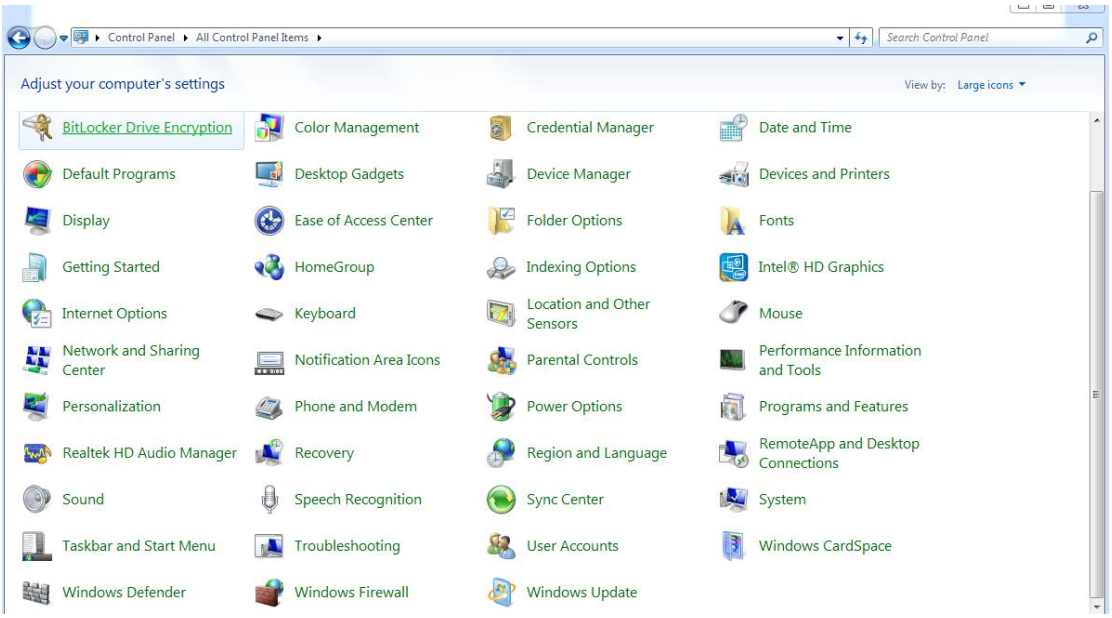


Figure 51 Network IP Address Setting

Click **Change adapter settings**.

