Triple-Channel DC Power Supply

IT-N6300 Series User Manual

Model: IT-N6300 Series
Version: V1.5

Notices

Manual Part Number

IT-N6300

Revision

1st Edition: Feb. 28th, 2026

Itech Electronic, Co., Ltd.

Trademarks

Pentium is U.S. registered trademarks of Intel Corporation.

Microsoft, Visual Studio, Windows and MS Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries and regions.

Warranty

The materials contained in this document are provided “as is”, and is subject to change, without prior notice, in future editions. Further, to the maximum extent permitted by applicable laws, ITECH disclaims all warrants, either express or implied, with regard to this manual and any information contained herein, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. ITECH shall not be held liable for errors or for incidental or indirect damages in connection with the furnishing, use or application of this document or of any information contained herein. Should ITECH and the user enter into a separate written agreement with warranty terms covering the materials in this document that conflict with these terms, the warranty terms in the separate agreement shall prevail.

Technology Licenses

The hardware and/or software described herein are furnished under a license and may be used or copied only in accordance with the terms of such license.

Restricted Rights Legend

Restricted permissions of the U.S. government. Permissions for software and technical data which are authorized to the U.S. Government only include those for custom provision to end users ITECH provides this customary commercial license in software and technical data pursuant to FAR 12.211 (Technical Data) and 12.212 (Computer Software) and, for the Department of Defense, DFARS 252.227-7015 (Technical Data – Commercial Items) and DFARS 227.7202-3 (Rights in Commercial Computer Software or Computer Software Documentation).

Safety Notices

CAUTION

A CAUTION sign denotes a hazard.
It calls attention to an operating procedure or practice that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION sign until the indicated conditions are fully understood and met.

WARNING

A WARNING sign denotes a hazard. It calls attention to an operating procedure or practice that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING sign until the indicated conditions are fully understood and met.

NOTE

A NOTE sign denotes important hint. It calls attention to tips or supplementary information that is essential for users to refer to.

Quality Certification and Assurance

We certify that the device meets all the published specifications.

Warranty

ITECH warrants that the product will be free from defects in material and workmanship under normal use for a period of one (1) year from the date of delivery (except those described in the Limitation of Warranty below).
For warranty service or repair, the product must be returned to a service center designated by ITECH.

Note

Visit https://www.itechate.com/en/support/register.html to complete product registration by filling out the necessary information to extend the warranty to two (2) years.

- The product returned to ITECH for warranty service must be shipped PREPAID. And ITECH will pay for return of the product to customer.
- If the product is returned to ITECH for warranty service from overseas, all the freights, duties and other taxes shall be on the account of customer.

Limitation of Warranty

This Warranty will be rendered invalid if the product is:

- Damage caused by circuit installed by customer or using customer own products or accessories;
- Modified or repaired by customer without authorization;
- Damage caused by circuit installed by customer or not operating our products under designated environment;
- The product model or serial number is modified, deleted, removed or illegible;
- Damaged as a result of accidents, including but not limited to lightning, moisture, fire, improper use or negligence.

Safety Symbols

⎓	Direct current	▮	ON (power on)
∼	Alternating current	○	OFF (power off)
⎓ ∼	Both direct and alternating current	⎍	Power-on state
⏚	Protective conductor terminal	⎕	Power-off state
⏚	Earth (ground) terminal	⊥	Reference terminal

	Caution, risk of electric shock	+	Positive terminal
	Warning, risk of danger (refer to this manual for specific Warning or Caution information)	−	Negative terminal
	Frame or chassis terminal	-	-

Safety Precautions

The following safety precautions must be observed during all phases of operation of this instrument. Failure to comply with these precautions or specific warnings elsewhere in this manual will constitute a default under safety standards of design, manufacture and intended use of the instrument. ITECH assumes no liability for the customer's failure to comply with these precautions.

WARNING

- Do not use the instrument if it is damaged. Before operation, check the casing to see whether it cracks. Do not operate the instrument in the presence of inflammable gasses, vapors or dusts.
- The instrument is provided with power cord during delivery and should be connected to the distribution box. Before operation, be sure that the instrument is well grounded.
- Make sure to use the power cord supplied by ITECH.
- Check all marks on the instrument before connecting the instrument to power supply.
- Use electric wires of appropriate load. All loading wires should be capable of bearing maximum short-circuit of electronic load without overheating. If there are multiple loads, each pair of the load power cord must be carry out the full rated short-circuit output current of the power securely.
- Ensure the voltage fluctuation of mains supply is less than 10% of the working voltage range in order to reduce risks of fire and electric shock.
- Do not install alternative parts on the instrument or perform any unauthorized modification.
- Do not use the instrument if the detachable cover is removed or loose.
- To prevent the possibility of accidental injuries, be sure to use the power adapter supplied by the manufacturer only.
- We do not accept responsibility for any direct or indirect financial damage or loss of profit that might occur when using the instrument.
- This instrument is used for industrial purposes. Do not apply this product to IT power supply system.
- Never use the instrument with a life-support system or any other equipment subject to safety requirements.

CAUTION

- Failure to use the instrument as directed by the manufacturer may render its protective features void.
- Always clean the casing with a dry cloth. Do not clean the internals.
- Make sure the vent hole is always unblocked.

Environmental Conditions

The instrument is designed for indoor use and an area with low condensation. The table below shows the general environmental requirements for the instrument.

Environmental Conditions	Requirements
Operating temperature	0°C to 40°C
Operating humidity	20%-80% (non-condensation)
Storage temperature	-10°C to 70 °C
Altitude	Operating up to 2,000 meters
Pollution degree	Pollution degree 2
Installation category	II

NOTE

To make accurate measurements, allow the instrument to warm up for 30 min before operation.

Regulatory Markings

CE	The CE tag shows that the product complies with the provisions of all relevant European laws (if the year is shown, it indicates that the year when the design is approved).
UKCA	The UKCA tag shows that the product complies with the provisions of all relevant United Kingdom laws (if the year is shown, it indicates that the year when the design is approved).
	This instrument complies with the WEEE directive (2002/96/EC) tag requirements. This attached product tag shows that the electrical/electronic product cannot be discarded in household waste.

	This symbol indicates that no danger will happen or toxic substances will not leak or cause damage in normal use within the specified period. The service life of the product is 10 years. The product can be used safely within the environmental protection period; otherwise, the product should be put into the recycling system.

Waste Electrical and Electronic Equipment (WEEE) Directive

2002/96/EC Waste Electrical and Electronic Equipment (WEEE) Directive

This product complies with the WEEE Directive (2002/96/EC) marking requirement. This affix product label indicates that you must not discard the electrical/electronic product in domestic household waste.

Product Category

With reference to the equipment classifications described in the Annex I of the WEEE Directive, this instrument is classified as a “Monitoring and Control Instrument” product.

To return this unwanted instrument, contact your nearest ITECH office.

Compliance Information

Complies with the essential requirements of the following applicable European Directives, and carries the CE marking accordingly:

- Electromagnetic Compatibility (EMC) Directive 2014/30/EU
- Low-Voltage Directive (Safety) 2014/35/EU

Conforms with the following product standards:

EMC Standard

IEC 61326-1 / EN 61326-1 [1][2][3]
Reference Standards
CISPR 11, Class A
IEC 61000-3-2
IEC 61000-3-3
IEC 61000-4-2
IEC 61000-4-3
IEC 61000-4-4
IEC 61000-4-5
IEC 61000-4-6
IEC 61000-4-11

1. The product is intended for use in non-residential/non-domestic environments. Use of the product in residential/domestic environments may cause electromagnetic interference.
2. Connection of the instrument to a test object may produce radiations beyond the specified limit.
3. Use high-performance shielded interface cable to ensure conformity with the EMC standards listed above.

Safety Standard

IEC 61010-1:2010+A1:2016

Note

This section provides general and universal terms. For more detailed information on the Declaration of Conformity, please contact ITECH personnel.

Content

Chapter 1 Inspection and Installation

Power supply is a high level safety equipment, there is a protected ground terminal. Before Installation or operation, please read the safety signs and instructions in this manual.

1.1 Confirm package contents

Unpack the box and check the contents before operating the instrument. If wrong items have been delivered, if items are missing, or if there is a defect with the appearance of the items, please contact the ITECH authorized dealer or after-sales service department immediately.

The package contents include:

Device name	Quantity	Model	Remarks
Power supply	x1	IT-N6300 Series	-
Power Cord	x1	IT-E171/ IT-E172/ IT-E173/ IT-E174	Power cords equipped with different types of plugs are provided according to the region. For detailed specifications, refer to 1.5 Connecting the Power Cord.
USB communication cable	x1	-	Used to enable remote operation via the USB interface.
Calibration Certificate	x1	-	It is the calibration certificate of the instrument before delivery.

NOTE

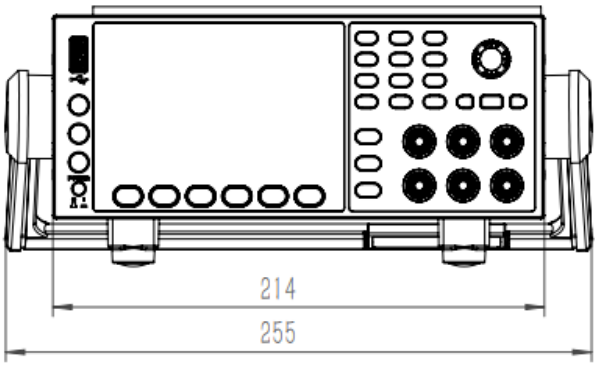
After confirming that package contents are consistent and correct, please appropriately keep package box and related contents. The package requirements should be met when the instrument is returned to factory for repair.

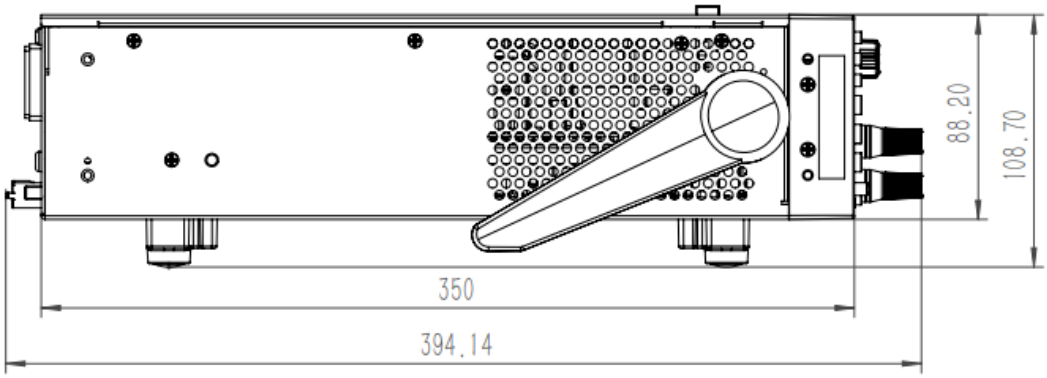
1.2 Installation Position

The instrument should be installed at well-ventilated and rational-sized space. Please select appropriate space for installation based on the power supply size. Unit: millimeter (mm)

IT-N6322A / IT-N6322B / IT-N6332A / IT-N6332B / IT-N6333A / IT-N6333B / IT-N6323A / IT-N6323B

Detailed Dimension Drawing

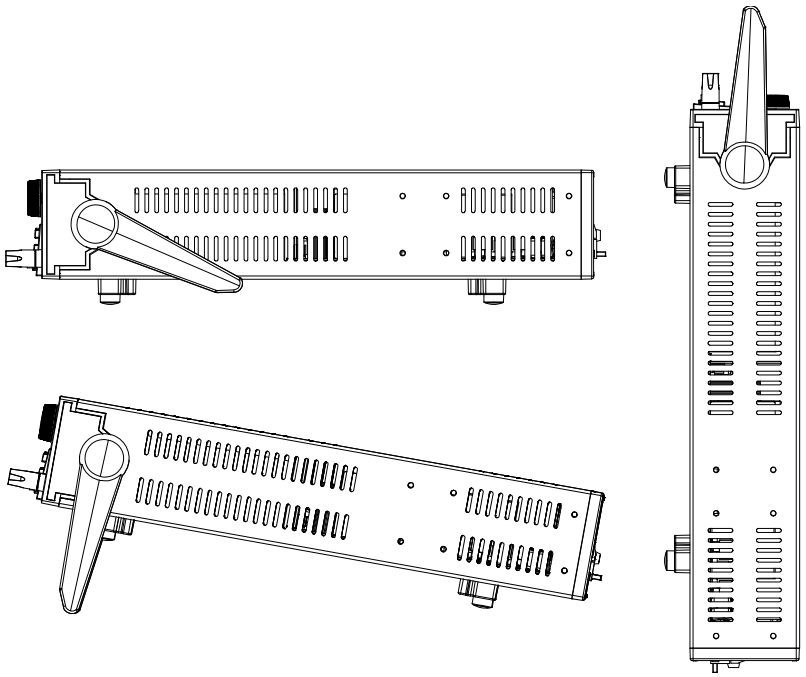




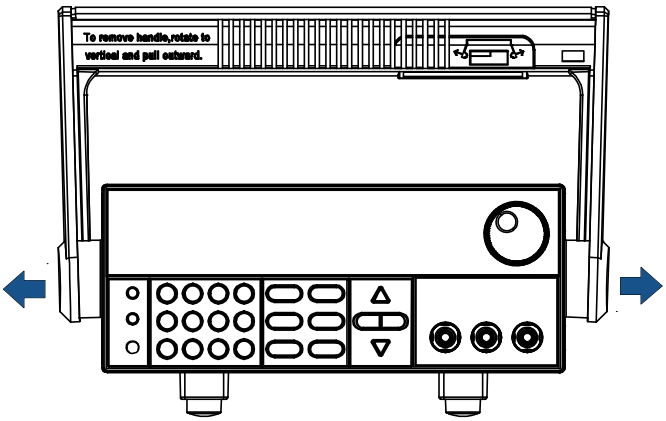
1.3 Adjustment of Power Handle

The power handle can be adjusted to three common state positions as shown in the figure below. Note that when adjusting the handle, it should be adjusted to the corresponding position with moderate force.

Note: The following picture is used to demonstrate the position of the handle, the actual appearance should be subject to the actual product.



If the handle is not required, the handle can be removed, the method of removal is:
Adjust the handle to the position as shown in the figure below, and then pull it to the sides with both hands.



Note

When installing and removing the power handle, don't use too much force to avoid pinching your hand.

1.4 Mounting Racks

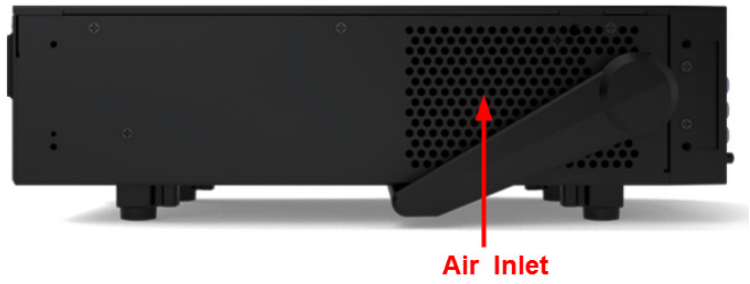
IT-N6300 series power supplies can be installed on standard 19-inch brackets. ITECH has prepared the **IT-E158B** (for mounting two units on a rack) and **IT-E158D** (for mounting a single unit on a rack) brackets as mounting kits for users. Users can select the IT-E158 manual for installation reference.

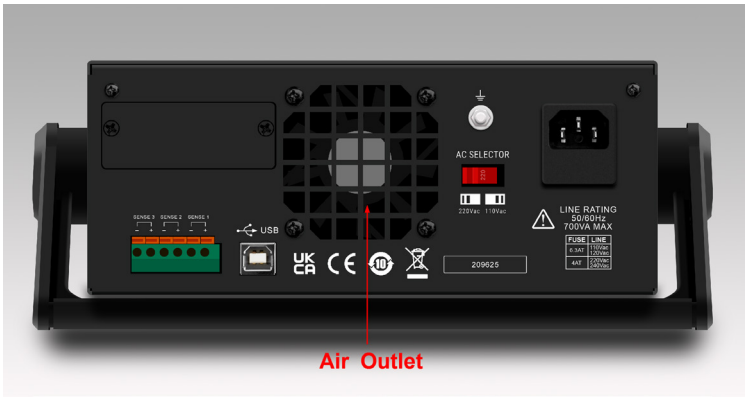
Before installing the IT-N6300 series power supply on the rack, please remove the handle and feet of the instrument.

