Multi-channel Modular Power System

IT2702/2704 Series User Manual

Model: IT2702/IT2704

Version: V2.1/10,2025

Notices

Manual Part Number

IT2702

Revision

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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 IT2700 series power supply meets all the published specifications at time of shipment from the factory.

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.

- 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:

- Damaged resulting from customer-wired circuits or customer-supplied parts or accessories;
- Modified or repaired by customer without authorization;
- Damaged resulting from customer-wired circuits or use in an environment not designated by us;
- The product model or serial number is altered, deleted, removed or made illegible by customer;
- Damaged as a result of accidents, including but not limited to lightning, moisture, fire, improper use or negligence.

Safety Symbols

⎓	Direct current	|	ON (power)
∼	Alternating current	○	OFF (power)
⎓ ∼	Both direct and alternating current	⎍	Power-on state
⏚	Chassis (earth ground) symbol.	⎍	Power-off state
⏚	Earth (ground) terminal	⊥	Reference terminal
⚠	Caution	+	Positive terminal
⚠	Warning (refer to this manual for specific Warning or Caution information)	—	Negative terminal

	A 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 a power cord during delivery and should be connected to a socket with a protective earth terminal, a junction box or a three-phase distribution box. Before operation, be sure that the instrument is well grounded.**
- **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 loosen.**
- **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.**

WARNING

- SHOCK HAZARD Ground the Instrument. This product is provided with a protective earth terminal. To minimize shock hazard, the instrument must be connected to the AC mains through a grounded power cable, with the ground wire firmly connected to an electrical ground (safety ground) at the power outlet or distribution box. Any interruption of the protective

(grounding) conductor or disconnection of the protective earth terminal will cause a potential shock hazard that could result in injury or death.

- Before applying power, verify that all safety precautions are taken. All connections must be made with the instrument turned off, and must be performed by qualified personnel who are aware of the hazards involved. Improper actions can cause fatal injury as well as equipment damage.
- SHOCK HAZARD, LETHAL VOLTAGES This product can input the dangerous voltage that can cause personal injury, and the operator must always be protected from electric shock. Ensure that the input electrodes are either insulated or covered using the safety covers provided, so that no accidental contact with lethal voltages can occur.
- Never touch cables or connections immediately after turning off the instrument. Verify that there is no dangerous voltage on the electrodes or sense terminals before touching them.

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

Note

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

Regulatory Markings

CE	The CE mark indicates that the product complies with all the relevant European legal directives. The specific year (if any) affixed refers to the year when the design was approved.
	The instrument 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.

	This symbol indicates the time period during which no hazardous or toxic substances are expected to leak or deteriorate during normal use. The expected useful life of the product is 10 years. The product can be used safely during the 10-year Environment Friendly Use Period (EFUP). Upon expiration of the EFUP, the product must be immediately recycled.

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 1 of the WEEE Directive, this instrument is classified as a “Monitoring and Control Instrument”.

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 61326-1:2012/ EN 61326-1:2013 [1][2][3]
Reference Standards
CISPR 11:2009+A1:2010/ EN 55011:2009+A1:2010 (Group 1, Class A)
IEC 61000-4-2:2008/ EN 61000-4-2:2009
IEC 61000-4-3:2006+A1:2007+A2:2010/ EN 61000-4-3:2006+A1:2008+A2:2010
IEC 61000-4-4:2004+A1:2010/ EN 61000-4-4:2004+A1:2010
IEC 61000-4-5:2005/ EN 61000-4-5:2006
IEC 61000-4-6:2008/ EN 61000-4-6:2009
IEC 61000-4-11:2004/ EN 61000-4-11:2004

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/ EN 61010-1:2010

Content

Chapter1 Quick Reference

This chapter introduces the front and rear panels of the IT2700 series multi-channel power system to ensure that you can quickly understand the appearance, structure, and wiring of the power system and other usage functions before operating the power system, which will help you to better use this series of instruments.

1.1 Brief Introduction

IT2702/IT2704 series multi-channel modular power system brings ultra-high power density. The 1U main frame can include up to 8 modules (200W each) or 4 modules (500W each). The IT2702 main frame can be equipped with bidirectional DC power supplies, DC power supplies or regenerative loads. And the IT2704 main frame can be equipped with regenerative loads. Different modules can be grouped and synchronized. They have built-in LAN, USB, CAN, digital I/O and free PC software. It can be widely used in ATE integration in R&D, design verification and manufacturing of DC-DC, communication power supplies, power component, electronic products, PCBA, battery simulation and test, chips BMS chips etc.

Features

- ATE systems for R&D, design verification and manufacturing
- Compact size: 1U single unit outputs up to 8 channels
- Flexible modular system: mix and match various modules
- 2 frame (1U), 3 module types (DC power supply, bidirectional power supply, regenerative load)
- Free PC software, display 8-channel output
- Support Web control, use common browser to realize all functions
- The electrically isolated source load module supports 8 modules in master-slave parallel connection up to 2kW
- Load function: support CC, CV, CP, CR, CC+CV, CR+CV, CP+CV, CC+CR, AUTO,BSIM (battery simulation)
- Power supply function: Supports CV/CC/CP loop and internal resistance setting
- Bidirectional power supply module supports resistance setting in load mode
- All modules are wide-range modules
- Single module voltage up to 150V, current up to 30A, power up to 500W
- Supports synchronous control between different frames, no upper limit of channels
- Rich trigger output and input, support step trigger output, can trigger other modules (acquisition, oscilloscope, data recording, etc.)
- Up to 50kHz external data recording function to improve test efficiency
- Measurement functions: multi-output/single-output display, oscilloscope, data record display, supports average, minimum and maximum values of V/I/P, and calculates P, Ah and Wh for all outputs
- Output functions: list function, arbitrary waveform, swept sine wave, arbitrary wave sequence, constant dwell arbitrary wave, load transient,

battery simulation*1, battery test, OCP and OPP test*2, output on/off serialization, Watchdog, support output coupling

- Full protection: OVP, UVP, OCP, OPP, OTP, UCP, Foldback, supports protection coupling
- Modules has anti-reverse connection function, built-in relay, and supports anti-discharge and anti-surge functions
- AC input: adaptive 100-380 V ac single phase
- Built-in LAN, USB-TMC,USB-VCP, CAN, digital I/O, data import and export by USB and supports SCPI protocol

*1 only available for bidirectional power supply modules only *2 only available for load modules

Models and Options

The IT2702 main frame can be equipped with up to eight 200W modules or four 500W modules, which can be bidirectional power supply modules, DC power supplies modules, regenerative load modules or SMU. The detailed model list is shown in the table below.

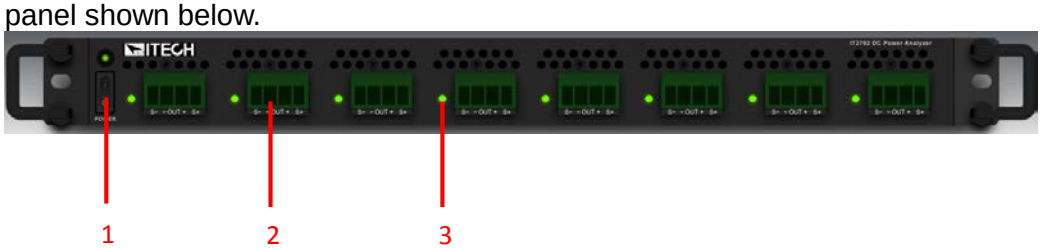
The IT2704 main frame can be equipped with up to eight 200W modules or four 500W modules. This frame can only be used with regenerative load modules, and does not support playing with power supply modules.

The detailed model list is shown in the table below:

Voltage	Current	Power	DC power supply	Bidirectional power supply	Regenerative load	SMU
20V	3A	20W	-	-		IT27814/ IT27814E
30V	15A	200W	IT27134	IT27334	IT27534	
	30A	500W	IT27154	IT27354	IT27554	
60V	10A	200W	IT27135	IT27335	IT27535	
	20A	500W	IT27155	IT27355	IT27555	
150V	5A	200W	IT27137	IT27337	IT27537	
	10A	500W	IT27157	IT27357	IT27557	

1.2 Front Panel Introduction

The IT2702 series power system is non-display panel models with the front panel shown below.



1 Power switch

2 Output terminals and remote measurement terminals corresponding to channels

3 Channel Status Indicator

1.3 Rear Panel Introduction

The rear panel of the IT2700 series is shown below.

1 Status indicator
2 LAN-Reset key
3 USB interface (U disk)
4 LAN interface
5 IO terminals and CAN interface
6 USB interface
7 AC power input

Chapter2 Inspection and Installation

2.1 Unpacking and Transportation

Unpacking

For cabinet products, they are packaged in wooden boxes at the factory. After you receive them, please refer to the unpacking instructions provided with the box for disassembly; for products packaged in cartons, please use appropriate tools for unpacking.

It is recommended to keep the complete transport packaging for the lifetime of the device for relocation or return to the manufacture for repair.

Transportation

If you need to transport non-cabinet products, you must pay attention to the following to ensure the safety of equipment and personnel.

CAUTION

- **Before moving, make sure that the cabinet or stand where the equipment will be placed has been fixed and meets the load-bear- ing conditions to avoid tilting and collapsing, causing personnel to be injured, and equipment broken.**
- **Due to the weight of the product, transport by hand should be avoided where possible. If unavoidable, carry it with two people and holding the product shell and not external parts (such as han- dles, electrodes, knobs, etc.).**
- **When carrying, be prepared to bear the weight to avoid sprains or being crushed by heavy objects.**
- **Use suitable safety clothing, especially safety shoes, when carrying the equipment, as due to its weight a fall can have serious consequences.**

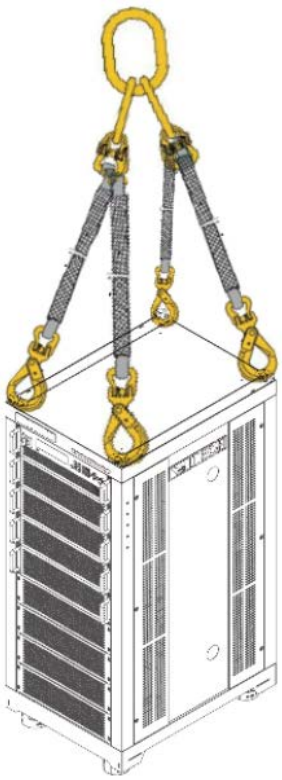
After unpacking the cabinet product, if you need to move it to other places, you must pay attention to the following matters to ensure the safety of equipment and personnel.