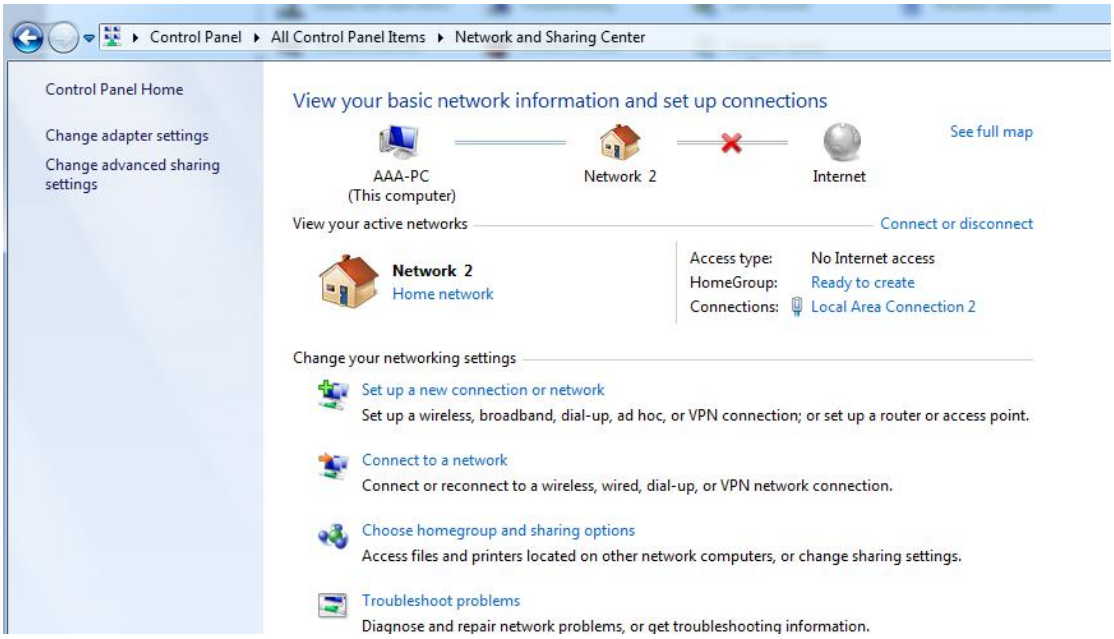


Figure 52 Network IP Address Setting

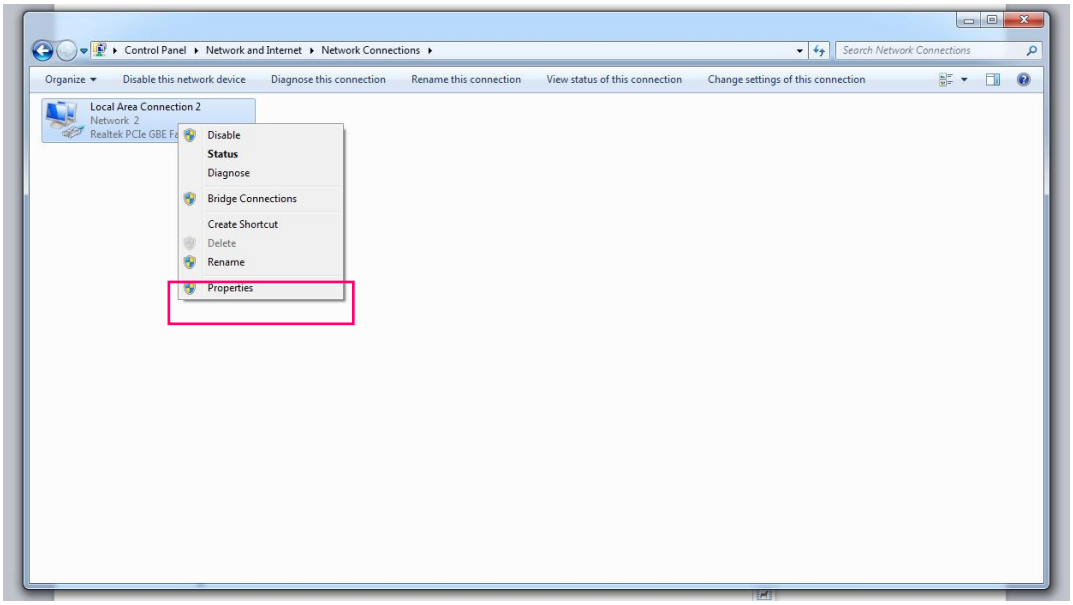


Figure 53 Network IP Address Setting

Click Internet Protocol Version 4(TCP/IPv4) and fill the below information and press **OK**.

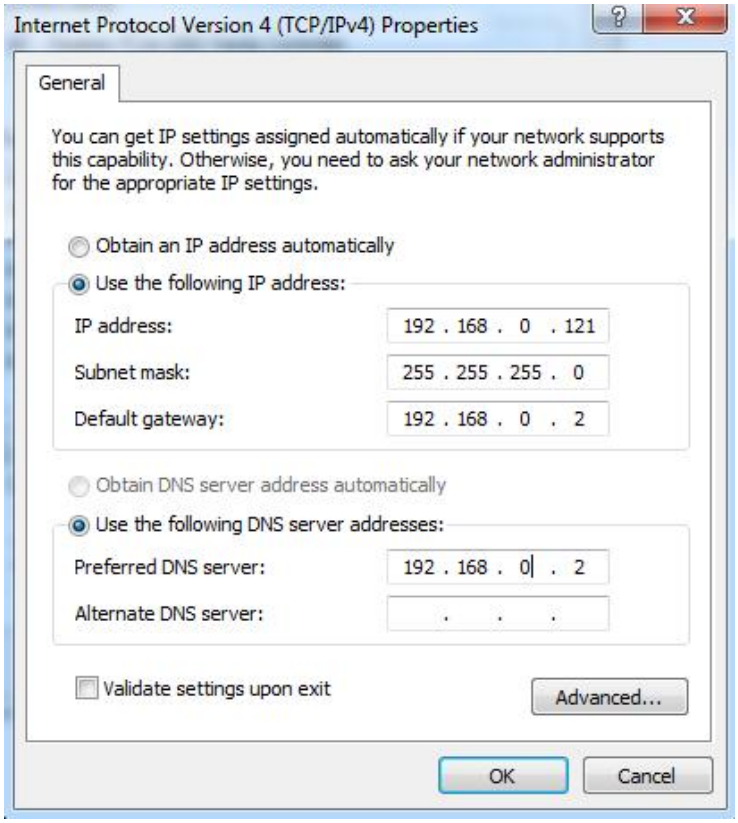


Figure 54 Network IP Address Setting

Input ping 192.168.0.123(default IP of N36300) and check if N36300 can communicate properly.

Figure 55 Run Command

If communicating properly, the below information will be reverted.

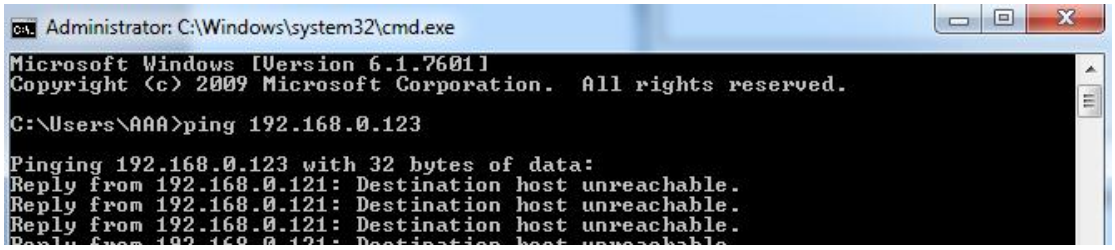


Figure 56 Communication Test

■ Windows 10 Setting

Click **Start**→Click **Set**→Click **Network & Internet**.