If there is a rubber sleeve, please remove it as well.

WARNING

Do not block the intake vents on the side of the instrument, and the exhaust vents on the rear panel.





Remove the Handle

1. Grasp the edge of the handle and pull it outward. This will rotate it.
2. Turn the handle to the vertical position and lower the instrument horizontally.
3. Pull the handle outwards, then lift up.

CAUTION

To replace the handle, pay attention to its orientation. It will be damaged if placed in the wrong direction

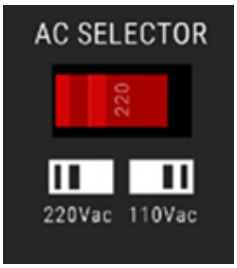
1.5 Connecting the Power Cord

Connect power cord of standard accessories and ensure that the power supply is under normal power supply.

AC Power Input Level

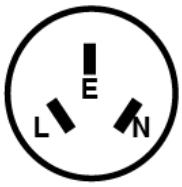
The AC input on the rear of the instrument is a general AC input. It accepts nominal line voltages in the range of 110VAC±10% or 220VAC±10%. 50 Hz or 60 Hz required.

Note: The instrument's rear panel includes a 110VAC / 220VAC switch. Please ensure the position of this switch matches the AC input voltage. As shown in the picture below, it is presently set for 220VAC input.



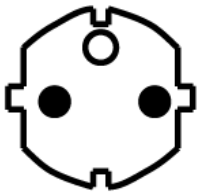
Categories of Power Cables

Select from the flowing schedule of power cord specifications an appropriate power cord that matches the voltage for the area in which you use the instrument. If the power cord included in the instrument you purchased doesn't match the outlet, contact the dealer or manufacturer for change.



China
IT-E171

United States & Canada & Japan
IT-E172



Europe
IT-E173

England
IT-E174

1.6 Connecting the DUT

WARNING

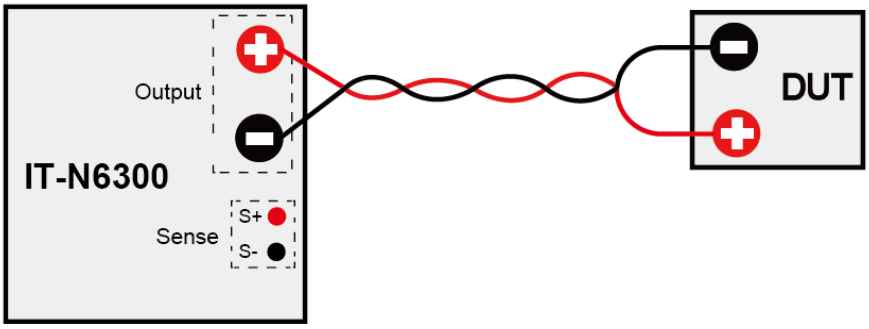
- **Before connecting DUT, be sure to switch off the instrument.**
- **If the DUT is a battery, do not short-circuit the battery. Shorted battery can cause serious injury.**
- **It is recommended to connect a fuse in series between the power supply and the battery when testing the battery to prevent short circuit caused by any case.**
- **Before connecting the test cables, please confirm the maximum current that the test cables can withstand.**

- **During wiring, check that the anode and cathode of the test cables are properly and tightly connected; anode ON and cathode OFF are prohibited.**
- **If the object to be tested is a battery, when wiring, please take measures to prevent reverse connection of the battery and prevent sparks.**
- **Ensure that the output terminals are either insulated or covered using, the safety covers provided, so that no accidental contact with lethal voltages can occur.**
- **Dangerous voltages may be present on the output terminals from external energy sources such as batteries. The external energy source must be disconnected before touching the output or sense terminals.**

Local Measurement

The instrument is local output by default, that is, the **Menu > Config > Sense > Remote Sense** function is **Off**.

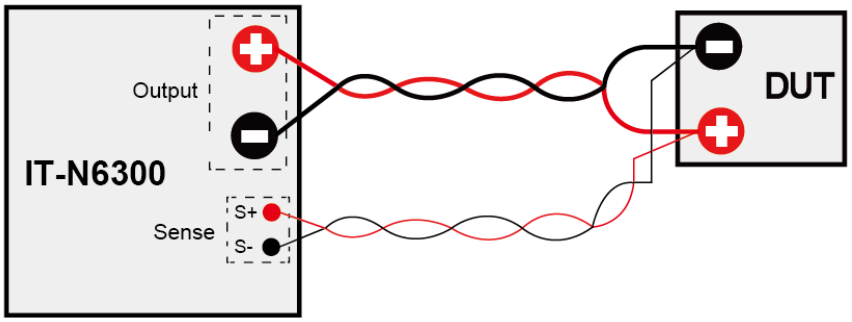
Taking CH1 as an example, use local measurement and connect the DUT as shown in the figure below.
It is recommended to twist the red and black test leads.



Remote Measurement Function (Sense)

Menu > Config > Sense > Remote Sense is set to **On** to indicate that the remote measurement function is enabled, and connect the DUT as shown in the figure below, taking CH1 as an example.

For the Sense terminal, use shielded twisted pair cables for connections; for the output terminal, it is recommended to twist the red and black test leads together.



NOTE

To ensure the stability of the system, use shielded twisted-pair cables between the remote sense terminals and the DUT. Pay attention to the positive and negative poles when wiring, otherwise it will damage the instrument. When the remote measurement function is turned on, don't leave the sense terminal unconnected.

1.7 Options Introduction

Note

The following optional accessories are sold separately, and users need to purchase them separately according to their needs.

- Rack Mounting Kits

  IT-N6300 series power supplies can be installed on standard 19-inch brackets. ITECH has prepared the **IT-E158B** (for mounting two units on a rack) and **IT-E158D** (for mounting a single unit on a rack) brackets as mounting kits for users. Users can select the IT-E158 manual for installation reference.

- Rubber Shock Absorber

  The IT-N6300A series models can be optionally equipped with the IT-E252 rubber shock absorber to protect the instrument casing.

  The IT-E252 is standard equipment for the IT-N6300B series models.

Chapter 2 Quick Reference

This chapter briefly introduces the front panel, rear panel, keyboard key functions and screen display functions of the IT-N6300 series power supply, so as to ensure that you can quickly understand the appearance, structure and key functions of the power supply before operating the power supply, so as to help you make better use of this series of power supplies.

2.1 Brief Introduction

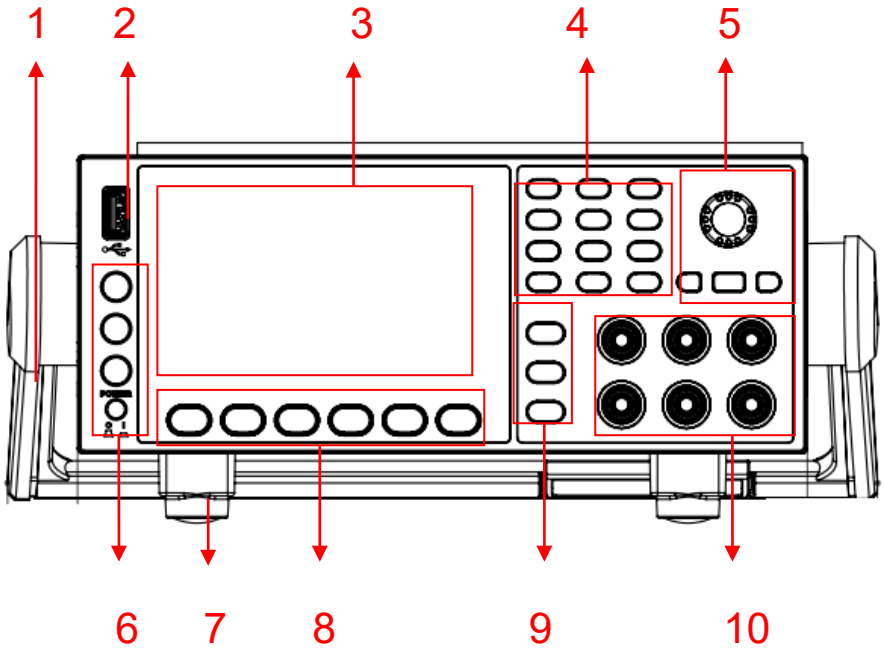
The IT-N6300 Series is a high-performance triple-output DC power supply from ITECH, housed in a compact 2U half-rack chassis. Each channel operates independently, with series/parallel and synchronization capabilities for versatile testing needs. A 4.3-inch high-resolution LCD offers intuitive control for parameter setting, test programming, and waveform monitoring. High-resolution output ensures precise voltage and current delivery.

With low ripple, CC/CV priority modes, and FOLDBACK protection, the IT-N6300 ensures stable and safe operation. Flexible control options, including panel and remote programming, simplify system integration. Ideal for labs, manufacturing, and communications testing, the IT-N6300 combines precision, reliability, and efficiency for advanced power management.

Model	CH1 and CH2	CH3	Interface	Rubber Shock Absorber
IT-N6322A	0 to 32V/0 to 6A/0 to 100W	0 to 9V/0 to 5A/0 to 45W	USB	Optional IT-E252
IT-N6322B	0 to 32V/0 to 6A/0 to 100W	0 to 15V/0 to 5A/0 to 45W	USB/LAN/ Digital IO/ RS232	Standard
IT-N6332A	0 to 32V/0 to 10A/0 to 200W	0 to 9V/0 to 5A/0 to 45W	USB	Optional IT-E252
IT-N6332B	0 to 32V/0 to 10A/0 to 200W	0 to 15V/0 to 5A/0 to 45W	USB/LAN/ Digital IO/ RS232	Standard
IT-N6333A	0 to 60V/0 to 5A/0 to 200W	0 to 9V/0 to 5A/0 to 45W	USB	Optional IT-E252
IT-N6333B	0 to 60V/0 to 5A/0 to 200W	0 to 15V/0 to 5A/0 to 45W	USB/LAN/ Digital IO/ RS232	Standard
IT-N6323A	0 to 60V/0 to 3A/0 to 100W	0 to 9V/0 to 5A/0 to 45W	USB	Optional IT-E252
IT-N6323B	0 to 60V/0 to 3A/0 to 100W	0 to 15V/0 to 5A/0 to 45W	USB/LAN/ Digital IO/ RS232	Standard

2.2 Front-Panel Overview

The front panel of IT-N6300 is introduced as follows.



1. Handle (removable)
2. USB port for inserting drives, which supports screenshot capture, data logging, and importing or exporting List files

   Note: The USB drive only supports the FAT32 file system and does not support NTFS.
3. 4.3” LCD high-definition screen
4. Numeric keypad (includes combination-function) and **[ESC]** key
5. Pressable knob, left and right cursor keys, Enter key
6. **[Shift]** combination key, **[View]** switch key, **[All On/Off]** key (synchronizes control of 3 channels), and power switch
7. Feet (removable)
8. Function keys corresponding to the bottom menu on the screen (varying with different screen displays)
9. **[On/Off]** output keys for 3 channels independently
10. Output terminals

2.3 Keyboard Introduction

The key descriptions are as follows:

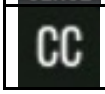
Key name	Function Description
Shift	Compound keys, used in combination with other keys to achieve compound menu settings
View	View switch button. In any interface, pressing the **[View]** button allows switching between the **single-channel Meter** interface, **three-channel Meter** interface, and **Recorder** interface.
All On/Off	Three-channel synchronized On/Off control button.
Power	Power switch button
0-9	Numeric input keys
⊙	Decimal point
Enter	Selects the menu item or confirm an operation.
← →	Moves the cursor below the setting value.
Esc	Cancel/Return key
Shift+1	Menu shortcut keys
Shift+2	System shortcut keys
Shift+3	Config shortcut keys
Shift+4	Protect shortcut keys
Shift+5	Save key
Shift+6	Recall key
Shift+7	Coupling channel combination shortcut key
Shift+8	List shortcut keys
Shift+9	Trig key
Shift+Esc	Local switch key, used to change the power source from remote control mode back to local mode.
Shift+0	Panel lock keys
Shift+⊙	Screen print key, please insert a FAT 32 formatted USB drive before use.
CH1 On/Off CH2 On/Off CH3 On/Off	Single channel output on/off key.

Note:

In this document, the combination keys **A+B** indicates pressing the **A** key first, and then followed by the **B** key, rather than pressing both keys simultaneously.

2.4 Status Bar Indicator Description

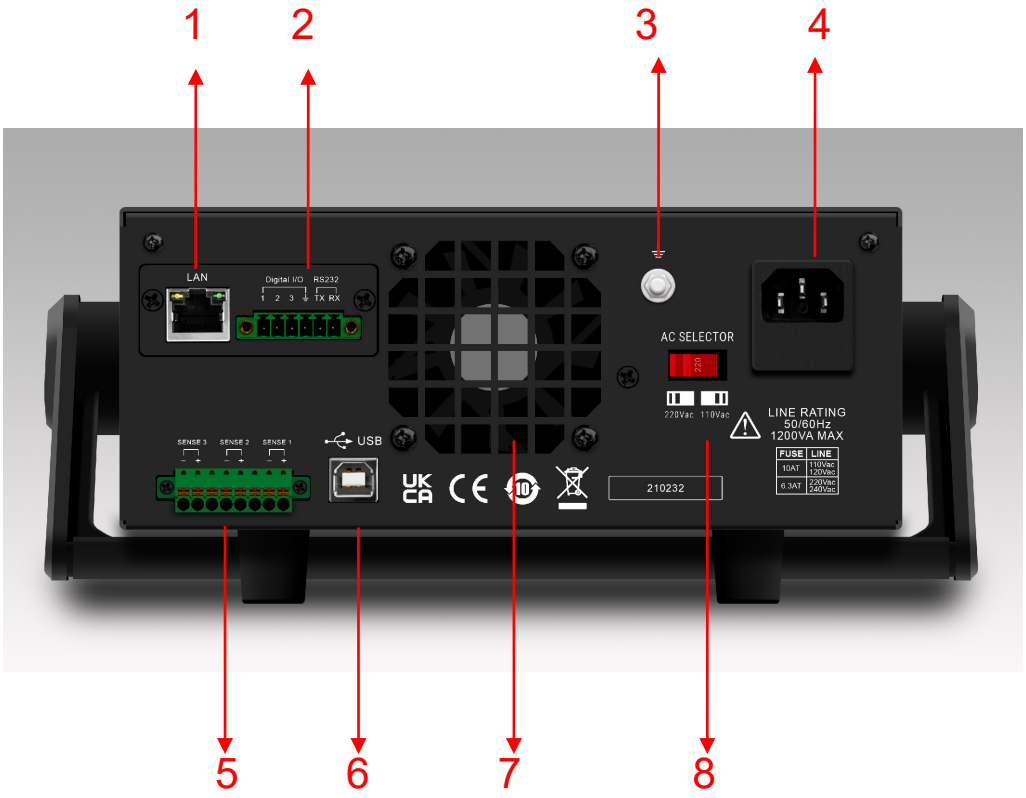
Status bar indicator and descriptions are as follows:

Indicator	Description	Indicator	Description
	U disk inserted		CC status under CV priority.
	Sense remote measurement function enabled		CV status under CC priority
	CC status under CC priority		OVP overvoltage protection

REM	Device in remote control mode	OC	OCP overcurrent protection
UC	UCP undercurrent protection	FOLD	Foldback protection
OTP	OTP overtemperature protection	UV	UVP undervoltage protection
POWER	OPP overpower protection	SENSE	Sense protection
ERROR	Command execution error, general error	OFF	Output off status
CV	CV status under CV priority	INHIBIT	INHIBIT LATCH protection
ERROR	Critical error	INHIBIT	INHIBIT LIVING warning
PS	PS status bit	LOCK	Keyboard lock function enabled

2.5 Rear Panel Introduction

The rear panel of IT-N6300 is introduced as follows.