CAUTION

- **The cabinet product is very heavy. Before moving to another loca- tion, confirm whether the ground load is in compliance.**
- **During the process of moving the cabinet, it is recommended that two or more people cooperate and push it slowly and at a constant speed. If you encounter a pit, you need to pay special attention. It is forbidden to push it quickly, otherwise it will easily cause excessive inertia and cause the casters at the bottom of the cabinet to jam and the cabinet to fall.**
- **It is not advisable to push down the slope to prevent the cabinet from falling down due to the shift of the center of gravity. It is rec- ommended**

to use a forklift or crane to move the cabinet.

- **ITECH 27U and 37U cabinets are equipped with hoisting rings as standard on the top. It is recommended to use a crane equipped with a four-leg hoisting belt structure for horizontal hoisting and moving, and ensure that the four hoisting belts are the same length to avoid cabinet skew during movement. As shown below.**
- **After moving to the destination, please lock the four casters to se- cure the cabinet.**
- **The cabinet should be placed on a level ground. It is forbidden to place the cabinet on a sloped ground.**



2.2 Verifying the Shipment

Open the package and check the articles within package box before operation. In case of any non-conformity, missing or appearance wearing, please contact ITECH immediately.

The package box should comprise:

Device name	Quantity	Model	Remarks
Multi-channel power system	x1	IT2702/IT 2704	For the specific models included in this series, refer to *1.1 Brief Introduction.*
Power Cord	x1	-	Depending on the instrument model. For details, see *2.4 Connecting the Power Cord*.
USB cable	x1	-	Used for communicating with the PC.
LAN cable	x1	-	Used for communicating with the PC.

Calibration Certificate	x1	-	Test report before delivery

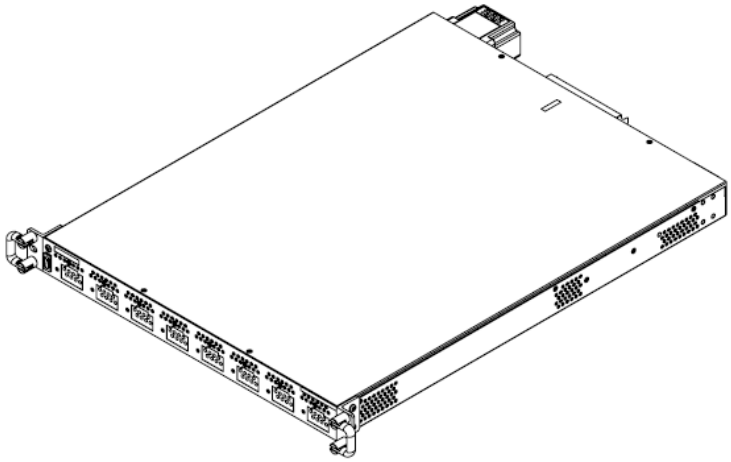
NOTE

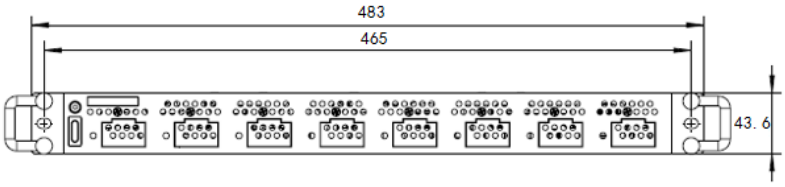
After confirming that package contents are consistent and correct, please appropriately keep package box and related contents. The package requirements should be met when the instrument is returned to factory for repair.

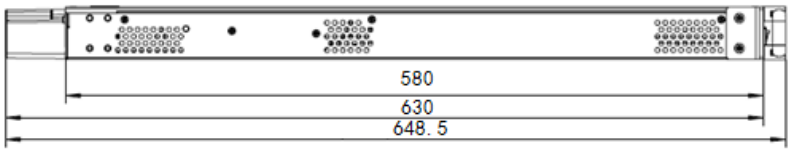
2.3 Instrument Size Introduction

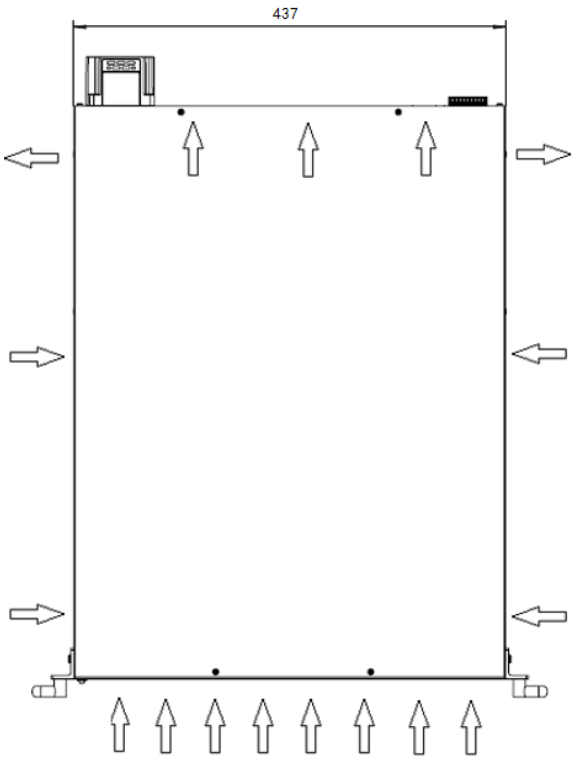
The instrument should be installed at well-ventilated and rational-sized space. Please select appropriate space for installation based on the power supply size.

IT2702 Model









Arrow ⇨ indicates the direction of airflow.

2.4 Installing the Instrument

2.4.1 Power Module Installation

CAUTION

The information in this section applies if you have purchased an IT2700 mainframe without the power modules installed, or if you are adding a power module to the mainframe.

Turn the mainframe off and disconnect the power cord beforeinstalling or removing power modules. Observe all standard electrostatic discharge precautions before handling electronic components.

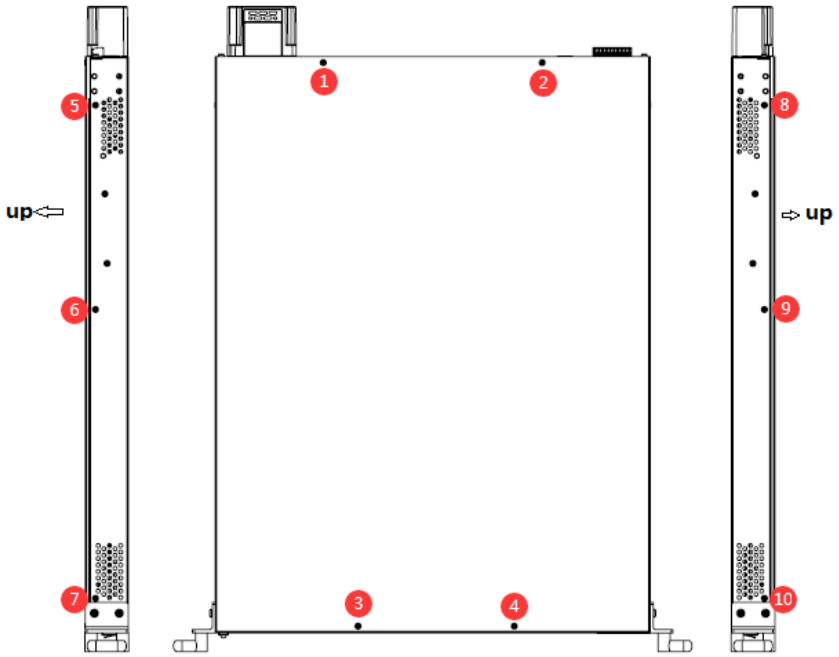
Preparation before installation

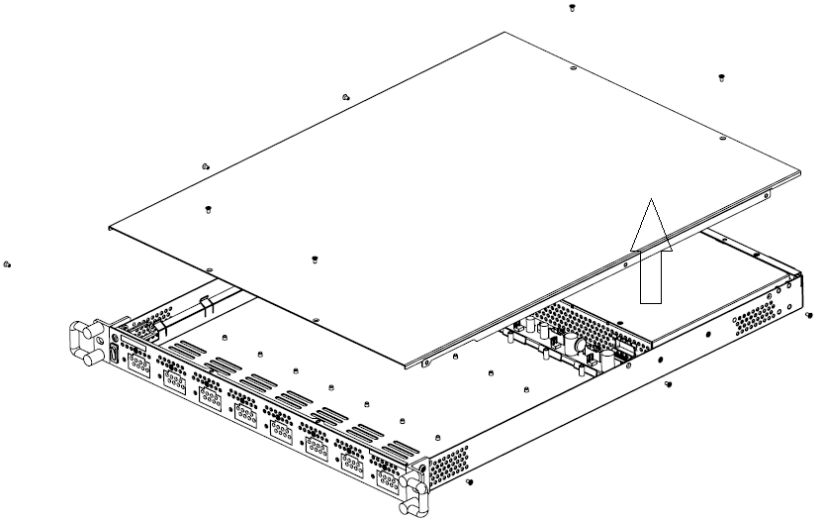
The screws used for removing the top cover and mounting the module are M3 type screws, so please prepare the corresponding Phillips screwdriver in advance.

