
PD1550A Advanced Dynamic Power Device Analyzer

Operation and General Maintenance



Provides detailed information to set-up, operate and maintain the PD1550A Dynamic Power Device Analyzer for power modules. This guide is for system operators and includes safety guidelines

Notices

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Manual Part Number
PD1550-90003

Edition

Third Edition, December 2023

Published by
Keysight Technologies, Inc.
900 S. Taft Ave.
Loveland, CO 80537 USA

Sales and Technical Support

To contact Keysight for sales and technical support, refer to the support links on the following Keysight websites:

www.keysight.com/find/PD1550A

(product-specific information and support, software and documentation updates)

www.keysight.com/find/assist (worldwide contact information for repair and service)

Declaration of Conformity

Declarations of Conformity for this product and for other Keysight products may be downloaded from the Web. Go to <http://keysight.com/go/conformity> and click on “Declarations of Conformity.” You can then search by product number to find the latest Declaration of Conformity.

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Safety Information

The following general safety precautions must be observed during all phases of operation of these instruments. Failure to comply with these precautions or with specific warnings or operating instructions in the product manuals violates safety standards of design, manufacture, and intended use of the instruments. Keysight Technologies assumes no liability for the customer's failure to comply with these requirements.

General

Do not use these instruments in any manner not specified by the manufacturer. The protective features of these instruments must not be impaired if it is used in a manner specified in the operation instructions.

Before Applying Power

Verify that all safety precautions are taken. Make all connections to the instruments before applying power. Note the external markings described under "Safety Symbols".

Ground the Instrument

Keysight instruments are provided with a grounding-type power plug. The instruments must be connected to an electrical ground to minimize shock hazard. The ground pin must be firmly connected to an electrical ground (safety ground) terminal at the power outlet. Any interruption of the protective (grounding) conductor or disconnection of the protective earth terminal will cause a potential shock hazard that could result in personal injury.

Unless otherwise noted in the specifications, these instruments or system is intended for indoor use in an installation category II, pollution degree 2 environment per IEC 61010-1 and 664 respectively. They are designed to operate at a maximum relative humidity of 50% to 80% at 30 °C or less (non-condensing). These instruments or system are designed to operate at altitudes up to 3000 meters, and at temperatures between 20 and 30 °C.

Do Not Operate in an Explosive Atmosphere Do not operate in the presence of flammable gases or fumes.

Do Not Operate Near Flammable Liquids

Do not operate the instruments in the presence of flammable liquids or near containers of such liquids.

Cleaning

Clean the outside of the Keysight instruments with a soft, lint-free, slightly dampened cloth. Do not use detergent or chemical solvents.

Do Not Remove Instrument Cover

Only qualified, service-trained personnel who are aware of the hazards involved should remove instrument covers. Always disconnect the power cable and any external circuits before removing the instrument cover.

Keep away from live circuits

Operating personnel must not remove equipment covers or shields. Procedures involving the removal of covers and shields are for use by service-trained personnel only. Under certain conditions, dangerous voltages may exist even with the equipment switched off. To avoid dangerous electrical shock, DO NOT perform procedures involving cover or shield removal unless you are qualified to do so.

DO NOT operate damaged equipment

Whenever it is possible that the safety protection features built into these instruments have been impaired, either through physical damage, excessive moisture, or any other reason, REMOVE POWER and do not use the instrument until safe operation can be verified by service-trained personnel. If necessary, return the product to a Keysight Technologies Sales and Service Office for service and repair to ensure the safety features are maintained.

DO NOT block the primary disconnect

The primary disconnect device is the appliance connector/power cord when an instrument used by itself, but when installed into a rack or system the disconnect may be impaired and must be considered part of the installation.

Do Not Modify the Instrument

Do not install substitute parts or perform any unauthorized modification to the product. Return the product to a Keysight Sales and Service Office to ensure that safety features are maintained.

In Case of Damage

Instruments that appear damaged or defective should be made inoperative and secured against unintended operation until they can be repaired by qualified service personnel.

Measurement Limits

The Truevolt Series DMMs provide protection circuitry to prevent damage to the instrument and to protect against the danger of electric shock, provided the Measurement Limits are not exceeded. To ensure safe operation of the instrument, do not exceed the Measurement Limits shown on the front and rear panel.

The DMMs comply with EN/IEC 61326-2-1, for sensitive test and measurement equipment.

When subjected to transient radiated and/or conducted electromagnetic phenomena, the DMMs may have temporary loss of function or performance which is self-recovering. Recovery may take longer than 10 seconds.

When subjected to continuously present electromagnetic phenomena, some degradation of performance may occur.

Safety and Regulatory Symbols

CAUTION

A CAUTION 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 notice until the indicated conditions are fully understood and met.

WARNING

A WARNING 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 notice until the indicated conditions are fully understood and met.

Products display the following:



CAUTION. Refer to documentation for safety information.