1. LAN communication interface (**only available in the IT-N6300B series**)
2. Digital I/O and RS232 interface (**only available in the IT-N6300B series**)
3. Ground terminal (test ground)
4. AC power input socket (with fuse)
5. Remote sensing terminals for CH1, CH2, and CH3 (Sense)
6. USB communication interface
7. Ventilation window (exhaust vent)
8. 110VAC / 220VAC switch

2.6 Power-on Selftest

A successful selftest indicates that the purchased power product meets delivery standards and is available for normal usage.

Before operation, please confirm that you have fully understood the safety instructions.

WARNING

- To avoid burning out, be sure to confirm that power voltage matches with supply voltage.
- Be sure to connect the main power socket to the power outlet of protective grounding. Do not use terminal board without protective grounding. Before operation, be sure that the power supply is well grounded.
- To avoid burning out, pay attention to marks of positive and negative polarities before wiring.

Selftest Steps

The normal self-test process of the power supply is as follows:

1. Connect the power cord correctly, press the power button to turn on the power.

   Power supply self-test.

2. After the power supply self-test is completed, the screen displays as below.

Error Information References

The following error information may occur when an error occurs during Power On self-test:

User calibration data error
Factory calibration data error
FLASH self-check failed
System parameter loading failed
Communication parameter loading failed
Network parameter loading failed
Source parameter loading failed
Configuration parameter loading failed
Source protection parameter loading failed
Power loss times loading failed
System parameter setting failure
Source parameter setting failure
Source protection parameter setting failure

When encountering the above error message, it is recommended to perform a factory reset first (**Menu > System > Source > System Reset**). If the error message persists even after the factory reset, please return the device for repair.

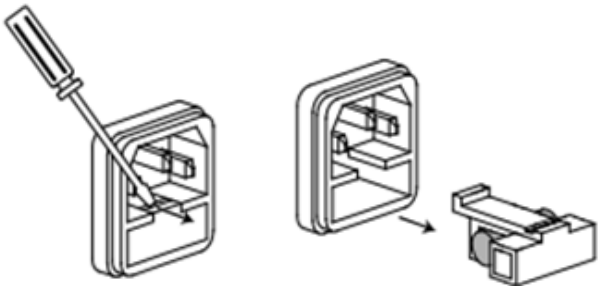
Exception Handling

If the power supply cannot start normally, please check and take measures by reference to steps below.

1. Check whether the power cord is correctly connected and confirm whether the power supply is powered.
   Correct wiring of power cord => **2**
   Incorrect wiring of power cord => Re-connect the power cord and check whether the exception is removed.

2. Check whether the power in On. Power key is under "I" On status.
   Yes => **3**
   No => Please check the Power key to start power and check whether the exception is removed.

3. Check whether the fuse is burned out.
   If yes, change fuse. Detailed steps:
   1) Pull out power cable and take out the fuse box at power cable jack with a small screw driver. As shown below.



   2) If the fuse is fused, replace it with a fuse of the same specification according to the model. **The fuse specifications can be found in the specification section.**

Chapter 3 Function and Features

This chapter will describe the functions and characteristics of the power supply in detail.

3.1 Switching of Local/Remote Operation Modes

The power supply provides two modes of operation, local operation and remote operation. Switching between the two operating modes is possible through communication commands. Power initialization mode defaults to local operation mode.

- Local operation mode: use the buttons on the power supply body to perform related operations.
- Remote operation mode: The power supply is connected to the PC, and the related operations of the power supply are performed on the PC. When the power supply is in remote operation mode, except for the **[Shift] + [Esc] (Local)** keys, other keys on the panel have no effect. It is possible to switch to local operating mode with the **[Shift] + [Esc] (Local)** keys. When the operating mode is changed, the output parameters of the power supply will not be affected.

3.2 Output On/Off Operation

You can control the output switch of the power supply by pressing the On/Off key on the front panel. The On/Off key light is on, indicating that the output is turned on, and the On/Off key light is off, indicating that the output is turned off. When the power is on, the working status sign (CV/CC) on the screen will be lit.

Note

After the power supply is connected to the DUT, press the On/Off key to turn on the output. If the power supply has no output after the output is turned on, please check the voltage and current setting values, please set both the voltage and current to non-zero values, and then turn on the output.

3.3 Power State CC/CV Switching

- In **CV Priority** mode, when the actual output current is lower than the set current limit, the power supply operates in Constant Voltage (CV) mode and indicates the CV status 

. If the output current is limited by the current limit value, the power supply switches to Constant Current (CC) mode and indicates the CC status 

.

- In **CC Priority** mode, when the output current is lower than the set current value, the power supply operates in Constant Voltage (CV) mode and indicates the CV status 

. If the output current reaches the set current value, the power supply switches to Constant Current (CC) mode and indicates the CC status 

.

3.4 Meter Interface

After the power is turned on, the following interface is displayed:

Press the corresponding button at the bottom  of the screen to quickly set the voltage and current values for each channel of the power supply.

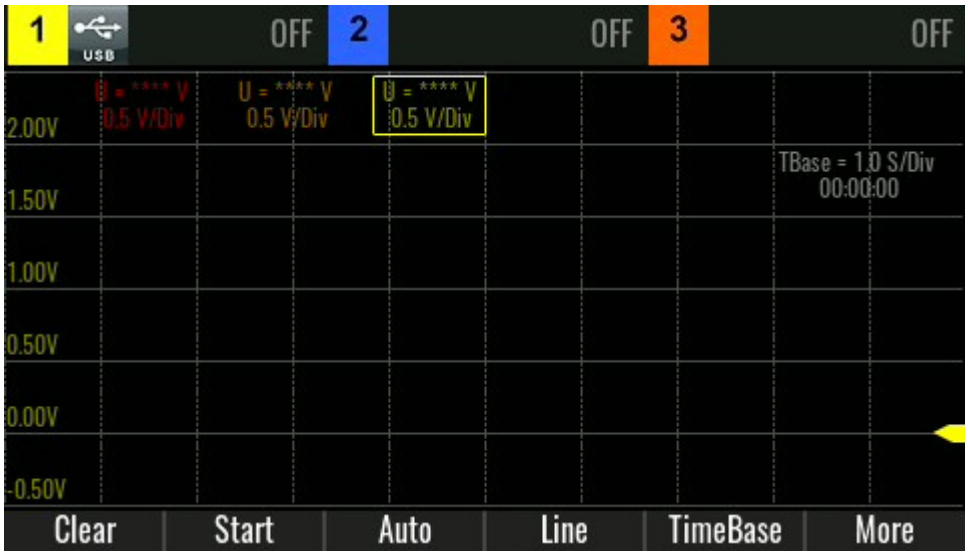
3.5 View Interface

View function implementation:

1. Meter interface and quick setting interface for a single channel

2. Meter interface and quick setting interface for three channels

3. Trend chart analysis monitors the voltage, current, and power curves of the DUT over extended periods of operation. Data from the testing process can be saved in real-time to a USB drive, supporting file formats **.csv** and **.Tdms**.



- **Clear**: Clear the currently recorded data.
- **Start / Stop**: Start or stop curve plotting.
- **Auto**: Automatically adjusts waveform scaling based on actual output voltage, current, or power values, ensuring proper proportions for display.
- **Line**: Toggle the display of specific curves.
- **TimeBase**: Adjust the timebase resolution, i.e., the time represented by each division on the X-axis.
- **More**: Configuration menu for the View function, with parameters explained as follows:
  - **Base**: Configure the attributes of six curves (Line1~Line6). Each curve can be set to represent the Voltage/Current/Power curve of a specified channel, or turned OFF to hide it.
    Available channel options:
    In non-series/parallel mode: OFF/CH1/CH2/CH3.
    In series/parallel mode: OFF/CH1&2/CH3.
  - **Advance**: Set the data acquisition interval. Choose to save real-time data to a USB drive or internal storage. Supported file formats: .csv and .Tdms.
  - **Export**:
    For internal data export: Clicking **Export** saves the data to a USB drive.
    For external data export: Clicking **Export** displays "Start" and "Stop." Clicking **Start** initiates data writing to the USB drive. Clicking **Stop** or removing the USB drive halts data writing.
  - **Return**: Return to the **Recorder** interface.

3.6 System Interface

[Shift] + [2] (System) menu contains the settings for the following functional parameters of the power supply, which are described as follows:

The parameter setting method is as follows:

1. Press the corresponding button at the bottom of the screen to switch to the corresponding page, such as General.
2. In the General interface, turn the knob or press the left/right direction keys to adjust the cursor on the specified parameter.
3. Press **[Enter]** to enter the parameter modification state.
4. Adjust the parameter value by turning the knob or pressing the left/right direction keys.
5. Press **[Enter]** to confirm the modification.

General	Key Sound	OFF	Set no sound when pressing the keyboard
		ON	Make a sound when you press the keyboard
	Knob Immediately	OFF	Setting the pulsation knob adjustment does not take effect immediately, and needs to manually press the **[Enter]** key to take effect. **Note: The Meter and List pages are not affected.**
		ON	Set the pulsation knob adjustment to take effect immediately. **Note: The Meter and List pages are not affected.**
	LCD Brightness		To adjust screen brightness: 10%~100%

	Instructions		Select the type of program-controlled command: Standard or Extended. ● **Standard**: Select the SCPI commands supported by the **IT-N6300 series**. ● **Extended**: Select the SCPI commands supported by the **IT6300A/B/C series** and **IT6302**. **Note**: Commands for **IT6322** are not included.
	Language		Select the interface language: English (default) or Simplified Chinese.
Source	Power-On Setup	Reset	Set the parameters to the system defaults when the power is turned on.
		Last	Set the parameters when the power is turned on to the parameters at the last shutdown, and the output state is the same as the state before shutdown.
		Last+Off	Set the parameters when the power is turned on to the parameters when the power was turned off last time, and the output state is **OFF**.
	Output Coupling	Off	Output synchronization mode off.
		CH1/CH2	CH1 and CH2 output synchronized.
		CH2/CH3	CH2 and CH3 output synchronized.
		CH1/CH3	CH1 and CH3 output synchronized.
		ALL	CH1, CH2, and CH3 output synchronized.
	System Reset	No	Keep the original menu settings unchanged
		Yes	Restore factory defaults
About	Product Model		Instrument model
	SN		Instrument serial number
	Soft Version		Instrument firmware version
	MAC		Instrument MAC address
	Hardware Version		Instrument hardware version
Comm (Displayed only on the IT-N6300B series)	Mode		● Auto: Automatically set IP address and other information ● Manual: Manually set the IP address and other information. After selecting Manual, the following editable setting items will appear. – IP: IP address settings – Mask: Subnet mask setting – Gateway: Gateway address setting
	Baudrate		RS232 communication baud rate settings
	Parity		RS232 communication parity settings, None / Odd / Even
Digital (Displayed only on the IT-N6300B series)	Function		**For detailed information on the functions and polarity settings of the Digital I/O pins, refer to**
	Polarity		

		Section 3.14. Under certain functions, the Digital I/O pins D1/D2/D3 are not associated with channels CH1/CH2/CH3. Under other functions, the pins D1/D2/D3 must be assigned to specific channels CH1/CH2/CH3.

3.7 Config Interface

[Shift] + [3] (Config) interface contains the parameter settings of the following power functions, which are described as follows:

Channel	Select CH1 / CH2 / CH3	
Source	**Priority**	Voltage: CV Priority Current: CC Priority
	Slew Type	**Slope Unit Settings**: • **Time**: Slope unit is seconds. • **Slew Rate**: Depending on the priority selected (Voltage or Current), the slope unit is V/ms or A/ms.
	Slew ↑	**Set the rising slope for voltage/current based on the selected CV/CC priority mode**: • When **Slew Type** is **Time**, the setting range is 0.001~10.000s. • When **Slew Type** is **Slew Rate**, the

		adjustable range varies depending on the model.
	Slew ↓	**Set the falling slope for voltage/current based on the selected CV/CC priority mode**: • When **Slew Type** is **Time**, the setting range is 0.001~10.000s. • When **Slew Type** is **Slew Rate**, the adjustable range varies depending on the model.
	On Delay	Output turn-on delay time. Setting range: 0~10.000, step 0.001. Unit: seconds.
	Off Delay	Output turn-off delay time. Setting range: 0~10.000, step 0.001. Unit: seconds.
Sense	**Measure Speed**	Set loop speed: Fast (1PLC), Medium (5PLC), Slow (10PLC).
	Remote Sense	**Sense switch settings**: • **Off**: Sense switch off. • **On**: Sense switch on.
Timer	**State**	**Output timer settings**: • **Off**: Output timer disabled. • **On**: Output timer enabled.
	Value	Set the timer duration in seconds. Setting range: 1~9999, step 1s.

3.8 List Interface

The List interface provides functions such as custom waveform editing, running, importing/exporting, etc. Details are as follows:

Interface Overview

- Channel: Select the channel
- VSET/ISET: Set voltage/current values
- Open: Select/open a List file

- **Internal**: Select a List file saved in the instrument's internal memory. The save address ranges from 1 to 20, allowing up to 20 files to be stored.
- **USB**: Select a List file stored in the root directory of an external USB drive (USB drive must be inserted into the front panel).

Note:

List files stored in the USB root directory must be in .csv format and conform to the required template. Users can save a List file template to the USB root directory by navigating to **Edit > Save As > USB > Enter**,

making it convenient to edit the .csv file on a computer and re-import the edited .csv file into the instrument for operation.

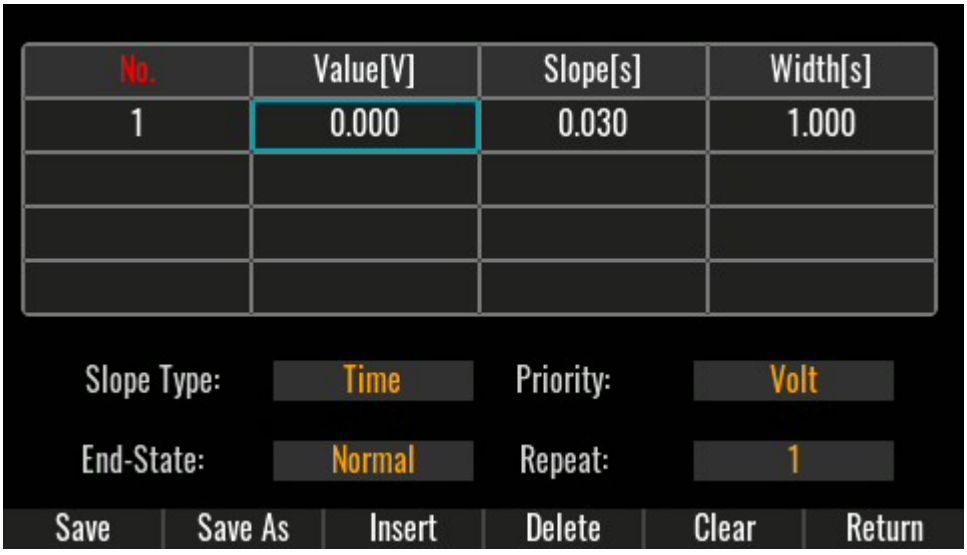
- **Edit**: Edit the List file.
- **TSource**: Set the trigger source.
  - If set to **Manual** (default), the trigger signal is provided by the panel combination keys **[Shift] + [9]** (Trigger).
  - If set to **Bus**, the trigger mode is command-based (***TRG** trigger command).
  - If set to **External** (supported only on the IT-N6300B series), the trigger mode is external signal-based. In this mode, each external signal received by the rear panel Digital I/O terminal triggers a List run.

    External signal definition:

    - The **Function** of Digital IO must be set to **Trigger In**.
    - If the polarity is **Positive**, the List run is triggered by a falling edge signal received by the IO terminal.
    - If the polarity is **Negative**, the List run is triggered by a rising edge signal received by the IO terminal.