Installation Step

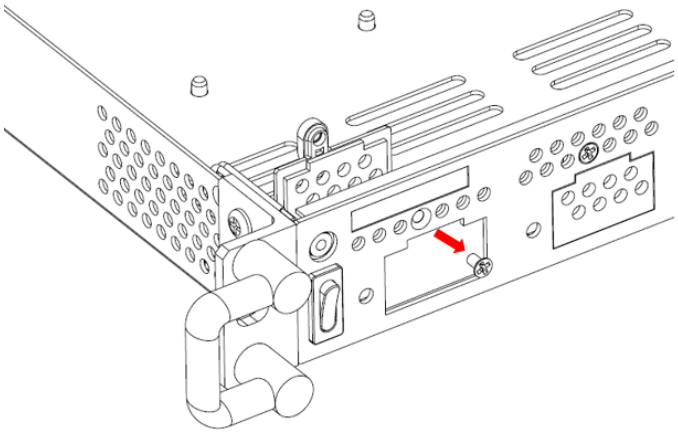
1. Remove the top cover.

   Loosen the screws in the locations shown below to remove the top cover.

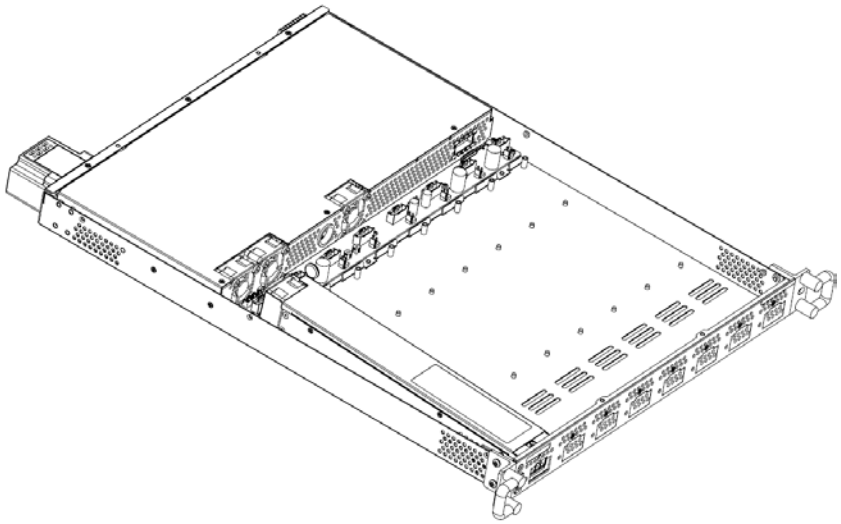




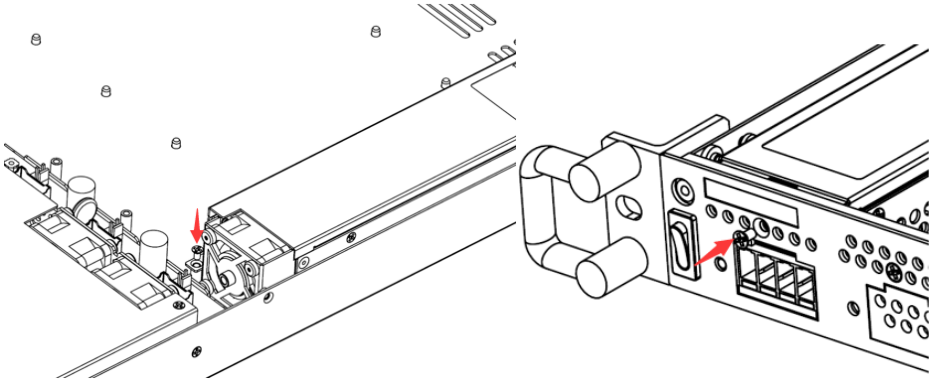
2. Remove the plastic plugs from the terminals corresponding to the module.



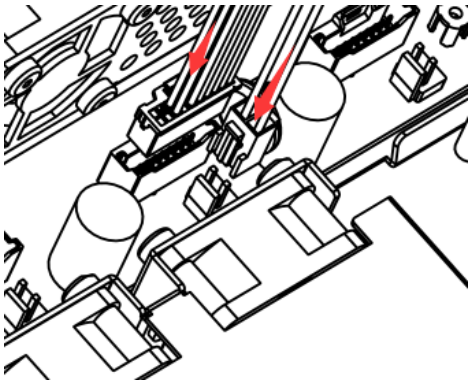
3. Place the power modules into the corresponding slot.



4. Set screws on both ends of the locking module.

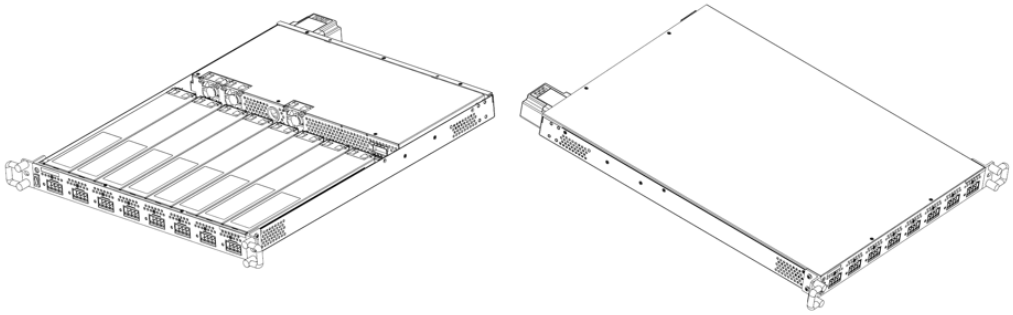


5. Connecting the module wire harness.



The location of the power modules wire harness connection inside the mainframe determines their front panel output and programming channel assignments. For example, modules installed in channel 1 will be connected to the wire harness for output1 . Modules installed in channel 4 will be connected to the wire harness for output4.

6. Finish the installation. Install the top cover, as shown as below.



2.4.2 Rack Mounting

Power System can be mounted on a standard 19-inch rack. ITECH provides user with IT-E157 mounting rack, as an optional mount kit. The detailed information and installation method please refer to the *IT-E157 User Manual*.

CAUTION

You cannot use support rails for rack mounting this series instrument.

Support rails would block the airflow needed for cooling.

Use Rack Mount kit (Option IT-E157) to rack mount this instrument.

2.5 Connecting the Power Cord

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

Before connecting the power cord

To prevent electric shock and damage to the instrument, observe the following precautions.

WARNING

- Before connecting power cord, be sure to confirm that the power voltage matches with the rated input voltage of the instrument.
- Before connecting power cord, be sure to switch off the instrument. Verify that there is no dangerous voltage on the connection terminals.
- To avoid fire or electric shock, Make sure to use the power cord supplied by ITECH.
- Be sure to connect the power cord to the AC distribution box with protective grounding. Do not use terminal board without protective grounding.
- Do not use an extended power cord without protective grounding, otherwise the protection function will fail.
- Ensure that the power cord connection terminals are either insulated or covered by the supplied protective cover so that no accidental contact with lethal voltage can occur.

CAUTION

Safety agency requirements dictate that there must be a way to physically disconnect the AC mains cable from the unit. A disconnect device, either a switch or circuit breaker must be provided in the final installation. The disconnect device must be close to the equipment, be easily accessible, and be marked as the disconnect device for this equipment.

AC Power Input Level

The input of this series of instruments only supports single-phase wiring (L/ N/ PE), and the voltage can support 100V~380V, 50 ~ 60Hz.

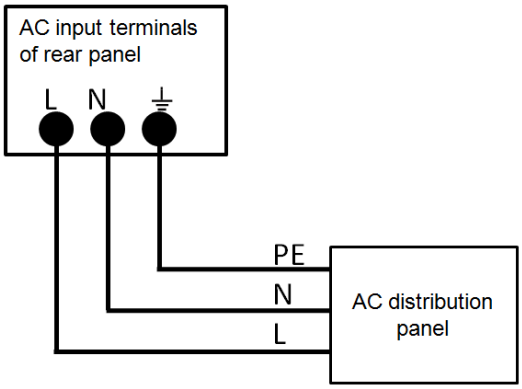
When it is necessary to connect to 380V power supply, users can connect L1/L2/PE or L2/L3/PE in three-phase power supply.X

Connecting the power cord

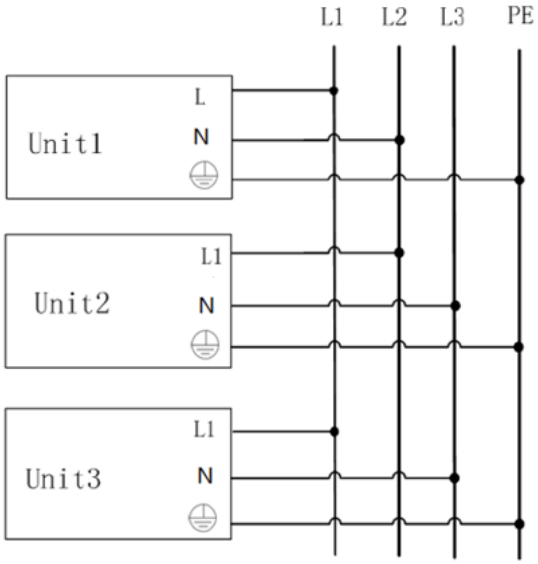
The standard power cord specifications for this series is show as follow:

Please take care for balanced current distribution on three phases. For single mainframe, it supports single phase input, and it requires single phase or three phases of AC distribution box.

Single phase input connecting:



In case multiple units are connected to the same main three phase AC distribution box. It is recommended to follow the suggestion connection diagram as below.



First connect one end of the AC power cord to the AC input terminal on the rear panel of this instrument. When connecting, you need to connect the fire wire, zero wire, and ground wire to the corresponding terminals on the device. Loosen the screws before insertion, and lock the screws after insertion.

Connect the plug on the other end of the power cord to your AC 220V power source. Connect the three terminals brown to line (L), black to neutral (N), and yellow-green to ground (PE) on the other end of the power cord to your AC distribution panel.

2.6 Connecting Test Lines (Optional)

Test lines are not standard accessories of the instrument. Please select optional red and black test lines for individual sales based on the maximum current value. For specifications of test lines and maximum current values, refer to "**Specifications of Red and Black Test Lines**" in "**Appendix**".