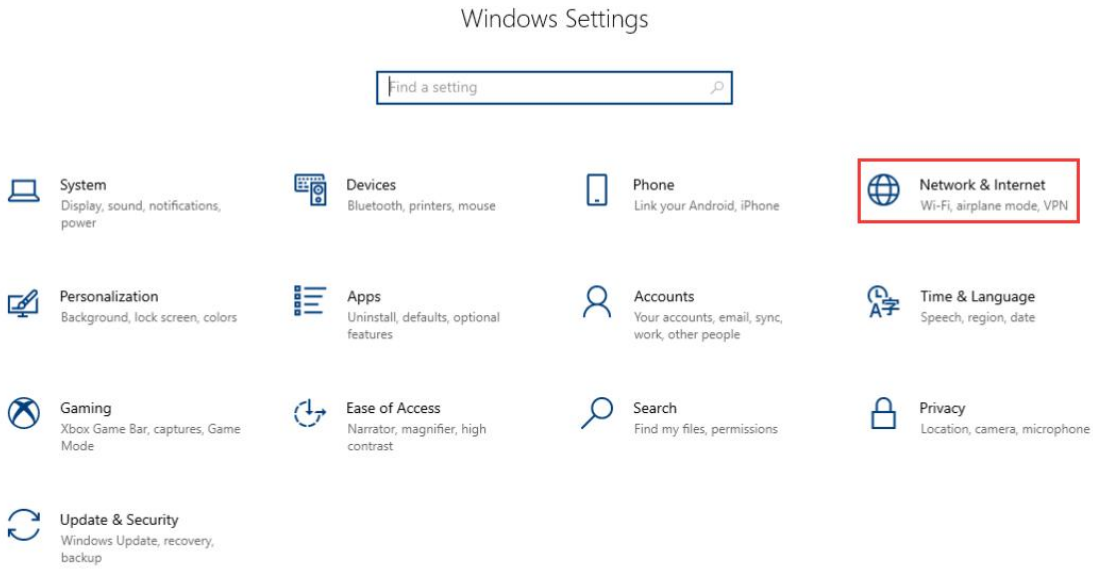


Figure 57 Network IP Address Setting

Click **Change adapter options**.

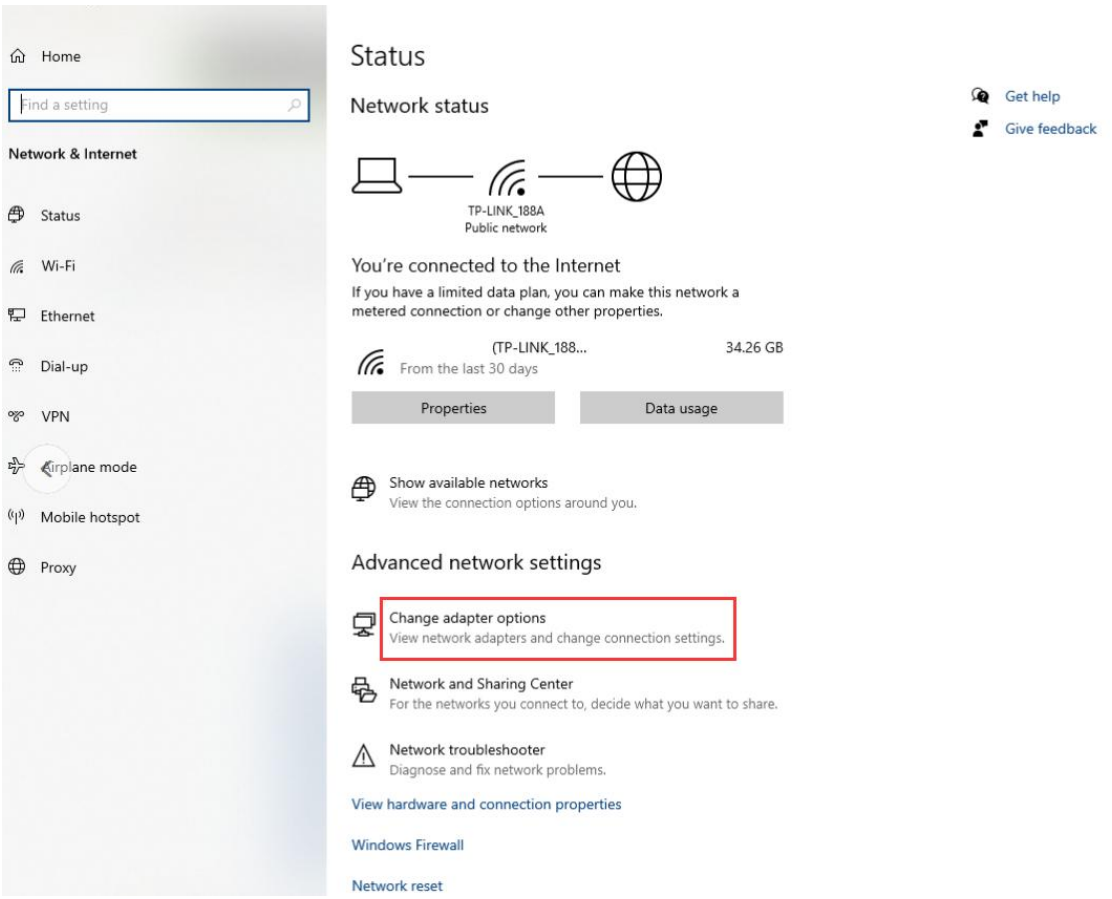


Figure 58 Network IP Address Setting

Select the network→Right click and choose **Properties**.

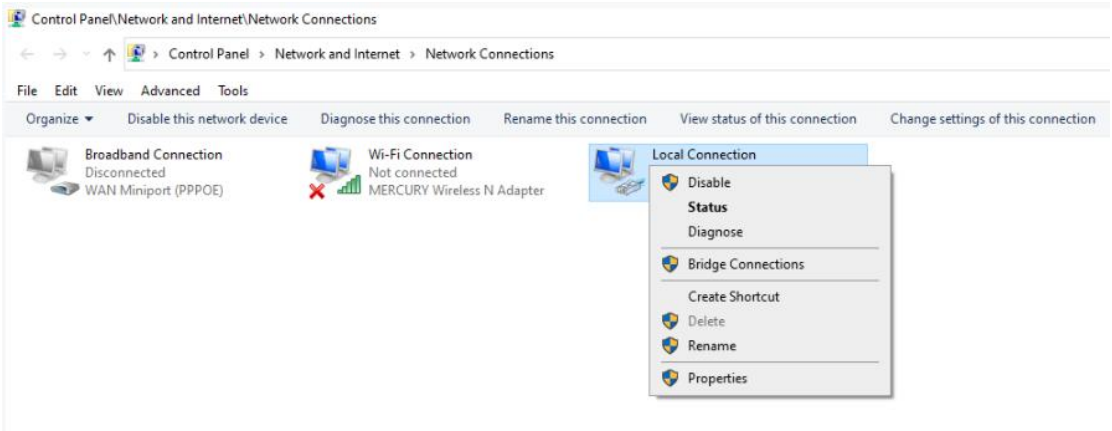


Figure 59 Network IP Address Setting

Click Internet Protocol Version 4(TCP/IPv4) and fill the below information and press **OK**.