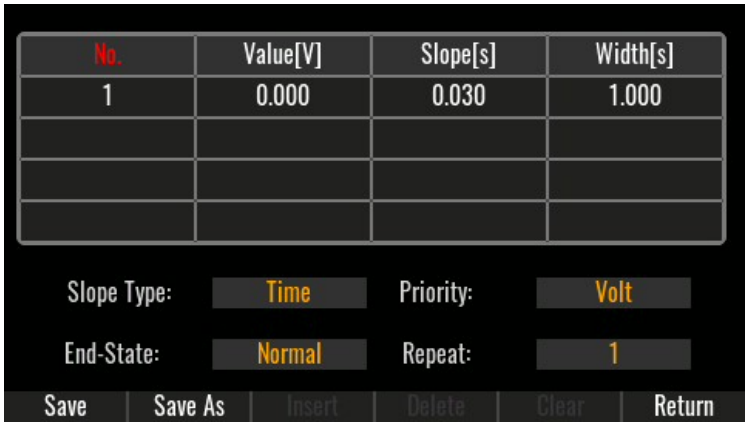
- **Run / Stop**: Start or stop the List run.

Edit List



The method for editing a List file is as follows:

1. After entering the List editing interface, press the **[Esc]** key once to move the cursor (grey box) to the waveform editing area, as shown below.



The **Slope (ramp time)** setting range is **0.001–10 seconds**.

The **Width (step duration)** setting range is **0.001–3600 seconds**.

2. Rotate the knob or press the **left/right arrow keys** to select **Priority** and set it to CC or CV priority.
3. Use the same method to configure the following parameters:

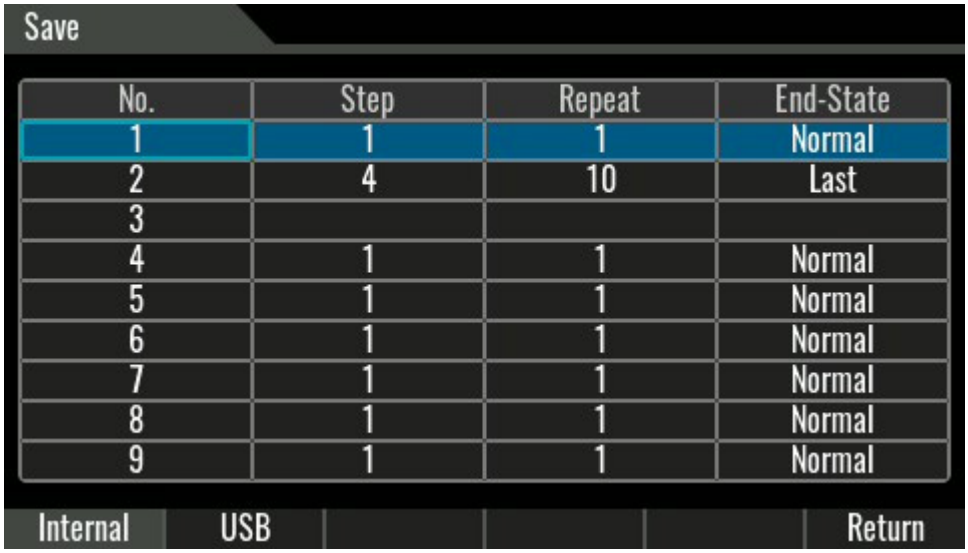
   - **Slope Type**: Unit of the slope.
   - **End-State**: The state after the List run finishes:
     - **Normal**: Returns to the voltage/current settings before the List run, with the output still on.
     - **Last**: Remains at the voltage/current settings of the last step in the List, with the output still on.
     - **Off**: Turns off the output after the run finishes.
   - **Repeat**: Number of List cycles. Setting range: 1~9999.

4. Press the button below **[Insert]** to insert a row of data. The cursor will then move to the waveform editing area.
   Note: Up to 100 rows of data (100 Steps) are supported.

   Other screen button functions:

   - **Delete**: Delete the selected row of data.
   - **Clear**: Clear all data in the List editing area.
   - **Return**: Return to the List main interface.

5. Rotate the knob or press the **left/right arrow keys** to select a parameter for a specific Step. Press **[Enter]** to put the parameter into edit mode.
6. Use the number keys or rotate the knob to set the parameter for the Step. Press **[Enter]** to confirm the modification.
7. After completing the entire List editing, press **[Save As]** to save it either to an internal address in the instrument or to an external USB drive.



Run List

1. In the List main interface, press the **[Open]** key to enter the List file storage area.
2. Rotate the knob to select a previously edited List file and press **[Enter]** to load it.
3. Press the **[Run / Stop]** key to run the selected List file.

   At this point, a trigger-waiting indicator for the List appears at the top of the screen.
4. Turn on **[On/Off]**.
   The instrument will output according to the V-set and I-set configurations in the List main interface.

   Note: If a device under test (DUT) is already connected, ensure that the configured voltage and current values match the actual testing requirements.
5. Trigger the List run according to the configured **TSource**.

3.9 Factory Interface

Factory is the factory menu, in order to facilitate troubleshooting and problem analysis, in case of troubleshooting, please operate under the guidance of ITECH technical support.

3.10 Save/Recall Operation

The power supply can save some commonly used parameters in 4X10 groups of non-volatile memory, which can be easily and quickly taken out by users. You can use the compound keys **[Shift] + [5]** (Save) and **[Shift] + [6]** (Recall) on the front panel, or the Save and Recall functions in the Menu menu, or the SCPI

commands ***SAV**, ***RCL** to achieve save/recall operations

Storage contents include: V-set voltage setting value, I-set current setting value, CC/CV priority, voltage/current rising slope, voltage/current falling slope, and the timer setting.

Save Operation

1. Enter the Save interface through the compound keys **[Shift]** + **[5]** (Save) or through the Menu menu.

2. Press the **All/CH1/CH2/CH3** button  below the screen to select the channel to be saved.

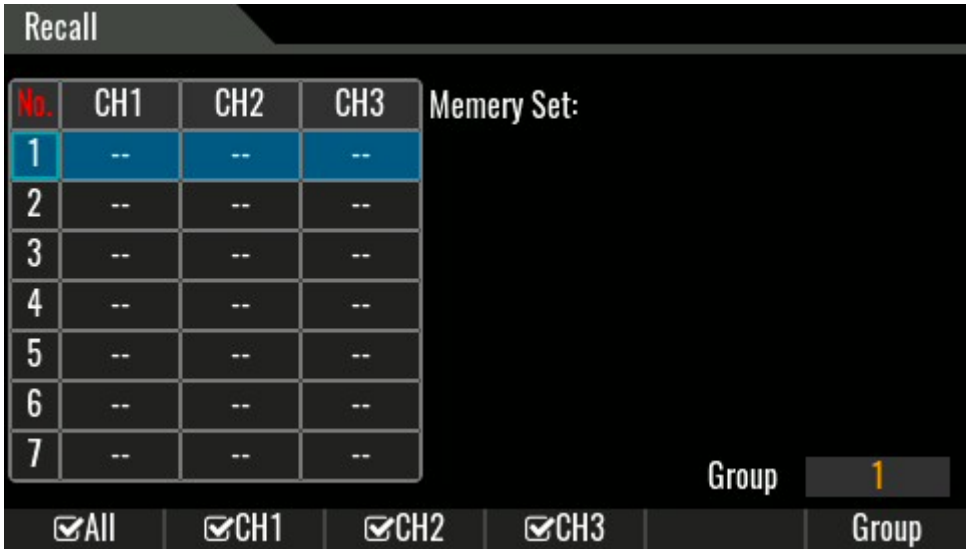
3. Press the button  corresponding to Group at the bottom of the screen and select the saved group name.

4. Press 1~10 number keys or rotate the knob to select the corresponding save address.

5. Press **[Enter]** to store the parameters of power supply in the specified storage area.

Recall Operation

1. Enter the Recall interface through the compound key **[Shift]** + **[6]** (Recall) or through the Menu menu.



2. Press the **All/CH1/CH2/CH3** button below the screen to select the channel to be recalled.

3. Press the button corresponding to Group at the bottom of the screen and select the recalled group name.

4. Press 1~10 number keys or rotate the knob to select the corresponding recall address.

5. Press **[Enter]** to recall the parameters of power supply in the specified storage area.

3.11 Protect Interface

The IT-N6300 series power supply supports comprehensive protection functions. The **[Shift] + [4] (Protect)** interface is introduced as follows:

<table>
<tr><td>CH1 Limit
CH2 Limit
CH3 Limit</td><td colspan="3">Set the voltage and current limits for a specific channel to prevent misconfiguration of output voltage and current on any interface.

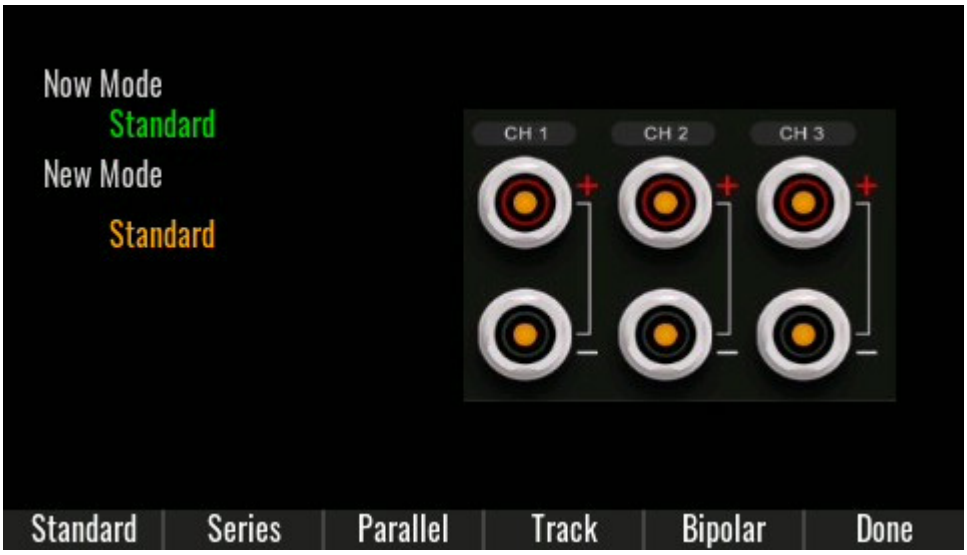
• Max Voltage: Voltage limit
• Max Current: Current limit
• Max Power: Power limit, which effectively restricts the I-SET current value.</td></tr>
<tr><td rowspan="12">Voltage</td><td colspan="3">Sets the overvoltage or undervoltage protection</td></tr>
<tr><td>OVP</td><td colspan="2">Over voltage protection function</td></tr>
<tr><td rowspan="4"></td><td>Off</td><td>Disable OVP function (Def)</td></tr>
<tr><td>On</td><td>Enable the OVP function</td></tr>
<tr><td>Value</td><td>OVP value</td></tr>
<tr><td>Delay</td><td>Delay time of protection.
Setting range: 0.000~10S, step 0.001S, default 10S.</td></tr>
<tr><td>UVP</td><td colspan="2">Undervoltage protection function</td></tr>
<tr><td rowspan="5"></td><td>Off</td><td>Disable UVP function (Def)</td></tr>
<tr><td>On</td><td>Enable UVP function</td></tr>
<tr><td>Warm</td><td>The instrument warm-up time, which is set to prevent the voltage from reaching the protection value during the rising process and triggering the protection state. Because this transient condition should not be regarded as an undervoltage fault, and there is no need to trigger the protection mechanism. Setting range: 0.00~30S, step 0.01S, default 30S</td></tr>
<tr><td>Value</td><td>UVP value</td></tr>
<tr><td>Delay</td><td>Delay time of protection.
Setting range: 0.000~10S, step 0.001S, default 10S.</td></tr>
<tr><td rowspan="6">Current</td><td colspan="3">Set the current overcurrent or undercurrent protection.</td></tr>
<tr><td>OCP</td><td colspan="2">OCP</td></tr>
<tr><td rowspan="4"></td><td>Off</td><td>Disable OCP function (Def)</td></tr>
<tr><td>On</td><td>Enable OCP function</td></tr>
<tr><td>Value</td><td>OCP value</td></tr>
<tr><td>Delay</td><td>Delay time of protection.
Setting range: 0.000~10S, step</td></tr>
</table>

			0.001S, default 10S.	
	UCP	Undercurrent protection function		
		Off	Disable the UCP function (Def)	
		On	Enable the UCP function	
		Warm	The instrument warm-up time, which is set to prevent the current from reaching the protection value during the rising process and triggering the protection state. Because this transient condition should not be considered an undercurrent fault, and there is no need to trigger the protection mechanism. Setting range: 0.00~30S, step 0.01S, default 30S	
		Value	UCP value	
		Delay	Delay time of protection. Setting range: 0.000~10S, step 0.001S, default 10S.	
Power	OPP	Over power protection function		
		Off	Disable the OPP function (Def)	
		On	Enable the OPP function	
			Value	OPP value
			Delay	Delay time of protection. Setting range: 0.000~10S, step 0.001S, default 10S.
Other	Fold Back	Foldback protection function. Default is Off. ● If CC is selected, it means that when the operating mode of the instrument is switched from CV mode to CC mode, the instrument triggers the protection and the output is OFF. After selecting CC, you also need to set the protection delay time. Setting range: 0.000~10, step 0.001S, default 0S. ● If CV is selected, it means that when the operation mode of the instrument is switched from CC mode to CV mode, the instrument triggers the protection and the output is OFF. After selecting CV, it is also necessary to set the protection delay time. Setting range: 0.000~10S, step 0.001S, default 0S. ● Select Off to disable the foldback protection function.		

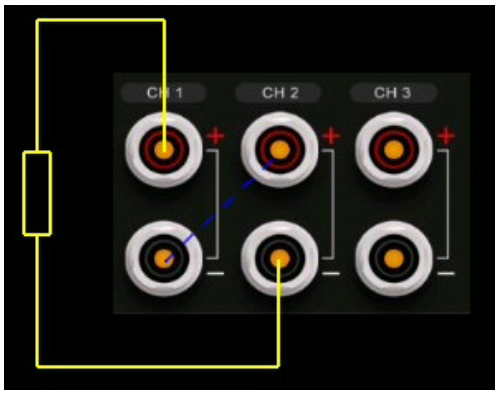
3.12 Coupling Interface

This series supports the following modes for channel combination output.

Done: After modifying the channel combination mode, you must click "Done" for the changes to take effect.



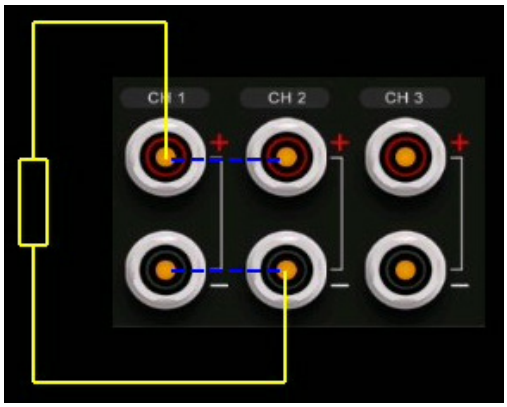
- **Standard**: Standard 3-channel independent output mode.
- **Series**: CH1 and CH2 series mode output. In addition to modifying the mode settings here, a physical connection between CH1 and CH2 must be established when connecting the device under test. Please refer to the diagram for proper wiring.



(Blue dashed lines indicate optional connections. The Sense cables connect **CHS1+** and **CHS2-** to **DUT+** and **DUT-** respectively.)

Note: In series mode, the "Voltage," "Power," and "Other" configuration items in the Protect menu cannot be set and will be forcibly disabled, turning off these protection settings.

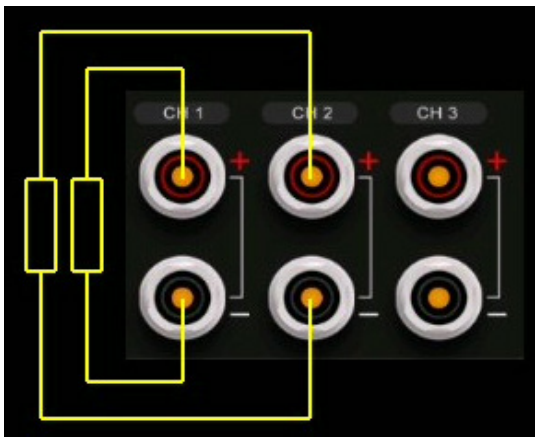
- **Parallel**: CH1 and CH2 parallel mode output. In addition to modifying the mode settings here, a physical connection between CH1 and CH2 must be established when connecting the device under test. Please refer to the diagram for proper wiring.