WARNING

- Before connecting test lines, be sure to switch off the instrument. Power switch is in Off position. Otherwise, contact with output terminals in rear panel may cause electrical shock.
- To avoid electrical shock, before testing, please make sure the rating values of the testing lines, and do not measure the current that higher than the rating value. All test lines shall be capable of withstanding the maximum short circuit output current of the power supply without causing overheat.
- If several loads are provided, each pair of load wires shall safely withstand the rated short circuit output current of the power supply under full load.
- Always use test lines provided by ITECH to connect the equipment. If test lines from other factories are used, please check that the test line can withstand maximum current.

Specification for Test Cables

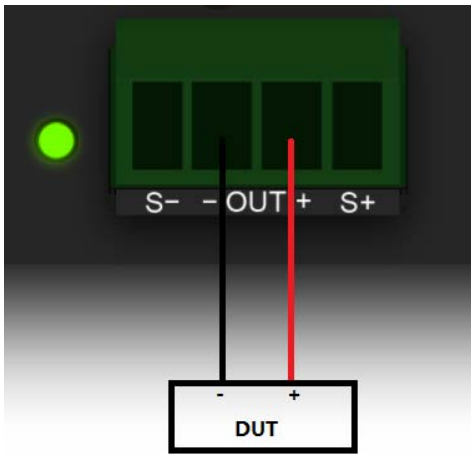
Test cables are not standard accessories for the instrument. Please select optional red and black test cables for individual sales based on the maximum current value. For specifications of test cables and maximum current values, refer to A.1 Specifications of Red and Black Test Cables for more information.

Connecting the DUT (Local Measurement)

The instrument supports two kinds of wiring methods with the DUT: local measurement and remote measurement (SENSE). The default test mode is local measurement.

Please confirm that the Remote Sense function in the menu is set to Off, otherwise the instrument will report an error in the present connection mode.

The connection diagram is shown as follow:



1. Confirm that the power switch is in the OFF position and verify that there is no dangerous voltage on the connection terminals.
2. Remove the output terminals cover of the power system.
3. Loosen the screws of the output terminals and connect the red and black test cables to the output terminals. Re-tighten the screws.

   When maximum current that one test cable can withstand fails to meet the rated current, use multiple pieces of red and black test cables. For example, the maximum current is 1,200A, then 4 pieces of 360A red and black cables are required.
4. Thread the red and black test cables through the output terminals cover of the power system and install the cover, some models do not have a protective cover; skip this step.
5. Connect the other end of the red and black cables to the DUT. The positive and negative poles must be properly connected and fastened when wiring.

Connecting the DUT (Remote Sensing)

Remote measurement is available for the following scenarios:

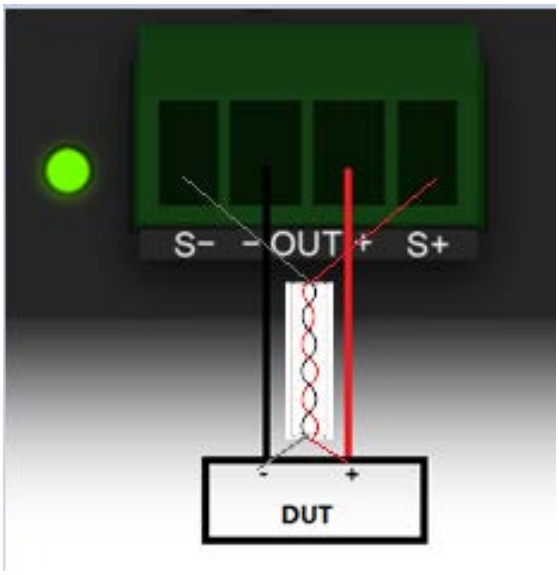
When the DUT consumes large current or the wires are too long, there is a voltage drop on the wires between DUT and output terminals of the power system.

To maximize measurement accuracy, the power system provides the remote

measurement terminals S+ and S- on the rear panel, which can be used to measure the terminal voltage of the DUT.

When the power system is used for battery testing in actual applications, the voltage drop of the wire will lead to voltage inconsistency of both ends and inconsistency of the cutoff voltage of power system and the actual voltage of battery, resulting in inaccurate measurement.

The connection diagram and steps of remote measurement are as follows:



1. Confirm that the power switch is in the OFF position and verify that there is no dangerous voltage on the connection terminals.
2. Remove the output terminals cover of the power system.
3. Refer to the wiring diagram and connect the Vs+ and Vs- with armored twisted-pair cables. Loosen the screws of the output terminals and connect the red and black test cables to the output terminals. Re-tighten the screws.

   When maximum current that one test cable can withstand fails to meet the rated current, use multiple pieces of red and black test cables. For example, the maximum current is 1,200A, then 4 pieces of 360A red and black cables are required.
4. Thread the red and black test cables through the output terminals cover of the power system and install the cover, some models do not have a protective cover; skip this step.
5. Connect the other end of the remote sense cables to the DUT.
6. Connect the other end of the red and black cables to the DUT. The positive and negative poles must be properly connected and fastened when wiring.
7. Power on the instrument and turn on the Sense function of the instrument.

Chapter3 Getting Started

The IT2702 series are instruments without an operator panel and there are two ways for the user to operate the instrument:

- PV2700 Demo Software

  The PV2700 Demo software is the free host computer software provided with the IT2700 series. Users can install it on the computer and use the software to operate the instrument after connecting the instrument communication.

  If the user chooses this operation method, please refer to the PV2700 User Manual for detailed functions and operation methods.

- IT2700 Web Control:

  This series instrument comes standard with a LAN communication interface, and Web remote control can be realized by through LAN communication.

  If users choose this operation method, please refer to the *IT2700 Web Control Manual*.

3.1 Power-on the Instrument

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.

Precautions

To prevent electric shock and damage to the instrument, please observe the following precautions.

WARNING

- **Before connecting power cord, be sure to confirm that the power voltage matches with the supply voltage.**
- **Before connecting power cord, be sure to switch off the instrument. Verify that there is no dangerous voltage on the terminals before touching them.**
- **To avoid fire or electric shock, make sure to use the power cord supplied by ITECH.**
- **Be sure to connect the main power socket to the power outlet with protective grounding. Do not use terminal board without protective grounding.**
- **Do not use an extended power cord without protective grounding, otherwise the protection function will fail.**
- **Ensure that the input electrodes are either insulated or covered using the safety covers provided, so that no accidental contact with lethal voltages can occur.**
- **If you notice strange sounds, unusual odors, fire, or smoke around or from inside the instrument, flip the POWER switch to the (O) side to**

turn the instrument off, or remove the power cord plug from the outlet. The detachable power cord may be used as an emergency disconnecting device. Removing the power cord will disconnect AC input power to the unit.

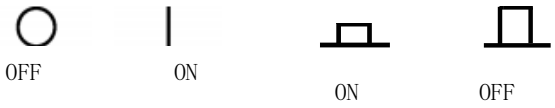
CAUTION

Safety agency requirements dictate that there must be a way to physically disconnect the AC mains cable from the unit. A disconnect device, either a switch or circuit breaker must be provided in the final installation. The disconnect device must be close to the equipment, be easily accessible, and be marked as the disconnect device for this equipment.

Power Switch Introduction

User can press the power switch of IT2700 series instrument directly to turn on or turn off the instrument.

The status of Power switch is as follows.



Turning the POWER Switch On

Check that the power cord is connected properly.

Flip the POWER switch to the (|) side to turn the instrument on. The front panel display will light up after a few seconds. The indicator corresponding to the channel will blink.

Turning the POWER Switch Off

Flip the POWER switch to the (O) side to turn the instrument off.

After you turn the POWER switch off, wait at least 10 seconds after the fan stops before you turn the POWER switch back on.

3.2 Remote Control

This series power system comes standard with three communication interfaces: USB, LAN and CAN, you can choose one of them to communicate with your computer.

3.2.1 USB Interface

Use cables with both USB ends to connect with IT7800 and PC. All functions are programmable over the USB.

The USB488 interface capabilities are described below:

- The interface is 488.2 USB488 interface.
- The interface accepts REN_CONTROL, GO_TO_LOCAL, and

LOCAL_LOCKOUT requests.

- The interface accepts MsgID = TRIGGER USBTMC command message and forwards TRIGGER requests to the function layer.

The USB488 device functions are described below:

- The device understands all mandatory SCPI commands.
- The device is SR1 capable.
- The device is RL1 capable.
- The device is DT1 capable.

3.2.2 LAN Interface

When the user connect PC through LAN interface, the following is required to use the LAN interface. The LAN interface complies with the LXI standard.

Under the web control mode, the instrument and computer must communicate through the LAN interface.The default IP address is **192.168.200.100** for the first time, users can use the default IP address.

Connect Interface

Connect the LAN interface of power supply to the computer with a reticle. The gateway address 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.

For the first time, it is recommended that you first use USB communication to modify the IP address of the instrument by sending commands. You can also directly modify the IP address of your computer and the same network segment of the instrument.

Using Web Server

The instrument has a built-in Web server for monitoring and controlling the instrument through a Web browser in PC.

To use the Web server, connect the instrument and PC over LAN interface and enter the instrument's IP address into the address bar at the top of your PC's Web browser, you can access the front panel control functions including the LAN configuration parameters.

1. The format of the address entered in the address bar of the browser is **http:// *192.168.200.100***. The specific IP address is subject to the actual instrument settings. The initial IP address is 192.168.200.100. If the IP address has been changed before, you can reset it by pressing the **LAN-Reset** button on the rear panel.

   The opened page is displayed as follows:

You can select different pages by clicking the buttons shown in the navigation bar on the left side of the window. The detailed descriptions are as follows.

- Home: Web home interface, displays the model and appearance of the instrument;
- Information: Displays the serial number of the instrument and more system information as well as LAN configuration parameters;
- Web Control: Enables the Web control to begin controlling the instrument. This page allows you to monitor and control the instrument; For a detailed description of control operations, refer to the corresponding manual *IT2700 Web Control Manual.*
- LAN Configuration: Reconfigure the LAN parameters;
- Manual: Go to the ITECH official website and view or download the relevant documents.
- Upload: Performs a system upgrade.