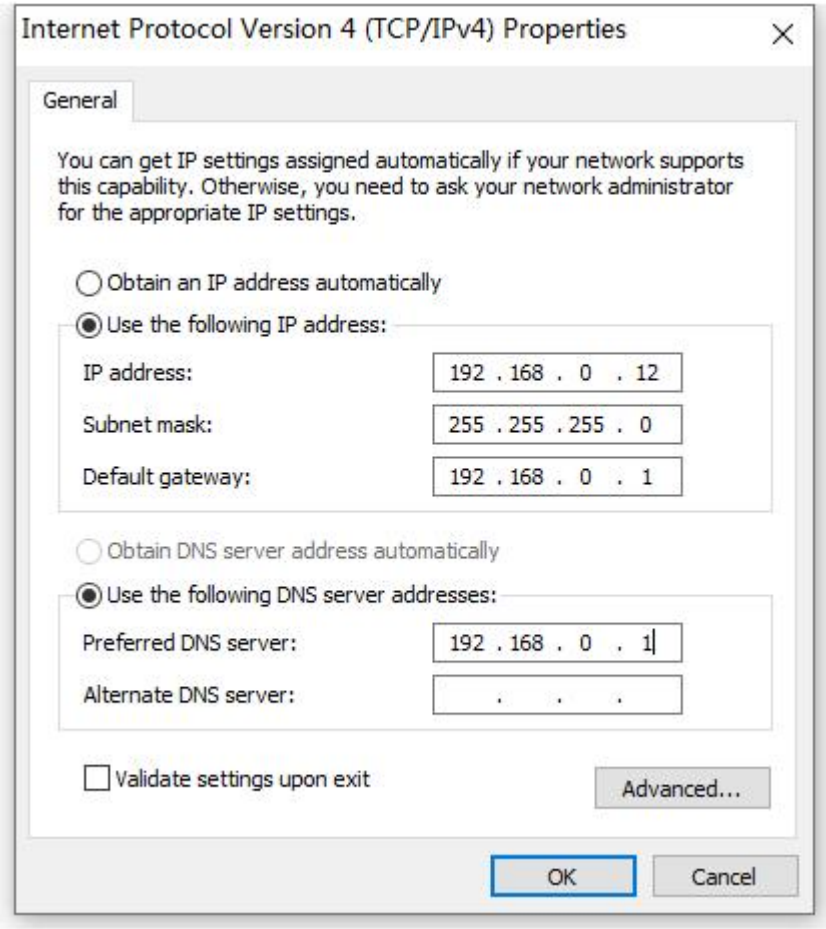


Figure 60 Network IP Address Setting

Click **Start**→Input **cmd**.

Input ping 192.168.0.123(default IP of N36300) and check if N36300 can communicate properly.

Figure 61 Run Command

If communicating properly, the below information will be reverted.

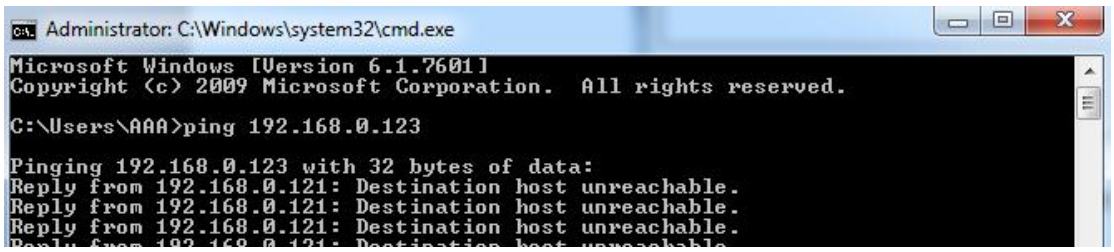


Figure 62 Communication Test

6.4 Operation

After the application software is successfully installed, a shortcut icon will be generated on the desktop. Please click the shortcut to enter the menu.