(Blue dashed lines indicate optional connections. The Sense cables connect **CHS1+** and **CHS2-** to **DUT+** and **DUT-** respectively.)

Note: In parallel mode, the "Current," "Power," and "Other" configuration items in the Protect menu cannot be set and will be forcibly disabled, turning off these protection settings.

- **Track:** CH1 and CH2 tracking output mode.

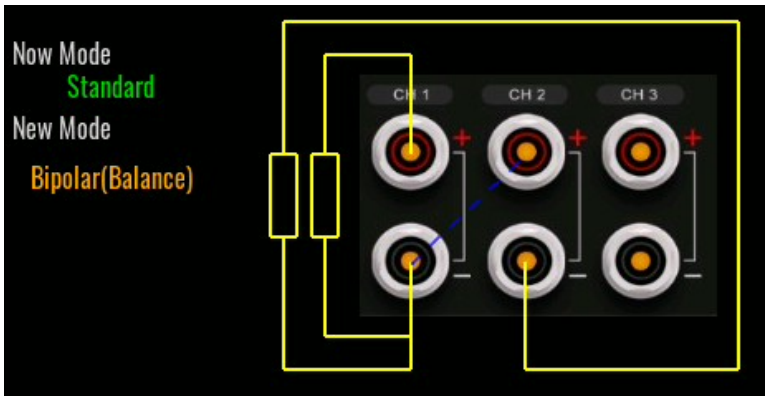


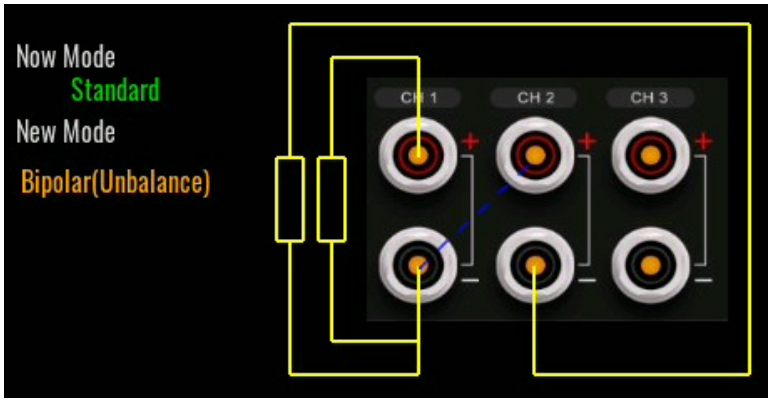
In tracking mode, the parameters of CH1 and CH2 are adjusted according to the ratio set before switching to tracking mode. For example:

Before switching to tracking mode, if CH1 is set to 10V@1A and CH2 is set to 20V@3A, then after switching to tracking mode, modifying CH1 to 11V@2A on the main interface will automatically adjust CH2 to 22V@6A.

However, after a **Recall**, the parameters from the recalled set will establish a new tracking ratio.

- **Bipolar**: Bipolar output mode for CH1 and CH2. In addition to modifying the mode settings here, the physical wiring between CH1 and CH2 when connecting the device under test (DUT) must also be configured. Please refer to the diagram for proper connection.





(Blue dashed line indicates optional connections. The Sense cables connect **CHS1+** and **CHS2-** to **DUT+** and **DUT-** respectively. **CHS1-** and **CHS2+** should be shorted.)

Note:

- In bipolar balanced mode, the following parameters for CH1 and CH2 are automatically synchronized: voltage and current settings, priority mode, slope type, timer status, timer duration, ON Delay, OFF Delay, Sense switch status, and measurement speed.
- In bipolar balanced mode, on the **Recall** and **LIST Open** interfaces, CH1 and CH2 cannot be selected simultaneously.
- In bipolar balanced mode, CH1 and CH2 will load and run the same List file.
- In bipolar balanced mode, the Lists for CH1 and CH2 will run or stop simultaneously. Stopping the List for CH1 will also stop the List for CH2, and running the List for CH1 will also run the List for CH2.

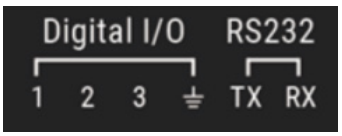
- **Done**: After modifying the channel combination mode, you must click "Done" for the changes to take effect.

3.13 Keyboard Lock Function

The instrument panel keys can be locked by the compound keys **[Shift] + [0]** (Lock) on the panel. At this time, the LOCK icon will be displayed at the top of the screen. Except for the **[Shift]** key, all other keys are disabled, press this compound keys again to cancel the lock.

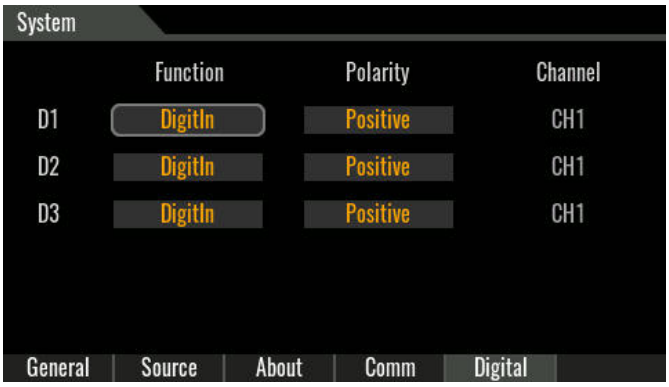
3.14 Digital IO Function

The IO pins are as follows:



Note: For Digital IO pins, low level is 0V, and high level is 5V.

System > Digit menu:



Function	Polarity	Description
DigitIn (D1/D2/D3 **are not** mapped to specific channels.)	Positive	Detect the level state of the corresponding Digit IO pin. The SCPI command **[SOURce:]DIGital:PIN:INPut? <NR1>** returns 1 for high level and 0 for low level.
	Negative	Detect the level state of the corresponding Digit IO pin. The SCPI command **[SOURce:]DIGital:PIN:INPut? <NR1>** returns 0 for high level and 1 for low level.
DigitOut (D1/D2/D3 **are not** mapped to specific channels.)	Positive	The SCPI command **[SOURce:]DIGital:PIN:OUTPut <NR1>,<bool>** sets the corresponding Digit IO pin to output high level when the state is set to 1 and to output low level when the state is set to 0.
	Negative	The SCPI command **[SOURce:]DIGital:PIN:OUTPut <NR1>,<bool>** sets the corresponding Digit IO pin to output low level when the state is set to 1 and to output high level when the state is set to 0.

TriggerIn (D1/D2/D3 **must be assigned to** specific channels CH1/CH2/CH3.)	Positive	When a falling edge event occurs on the corresponding Digit IO pin, and the Digit IO is bound to a channel with LIST or Recorder set to external trigger, the related trigger operation is initiated if the LIST is open or the Recorder is ready.
	Negative	When a rising edge event occurs on the corresponding Digit IO pin, and the Digit IO is bound to a channel with LIST or Recorder set to external trigger, the related trigger operation is initiated if the LIST is open or the Recorder is ready.
InhibitLiving (D1/D2/D3 **must be assigned to** specific channels CH1/CH2/CH3.)	Positive	When the corresponding Digit IO pin is at a low level, the bound channel output is turned off. When the Digit IO pin is at a high level, the bound channel source output is restored.
	Negative	When the corresponding Digit IO pin is at a high level, the bound channel output is turned off. When the Digit IO pin is at a low level, the bound channel source output is restored.
InhibitLatch (D1/D2/D3 **must be assigned to** specific channels CH1/CH2/CH3.)	Positive	When the corresponding Digit IO pin is at a low level, the bound channel source output is disabled, triggering an inhibit protection. To release the output disable, first restore the IO pin to high level and press **[Esc]** to clear the protection.
	Negative	When the corresponding Digit IO pin is at a high level, the bound channel source output is disabled, triggering an inhibit protection. To release the output disable, first restore the IO pin to low level and press **[Esc]** to clear the protection.
OutSync (D1/D2/D3 **must be assigned to** specific channels CH1/CH2/CH3.)	Positive	The output state of the corresponding Digital I/O port follows the source output state of the bound channel. For example, if D1 is assigned to CH1: When the output of CH1 is turned on, D1 outputs a high level. When the output of CH1 is turned off, D1 outputs a low level.
	Negative	The output state of the corresponding Digital I/O port is opposite to the source output state of the bound channel. For example, if D1 is assigned to CH1: When the output of CH1 is turned on, D1 outputs a low level. When the output of CH1 is turned off, D1 outputs a high level.

Chapter 4 Remote Control

The IT-N6300A series power supplies come standard with a USB communication interface. The IT-N6300B series power supplies are equipped with three communication interfaces: USB, RS232, and LAN. Users can choose any of these interfaces to establish communication with a computer.

4.1 USB Interface

The USB interface is located on the rear panel of the instrument, and the user can connect the instrument and the computer through a cable with both USB ports (one end is USB A type interface and the other end is USB B type interface).

This series of power supply USB interfaces include the following two types, which do not need to be set in the menu, and can be operated remotely after installing the driver and connecting the USB communication cable.

- TMC: USB_TMC type interface, you need to install the NI-VISA driver adapted to the computer operating system version. Please download the driver from the NI official website. After the driver is installed successfully, it will be recognized as the USB device address in the computer device manager.
- VCP: Virtual serial port. The Win7 version of the operating system needs to install the supporting driver. Please download the driver from the ITECH official website or contact the ITECH technical support personnel to obtain it. The operating system of Win10 and above does not need to install the driver. Recognized as a COM port in the computer's device manager.

4.2 LAN Interface

When the user uses the LAN interface to communicate with the PC, the user should refer to the following contents to connect and configure the LAN interface. The LAN interface of this instrument conforms to the LXI standard.

Connection Interface

Connecting the Interface Use the following steps to quickly connect the instrument to a local area network and configure it. Two typical LAN interface systems are described below: private network and site network.

- **Connect to private LAN**

  A private LAN is a network in which LAN-enabled instruments and computers are directly connected. They are typically small, with no centrally managed resources. When connected to a computer, a standard network cable can be used to connect directly to the computer via the LAN interface.

- **Connect to site LAN**

  A site LAN is a local area network in which LAN-enabled instruments and computers are connected to the network through routers, hubs, and/or

switches. They are typically large, centrally-managed networks with services such as DHCP and DNS servers. When connected to a computer, a network cable can be used to connect to the router, and the computer is also connected to the router.

Note

When using one crossover cable to connect PC directly, the gateway address of the instrument should be consistent with that of the PC, and the IP address should be at the same network segment with the PC's IP address.

When the instrument and computer are connected to the router, an independent IP address must be assigned for the instrument.

Configure LAN Interface Parameters

This series of power supplies supports the configuration of the following LAN communication parameters:

- MODE: Set IP mode
  - Automatically configure instrument address (Auto): Automatically configure the default IP address.
  - Manually configure the instrument address (Manual): The method is to set the following parameters of the instrument, the settings of these parameter values are only displayed when Manual is selected.
- IP: This value is the Internet Protocol (IP) address of the instrument. An IP address is required for all IP and TCP/IP communications with the instrument. An IP Address consists of 4 decimal numbers separated by periods. Each decimal number ranges from 0 through 255 with no leading zeros (for example, 169.254.2.20).
- Gateway: This value is the IP Address of the default gateway that allows the instrument to communicate with systems that are not on the local subnet, as determined by the subnet mask setting. The same numbering notation applies as for the IP Address. A value of 0.0.0.0 indicates that no default gateway is defined.
- Mask: This value is used to enable the instrument to determine if a client IP address is on the same local subnet. The same numbering notation applies as for the IP Address. When a client IP address is on a different subnet, all packets must be sent to the Default Gateway.
- PORT: This value indicates the port number corresponding to the service, which is fixed at 30000.

The configuration steps are as follows:

1. Press the **[Menu]** key to enter the Menu interface.
2. Rotate the knob, select **System**, and press **[Enter]** to confirm.
3. Press the button corresponding to **Comm** at the bottom of the screen.
4. Rotate the knob, select **Mode**, press **[Enter]** to confirm, and select IP setting mode.
   - Auto: Automatic mode, which can automatically set the address of the instrument;
   - Manual: Manual mode, you can manually set the address of the

instrument. If Manual is selected, you need to set the IP, Gateway, Mask parameter values.

The IP address needs to be configured to be on the same network segment as the computer.

Gateway and Mask must be the same as the computer configuration.

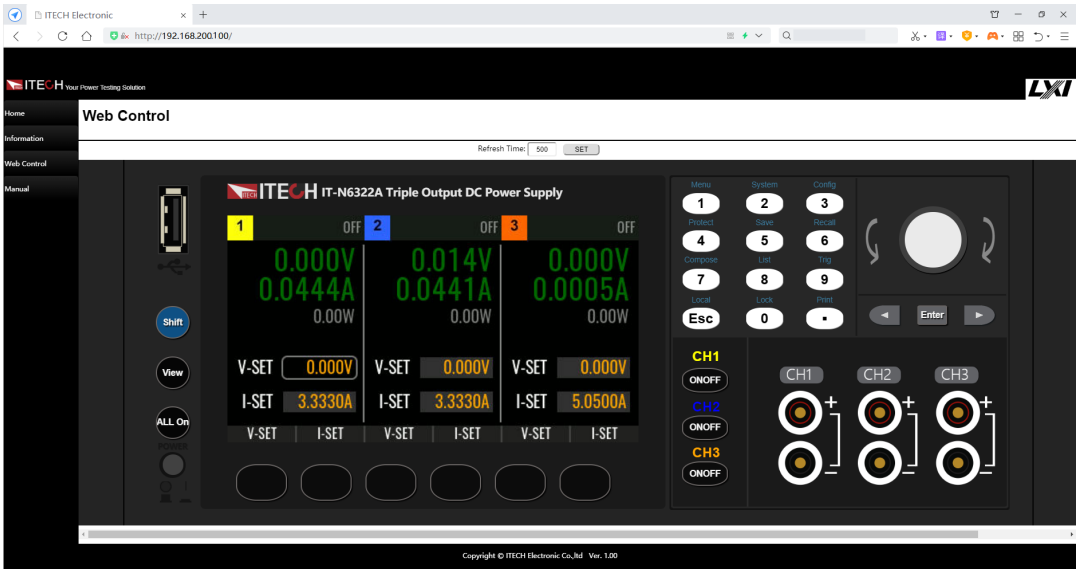
5. After the configuration is complete, press the **[Esc]** key to return.
6. Restart the instrument by powering it off and on to activate the LAN settings.

Use Web Function

The instrument provides a built-in web server, allowing you to monitor it directly from your computer's web browser. To use this web server, connect the instrument and the computer via the LAN interface. Then, enter the instrument's IP address in the address bar at the top of the computer's web browser to access front panel control, including LAN configuration parameters.

The address format to be entered in the browser's address bar is:
http://192.168.200.100

192.168.200.100 is the default IP address. If it has been changed by the user, replace this IP with the actual configuration found in the instrument's Menu.