Earth Ground.



Chassis Ground.



Alternating Current (AC).



Direct Current (DC).



Standby Power. Unit is not completely disconnected from AC mains when power switch is in standby position



Indicates that antistatic precautions should be taken.



DANGER: Hazardous voltage, potential for electric shock. Do not touch terminals.



Cold Surface, avoid contact. Low temperature or freezing conditions. Surfaces are cold and may cause personal injury.



Hot Surface, avoid contact. Surface is hot and may cause personal injury.



The CE marking is a registered trademark of the European Community (if accompanied by a year, it is the year when the design was proven). It indicates that the product complies with all relevant EU directives.



The Regulatory Compliance Mark (RCM) is a registered trademark of the Australian Communications and Media Authority.



The CSA mark is a registered trademark of the Canadian Standards Association and indicates compliance to the standards laid out by them. Refer to the product Declaration of Conformity for details.



This symbol represents the time period during which no hazardous or toxic substance elements are expected to leak or deteriorate during normal use. Forty years is the expected useful life of this product.



Universal recycling symbol. This symbol indicates compliance with the China standard GB 18455-2001 as required by the China RoHS regulations for paper/fiberboard packaging.



R-R-Kst-SP21786

South Korean Certification (KC) mark. It includes the marking's identifier code.

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Waste Electrical and Electronic Equipment (WEEE)

The crossed-out wheeled bin symbol indicates that separate collection for Waste Electrical And Electronic Equipment (WEEE) is required, as obligated by the EU DIRECTIVE and other National legislation.

Please refer to [keysight.com/go/takeback](https://www.keysight.com/go/takeback) to understand your trade-in options with Keysight in addition to takeback instructions.

Traditional Chinese

根據歐盟指令和其他國家的法律規定，帶有X標誌的帶輪垃圾桶圖案，表示該產品屬於需要進行單獨回收的電子電器產品。

請參考 [keysight.com/go/takeback](https://www.keysight.com/go/takeback)，了解產品回收說明以及Keysight的以舊換新方式。

Simplified Chinese

根據歐盟指令和其他國家的法律規定，帶有X標誌的帶輪垃圾桶圖案，表示該產品屬於需要進行單獨回收的電子電器產品。

請參考 [keysight.com/go/takeback](https://www.keysight.com/go/takeback)，了解產品回收說明以及Keysight的以舊換新方式。

Japanese

車輪付きゴミ箱に×マークは、EU DIRECTIVEやその他の国の法律で義務付けられている廃電気・電子機器 (WEEE) の分別回収が必要であることを示しています。

[keysight.com/go/takeback](https://www.keysight.com/go/takeback) では、製品のテイクバック方法に加えて、Keysight の下取りオプションについてもご紹介しています。

Korean

바퀴달린 쓰레기통의 X 표시는 EU 지침 및 기타 국가 법률에 따라 전기 및 전자 장비 폐기물(WEEE)에 대한 별도 수거가 필요함을 나타냅니다.

제품 회수 지침과 함께 Keysight를 통한 보상 판매 옵션을 이해하려면 [keysight.com/go/takeback](https://www.keysight.com/go/takeback) 을 참조하십시오.

German

Das Symbol der durchgestrichenen Mülltonne auf Rädern weist darauf hin, dass eine getrennte Sammlung von Elektro- und Elektronik-Altgeräten (WEEE) gemäß der EU-RICHTLINIE und anderer nationaler Gesetze erforderlich ist.

Bitte informieren Sie sich unter [keysight.com/go/takeback](https://www.keysight.com/go/takeback) über Ihre Rücknahmeoptionen bei Keysight sowie über die Anweisungen zur Produktrücknahme.

French

Le pictogramme de la poubelle barrée indique que la collecte séparée des déchets d'équipements électriques et électroniques (DEEE) est requise, comme l'oblige la directive européenne et d'autres législations nationales.

Veillez vous référer à [keysight.com/go/takeback](https://www.keysight.com/go/takeback) pour obtenir les options d'échange Keysight en plus des instructions de reprise de produit.

Italian

Il simbolo del bidone barrato indica che è richiesta la raccolta separata dei rifiuti di apparecchiature elettriche ed elettroniche (RAEE), come previsto dalla DIRETTIVA UE e da altre legislazioni nazionali.

Si prega di fare riferimento al sito [keysight.com/go/takeback](https://www.keysight.com/go/takeback) per comprendere le opzioni di Commercializzazione con Keysight oltre alle istruzioni per il ritiro del prodotto.

Spanish

El símbolo del contenedor de basura tachado indica la obligación de recogida selectiva de los residuos de aparatos eléctricos y electrónicos (RAEE), tal y como lo establece la DIRECTIVA de la UE y otras legislaciones nacionales.

Acceda a nuestra página [keysight.com/go/takeback](https://www.keysight.com/go/takeback) para obtener información sobre las opciones de recuperación que ofrece Keysight, y las instrucciones de recuperación del producto.