Figure 63 Shortcut

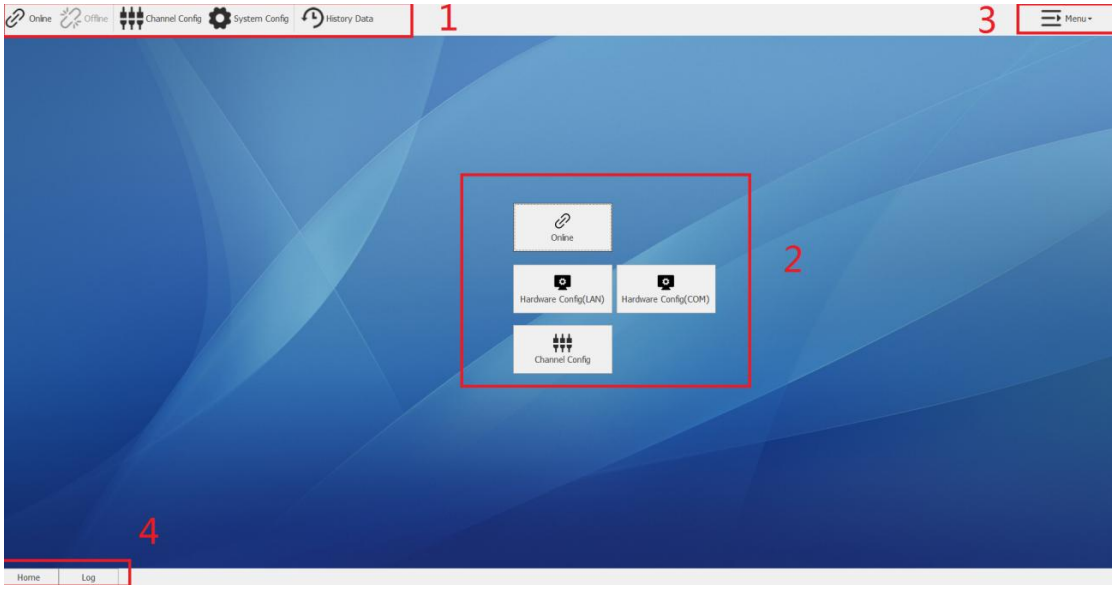


Figure 64 Application Software Interface

Application software interface introduction:

1. Toolbar

It includes Online and Offline, Channel Config, System Config, History Data, View.

2. Menu
3. Shortcut menu
4. Log

To display device exception information.

6.5 Configuration

6.5.1 Hardware Configuration

Operation Steps:

1. Click **Hardware Config(LAN)**.

2. Click **Scan**→Select 192.168.0.XXX network→Click **OK**→Click **Save** after the device is searched.

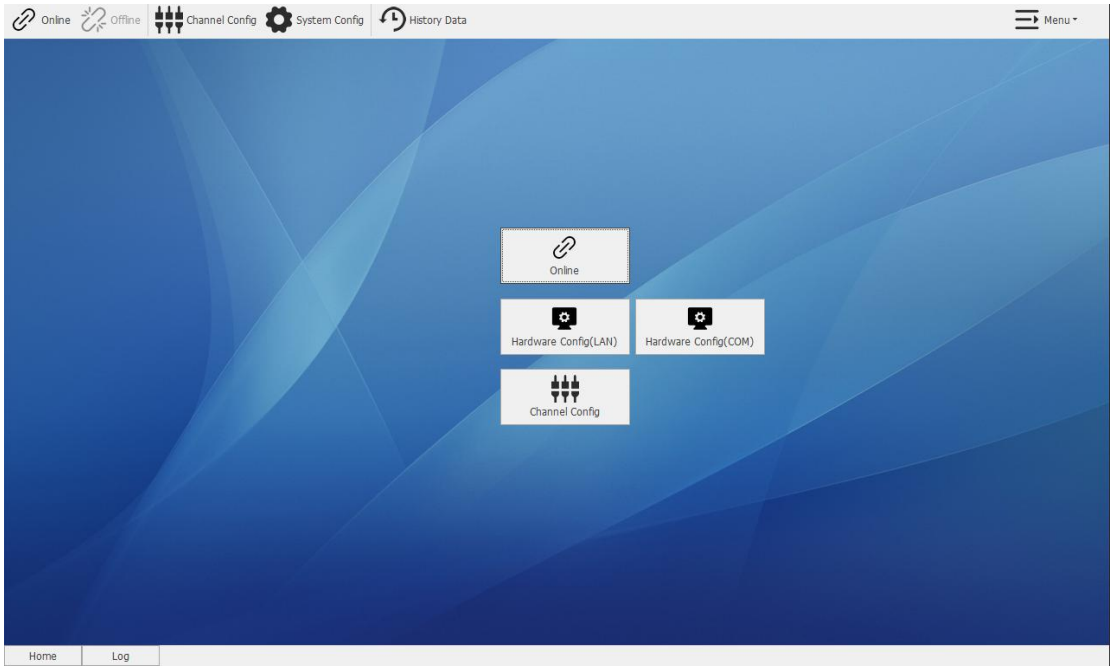


Figure 65 Hardware configuration

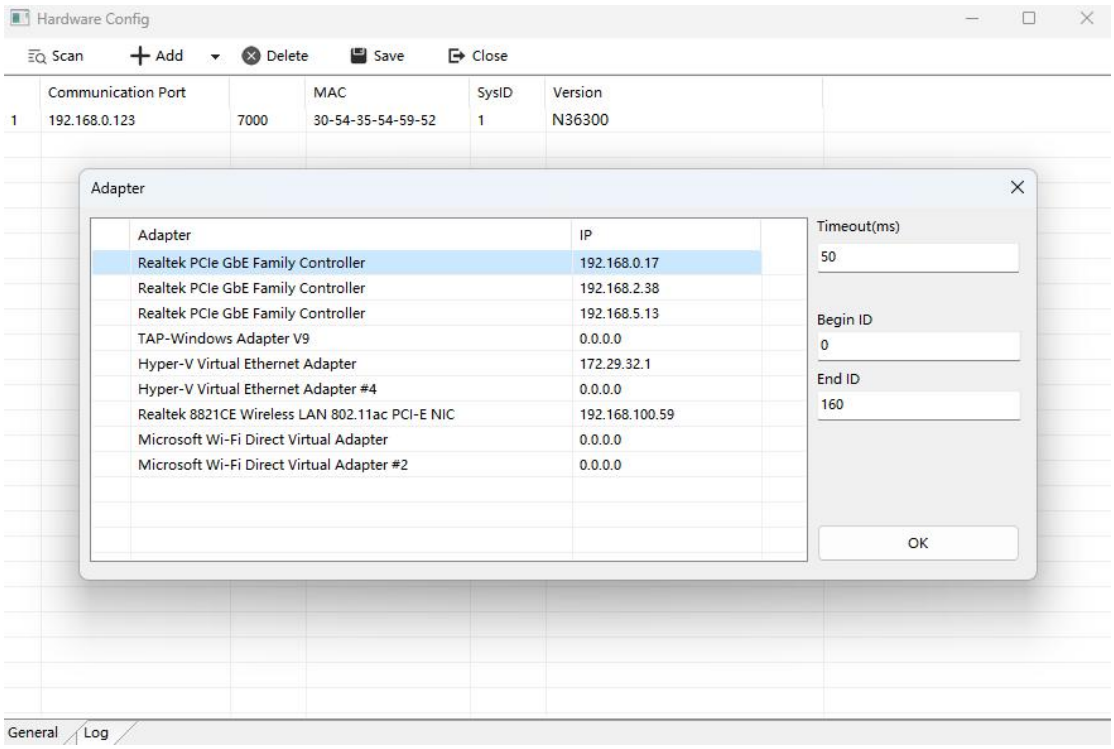


Figure 66 Scan

6.5.2 Channel Configuration

Operation Steps:

1. Click **Channel Config**.
2. Default Channel: Click **Other**→Set default value, Channel will be named from CH1 to CH99.
3. Multiple Devices Operation: Click **Other**→Select **ON-All**, quickly select all devices in the segment.

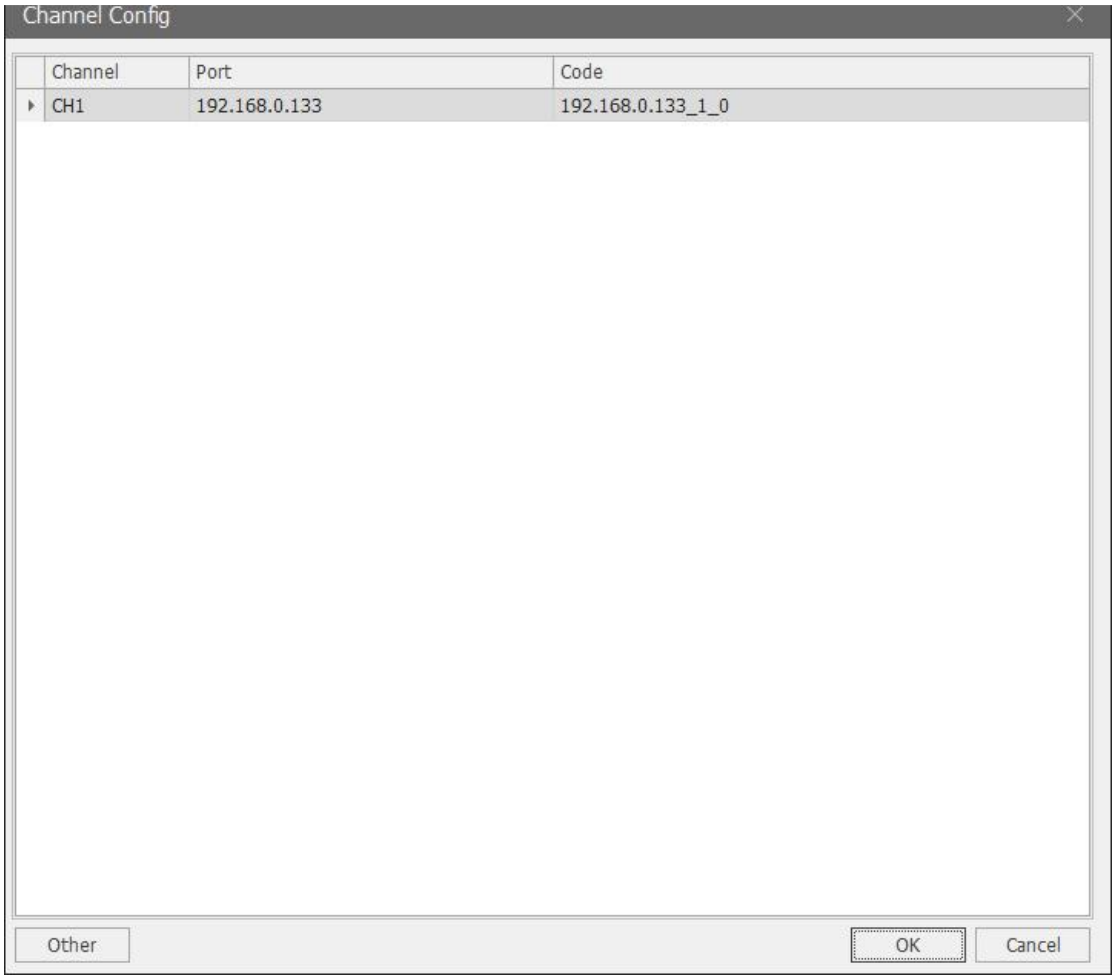


Figure 67 Channel Configuration

6.5.3 Online/Offline

Online means that the software establishes a connection with the device, and the device can be controlled only in the online state. **Offline** means that the the communication is interrupted.

Figure 68 Online

1. Toolbar: including online, offline, channel configuration, system configuration, clear error and historical data.

2. Start Data Logging: Click to start data logging, the file data (.ndat format) will be automatically saved to the historical data.