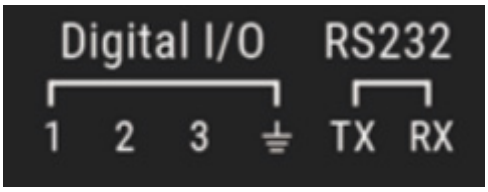


Clicking different buttons in the navigation bar on the left side of the window will display different interfaces. Detailed descriptions are as follows:

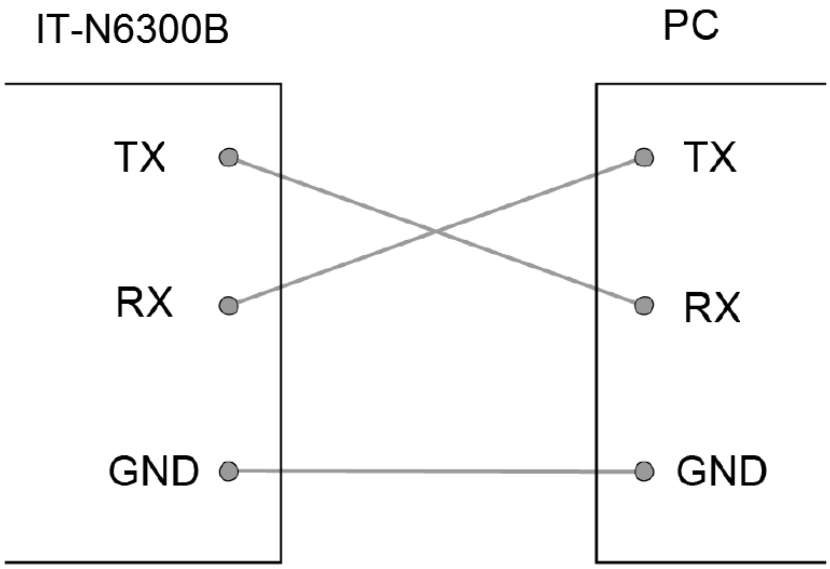
- **Home**: The main web interface, displaying the instrument model and appearance.
- **Information**: Displays system information such as the instrument's serial number and LAN configuration parameters.
- **Web Control**: Enables Web Control for remote operation of the instrument. On this interface, you can monitor and control the instrument.
- **Manual**: Redirects to the ITECH official website, where you can view or download relevant documentation for the instrument.

4.3 RS232 Interface

RS232 pins are as follows:



The wiring diagram is as follows:



RS232 parameter settings are as follows:

1. Press the **[Menu]** key to enter the Menu interface.
2. Rotate the knob to select **System**, then press the **[Enter]** key to confirm.
3. Press the button corresponding to **Comm** at the bottom of the screen.
4. Rotate the knob to select **Baudrate** or **Parity**, then press the **[Enter]** key to enter the setting selection interface.
   a) The **Baudrate** and **Parity** settings must match the configuration in the PC software.
   b) Data bits are fixed at 8, and stop bits are fixed at 1.
5. Rotate the knob to select the desired setting, then press the **[Enter]** key to confirm.
6. Once the configuration is complete, press the **[Esc]** key to return.

Chapter 5 Technical Specification

This chapter will introduce the main technical parameters such as rated voltage, rated current and rated power of the IT-N6300 power supply, as well as the storage environment and temperature of the power supply.

5.1 Main Technical Parameters

IT-N6322A

IT-N6322A				
Parameter		CH1	CH2	CH3
Rated Value	**Voltage**	0 to 32V	0 to 32V	0 to 9V
	Current	0 to 6A	0 to 6A	0 to 5A
	Power	0 to 100W	0 to 100W	0 to 45W
Power Regulation ±(%of Output+Offset)	**Voltage**	≤0.005%+1.5mV	≤0.005%+1.5mV	≤0.005%+1mV
	Current	≤0.015%+0.6mA	≤0.015%+0.6mA	≤0.015%+0.5mA
Load Regulation ±(%of Output+Offset)	**Voltage**	≤0.005%+1.5mV	≤0.005%+1.5mV	≤0.005%+1.3mV
	Current	≤0.015%+0.6mA	≤0.015%+0.6mA	≤0.015%+0.5mA
Setup Resolution	**Voltage**	10mV	10mV	1mV
	Current	1mA	1mA	1mA
	OVP	10mV	10mV	1mV
Read Back Resolution	**Voltage**	1mV	1mV	1mV
	Current	1mA	1mA	1mA
	Power	10mW	10mW	10mW
List Minimum Delay Time	**Voltage**	1ms		
Setup Accuracy (within 12 months,25°C±5°C) ±(%of Output+Offset)	**Voltage**	≤0.02%+10mV	≤0.02%+10mV	≤0.02%+4mV
	Current	≤0.05%+3mA	≤0.05%+3mA	≤0.05%+2.5mA
	OVP	≤0.2%+0.2V	≤0.2%+0.2V	≤0.2%+0.1V
Read Back Accuracy (within 12 months,25°C±5°C) ±(%of Output+Offset)	**Voltage**	≤0.02%+10mV	≤0.02%+10mV	≤0.02%+4mV
	Current	≤0.05%+3mA	≤0.05%+3mA	≤0.05%+2.5mA
Ripple (20Hz -20MHz)	**Voltage Peak**	≤3mVp-p	≤3mVp-p	≤2mVp-p
	Voltage RMS	≤0.5mVrms	≤0.5mVrms	≤0.35mVrms

	Current RMS	≤1mArms	≤1mArms	≤1mArms
Setup Temperature Coefficient ±(%of Output/°C+Offset)	**Voltage**	≤0.003%+1mV	≤0.003%+1mV	≤0.003%+0.25mV
	Current	≤0.005%+0.2mA	≤0.005%+0.2mA	≤0.005%+0.15mA
Read Back Temperature Coefficient ±(%of Output/°C+Offset)	**Voltage**	≤0.003%+2mV	≤0.003%+2mV	≤0.003%+2mV
	Current	≤0.005%+2mA	≤0.005%+2mA	≤0.005%+2mA
Rise Time (no load)	**Voltage**	≤20ms(10%-90%)	≤20ms(10%-90%)	≤10ms(10%-90%)
Rise Time (full load)	**Voltage**	≤30ms(10%-90%)	≤30ms(10%-90%)	≤20ms(10%-90%)
Fall Time (no load)	**Voltage**	≤100ms(90%-10%)	≤100ms(90%-10%)	≤60ms(90%-10%)
Fall Time (full load)	**Voltage**	≤15ms(90%-10%)	≤15ms(90%-10%)	≤12ms(90%-10%)
Transient Response Time	**Voltage**	Load transient recovery time (the time required for the output voltage to recover to within ±50mV of the steady-state output value when the output Current changes from 50% to 100% or from 100% to 50%)		
		≤50us	≤50us	≤50us
Setup Stability-30min (%of Output +Offset)	**Voltage**	≤0.005%+1mV	≤0.005%+1mV	≤0.005%+0.4mV
	Current	≤0.015%+1.2mA	≤0.015%+1.2mA	≤0.015%+1mA
Readback Stability-30min (%of Output +Offset)	**Voltage**	≤0.005%+2mV	≤0.005%+2mV	≤0.005%+2mV
	Current	≤0.015%+2mA	≤0.015%+2mA	≤0.015%+2mA
Parallel Connection	**Voltage**	≤0.02%+10mV		/
	Current	≤0.05%+6mA		/
Series Connection	**Voltage**	≤0.02%+20mV		/
	Current	≤0.05%+3mA		/
Efficiency	75% (Typical)			
Remote Sense Compensation Voltage	≤2.5V			
Command Response Time	5ms (Typical)			
Power Factor	0.5			
Maximum input current	7A			
Maximum input apparent power	700VA			
Storage Temperature	-10°C to 70°C			
Protective Function	OVP/UVP/OCP/UCP/OTP/OPP/FOLDBACK			
OVP Response Time	≤100us			

Communication Interface		USB
Isolation Voltage (output to PE)		240VDC
Isolation Voltage (input to PE)		2121VDC
Working Temperature		0 to 40°C
AC Input	**Voltage**	110V/220V±10%
	Frequency	50/60Hz
Fuse Specification Wire		6.3A(110V) / 4A(220V)
Number of parallel machines		/
Number of machines in series		/
Protection level		IP20
Safety		IEC 61010
Cooling method		Fan Cooling
Dimensions of mounted in rack Handles and feet removed		350mm(D)x 214mm(W)x 88.2mm(H)
Overall size of single unit Includes handles and feet		404.3mm(D)x 255 mm(W)x 108mm(H)
Weight (net weight)		6.3kg

IT-N6322B

IT-N6322B				
Parameter		CH1	CH2	CH3
Rated Value	**Voltage**	0 to 32V	0 to 32V	0 to 15V
	Current	0 to 6A	0 to 6A	0 to 5A
	Power	0 to 100W	0 to 100W	0 to 45W
Power Regulation ±(%of Output+Offset)	**Voltage**	≤0.005%+1mV	≤0.005%+1mV	≤0.005%+1mV
	Current	≤0.01%+0.3mA	≤0.01%+0.3mA	≤0.01%+0.25mA
Load Regulation ±(%of Output+Offset)	**Voltage**	≤0.005%+1.5mV	≤0.005%+1.5mV	≤0.005%+1.3mV
	Current	≤0.01%+0.3mA	≤0.01%+0.3mA	≤0.01%+0.25mA
Setup Resolution	**Voltage**	1mV	1mV	1mV
	Current	0.1mA	0.1mA	0.1mA
	OVP	1mV	1mV	1mV

Read Back Resolution	**Voltage**	1mV	1mV	1mV
	Current	0.1mA	0.1mA	0.1mA
	Power	10mW	10mW	10mW
List Minimum Delay Time	**Voltage**	1ms		
Setup Accuracy (within 12 months,25°C±5°C) ±(%of Output+Offset)	**Voltage**	≤0.02%+7mV	≤0.02%+7mV	≤0.02%+3mV
	Current	≤0.03%+1.8mA	≤0.03%+1.8mA	≤0.03%+1.5mA
	OVP	≤0.2%+0.2V	≤0.2%+0.2V	≤0.2%+0.1V
Read Back Accuracy (within 12 months,25°C±5°C) ±(%of Output+Offset)	**Voltage**	≤0.02%+7mV	≤0.02%+7mV	≤0.02%+3mV
	Current	≤0.03%+1.8mA	≤0.03%+1.8mA	≤0.03%+1.5mA
Ripple (20Hz -20MHz)	**Voltage Peak**	≤3mVp-p	≤3mVp-p	≤2mVp-p
	Voltage RMS	≤0.5mVrms	≤0.5mVrms	≤0.35mVrms
	Current RMS	≤1mArms	≤1mArms	≤1mArms
Setup Temperature Coefficient ±(%of Output/°C+Offset)	**Voltage**	≤0.0015%+0.5mV	≤0.0015%+0.5mV	≤0.0015%+0.25mV
	Current	≤0.003%+0.12mA	≤0.003%+0.12mA	≤0.003%+0.08mA
Read Back Temperature Coefficient ±(%of Output/°C+Offset)	**Voltage**	≤0.0015%+2mV	≤0.0015%+2mV	≤0.0015%+2mV
	Current	≤0.003%+0.2mA	≤0.003%+0.2mA	≤0.003%+0.2mA
Rise Time (no load)	**Voltage**	≤20ms(10%-90%)	≤20ms(10%-90%)	≤10ms(10%-90%)
Rise Time (full load)	**Voltage**	≤30ms(10%-90%)	≤30ms(10%-90%)	≤20ms(10%-90%)
Fall Time (no load)	**Voltage**	≤100ms(90%-10%)	≤100ms(90%-10%)	≤60ms(90%-10%)
Fall Time (full load)	**Voltage**	≤15ms(90%-10%)	≤15ms(90%-10%)	≤12ms(90%-10%)
Transient Response Time	**Voltage**	Load transient recovery time (the time required for the output voltage to recover to within ±50mV of the steady-state output value when the output Current changes from 50% to 100% or from 100% to 50%)		
		≤50us	≤50us	≤50us
Setup Stability-30min (%of Output +Offset)	**Voltage**	≤0.005%+0.8mV	≤0.005%+0.8mV	≤0.005%+0.4mV
	Current	≤0.01%+0.6mA	≤0.01%+0.6mA	≤0.01%+0.5mA
Readback Stability-30min (%of Output +Offset)	**Voltage**	≤0.005%+2mV	≤0.005%+2mV	≤0.005%+2mV
	Current	≤0.01%+0.6mA	≤0.01%+0.6mA	≤0.01%+0.5mA

Parallel Connection		**Voltage**	≤0.02%+7mV	/
		Current	≤0.03%+3.6mA	/
Series Connection		**Voltage**	≤0.02%+14mV	/
		Current	≤0.03%+1.8mA	/
Efficiency		75% (Typical)		
Remote Sense Compensation Voltage		≤2.5V		
Command Response Time		5ms (Typical)		
Power Factor		0.5		
Maximum input current		7A		
Maximum input apparent power		700VA		
Storage Temperature		-10°C to 70°C		
Protective Function		OVP/UVP/OCP/UCP/OTP/OPP/FOLDBACK		
OVP Response Time		≤100us		
Communication Interface		USB/LAN/Digital IO/RS232		
Isolation Voltage (output to PE)		240VDC		
Isolation Voltage (input to PE)		2121VDC		
Working Temperature		0 to 40°C		
AC Input	**Voltage**	110V/220V±10%		
	Frequency	50/60Hz		
Fuse Specification Wire		6.3A(110V)/4A(220V)		
Number of parallel machines		/		
Number of machines in series		/		
Protection level		IP20		
Safety		IEC 61010		
Cooling method		Fan Cooling		
Dimensions of mounted in rack **Handles and feet removed**		350mm(D)x 214mm(W)x 88.2mm(H)		
Overall size of single unit **Includes handles and feet**		404.3mm(D)x 255mm(W)x 108mm(H)		

Weight (net weight)	6.3kg

IT-N6323A

IT-N6323A				
Parameter		CH1	CH2	CH3
Rated Value	**Voltage**	0 to 60V	0 to 60V	0 to 9V
	Current	0 to 3A	0 to 3A	0 to 5A
	Power	0 to 100W	0 to 100W	0 to 45W
Power Regulation ±(%of Output+Offset)	**Voltage**	≤0.005%+2mV	≤0.005%+2mV	≤0.005%+1mV
	Current	≤0.015%+0.3mA	≤0.015%+0.3mA	≤0.015%+0.5mA
Load Regulation ±(%of Output+Offset)	**Voltage**	≤0.005%+1mV	≤0.005%+1mV	≤0.005%+1.3mV
	Current	≤0.015%+0.3mA	≤0.015%+0.3mA	≤0.015%+0.5mA
Setup Resolution	**Voltage**	10mV	10mV	1mV
	Current	1mA	1mA	1mA
	OVP	10mV	10mV	1mV
Read Back Resolution	**Voltage**	1mV	1mV	1mV
	Current	1mA	1mA	1mA
	Power	10mW	10mW	10mW
Setup Accuracy (within 12 months,25°C±5°C) ±(%of Output+Offset)	**Voltage**	≤0.02%+18mV	≤0.02%+18mV	≤0.02%+4mV
	Current	≤0.05%+1.5mA	≤0.05%+1.5mA	≤0.05%+2.5mA
	OVP	≤0.2%+0.4V	≤0.2%+0.4V	≤0.2%+0.1V
Read Back Accuracy (within 12 months,25°C±5°C) ±(%of Output+Offset)	**Voltage**	≤0.02%+18mV	≤0.02%+18mV	≤0.02%+4mV
	Current	≤0.05%+1.5mA	≤0.05%+1.5mA	≤0.05%+2.5mA
Ripple (20Hz -20MHz)	**Voltage Peak**	≤3mVp-p	≤3mVp-p	≤2mVp-p
	Voltage RMS	≤0.5mVrms	≤0.5mVrms	≤0.35mVrms
	Current RMS	≤1mArms	≤1mArms	≤1mArms
Setup Temperature Coefficient ±(%of Output/°C+Offset)	**Voltage**	≤0.003%+2mV	≤0.003%+2mV	≤0.003%+0.25mV
	Current	≤0.005%+0.1mA	≤0.005%+0.1mA	≤0.005%+0.15mA