  Click **CONNECT** to connect the PC with the instrument, then click

  Select File to select the system upgrade installation package (for example, IT2700-U-V000.001.029all.itech), and then click **UPLOAD** performs the upgrade operation. After the upgrade is complete, the instrument needs to be restarted.

3.2.3 CAN Interface

The CAN interface is located on the rear panel of the instrument and is connected to the computer using a CAN communication cable.

Definition of CAN Pins

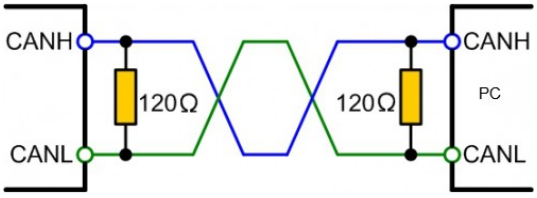
The definition of CAN pins are as follows.

Pins	Description
H	CAN_H
L	CAN_L

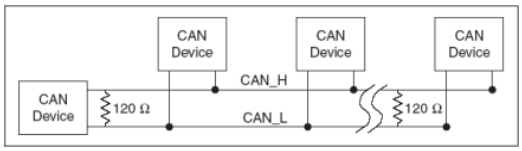
CAN Troubleshooting

If you meet some problems when communicating with PC by CAN interface, please check the following items:

- PC and the instrument must have the same baud rate.
- Ensure you have used the correct communication cable (CAN_H, CAN_L). Please pay attention that some cable may not have a correct internal wiring even it is with an appropriate plug.
- The interface cable is correctly connected (CAN_H to CAN_H, CAN_L to CAN_L).
- If the communication signal is poor or unstable, it is recommended to con- nect a 120 Ω terminating resistance.
  - The connection diagram of a single device is as below.



  - The connection diagram of multiple devices is as below.



Chapter4 Technical Specifications

This chapter will introduce the main technical parameters of IT7800, such as rated voltage/current/power and so on. Besides, this part will introduce the working environment and storage temperature.

NOTE

All the below parameters are subject to change without prior notice from ITECH.

4.1 Supplemental characteristics

Recommended calibration frequency: once a year

Cooling style: fans

4.2 Main technical parameters

IT2702 Mainframe Specifications

AC Input	Voltage	1-Phase 100V～380V
	Frequency	50/60Hz
Maximum input apparent power	2.3kVA	
Maximum input current	12.5Aac	
Efficiency (1)	93%	
Power factor	0.99	
DC current Offset	≤0.2A	
ITHD	≤3%	
Communication interface	USB/LAN/CAN/digital-IO	
Command Response Time	0.1ms	
Max-channel	8	
Working temperature	0～40℃	
Storage temperature	-10℃～70℃	
Protection class	IP20	
Isolation (output to ground)	3500Vdc	
Cooling style	fans	

Dimension (mm)	437mm(W)*43.6mm(H)*580mm(D)(Main Frame size) 437mm(W)*43.6mm(H)*648.5mm(D)(include handle and cover)
Weight(net)	9kg

Note:
（1）AC current will be limited to 12.5Aac and power limiting may occur at low inputvoltage.Example: AC input voltage is single phase 100Vac, power limit is:P=100Vac*12.5Aac=1250VA

IT2704 Mainframe Specifications

AC Input	Voltage	Single phase 100V～380V
	Frequency	50/60Hz
Max. apparent power	1.8kVA	
Max. input current（1）	12.5Aac	
Max. efficiency	93%	
Power Factor	0.99	
DC component	≤0.2A	
Current harmonics	≤3%	
Standard Interface	USB/LAN/CAN/Digit-IO	
Command Response Time	0.1ms	
Max. Channel	8	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Isolation DC to GND	3500Vdc	
Cooling	Air	
Dimension(mm)	437mm(W)*43.6mm(H)*580mm(D)(Main Frame size) 437mm(W)*43.6mm(H)*648.5mm(D)(include handle and cover)	

Weight(Main Frame)	9kg

Note：
（1）AC current will be limited to 12.5Aac and power limiting may occur at low input voltage. Example: AC input voltage is single phase 100Vac, power limit is:P=100Vac*12.5Aac=1250VA

IT27134

Model	IT27134 DC power supply	
Rated value	Voltage	0～30V
	Current	0～15A
	Power	0～200W
	Series internal resistance (CV Priority)	0～1Ω
Setup Resolution	Voltage	0.001V
	Current	0.001A
	Power	0.01W
	Series internal resistance (CV Priority)	0.0001Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Series internal resistance (CV Priority)	≤1%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Voltage ripple (1)	Vpeak	≤30mVpp
	Vrms	≤5mV
Setup Temperature	Voltage	≤20ppm/℃

Coefficient	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Rise Time(no load)	Voltage	≤10ms
Rise Time(full load)	Voltage	≤20ms
Fall Time(no load)	Voltage	≤0.5s
Fall Time(full load)	Voltage	≤50ms
Transient Response Time (2)	Time	≤1ms
	Stability Voltage	±0.3V
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (3)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Output protection	OCP	15.3A
	OVP	30.6V
	OPP	204W
Remote Sense Compensation Voltage	≤3V	
Isolation DC to GND	800Vdc	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Cooling	Air	
Dimension (mm)	321mm(D)*51.7mm(W)*40.5mm(H)	
Weight(net)	0.6kg	

Note：

（1）Ripple peak and RMS doubled for voltages 0.5V and below

（2）10% rated current to 90% rated current

（3）Under sense mode

（4）Voltage rise time from 10% to 90% of rated voltage and voltage fall time from 90% to 10% of rated voltage

IT27135

Model	IT27135 DC power supply	
Rated value	Voltage	0～60V
	Current	0～10A
	Power	0～200W
	Series internal resistance (CV Priority)	0～1Ω
Setup Resolution	Voltage	0.001V
	Current	0.001A
	Power	0.01W
	Series internal resistance (CV Priority)	0.0001Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Series internal resistance (CV Priority)	≤1%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Voltage ripple (1)	Vpeak	≤60mVpp
	Vrms	≤10mV
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Rise Time(no load)	Voltage	≤10ms

Rise Time(full load)	Voltage	≤20ms
Fall Time(no load)	Voltage	≤0.5s
Fall Time(full load)	Voltage	≤50ms
Transient Response Time (2)	Time	≤1ms
	Stability Voltage	±0.6V
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (3)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Output protection	OCP	10.2A
	OVP	61.2V
	OPP	204W
Remote Sense Compensation Voltage	≤6V	
Isolation DC to GND	800Vdc	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Cooling	Air	
Dimension (mm)	321mm(D)*51.7mm(W)*40.5mm(H)	
Weight(net)	0.6kg	

Note：

（1）Ripple peak and RMS doubled for voltages 0.5V and below

（2）10% rated current to 90% rated current

（3）Under sense mode

（4）Voltage rise time from 10% to 90% of rated voltage and voltage fall time from 90% to 10% of rated voltage

IT27137

Model	IT27137 DC power supply	
Rated value	Voltage	0～150V
	Current	0～5A
	Power	0～200W

	Series internal resistance (CV Priority)	0～1Ω
Setup Resolution	Voltage	0.01V
	Current	0.001A
	Power	0.01W
	Series internal resistance (CV Priority)	0.0001Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Series internal resistance (CV Priority)	≤1%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Voltage ripple (1)	Vpeak	≤150mVpp
	Vrms	≤50mV
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Rise Time(no load)	Voltage	≤10ms
Rise Time(full load)	Voltage	≤20ms
Fall Time(no load)	Voltage	≤0.5s
Fall Time(full load)	Voltage	≤50ms
Transient Response Time (2)	Time	≤1ms
	Stability Voltage	±1.5V
Line Regulation	Voltage	≤0.005% + 0.005%FS

	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (3)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Output protection	OCP	5.1A
	OVP	153V
	OPP	204W
Remote Sense Compensation Voltage	≤15V	
Isolation DC to GND	800Vdc	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Cooling	Air	
Dimension (mm)	321mm(D)*51.7mm(W)*40.5mm(H)	
Weight(net)	0.6kg	

Note：
（1）Ripple peak and RMS doubled for voltages 0.5V and below
（2）10% rated current to 90% rated current
（3）Under sense mode
（4）Voltage rise time from 10% to 90% of rated voltage and voltage fall time from 90% to 10% of rated voltage

IT27153

Model	IT27153 DC power supply	
Rated value	Voltage	0～20V
	Current	0～50A
	Power	0～500W
	Series internal resistance (CV Priority)	0～1Ω
Setup Resolution	Voltage	0.001V
	Current	0.001A
	Power	0.01W
	Series internal resistance (CV Priority)	0.0001Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A

	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Series internal resistance (CV Priority)	≤1%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Voltage ripple (1)	Vpeak	≤30mVpp
	Vrms	≤5mV
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Rise Time(no load)	Voltage	≤10ms
Rise Time(full load)	Voltage	≤20ms
Fall Time(no load)	Voltage	≤0.5s
Fall Time(full load)	Voltage	≤50ms
Transient Response Time (2)	Time	≤1ms
	Voltage	±0.2V
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (3)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Output protection	OCP	51A
	OVP	20.4V
	OPP	510W
Remote Sense Compensation Voltage	≤2V	
Isolation DC to GND	800Vdc	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Cooling	Air	
Dimension (mm)	321mm(D)*104mm(W)*40.5mm(H)	

Weight(net)	1.0kg

Note：
（1）Ripple peak and RMS doubled for voltages 0.5V and below
（2）10% rated current to 90% rated current
（3）Under sense mode
（4）Voltage rise time from 10% to 90% of rated voltage and voltage fall time from 90% to 10% of rated voltage

IT27154

Model	IT27154 DC power supply	
Rated value	Voltage	0～30V
	Current	0～30A
	Power	0～500W
	Series internal resistance (CV Priority)	0～1Ω
Setup Resolution	Voltage	0.001V
	Current	0.001A
	Power	0.01W
	Series internal resistance (CV Priority)	0.0001Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Series internal resistance (CV Priority)	≤1%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Voltage ripple (1)	Vpeak	≤30mVpp
	Vrms	≤5mV
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃

Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Rise Time(no load)	Voltage	≤10ms
Rise Time(full load)	Voltage	≤20ms
Fall Time(no load)	Voltage	≤0.5s
Fall Time(full load)	Voltage	≤50ms
Transient Response Time (2)	Voltage	≤1ms
	Stability Voltage	±0.3V
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (3)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Output protection	OCP	30.6A
	OVP	30.6V
	OPP	510W
Remote Sense Compensation Voltage	≤3V	
Isolation DC to GND	800Vdc	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Cooling	Air	
Dimension (mm)	321mm(D)*104mm(W)*40.5mm(H)	
Weight(net)	1.0kg	

Note：
（1）Ripple peak and RMS doubled for voltages 0.5V and below
（2）10% rated current to 90% rated current
（3）Under sense mode
（4）Voltage rise time from 10% to 90% of rated voltage and voltage fall time from 90% to 10% of rated voltage

IT27155

Model	IT27155 DC power supply	
Rated value	Voltage	0～60V

	Current	0～20A
	Power	0～500W
	Series internal resistance (CV Priority)	0～1Ω
Setup Resolution	Voltage	0.001V
	Current	0.001A
	Power	0.01W
	Series internal resistance (CV Priority)	0.0001Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Series internal resistance (CV Priority)	≤1%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Voltage ripple (1)	Vpeak	≤60mVpp
	Vrms	≤10mV
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Rise Time(no load)	Voltage	≤10ms
Rise Time(full load)	Voltage	≤20ms
Fall Time(no load)	Voltage	≤0.5s
Fall Time(full load)	Voltage	≤50ms
Transient Response	Time	≤1ms

Time (2)	Stability Voltage	±0.6V
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (3)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Output protection	OCP	20.4A
	OVP	61.2V
	OPP	510W
Remote Sense Compensation Voltage	≤6V	
Isolation DC to GND	800Vdc	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Cooling	Air	
Dimension (mm)	321mm(D)*104mm(W)*40.5mm(H)	
Weight(net)	1.0kg	

Note：
（1）Ripple peak and RMS doubled for voltages 0.5V and below
（2）10% rated current to 90% rated current
（3）Under sense mode
（4）Voltage rise time from 10% to 90% of rated voltage and voltage fall time from 90% to 10% of rated voltage

IT27157

Model	IT27157 DC power supply	
Rated value	Voltage	0～150V
	Current	0～10A
	Power	0～500W
	Series internal resistance (CV Priority)	0～1Ω
Setup Resolution	Voltage	0.01V
	Current	0.001A
	Power	0.01W

	Series internal resistance (CV Priority)	0.0001Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Series internal resistance (CV Priority)	≤1%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Voltage ripple (1)	Vpeak	≤150mVpp
	Vrms	≤30mV
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Rise Time(no load)	Voltage	≤10ms
Rise Time(full load)	Voltage	≤20ms
Fall Time(no load)	Voltage	≤0.5s
Fall Time(full load)	Voltage	≤50ms
Transient Response Time (2)	Time	≤1ms
	Stability Voltage	±1.5V
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (3)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Output protection	OCP	10.2A

	OVP	153V
	OPP	510W
Remote Sense Compensation Voltage	≤15V	
Isolation DC to GND	800Vdc	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Cooling	Air	
Dimension (mm)	321mm(D)*104mm(W)*40.5mm(H)	
Weight(net)	1.0kg	

Note：

（1）Ripple peak and RMS doubled for voltages 0.5V and below

（2）10% rated current to 90% rated current

（3）Under sense mode

（4）Voltage rise time from 10% to 90% of rated voltage and voltage fall time from 90% to 10% of rated voltage

IT27334

Model	IT27334 Bidirectional DC power supply	
Rated value	Voltage	0～30V
	Current	-15A～15A
	Power	-200W～200W
	Series internal resistance (CV Priority)	0～1Ω
	Load internal resistance (CC Priority)	0.04Ω～200Ω
	Min. operating voltage （Sink mode）	0.6V at 15A
Setup Resolution	Voltage	0.001V
	Current	0.001A
	Power	0.01W
	Series internal resistance (CV Priority)	0.0001Ω
	Load internal resistance (CC Priority)	0.01Ω
Read Back Resolution	Voltage	0.0001V

	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Series internal resistance (CV Priority)	≤1%FS
	Load internal resistance (CC Priority) (1)	(Vin/Rset)*0.5%+0.5%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Voltage ripple (2)	Vpeak	≤30mVpp
	Vrms	≤5mV
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Rise Time(no load)	Voltage	≤10ms
Rise Time(full load)	Voltage	≤20ms
Fall Time(no load)	Voltage	≤10ms
Fall Time(full load)	Voltage	≤10ms
Transient Response Time (3)	Time	≤1ms
	Stability Voltage	±0.3V
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (4)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Output protection	OCP	-15.3A or 15.3A

	OVP	30.6V
	OPP	-204W or 204W
Remote Sense Compensation Voltage	≤3V	
Isolation DC to GND	800Vdc	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Cooling	Air	
Dimension (mm)	321mm(D)*51.7mm(W)*40.5mm(H)	
Weight(net)	0.6kg	

Note：
（1）The voltage/current input is no less than 10%FS.
（2）Ripple peak and RMS doubled for voltages 0.5V and below
（3）10% rated current to 90% rated current
（4）Under sense mode
（5）Voltage rise time from 10% to 90% of rated voltage and voltage fall time from 90% to 10% of rated voltage

IT27335

Model	IT27335 Bidirectional DC power supply	
Rated value	Voltage	0～60V
	Current	-10A～10A
	Power	-200W～200W
	Series internal resistance (CV Priority)	0～1Ω
	Load internal resistance (CC Priority)	0.06Ω～600Ω
	Min. operating voltage （Sink mode）	0.6V at 10A
Setup Resolution	Voltage	0.001V
	Current	0.001A
	Power	0.01W
	Series internal resistance (CV Priority)	0.0001Ω

	Load internal resistance (CC Priority)	0.01Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Series internal resistance (CV Priority)	≤1%FS
	Load internal resistance (CC Priority) (1)	(Vin/Rset)*0.5%+0.5%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Voltage ripple (2)	Vpeak	≤60mVpp
	Vrms	≤10mV
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Rise Time(no load)	Voltage	≤10ms
Rise Time(full load)	Voltage	≤20ms
Fall Time(no load)	Voltage	≤10ms
Fall Time(full load)	Voltage	≤10ms
Transient Response Time (3)	Time	≤1ms
	Stability Voltage	±0.6V
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (4)	≤0.005% + 0.005%FS

	Current	≤0.015% + 0.015%FS
Output protection	OCP	-10.2A or 10.2A
	OVP	61.2V
	OPP	-204W or 204W
Remote Sense Compensation Voltage	≤6V	
Isolation DC to GND	800Vdc	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Cooling	Air	
Dimension (mm)	321mm(D)*51.7mm(W)*40.5mm(H)	
Weight(net)	0.6kg	

Note：
（1）The voltage/current input is no less than 10%FS.
（2）Ripple peak and RMS doubled for voltages 0.5V and below
（3）10% rated current to 90% rated current
（4）Under sense mode
（5）Voltage rise time from 10% to 90% of rated voltage and voltage fall time from 90% to 10% of rated voltage

IT27337

Model	IT27337 Bidirectional DC power supply	
Rated value	Voltage	0～150V
	Current	-5A～5A
	Power	-200W～200W
	Series internal resistance (CV Priority)	0～1Ω
	Load internal resistance (CC Priority)	0.5Ω～3000Ω
	Min. operating voltage （Sink mode）	25V at 5A
Setup Resolution	Voltage	0.01V
	Current	0.001A

	Power	0.01W
	Series internal resistance (CV Priority)	0.0001Ω
	Load internal resistance (CC Priority)	0.01Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Series internal resistance (CV Priority)	≤1%FS
	Load internal resistance (CC Priority) (1)	(Vin/Rset)*0.5%+0.5%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Voltage ripple (2)	Vpeak	≤150mVpp
	Vrms	≤50mV
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Rise Time(no load)	Voltage	≤10ms
Rise Time(full load)	Voltage	≤20ms
Fall Time(no load)	Voltage	≤10ms
Fall Time(full load)	Voltage	≤10ms
Transient Response Time (3)	Voltage	≤1ms
	Stability Voltage	±1.5V
Line Regulation	Voltage	≤0.005% + 0.005%FS

	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (4)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Output protection	OCP	-5.1A or 5.1A
	OVP	153V
	OPP	-204W or 204W
Remote Sense Compensation Voltage	≤15V	
Isolation DC to GND	600Vdc	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Cooling	Air	
Dimension (mm)	321mm(D)*51.7mm(W)*40.5mm(H)	
Weight(net)	0.6kg	

Note：
（1）The voltage/current input is no less than 10%FS.
（2）Ripple peak and RMS doubled for voltages 0.5V and below
（3）10% rated current to 90% rated current
（4）Under sense mode
（5）Voltage rise time from 10% to 90% of rated voltage and voltage fall time from 90% to 10% of rated voltage

IT27353

Model	IT27353 Bidirectional DC power supply	
Rated value	Voltage	0～20V
	Current	-50A～50A
	Power	-500W～500W
	Series internal resistance (CV Priority)	0～1Ω
	Load internal resistance (CC Priority)	0.016Ω～40Ω
	Min. operating voltage （Sink mode）	0.8V at 50A
Setup Resolution	Voltage	0.001V
	Current	0.001A

	Power	0.01W
	Series internal resistance (CV Priority)	0.0001Ω
	Load internal resistance (CC Priority)	0.01Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Series internal resistance (CV Priority)	≤1%FS
	Load internal resistance (CC Priority)	(Vin/Rset)*0.5%+0.5%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Voltage ripple (2)	Vpeak	≤30mVpp
	Vrms	≤5mV
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Rise Time(no load)	Voltage	≤10ms
Rise Time(full load)	Voltage	≤20ms
Fall Time(no load)	Voltage	≤10ms
Fall Time(full load)	Voltage	≤10ms
Transient Response Time (3)	Time	≤1ms
	Stability Voltage	±0.2V
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (4)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Output protection	OCP	-51A or 51A
	OVP	20.4V
	OPP	-510W or 510W
Transient Response Time (3)	≤2V	