3. Data display area: contains data graphs and status information (voltage, current, power and time).

4. Function modes: including V/I, CP mode, charge mode, SEQ edit, SEQ mode, system parameters, protection configuration, etc.
System Parameters: to set CC/CV priority and simulated resistance
Protection Configuration: to set OVP, OCP, OPP.

7 Maintenance and Calibration

7.1 Warranty Service

NGI guarantees that the instrument's specifications and performance fully meet the technical parameters stated in the manual. The raw materials and manufacturing processes are strictly controlled to ensure stability and reliability.

For one year from the purchase date, NGI provides free repair for any malfunction under normal use and maintenance. Customers are responsible for the one-way shipping cost, while NGI covers return shipping. For international returns, the customer must bear all shipping, customs duties, and taxes.

7.2 Warranty Limitations

The warranty covers only the main instrument unit (excluding consumables such as fuses and test cables). Damage caused by misuse, lack of maintenance, unauthorized modifications, abnormal operating conditions, or force majeure is not covered. An estimate will be provided before any repair.

This warranty is limited to the above and does not include any other express or implied warranties, including but not limited to implied warranties of merchantability or fitness for a particular purpose. NGI is not liable for any special, incidental, or consequential damages, whether arising from contract, negligence, or other causes.

7.3 Regular Maintenance

Clean the Device

Please wipe lightly the device with a dry or slightly wet cloth, and do not wipe the inside of it. Make sure the power is disconnected before cleaning.

It is advised to clean the equipment once a year. Disconnect power before cleaning!

7.4 Fault Self-inspection

Device Fault Self-inspection

Due to system upgrade or hardware problem, the device may break down. Please do the following necessary inspection to eliminate the troubles, which can save your maintenance and time cost. If the troubles cannot be recovered, please contact us.

1. Verify instrument is powered.
2. Confirm instrument is properly turned on.
3. Inspect instrument's fuse for integrity.
4. Check all connections (cables, plugs, etc.) for correctness.
5. Ensure system configuration is correct during instrument use.
6. Confirm instrument passes self - test and meets specifications.
7. Check for any error messages on the instrument.
8. Use another instrument for comparison to confirm performance.

If the issue doesn't resolve, contact an authorized NGI distributor or service department. Before contacting, please:

- Review the warranty and limitations in the manual to ensure eligibility.
- Refer to the Factory Repair section if returning the instrument for repair.
- Provide the device SN number (found on the instrument label) for effective service.

Calibration Intervals

It is suggested that N36300series should be calibrated once a year.

7.5 Factory Repair

After effective communication and agreement for factory repair, please follow these steps to package the instrument:

1.Place the instrument in the original shipping box and include any relevant accessories.
2.Provide a detailed description of the issue, including any error messages or relevant files.
3.Review the shipping cost details in the **Warranty Service** section before shipping.

Remark

1. Using non-designated packaging during shipping may damage the instrument. Please use the original shipping box and follow the packaging standards as closely as possible
2. Do not use styrofoam particles as packing material, as they do not secure the instrument properly and may generate static, potentially damaging the instrument

Warning

The measurement accuracy is identified by the following three conditions: within one year after calibration, operation temperature between 18℃ and 28℃, and the relative humidity up to 80%.

Model: N36316-80-42

Model		N36316-80-42
Rated	Voltage	0~80V
	Current	0~42A
	Power	1600W
Channels		1CH
CV Mode		
Range		0~80V
Resolution		1mV
Accuracy (23±5℃)		≤0.03%+0.02%F.S.
Voltage Ripple (20Hz~20MHz)		≤80mV_{p-p}
CC Mode		
Range		0~42A
Resolution		1mA
Setting Accuracy (23±5℃)		≤0.1%+0.1%F.S.
Current Ripple (20Hz~20MHz)		50mA_{rms}
CP Mode		
Range		1600W
Resolution		0.1W
Setting Accuracy (23±5℃)		0.5%F.S.
Voltage Measurement		
Range		0~80V

Setting Accuracy (23±5℃)	≤0.03%+0.02%F.S.
Current Measurement	
Range	0~42A
Resolution	1mA
Setting Accuracy (23±5℃)	≤0.1%+0.1%F.S.
Line Regulation	
Voltage	＜0.02%F.S.
Current	＜0.05%F.S.
Load Regulation	
Voltage	＜0.03%F.S.
Current	＜0.05%F.S.
Dynamic Characteristics	
Voltage Rise Time (no load)	≤10ms
Voltage Rise Time (full load)	≤10ms
Voltage Fall Time (no load)	≤25ms
Voltage Fall Time (full load)	≤10ms
Transient Recovery Time	Output voltage recovery to within 0.5% of rated voltage （10%~90%load)≤1ms
Others	
Isolation (Output to ground)	500V DC
Max. Efficiency (100%U_{DC})	91%
Power Factor (PF)	0.99
Communication Interface	LAN/RS232/RS485/CAN
Communication Response Time	5ms
AC Input	Single phase, please refer to the voltage mark at the rear panel
Temperature	Operating temperature: 0℃-40℃, storage temperature: -10℃~70℃
Operating Environment	Altitude <2000m, relative humidity: 5%-90%RH(non-condensing), atmospheric pressure: 80-110kPa
Dimension（mm）	88.0mm(H)*214.0mm(W)*483.5mm(D)(with output shield)