Read Back Temperature Coefficient ±(%of Output/°C+Offset)	**Voltage**	≤0.003%+2mV	≤0.003%+2mV	≤0.003%+2mV
	Current	≤0.005%+2mA	≤0.005%+2mA	≤0.005%+2mA
Rise Time (no load)	**Voltage**	≤30ms(10%-90%)	≤30ms(10%-90%)	≤10ms(10%-90%)
Rise Time (full load)	**Voltage**	≤40ms(10%-90%)	≤40ms(10%-90%)	≤20ms(10%-90%)
Fall Time (no load)	**Voltage**	≤200ms(90%-10%)	≤200ms(90%-10%)	≤60ms(90%-10%)
Fall Time (full load)	**Voltage**	≤30ms(90%-10%)	≤30ms(90%-10%)	≤12ms(90%-10%)
Transient Response Time	**Voltage**	Load transient recovery time (the time required for the output voltage to recover to within ±50mV of the steady-state output value when the output Current changes from 50% to 100% or from 100% to 50%)		
		≤50us	≤50us	≤50us
Setup Stability-30min (%of Output +Offset)	**Voltage**	≤0.005%+2mV	≤0.005%+2mV	≤0.005%+0.4mV
	Current	≤0.015%+0.6mA	≤0.015%+0.6mA	≤0.015%+1mA
Readback Stability-30min (%of Output +Offset)	**Voltage**	≤0.005%+3mV	≤0.005%+3mV	≤0.005%+2mV
	Current	≤0.015%+2mA	≤0.015%+2mA	≤0.015%+2mA
Parallel Connection	**Voltage**	≤0.02%+18mV		/
	Current	≤0.05%+3mA		/
Series Connection	**Voltage**	≤0.02%+36mV		/
	Current	≤0.05%+1.5mA		/
Efficiency		75% (Typical)		
Remote Sense Compensation Voltage		≤2.5V		
Command Response Time		5ms (Typical)		
Power Factor		0.5		
Maximum input current		7A		
Maximum input apparent power		700VA		
Storage Temperature		-10°C to 70°C		
Protective Function		OVP/UVP/OCP/UCP/OTP/OPP/FOLDBACK		
OVP Response Time		≤100us		
Communication Interface		USB		
Isolation Voltage (output to PE)		240VDC		
Isolation Voltage (input to PE)		2121VDC		

Working Temperature		0 to 40°C
AC Input	**Voltage**	110V/220V±10%
	Frequency	50/60Hz
Fuse Specification Wire		6.3A(110V)/4A(220V)
Number of parallel machines		/
Number of machines in series		/
Protection level		IP20
Safety		IEC 61010
Cooling method		Fan Cooling
Dimensions of mounted in rack Handles and feet removed		350mm(D)x 214mm(W)x 88.2mm(H)
Overall size of single unit Includes handles and feet		404.3mm(D)x 255 mm(W)x 108mm(H)
Weight (net weight)		6.3kg

IT-N6323B

IT-N6323B				
Parameter		CH1	CH2	CH3
Rated Value	**Voltage**	0 to 60V	0 to 60V	0 to 15V
	Current	0 to 3A	0 to 3A	0 to 5A
	Power	0 to 100W	0 to 100W	0 to 45W
Power Regulation ±(%of Output+Offset)	**Voltage**	≤0.005%+1mV	≤0.005%+1mV	≤0.005%+1mV
	Current	≤0.01%+0.15mA	≤0.01%+0.15mA	≤0.01%+0.25mA
Load Regulation ±(%of Output+Offset)	**Voltage**	≤0.005%+1mV	≤0.005%+1mV	≤0.005%+1.3mV
	Current	≤0.01%+0.15mA	≤0.01%+0.15mA	≤0.01%+0.25mA
Setup Resolution	**Voltage**	1mV	1mV	1mV
	Current	0.1mA	0.1mA	0.1mA
	OVP	1mV	1mV	1mV
Read Back Resolution	**Voltage**	1mV	1mV	1mV
	Current	0.1mA	0.1mA	0.1mA
	Power	10mW	10mW	10mW

List Minimum Delay Time	**Voltage**	1ms		
Setup Accuracy (within 12 months,25°C±5°C) ±(%of Output+Offset)	**Voltage**	≤0.02%+12mV	≤0.02%+12mV	≤0.02%+3mV
	Current	≤0.03%+0.9mA	≤0.03%+0.9mA	≤0.03%+1.5mA
	OVP	≤0.2%+0.4V	≤0.2%+0.4V	≤0.2%+0.1V
Read Back Accuracy (within 12 months,25°C±5°C) ±(%of Output+Offset)	**Voltage**	≤0.02%+12mV	≤0.02%+12mV	≤0.02%+3mV
	Current	≤0.03%+0.9mA	≤0.03%+0.9mA	≤0.03%+1.5mA
Ripple (20Hz -20MHz)	**Voltage Peak**	≤3mVp-p	≤3mVp-p	≤2mVp-p
	Voltage RMS	≤0.5mVrms	≤0.5mVrms	≤0.35mVrms
	Current RMS	≤1mArms	≤1mArms	≤1mArms
Setup Temperature Coefficient ±(%of Output/°C+Offset)	**Voltage**	≤0.0015%+1mV	≤0.0015%+1mV	≤0.0015%+0.25mV
	Current	≤0.003%+0.05mA	≤0.003%+0.05mA	≤0.003%+0.08mA
Read Back Temperature Coefficient ±(%of Output/°C+Offset)	**Voltage**	≤0.0015%+3mV	≤0.0015%+3mV	≤0.0015%+2mV
	Current	≤0.003%+0.2mA	≤0.003%+0.2mA	≤0.003%+0.2mA
Rise Time (no load)	**Voltage**	≤30ms(10%-90%)	≤30ms(10%-90%)	≤10ms(10%-90%)
Rise Time (full load)	**Voltage**	≤40ms(10%-90%)	≤40ms(10%-90%)	≤20ms(10%-90%)
Fall Time (no load)	**Voltage**	≤200ms(90%-10%)	≤200ms(90%-10%)	≤60ms(90%-10%)
Fall Time (full load)	**Voltage**	≤30ms(90%-10%)	≤30ms(90%-10%)	≤12ms(90%-10%)
Transient Response Time	**Voltage**	Load transient recovery time (the time required for the output voltage to recover to within ±50mV of the steady-state output value when the output Current changes from 50% to 100% or from 100% to 50%)		
		≤50us	≤50us	≤50us
Setup Stability-30min (%of Output +Offset)	**Voltage**	≤0.005%+1.5mV	≤0.005%+1.5mV	≤0.005%+0.4mV
	Current	≤0.01%+0.3mA	≤0.01%+0.3mA	≤0.01%+0.5mA
Readback Stability-30min (%of Output +Offset)	**Voltage**	≤0.005%+2mV	≤0.005%+2mV	≤0.005%+2mV
	Current	≤0.01%+0.3mA	≤0.01%+0.3mA	≤0.01%+0.5mA
Parallel Connection	**Voltage**	≤0.02%+12mV		/
	Current	≤0.03%+1.8mA		/
Series Connection	**Voltage**	≤0.02%+24mV		/

	Current	≤0.03%+0.9mA	/
Efficiency	75% (Typical)		
Remote Sense Compensation Voltage	≤2.5V		
Command Response Time	5ms (Typical)		
Power Factor	0.5		
Maximum input current	7A		
Maximum input apparent power	700VA		
Storage Temperature	-10°C to 70°C		
Protective Function	OVP/UVP/OCP/UCP/OTP/OPP/FOLDBACK		
OVP Response Time	≤100us		
Communication Interface	USB/LAN/Digital IO/RS232		
Isolation Voltage (output to PE)	240VDC		
Isolation Voltage (input to PE)	2121VDC		
Working Temperature	0 to 40°C		
AC Input	**Voltage**	110V/220V±10%	
	Frequency	50/60Hz	
Fuse Specification Wire	6.3A(110V)/4A(220V)		
Number of parallel machines	/		
Number of machines in series	/		
Protection level	IP20		
Safety	IEC 61010		
Cooling method	Fan Cooling		
Dimensions of mounted in rack **Handles and feet removed**	350mm(D)x 214mm(W)x 88.2mm(H)		
Overall size of single unit **Includes handles and feet**	404.3mm(D)x 255 mm(W)x 108mm(H)		
Weight (net weight)	6.3kg		

IT-N6332A

IT-N6332A				
Parameter		CH1	CH2	CH3
Rated Value	**Voltage**	0 to 32V	0 to 32V	0 to 9V
	Current	0 to 10A	0 to 10A	0 to 5A
	Power	0 to 200W	0 to 200W	0 to 45W
Power Regulation ±(%of Output+Offset)	**Voltage**	≤0.005%+1.5mV	≤0.005%+1.5mV	≤0.005%+1mV
	Current	≤0.015%+1mA	≤0.015%+1mA	≤0.015%+0.5mA
Load Regulation ±(%of Output+Offset)	**Voltage**	≤0.005%+2.5mV	≤0.005%+2.5mV	≤0.005%+1.3mV
	Current	≤0.015%+1mA	≤0.015%+1mA	≤0.015%+0.5mA
Setup Resolution	**Voltage**	10mV	10mV	1mV
	Current	1mA	1mA	1mA
	OVP	10mV	10mV	1mV
Read Back Resolution	**Voltage**	1mV	1mV	1mV
	Current	1mA	1mA	1mA
	Power	10mW	10mW	10mW
List Minimum Delay Time	**Voltage**	1ms		
Setup Accuracy (within 12 months,25°C±5°C) ±(%of Output+Offset)	**Voltage**	≤0.02%+10mV	≤0.02%+10mV	≤0.02%+4mV
	Current	≤0.05%+5mA	≤0.05%+5mA	≤0.05%+2.5mA
	OVP	≤0.2%+0.2V	≤0.2%+0.2V	≤0.2%+0.1V
Read Back Accuracy (within 12 months,25°C±5°C) ±(%of Output+Offset)	**Voltage**	≤0.02%+10mV	≤0.02%+10mV	≤0.02%+4mV
	Current	≤0.05%+5mA	≤0.05%+5mA	≤0.05%+2.5mA
Ripple (20Hz -20MHz)	**Voltage Peak**	≤3mVp-p	≤3mVp-p	≤2mVp-p
	Voltage RMS	≤0.5mVrms	≤0.5mVrms	≤0.35mVrms
	Current RMS	≤1mArms	≤1mArms	≤1mArms
Setup Temperature Coefficient ±(%of Output/°C+Offset)	**Voltage**	≤0.003%+1mV	≤0.003%+1mV	≤0.003%+0.25mV
	Current	≤0.006%+0.3mA	≤0.006%+0.3mA	≤0.005%+0.15mA
Read Back Temperature Coefficient ±(%of Output/°C+Offset)	**Voltage**	≤0.003%+2mV	≤0.003%+2mV	≤0.003%+2mV
	Current	≤0.006%+2mA	≤0.006%+2mA	≤0.005%+2mA

Rise Time (no load)	**Voltage**	≤20ms(10%-90%)	≤20ms(10%-90%)	≤10ms(10%-90%)
Rise Time (full load)	**Voltage**	≤30ms(10%-90%)	≤30ms(10%-90%)	≤20ms(10%-90%)
Fall Time (no load)	**Voltage**	≤100ms(90%-10%)	≤100ms(90%-10%)	≤60ms(90%-10%)
Fall Time (full load)	**Voltage**	≤15ms(90%-10%)	≤15ms(90%-10%)	≤12ms(90%-10%)
Transient Response Time	**Voltage**	Load transient recovery time (the time required for the output voltage to recover to within ±50mV of the steady-state output value when the output Current changes from 50% to 100% or from 100% to 50%)		
		≤50us	≤50us	≤50us
Setup Stability-30min (%of Output +Offset)	**Voltage**	≤0.005%+1mV	≤0.005%+1mV	≤0.005%+0.4mV
	Current	≤0.015%+2mA	≤0.015%+2mA	≤0.015%+1mA
Readback Stability-30min (%of Output +Offset)	**Voltage**	≤0.005%+2mV	≤0.005%+2mV	≤0.005%+2mV
	Current	≤0.015%+2mA	≤0.015%+2mA	≤0.015%+2mA
Parallel Connection	**Voltage**	≤0.02%+10mV		/
	Current	≤0.05%+10mA		/
Series Connection	**Voltage**	≤0.02%+20mV		/
	Current	≤0.05%+5mA		/
Efficiency	75% (Typical)			
Remote Sense Compensation Voltage	≤2.5V			
Command Response Time	5ms (Typical)			
Power Factor	0.5			
Maximum input current	10A			
Maximum input apparent power	1200VA			
Storage Temperature	-10°C to 70°C			
Protective Function	OVP/UVP/OCP/UCP/OTP/OPP/FOLDBACK			
OVP Response Time	≤100us			
Communication Interface	USB			
Isolation Voltage (output to PE)	240VDC			
Isolation Voltage (input to PE)	2121VDC			
Working Temperature	0 to 40°C			
AC Input	**Voltage**	110V/220V±10%		
	Frequency	50/60Hz		

Fuse Specification Wire	10A(110V)/6.3A(220V)
Number of parallel machines	/
Number of machines in series	/
Protection level	IP20
Safety	IEC 61010
Cooling method	Fan Cooling
Dimensions of mounted in rack **Handles and feet removed**	350mm(D)x 214mm(W)x 88.2mm(H)
Overall size of single unit **Includes handles and feet**	404.3mm(D)x 255 mm(W)x 108mm(H)
Weight (net weight)	6.7kg

IT-N6332B

IT-N6332B				
Parameter		CH1	CH2	CH3
Rated Value	**Voltage**	0 to 32V	0 to 32V	0 to 15V
	Current	0 to 10A	0 to 10A	0 to 5A
	Power	0 to 200W	0 to 200W	0 to 45W
Power Regulation ±(%of Output+Offset)	**Voltage**	≤0.005%+1mV	≤0.005%+1mV	≤0.005%+1mV
	Current	≤0.01%+0.5mA	≤0.01%+0.5mA	≤0.01%+0.25mA
Load Regulation ±(%of Output+Offset)	**Voltage**	≤0.005%+2.5mV	≤0.005%+2.5mV	≤0.005%+1.3mV
	Current	≤0.01%+0.5mA	≤0.01%+0.5mA	≤0.01%+0.25mA
Setup Resolution	**Voltage**	1mV	1mV	1mV
	Current	0.2mA	0.2mA	0.1mA
	OVP	1mV	1mV	1mV
Read Back Resolution	**Voltage**	1mV	1mV	1mV
	Current	0.1mA	0.1mA	0.1mA
	Power	10mW	10mW	10mW
List Minimum Delay Time	**Voltage**	1ms		

Setup Accuracy (within 12 months,25°C±5°C) ±(%of Output+Offset)	**Voltage**	≤0.02%+7mV	≤0.02%+7mV	≤0.02%+3mV
	Current	≤0.03%+3mA	≤0.03%+3mA	≤0.03%+1.5mA
	OVP	≤0.2%+0.2V	≤0.2%+0.2V	≤0.2%+0.1V
Read Back Accuracy (within 12 months,25°C±5°C) ±(%of Output+Offset)	**Voltage**	≤0.02%+7mV	≤0.02%+7mV	≤0.02%+3mV
	Current	≤0.03%+3mA	≤0.03%+3mA	≤0.03%+1.5mA
Ripple (20Hz -20MHz)	**Voltage Peak**	≤3mVp-p	≤3mVp-p	≤2mVp-p
	VoltageRMS	≤0.5mVrms	≤0.5mVrms	≤0.35mVrms
	CurrentRMS	≤1mArms	≤1mArms	≤1mArms
Setup Temperature Coefficient ±(%of Output/°C+Offset)	**Voltage**	≤0.0015%+0.5mV	≤0.0015%+0.5mV	≤0.0015%+0.25mV
	Current	≤0.004%+0.2mA	≤0.004%+0.2mA	≤0.003%+0.08mA
Read Back Temperature Coefficient ±(%of Output/°C+Offset)	**Voltage**	≤0.0015%+2mV	≤0.0015%+2mV	≤0.0015%+2mV
	Current	≤0.004%+0.2mA	≤0.004%+0.2mA	≤0.003%+0.2mA
Rise Time (no load)	**Voltage**	≤20ms(10%-90%)	≤20ms(10%-90%)	≤10ms(10%-90%)
Rise Time (full load)	**Voltage**	≤30ms(10%-90%)	≤30ms(10%-90%)	≤20ms(10%-90%)
Fall Time (no load)	**Voltage**	≤100ms(90%-10%)	≤100ms(90%-10%)	≤60ms(90%-10%)
Fall Time (full load)	**Voltage**	≤15ms(90%-10%)	≤15ms(90%-10%)	≤12ms(90%-10%)
Transient Response Time	**Voltage**	Load transient recovery time (the time required for the output voltage to recover to within ±50mV of the steady-state output value when the output Current changes from 50% to 100% or from 100% to 50%)		
		≤50us	≤50us	≤50us
Setup Stability-30min (%of Output +Offset)	**Voltage**	≤0.005%+0.8mV	≤0.005%+0.8mV	≤0.005%+0.4mV
	Current	≤0.01%+1mA	≤0.01%+1mA	≤0.01%+0.5mA
Readback Stability-30min (%of Output +Offset)	**Voltage**	≤0.005%+2mV	≤0.005%+2mV	≤0.005%+2mV
	Current	≤0.01%+1mA	≤0.01%+1mA	≤0.01%+0.5mA
Parallel Connection	**Voltage**	≤0.02%+7mV		/
	Current	≤0.03%+6mA		/
Series Connection	**Voltage**	≤0.02%+14mV		/
	Current	≤0.03%+3mA		/
Efficiency		75% (Typical)		