Isolation DC to GND	800Vdc
Working Temperature	0～40℃
Storage Temperature	-10℃～70℃
IP	IP20
Cooling	Air
Dimension (mm)	321mm(D)*104mm(W)*40.5mm(H)
Weight(net)	1.0kg

Note：
（1）The voltage/current input is no less than 10%FS.
（2）Ripple peak and RMS doubled for voltages 0.5V and below
（3）10% rated current to 90% rated current
（4）Under sense mode
（5）Voltage rise time from 10% to 90% of rated voltage and voltage fall time from 90% to 10% of rated voltage

IT27354

Model	IT27354 Bidirectional DC power supply	
Rated value	Voltage	0～30V
	Current	-30A～30A
	Power	-500W～500W
	Series internal resistance (CV Priority)	0～1Ω
	Load internal resistance (CC Priority)	0.03Ω～100Ω
	Min. operating voltage （Sink mode）	0.9V at 30A
Setup Resolution	Voltage	0.001V
	Current	0.001A
	Power	0.01W
	Series internal resistance (CV Priority)	0.0001Ω
	Load internal resistance (CC Priority)	0.01Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS

	Power	≤0.1% + 0.2%FS
	Series internal resistance (CV Priority)	≤1%FS
	Load internal resistance (CC Priority) (1)	(Vin/Rset)*0.5%+0.5%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Voltage ripple (2)	Vpeak	≤30mVpp
	Vrms	≤5mV
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Rise Time(no load)	Voltage	≤10ms
Rise Time(full load)	Voltage	≤20ms
Fall Time(no load)	Voltage	≤10ms
Fall Time(full load)	Voltage	≤10ms
Transient Response Time (3)	Time	≤1ms
	Stability Voltage	±0.3V
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (4)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Output protection	OCP	-30.6A or 30.6A
	OVP	30.6V
	OPP	-510W or 510W
Remote Sense Compensation Voltage	≤3V	
Isolation DC to GND	800Vdc	

Working Temperature	0～40℃
Storage Temperature	-10℃～70℃
IP	IP20
Cooling	Air
Dimension (mm)	321mm(D)*104mm(W)*40.5mm(H)
Weight(net)	1.0kg

Note：
（1）The voltage/current input is no less than 10%FS.
（2）Ripple peak and RMS doubled for voltages 0.5V and below
（3）10% rated current to 90% rated current
（4）Under sense mode
（5）Voltage rise time from 10% to 90% of rated voltage and voltage fall time from 90% to 10% of rated voltage

IT27355

Model	IT27355 Bidirectional DC power supply	
Rated value	Voltage	0～60V
	Current	-20A～20A
	Power	-500W～500W
	Series internal resistance (CV Priority)	0～1Ω
	Load internal resistance (CC Priority)	0.03Ω～300Ω
	Min. operating voltage （Sink mode）	0.6V at 20A
Setup Resolution	Voltage	0.001V
	Current	0.001A
	Power	0.01W
	Series internal resistance (CV Priority)	0.0001Ω
	Load internal resistance (CC Priority)	0.01Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS

	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Series internal resistance (CV Priority)	≤1%FS
	Load internal resistance (CC Priority) (1)	(Vin/Rset)*0.5%+0.5%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Voltage ripple (2)	Vpeak	≤60mVpp
	Vrms	≤10mV
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Rise Time(no load)	Voltage	≤10ms
Rise Time(full load)	Voltage	≤20ms
Fall Time(no load)	Voltage	≤10ms
Fall Time(full load)	Voltage	≤10ms
Transient Response Time (3)	Time	≤1ms
	Stability Voltage	±0.6V
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (4)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Output protection	OCP	-20.4A or 20.4A
	OVP	61.2V
	OPP	-510W or 510W
Remote Sense Compensation Voltage	≤6V	

Isolation DC to GND	800Vdc
Working Temperature	0～40℃
Storage Temperature	-10℃～70℃
IP	IP20
Cooling	Air
Dimension (mm)	321mm(D)*104mm(W)*40.5mm(H)
Weight(net)	1.0kg

Note：
（1）The voltage/current input is no less than 10%FS.
（2）Ripple peak and RMS doubled for voltages 0.5V and below
（3）10% rated current to 90% rated current
（4）Under sense mode
（5）Voltage rise time from 10% to 90% of rated voltage and voltage fall time from 90% to 10% of rated voltage

IT27357

Model	IT27357 Bidirectional DC power supply	
Rated value	Voltage	0～150V
	Current	-10A～10A
	Power	-500W～500W
	Series internal resistance (CV Priority)	0～1Ω
	Load internal resistance (CC Priority)	0.17Ω～1500Ω
	Min. operating voltage （Sink mode）	1.7V at 10A
Setup Resolution	Voltage	0.01V
	Current	0.001A
	Power	0.01W
	Series internal resistance (CV Priority)	0.0001Ω
	Load internal resistance (CC Priority)	0.01Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W

Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Series internal resistance (CV Priority)	≤1%FS
	Load internal resistance (CC Priority) (1)	(Vin/Rset)*0.5%+0.5%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Voltage ripple (2)	Vpeak	≤150mVpp
	Vrms	≤50mV
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Rise Time(no load)	Voltage	≤10ms
Rise Time(full load)	Voltage	≤20ms
Fall Time(no load)	Voltage	≤10ms
Fall Time(full load)	Voltage	≤10ms
Transient Response Time (3)	Time	≤1ms
	Stability Voltage	±1.5V
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (4)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Output protection	OCP	-10.2A or 10.2A
	OVP	153V
	OPP	-510W or 510W

Remote Sense Compensation Voltage	≤15V
Isolation DC to GND	800Vdc
Working Temperature	0～40℃
Storage Temperature	-10℃～70℃
IP	IP20
Cooling	Air
Dimension (mm)	321mm(D)*104mm(W)*40.5mm(H)
Weight(net)	1.0kg

Note：
（1）The voltage/current input is no less than 10%FS.
（2）Ripple peak and RMS doubled for voltages 0.5V and below
（3）10% rated current to 90% rated current
（4）Under sense mode
（5）Voltage rise time from 10% to 90% of rated voltage and voltage fall time from 90% to 10% of rated voltage

IT27534

Model	IT27534 Programmable DC Load	
Rated value	Voltage	0.03V～30V
	Current	0～15A
	Power	0～200W
	Resistance	0.04Ω～200Ω
	Min. operating voltage	0.6V at 15A
	Input leakage current	0.001A
Setup Resolution	Voltage	0.001V
	Current	0.001A
	Power	0.01W
	Resistance	0.01Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS

	Resistance (1)	(Vin/Rset)*0.5%+0.5%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Current Slope	Rising slope	15A/ms
	Falling slope	15A/ms
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (2)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Isc	Current	15.75A
Input protection	OCP	15.3A
	OVP	30.6V
	OPP	204W
Input OVP	31.5V	
Remote Sense Compensation Voltage	≤3V	
Isolation DC to GND	800Vdc	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Cooling	Air	
Dimension (mm)	321mm(D)*51.7mm(W)*40.5mm(H)	
Weight(net)	0.6kg	

Note：
（1）The voltage/current input is not less than 10%FS.
（2）Under sense mode

IT27535

Model	IT27535 Programmable DC Load	
Rated value	Voltage	0.06V～60V
	Current	0～10A
	Power	0～200W

	Resistance	0.06Ω～600Ω
	Min. operating voltage	0.6V at 10A
	Input leakage current	0.001A
Setup Resolution	Voltage	0.001V
	Current	0.001A
	Power	0.01W
	Resistance	0.01Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Resistance (1)	(Vin/Rset)*0.5%+0.5%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Current Slope	Rising slope	10A/ms
	Falling slope	10A/ms
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (2)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Isc	Current	10.5A
Input protection	OCP	10.2A
	OVP	61.2V
	OPP	204W
Input OVP	63V	
Remote Sense Compensation Voltage	≤6V	
Isolation DC to GND	800Vdc	

Working Temperature	0～40℃
Storage Temperature	-10℃～70℃
IP	IP20
Cooling	Air
Dimension (mm)	321mm(D)*51.7mm(W)*40.5mm(H)
Weight(net)	0.6kg

Note：

（1）The voltage/current input is not less than 10%FS.

（2）Under sense mode

IT27537

Model	IT27537 Programmable DC Load	
Rated value	Voltage	0.150V～150V
	Current	0～5A
	Power	0～200W
	Resistance	0.5Ω～3000Ω
	Min. operating voltage	2.5V at 5A
	Input leakage current	0.001A
Setup Resolution	Voltage	0.01V
	Current	0.001A
	Power	0.01W
	Resistance	0.01Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Resistance (1)	(Vin/Rset)*0.5%+0.5%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS

	Power	≤0.1% + 0.2%FS
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Current Slope	Rising slope	5A/ms
	Falling slope	5A/ms
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (2)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Isc	Current	5.25A
Input protection	OCP	5.1A
	OVP	153V
	OPP	204W
Input OVP	156V	
Remote Sense Compensation Voltage	≤15V	
Isolation DC to GND	800Vdc	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Cooling	Air	
Dimension (mm)	321mm(D)*51.7mm(W)*40.5mm(H)	
Weight(net)	0.6kg	

Note：

（1）The voltage/current input is not less than 10%FS.