Model: N36304-80-25

Model		N36304-80-25
Rated	Voltage	0~80V
	Current	0~25A
	Power	400W
Channels		1CH
CV Mode		
Range		0~80V
Resolution		10mV
Accuracy (23±5℃)		≤0.03%+0.02%F.S.
Voltage Ripple (20Hz~20MHz)		$\leq 10mV_{rms}$
		$\leq 50mV_{p-p}$
CC Mode		
Range		0~25A
Resolution		1mA
Setting Accuracy (23±5℃)		≤0.1%+0.1%F.S.
Current Ripple (20Hz~20MHz)		$\leq 30mA_{rms}$
CP Mode		
Range		400W
Resolution		0.1W
Setting Accuracy (23±5℃)		0.5%F.S.
Voltage Measurement		
Range		0~80V
Resolution		10mV
Setting Accuracy (23±5℃)		≤0.03%+0.02%F.S.
Current Measurement		
Range		0~25A
Resolution		1mA
Setting Accuracy (23±5℃)		≤0.1%+0.1%F.S.
Line Regulation		
Voltage		＜0.02%F.S.
Current		＜0.05%F.S.
Load Regulation		
Voltage		＜0.03%F.S.
Current		＜0.05%F.S.
Dynamic Characteristics		
Voltage Rise Time (no load)		≤10ms

(full load)	≤10ms
Voltage Fall Time (no load)	≤25ms
Voltage Fall Time (full load)	≤10ms
Current Rise Time (no load)	≤10ms
Current Rise Time (full load)	≤10ms
Current Fall Time (no load)	≤10ms
Current Fall Time (full load)	≤10ms
Transient Recovery Time	Output voltage recovery to within 0.5% of rated voltage （10%~90%load)≤2ms
Others	
Isolation (Output to ground)	500V DC
Max. Efficiency (100%U_{DC})	89%
Power Factor (PF)	0.97
Communication Interface	LAN/RS232/RS485/CAN
Communication Response Time	≤5ms
AC Input	Single phase, please refer to the voltage mark at the rear panel
Temperature	Operating temperature: 0℃-40℃, storage temperature: -10℃~70℃
Operating Environment	Altitude <2000m, relative humidity: 5%-90%RH(non-condensing), atmospheric pressure: 80-110kPa
Dimension（mm）	88.0mm(H)*214.0mm(W)*413.5mm(D)（(with output shield)）

Model: N36309-40-50

Model		N36309-40-50
Rated	Voltage	0~40V
	Current	0~50A
	Power	900W
Channels		1CH
CV Mode		
Range		0~40V
Resolution		1mV
Accuracy (23±5℃)		≤0.03%+0.02%F.S.
Voltage Ripple (20Hz~20MHz)		≤40mV$_{p-p}$
CC Mode		
Range		0~50A
Resolution		1mA
Setting Accuracy (23±5℃)		≤0.1%+0.1%F.S.
Current Ripple (20Hz~20MHz)		50mA$_{rms}$
CP Mode		
Range		900W
Resolution		0.1W
Setting Accuracy (23±5℃)		0.5%F.S.
Voltage Measurement		
Range		0~40V
Resolution		1mV
Setting Accuracy (23±5℃)		≤0.03%+0.02%F.S.
Current Measurement		
Range		0~50A
Resolution		1mA
Setting Accuracy (23±5℃)		≤0.1%+0.1%F.S.
Line Regulation		
Voltage		＜0.02%F.S.
Current		＜0.05%F.S.
Load Regulation		
Voltage		＜0.03%F.S.

Dynamic Characteristics	
Voltage Rise Time (no load)	≤10ms
Voltage Rise Time (full load)	≤10ms
Voltage Fall Time (no load)	≤25ms
Voltage Fall Time (full load)	≤10ms
Transient Recovery Time	Output voltage recovery to within 0.5% of rated voltage （10%~90%load)≤1ms
Others	
Isolation (Output to ground)	500V DC
Max. Efficiency (100%U_{DC}）	91%
Power Factor (PF)	0.99
Communication Interface	LAN/RS232/RS485/CAN
Communication Response Time	5ms
AC Input	Single phase, please refer to the voltage mark at the rear panel
Temperature	Operating temperature: 0℃-40℃, storage temperature: -10℃~70℃
Operating Environment	Altitude <2000m, relative humidity: 5%-90%RH(non-condensing), atmospheric pressure: 80-110kPa
Dimension（mm）	88.0mm(H)*214.0mm(W)*413.5mm(D)(with output shield)
Net Weight	Approx.5kg

Note 1: For other specifications, please contact NGI.
Note 2: All specifications are subject to change without notice.

Cooperation
ET System electronic and NGI

Driving innovation, quality, and service – together

With over 30 years of experience in developing and manufacturing AC/DC power supplies, electronic loads, and battery simulators, ET System is a well-established provider of high-performance power solutions in Germany. Through our strategic partnership with Next Generation Instrumental (NGI) – a leading manufacturer with over 18 years of expertise in DC loads, bidirectional power supplies, and battery cell simulators – we are combining our strengths to offer an even broader and more powerful product portfolio.

This partnership enables:

- Centralized service and technical support in Germany for all NGI cooperation products
- Direct personal contact – from your initial inquiry to after-sales service, via our local team
- Demo equipment stock in Germany – ensuring quick availability for evaluation across Europe
- Local spare parts and selected device inventory – for fast response in service and urgent needs
- Premium quality and reliability from a single source – thanks to seamless integration of NGI products into ET System solutions

Our customers benefit from a unique combination of local engineering expertise, tailored system integration, and a comprehensive product offering – all from one trusted source.

Please note: Our existing product lines will continue to be manufactured in Germany and remain fully available without change.

From initial consultation to system implementation and ongoing support, our headquarters in Altlußheim (Germany) serves as the central competence center for both our own technologies and the entire NGI portfolio throughout Europe.

Need assistance or have any questions?

We're here to help – contact us.

Call us at:
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Fri.: 8 AM to 3 PM