Remote Sense Compensation Voltage		≤2.5V
Command Response Time		5ms (Typical)
Power Factor		0.5
Maximum input current		10A
Maximum input apparent power		1200VA
Storage Temperature		-10°C to 70°C
Protective Function		OVP/UVP/OCP/UCP/OTP/OPP/FOLDBACK
OVP Response Time		≤100us
Communication Interface		USB/LAN/Digital IO/RS232
Isolation Voltage (output to PE)		240Vdc
Isolation Voltage (input to PE)		2121Vdc
Working Temperature		0 to 40°C
AC Input	**Voltage**	110V/220V±10%
	Frequency	50/60Hz
Fuse Specification Wire		10A(110V)/6.3A(220V)
Number of parallel machines		/
Number of machines in series		/
Protection level		IP20
Safety		IEC 61010
Cooling method		Fan Cooling
Dimensions of mounted in rack Handles and feet removed		350mm(D)x 214mm(W)x 88.2mm(H)
Overall size of single unit Includes handles and feet		404.3mm(D)x 255mm(W)x 108mm(H)
Weight (net weight)		6.7kg

IT-N6333A

IT-N6333A				
Parameter		CH1	CH2	CH3
Rated Value	**Voltage**	0 to 60V	0 to 60V	0 to 9V
	Current	0 to 5A	0 to 5A	0 to 5A
	Power	0 to 200W	0 to 200W	0 to 45W
Power Regulation ±(%of Output+Offset)	**Voltage**	≤0.005%+2mV	≤0.005%+2mV	≤0.005%+1mV
	Current	≤0.015%+0.5mA	≤0.015%+0.5mA	≤0.015%+0.5mA
Load Regulation ±(%of Output+Offset)	**Voltage**	≤0.005%+1.3mV	≤0.005%+1.3mV	≤0.005%+1.3mV
	Current	≤0.015%+0.5mA	≤0.015%+0.5mA	≤0.015%+0.5mA
Setup Resolution	**Voltage**	10mV	10mV	1mV
	Current	1mA	1mA	1mA
	OVP	10mV	10mV	1mV
Read Back Resolution	**Voltage**	1mV	1mV	1mV
	Current	1mA	1mA	1mA
	Power	10mW	10mW	10mW
List Minimum Delay Time	**Voltage**	1ms		
Setup Accuracy (within 12 months,25°C±5°C) ±(%of Output+Offset)	**Voltage**	≤0.02%+18mV	≤0.02%+18mV	≤0.02%+4mV
	Current	≤0.05%+2.5mA	≤0.05%+2.5mA	≤0.05%+2.5mA
	OVP	≤0.2%+0.4V	≤0.2%+0.4V	≤0.2%+0.1V
Read Back Accuracy (within 12 months,25°C±5°C) ±(%of Output+Offset)	**Voltage**	≤0.02%+18mV	≤0.02%+18mV	≤0.02%+4mV
	Current	≤0.05%+2.5mA	≤0.05%+2.5mA	≤0.05%+2.5mA
Ripple (20Hz -20MHz)	**Voltage Peak**	≤3mVp-p	≤3mVp-p	≤2mVp-p
	Voltage RMS	≤0.5mVrms	≤0.5mVrms	≤0.35mVrms
	Current RMS	≤1mArms	≤1mArms	≤1mArms
Setup Temperature Coefficient ±(%of	**Voltage**	≤0.003%+1.3mV	≤0.003%+1.3mV	≤0.003%+0.25mV

Output/°C+Offset)	Current	≤0.005%+0.15mA	≤0.005%+0.15mA	≤0.005%+0.15mA
Read Back Temperature Coefficient ±(%of Output/°C+Offset)	Voltage	≤0.003%+2mV	≤0.003%+2mV	≤0.003%+2mV
	Current	≤0.005%+2mA	≤0.005%+2mA	≤0.005%+2mA
Rise Time (no load)	Voltage	≤30ms(10%-90%)	≤30ms(10%-90%)	≤10ms(10%-90%)
Rise Time (full load)	Voltage	≤40ms(10%-90%)	≤40ms(10%-90%)	≤20ms(10%-90%)
Fall Time (no load)	Voltage	≤200ms(90%-10%)	≤200ms(90%-10%)	≤60ms(90%-10%)
Fall Time (full load)	Voltage	≤30ms(90%-10%)	≤30ms(90%-10%)	≤12ms(90%-10%)
Transient Response Time	Voltage	Load transient recovery time (the time required for the output voltage to recover to within ±50mV of the steady-state output value when the output Current changes from 50% to 100% or from 100% to 50%)		
		≤50us	≤50us	≤50us
Setup Stability-30min (%of Output +Offset)	Voltage	≤0.005%+2mV	≤0.005%+2mV	≤0.005%+0.4mV
	Current	≤0.015%+1mA	≤0.015%+1mA	≤0.015%+1mA
Readback Stability-30min (%of Output +Offset)	Voltage	≤0.005%+3mV	≤0.005%+3mV	≤0.005%+2mV
	Current	≤0.015%+2mA	≤0.015%+2mA	≤0.015%+2mA
Parallel Connection	Voltage	≤0.02%+18mV		/
	Current	≤0.05%+5mA		/
Series Connection	Voltage	≤0.02%+36mV		/
	Current	≤0.05%+2.5mA		/
Efficiency		75% (Typical)		
Remote Sense Compensation Voltage		≤2.5V		
Command Response Time		5ms (Typical)		
Power Factor		0.5		
Maximum input current		10A		
Maximum input apparent power		1200VA		
Storage Temperature		-10°C to 70°C		
Protective Function		OVP/UVP/OCP/UCP/OTP/OPP/FOLDBACK		
OVP Response Time		≤100us		

Communication Interface		USB
Isolation Voltage (output to PE)		240VDC
Isolation Voltage (input to PE)		2121VDC
Working Temperature		0 to 40°C
AC Input	**Voltage**	110V/220V±10%
	Frequency	50/60Hz
Fuse Specification Wire		10A(110V)/6.3A(220V)
Number of parallel machines		/
Number of machines in series		/
Protection level		IP20
Safety		IEC 61010
Cooling method		Fan Cooling
Dimensions of mounted in rack **Handles and feet removed**		350mm(D)x 214mm(W)x 88.2mm(H)
Overall size of single unit **Includes handles and feet**		404.3mm(D)x 255mm(W)x 108mm(H)
Weight (net weight)		6.7kg

IT-N6333B

IT-N6333B				
Parameter		CH1	CH2	CH3
Rated Value	**Voltage**	0 to 60V	0 to 60V	0 to 15V
	Current	0 to 5A	0 to 5A	0 to 5A
	Power	0 to 200W	0 to 200W	0 to 45W
Power Regulation ±(%of Output+Offset)	**Voltage**	≤0.005%+1mV	≤0.005%+1mV	≤0.005%+1mV
	Current	≤0.01%+0.25mA	≤0.01%+0.25mA	≤0.01%+0.25mA
Load Regulation ±(%of Output+Offset)	**Voltage**	≤0.005%+1.3mV	≤0.005%+1.3mV	≤0.005%+1.3mV
	Current	≤0.01%+0.25mA	≤0.01%+0.25mA	≤0.01%+0.25mA
Setup Resolution	**Voltage**	1mV	1mV	1mV
	Current	0.1mA	0.1mA	0.1mA

	OVP	1mV	1mV	1mV
Read Back Resolution	**Voltage**	1mV	1mV	1mV
	Current	0.1mA	0.1mA	0.1mA
	Power	10mW	10mW	10mW
Setup Accuracy (within 12 months,25°C±5°C) ±(%of Output+Offset)	**Voltage**	≤0.02%+12mV	≤0.02%+12mV	≤0.02%+3mV
	Current	≤0.03%+1.5mA	≤0.03%+1.5mA	≤0.03%+1.5mA
	OVP	≤0.2%+0.4V	≤0.2%+0.4V	≤0.2%+0.1V
Read Back Accuracy (within 12 months,25°C±5°C) ±(%of Output+Offset)	**Voltage**	≤0.02%+12mV	≤0.02%+12mV	≤0.02%+3mV
	Current	≤0.03%+1.5mA	≤0.03%+1.5mA	≤0.03%+1.5mA
Ripple (20Hz -20MHz)	**Voltage Peak**	≤3mVp-p	≤3mVp-p	≤2mVp-p
	Voltage RMS	≤0.5mVrms	≤0.5mVrms	≤0.35mVrms
	Current RMS	≤1mArms	≤1mArms	≤1mArms
Setup Temperature Coefficient ±(%of Output/°C+Offset)	**Voltage**	≤0.0015%+1mV	≤0.0015%+1mV	≤0.0015%+0.25mV
	Current	≤0.003%+0.08mA	≤0.003%+0.08mA	≤0.003%+0.08mA
Read Back Temperature Coefficient ±(%of Output/°C+Offset)	**Voltage**	≤0.0015%+3mV	≤0.0015%+3mV	≤0.0015%+2mV
	Current	≤0.003%+0.2mA	≤0.003%+0.2mA	≤0.003%+0.2mA
Rise Time (no load)	**Voltage**	≤30ms(10%-90%)	≤30ms(10%-90%)	≤10ms(10%-90%)
Rise Time (full load)	**Voltage**	≤40ms(10%-90%)	≤40ms(10%-90%)	≤20ms(10%-90%)
Fall Time (no load)	**Voltage**	≤200ms(90%-10%)	≤200ms(90%-10%)	≤60ms(90%-10%)
Fall Time (full load)	**Voltage**	≤30ms(90%-10%)	≤30ms(90%-10%)	≤12ms(90%-10%)
Transient Response Time	**Voltage**	Load transient recovery time (the time required for the output voltage to recover to within ±50mV of the steady-state output value when the output Current changes from 50% to 100% or from 100% to 50%)		
		≤50us	≤50us	≤50us
Setup Stability-30min	**Voltage**	≤0.005%+1.5mV	≤0.005%+1.5mV	≤0.005%+0.4mV

(%of Output +Offset)	Current	≤0.01%+0.5mA	≤0.01%+0.5mA	≤0.01%+0.5mA
Readback Stability-30min (%of Output +Offset)	Voltage	≤0.005%+2mV	≤0.005%+2mV	≤0.005%+2mV
	Current	≤0.01%+0.5mA	≤0.01%+0.5mA	≤0.01%+0.5mA
Parallel Connection	Voltage	≤0.02%+12mV		/
	Current	≤0.03%+3mA		/
Series Connection	Voltage	≤0.02%+24mV		/
	Current	≤0.03%+1.5mA		/
Efficiency		75% (Typical)		
Remote Sense Compensation Voltage		≤2.5V		
Command Response Time		5ms (Typical)		
Power Factor		0.5		
Maximum input current		10A		
Maximum input apparent power		1200VA		
Storage Temperature		-10°C to 70°C		
Protective Function		OVP/UVP/OCP/UCP/OTP/OPP/FOLDBACK		
OVP Response Time		≤100us		
Communication Interface		USB/LAN/Digital IO/RS232		
Isolation Voltage (output to PE)		240VDC		
Isolation Voltage (input to PE)		2121VDC		
Working Temperature		0 to 40°C		
AC Input	Voltage	110V/220V±10%		
	Frequency	50/60Hz		
Fuse Specification Wire		10A(110V)/6.3A(220V)		
Number of parallel machines		/		
Number of machines in series		/		
Protection level		IP20		
Safety		IEC 61010		
Cooling method		Fan Cooling		

Dimensions of mounted in rack **Handles and feet removed**	350mm(D)x 214mm(W)x 88.2mm(H)
Overall size of single unit **Includes handles and feet**	404.3mm(D)x 255mm(W)x 108mm(H)
Weight (net weight)	6.7kg

* This specification is for reference only and is subject to change without notice.

5.2 Supplemental Characteristics

Recommended calibration frequency: once a year
Cooling style: fans

Appendix

Specifications of Red and Black Test Cables

ITECH provides you with optional red and black test cables, which individual sales and you can select for test. For specifications of ITECH test cables and maximum current values, refer to the table below.

Model	Description
IT-E30110-AB	1kV/10A/1m*2pcs Alligator clips-Banana plugs
IT-E30110-BB	1kV/10A/1m*2pcs Banana plugs-Banana plugs
IT-E30110-BY	1kV/10A/1m*2pcs Banana plugs-Y-type terminals
IT-E30312-YY	500V/30A/1.2m*2pcs Y-type terminals-Y-type terminals
IT-E30320-YY	500V/30A/2m*2pcs Y-type terminals-Y-type terminals
IT-E30615-OO	500V/60A/1.5m*2pcs Ring terminals-Ring terminals
IT-E31005LIC-OO	600V/100A/0.5m*2pcs Ring terminal low inductance
IT-E31010LIC-OO	600V/100A/1m*2pcs Ring terminal low inductance
IT-E31020LIC-OO	600V/100A/2m*2pcs Ring terminal low inductance
IT-E31040LIC-OO	600V/100A/2m*2pcs Ring terminal low inductance
IT-E31220-OO	500V/120A/2m*2pcs Ring terminals-Ring terminals
IT-E31250-OO	500V/120A/5m*2pcs Ring terminals-Ring terminals
IT-E32410-OO	500V/240A/1m*2pcs Ring terminals-Ring terminals
IT-E32420-OO	500V/240A/2m*2pcs Ring terminals-Ring terminals
IT-E32450-OO	500V/240A/5m*2pcs Ring terminals-Ring terminals
IT-E3301020-OO	3kV/100A/2m*2pcs Ring terminals-Ring terminals
IT-E3301050-OO	3kV/100A/5m*2pcs Ring terminals-Ring terminals
IT-E3302420-OO	3kV/240A/2m*2pcs Ring terminals-Ring terminals
IT-E3302450-OO	3kV/240A/5m*2pcs Ring terminals-Ring terminals
IT-E3303620-OO	3kV/360A/2m*2pcs Ring terminals-Ring terminals
IT-E3304020-OO	3kV/400A/2m*2pcs Ring terminals-Ring terminals
IT-E33620-OO	500V/360A/2m*2pcs Ring terminals-Ring terminals
IT-E33650-OO	500V/360A/5m*2pcs Ring terminals-Ring terminals
IT-E34020-OO	500V/400A/2m*2pcs Ring terminals-Ring terminals
IT-E34520-OO	500V/450A/2m*2pcs Ring terminals-Ring terminals
IT-E35030-OO	500V/360A/3m*2pcs Ring terminals-Ring terminals
IT-E36530-OO	500V/650A/3m*2pcs Ring terminals-Ring terminals

For maximum current of AWG copper wire, refer to table below.

AWG	10	12	14	16	18	20	22	24	26	28
The Maximum current value(A)	40	25	20	13	10	7	5	3.5	2.5	1.7

Note: AWG (American Wire Gage), it means X wire (marked on the wire). The table above lists current capacity of single wire at working temperature of 30°C. For reference only.

Contact Us

Thanks for purchasing ITECH products. In case of any doubts, please contact us as follows:

1. Visit ITECH website: www.itechate.com.
2. Select the most convenient contact method, for further information.