（2）Under sense mode

IT27553

Model	IT27553 Programmable DC Load	
Rated value	Voltage	0.05V～20V
	Current	0～50A
	Power	0～500W
	Resistance	0.016Ω～40Ω
	Min. operating voltage	0.8V at 50A
	Input leakage current	0.001A
Setup Resolution	Voltage	0.001V
	Current	0.001A
	Power	0.01W
	Resistance	0.01Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Resistance (1)	(Vin/Rset)*0.5%+0.5%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Current Slope	Rising slope	25A/ms
	Falling slope	25A/ms
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (2)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Isc	Current	52.5A
Input protection	OCP	51A

	OVP	20.4V
	OPP	510W
Input OVP	21V	
Remote Sense Compensation Voltage	≤2V	
Isolation DC to GND	800Vdc	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Cooling	Ari	
Dimension (mm)	321mm(D)*104mm(W)*40.5mm(H)	
Weight(net)	1.0kg	

Note：
（1）The voltage/current input is not less than 10%FS.
（2）Under sense mode

IT27554

Model	IT27554 Programmable DC Load	
Rated value	Voltage	0.03V～30V
	Current	0～30A
	Power	0～500W
	Resistance	0.03Ω～100Ω
	Min. operating voltage	0.9V at 30A
	Input leakage current	0.001A
Setup Resolution	Voltage	0.001V
	Current	0.001A
	Power	0.01W
	Resistance	0.01Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS

	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Resistance (1)	(Vin/Rset)*0.5%+0.5%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Current Slope	Rising slope	30A/ms
	Falling slope	30A/ms
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (2)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Isc	Current	31.5A
Input protection	OCP	30.6A
	OVP	30.6V
	OPP	510W
Input OVP	31.5V	
Remote Sense Compensation Voltage	≤3V	
Isolation DC to GND	800Vdc	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Cooling	Air	
Dimension (mm)	321mm(D)*104mm(W)*40.5mm(H)	

Weight(net)	1.0kg

Note：

（1）The voltage/current input is not less than 10%FS.

（2）Under sense mode

IT27555

Model	IT27555 Programmable DC Load	
Rated value	Voltage	0.06V～60V
	Current	0～20A
	Power	0～500W
	Resistance	0.03Ω～300Ω
	Min. operating voltage	0.6V at 20A
	Input leakage current	0.001A
Setup Resolution	Voltage	0.001V
	Current	0.001A
	Power	0.01W
	Resistance	0.01Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Resistance (1)	(Vin/Rset)*0.5%+0.5%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature	Voltage	≤20ppm/℃

Coefficient	Current	≤30ppm/℃
Current Slope	Rising slope	20A/ms
	Falling slope	20A/ms
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (2)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Isc	Current	21.0A
Input protection	OCP	15.3A
	OVP	61.2V
	OPP	510W
Input OVP	63V	
Remote Sense Compensation Voltage	≤6V	
Isolation DC to GND	800Vdc	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Cooling	Air	
Dimension (mm)	321mm(D)*104mm(W)*40.5mm(H)	
Weight(net)	1.0kg	

Note：
（1）The voltage/current input is not less than 10%FS.
（2）Under sense mode

IT27557

Model	IT27557 Programmable DC Load	
Rated value	Voltage	0.150V～150V
	Current	0～10A
	Power	0～500W

	Resistance	0.17Ω～1500Ω
	Min. operating voltage	1.7V at 10A
	Input leakage current	0.001A
Setup Resolution	Voltage	0.01V
	Current	0.001A
	Power	0.01W
	Resistance	0.01Ω
Read Back Resolution	Voltage	0.0001V
	Current	0.0001A
	Power	0.01W
Setup Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
	Resistance (1)	(Vin/Rset)*0.5%+0.5%FS
Read Back Accuracy	Voltage	≤0.02% + 0.02%FS
	Current	≤0.05% + 0.05%FS
	Power	≤0.1% + 0.2%FS
Setup Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Read Back Temperature Coefficient	Voltage	≤20ppm/℃
	Current	≤30ppm/℃
Current Slope	Rising slope	10A/ms
	Falling slope	10A/ms
Line Regulation	Voltage	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Load Regulation	Voltage (2)	≤0.005% + 0.005%FS
	Current	≤0.015% + 0.015%FS
Isc	Current	10.5A

Input protection	OCP	10.2A
	OVP	153V
	OPP	510W
Input OVP	156V	
Remote Sense Compensation Voltage	≤15V	
Isolation DC to GND	800Vdc	
Working Temperature	0～40℃	
Storage Temperature	-10℃～70℃	
IP	IP20	
Cooling	Air	
Dimension (mm)	321mm(D)*104mm(W)*40.5mm(H)	
Weight(net)	1.0kg	

Note：
（1）The voltage/current input is not less than 10%FS.
（2）Under sense mode

IT27814

Rated value	Voltage	-20V～20V	
	Current	-3A～3A	
	Power	-20W～20W	
	Series internal resistance (CV Priority)	-0.04Ω～1Ω	
Setup Resolution	Voltage	6V range	6uV
		20V range	20uV
	Current	10mA range	0.1uA
		100mA range	1uA
		3A range	10uA
	Series internal resistance (CV Priority)	6V range	0.25mΩ
		20V range	0.5mΩ
Read Back Resolution	Voltage	6V range	6uV
		20V range	20uV

	Current	10uA range	100pA
		1mA range	10nA
		100mA range	1uA
		3A range	10uA
Setup Accuracy	Voltage	6V range	0.015% + 300 μ V
		20V range	0.015% + 1mV
	Current	10mA range	0.025% + 5 μ A
		100mA range	0.025% + 10 μ A
		3A range	0.03% + 250 μ A
	Series internal resistance (CV Priority)（1）	6V range	0.1% + 1.5 m Ω
		20V range	0.1% + 3 m Ω
Read Back Accuracy	Voltage	6V range	0.015% + 300 μ V
		20V range	0.015% + 1mV
	Current	10uA range	0.025% + 8 nA
		1mA range	0.025% + 100 nA
		100mA range	0.025% + 10 μ A
		3A range	0.03% + 250 μ A
Voltage ripple	Vpeak		≤12mVpp
	Vrms		≤1.2mV
Transient Response Time（2）	Voltage	6V range with a 1.4A load step	≤35 μ s
		20V range with a 0.8A load step	≤35 μ s
Load Regulation	Voltage（3）	6V range	150 μ V
		20V range	400 μ V
	Current	10mA&100mA range	1 μ A
		1A range	50 μ A
		3A range	100 μ A
Output protection	OCP		-3.06A～3.06A
	OVP		-20.4V～20.4V
Remote Sense Compensation Voltage	<2V		
Isolation DC to GND	600Vdc		

Working Temperature	0～40℃
Storage Temperature	-10℃～70℃
IP	IP20
Cooling	Air
Dimension (mm)	320mm*104mm*40.5mm
Weight(net)	0.95kg

Note:
（1）The voltage/current input is no less than 0.1A.
（2）With 150μF cap (ESR=50mΩ) at load, remote sensing at cap, the current rise time(10%-90%) is 10us,settling band is ±20mV/±10mV under 6V/20V range.
（3）Under sense mode

IT27814E

Rated value	Voltage	-20V～20V	
	Current	-3A～3A	
	Power	-20W～20W	
	Series internal resistance (CV Priority)	-0.04Ω～1Ω	
Setup Resolution	Voltage	6V range	210uV
		20V range	700uV
	Current	10mA range	1uA
		100mA range	10uA
		3A range	300uA
	Series internal resistance (CV Priority)	6V range	0.5mΩ
		20V range	0.5mΩ
Read Back Resolution	Voltage	6V range	210uV
		20V range	700uV
	Current	10uA range	1nA
		1mA range	100nA
		100mA range	10uA
		3A range	300uA
Setup Accuracy	Voltage	6V range	0.02% + 1mV
		20V range	0.02% + 3 mV

	Current	10mA range	0.05% + 6uA
		100mA range	0.05% + 50uA
		3A range	0.05% + 1.5mA
	Series internal resistance (CV Priority)（1）	6V range	0.1% + 1.5 mΩ
		20V range	0.1% + 3 mΩ
Read Back Accuracy	Voltage	6V range	0.02% + 1mV
		20V range	0.02% + 3 mV
	Current	10uA range	0.05% + 8 nA
		1mA range	0.05% + 400 nA
		100mA range	0.05% + 40 μA
		3A range	0.05% + 1.2 mA
Voltage ripple	Vpeak		≤12mVpp
	Vrms		≤1.2mV
Transient Response Time（2）	Voltage	6V range with a 1.4A load step	≤55 μs
		20V range with a 0.8A load step	≤40 μs
Load Regulation	Voltage（3）	6V range	600 μV
		20V range	2mV
	Current	10mA&100mA range	3 μA
		1A range	200 μA
		3A range	400 μA
Output protection	OCP		-3.06A～3.06A
	OVP		-20.4V～20.4V
Remote Sense Compensation Voltage	<2V		
Isolation DC to GND	600Vdc		
Working Temperature	0～40℃		
Storage Temperature	-10℃～70℃		
IP	IP20		
Cooling	Air		
Dimension (mm)	320mm*104mm*40.5mm		

Weight(net)	0.95kg

Note:

（1）The voltage/current input is no less than 0.1A.

（2）With 150μF cap (ESR=50mΩ) at load, remote sensing at cap, the current rise time(10%-90%) is 10us,settling band is ±20mV/±10mV under 6V/20V range.

（3）Under sense mode

Chapter5 Appendix

Specifications of Red and Black Test Lines

ITECH provides you with optional red and black test lines, the user can choose the company's test line for testing. For specifications of ITECH test lines and maximum current values, refer to the table below.

Model	Specifications	Length	Description
IT-E30110-AB	10A	1m	Alligator clips-Banana plugs A pair of red and black test line
IT-E30110-BB	10A	1m	Banana plugs - Banana plugs A pair of red and black test line
IT-E30110-BY	10A	1m	Banana plugs - Y-type terminals A pair of red and black test line
IT-E30312-YY	30A	1.2m	Y-type terminals - A pair of red and black test line
IT-E30320-YY	30A	2m	Y-type terminals - A pair of red and black test line
IT-E30615-OO	60A	1.5m	Ring terminals - A pair of red and black test line
IT-E31220-OO	120A	2m	Ring terminals - A pair of red and black test line
IT-E32410-OO	240A	1m	Ring terminals - A pair of red and black test line
IT-E32420-OO	240A	2m	Ring terminals - A pair of red and black test line
IT-E33620-OO	360A	2m	Ring terminals - A pair of red and black test line

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

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.

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