Portuguese

O símbolo da lata de lixo riscada indica que a necessidade da coleta seletiva dos resíduos de equipamentos eléctricos e electrónicos (REEE) é obrigatória, em consonância com a DIRETIVA da União Europeia (WEEE) e outras legislações nacionais.

Consulte [keysight.com/go/takeback](https://www.keysight.com/go/takeback) para verificar suas opções de "trade in" com o escritório Keysight local, ou para receber as instruções de reciclagem do produto.

Russian

Символ перечеркнутого мусорного контейнера на колесиках указывает на необходимость раздельного сбора отходов электрического и электронного оборудования (WEEE) в соответствии с требованиями ДИРЕКТИВЫ ЕС и других национальных законодательств.

Пожалуйста, обратитесь к сайту [keysight.com/go/takeback](https://www.keysight.com/go/takeback), чтобы узнать о возможностях торговли с компанией Keysight, а также об инструкциях по возврату продукции.

WARNING



HIGH VOLTAGE

is used in the operation of this equipment.

LETHAL VOLTAGE on CONTACT

may be present at measurement terminals if you fail to implement all safety precautions.

- When the **RED** light is on in the light tower Double-Pulse Test Rack and Safety Enclosure, lethal voltage may appear at measurement terminals.
- Never attempt to defeat the safety interlock function of the safety doors.
- Do not operate the system unless another person is around the work space who is familiar with system operation and hazards for administering first aid.
- Potential voltages less than ± 500 V may cause death under certain conditions. Therefore, adequate preventive measures must be taken at all times!

Safety Summary

The following general safety precautions must be observed during all phases of operation, service, and repair of this system. Failure to comply with these precautions or with specific warnings elsewhere in this manual may impair the protections provided by the system. In addition, it violates safety standards of design, manufacture, and intended use of the system. Keysight assumes no liability for customer's failure to comply with these requirements.

Product manuals are available on the Web. Go to www.keysight.com/find/PD1550A for all documentation.

WARNING



Hazardous voltage: System maximum output voltage may appear at the measurement terminals inside the safety enclosure. Never attempt to bypass the safety interlock and features of the PD1550A Double-Pulse Test system safety enclosure. To avoid contact with extremely high voltages, the rack cabinet must be operated with all side, front, and rear panels in place and the safety enclosure must remain closed. There are no user-serviceable parts inside.

Do not intentionally modify the interlock function of the safety enclosure. While the high voltage indicator is lit, dangerous voltage or residual charge may appear on the measurement terminals.

CAUTION

Some of the material in the safety enclosure can generate static electricity. Take care if you are using ESD sensitive devices in its vicinity.

NOTE

Do not use this system in any manner not specified by the manufacturer. The protective features of this system may be impaired if it is used in a manner not specified in the operation instructions. This system is an INDOOR USE product only.

This system complies with INSTALLATION CATEGORY II for mains input and INSTALLATION CATEGORY I for measurement input terminals, and POLLUTION DEGREE 2 defined in IEC 61010-1.

If an system is marked CAT I (IEC Measurement Category I), or it is not marked with a measurement category, its measurement terminals must not be connected to line-voltage mains.

Safety of any system incorporating the equipment is the responsibility of the assembler of the system.

DANGEROUS PROCEDURE WARNINGS

- Warnings shall be complied. Procedures throughout in this manual prevent you from potential hazardous situations. The instructions contained in the warnings must be followed.

BEFORE APPLYING POWER

- Verify that all safety precautions are taken. Make all connections to the system before applying power. Note the system's external markings described under "Safety and Regulatory Symbols".

GROUND THE RACK

- This is Safety Class I system. To minimize shock hazard, the Rack and Safety Enclosure must be connected to an electrical ground. The power terminal and the power cable must meet International Electrotechnical Commission (IEC) safety standards.

DO NOT OPERATE IN AN EXPLOSIVE ATMOSPHERE

- Do not operate the system in the presence of flammable gases or fumes. Operation of any electrical instrument in such an environment constitutes a definite safety hazard.

DO NOT REMOVE COVERS

- No operator serviceable parts inside. Refer servicing to qualified personnel. To prevent electrical shock do not remove covers.

IN CASE OF DAMAGE

- Instruments, probes or cables that appear damaged or defective should be made inoperative and secured against unintended operation until they can be repaired by qualified service personnel. Return the product to a Keysight sales or service office for service and repair to ensure that safety features are maintained.

USE ONLY THE SPECIFIC ACCESSORIES

- Specified accessories satisfy the requirements for specific characteristics for using the instruments and the Rack and Safety Enclosure.

CLEANING

- Disconnect the power from the rack before cleaning the Rack and Safety Enclosure. Use only a damp cloth to clean the surfaces of the Rack and Safety Enclosure.

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1 Introduction and Site Preparation

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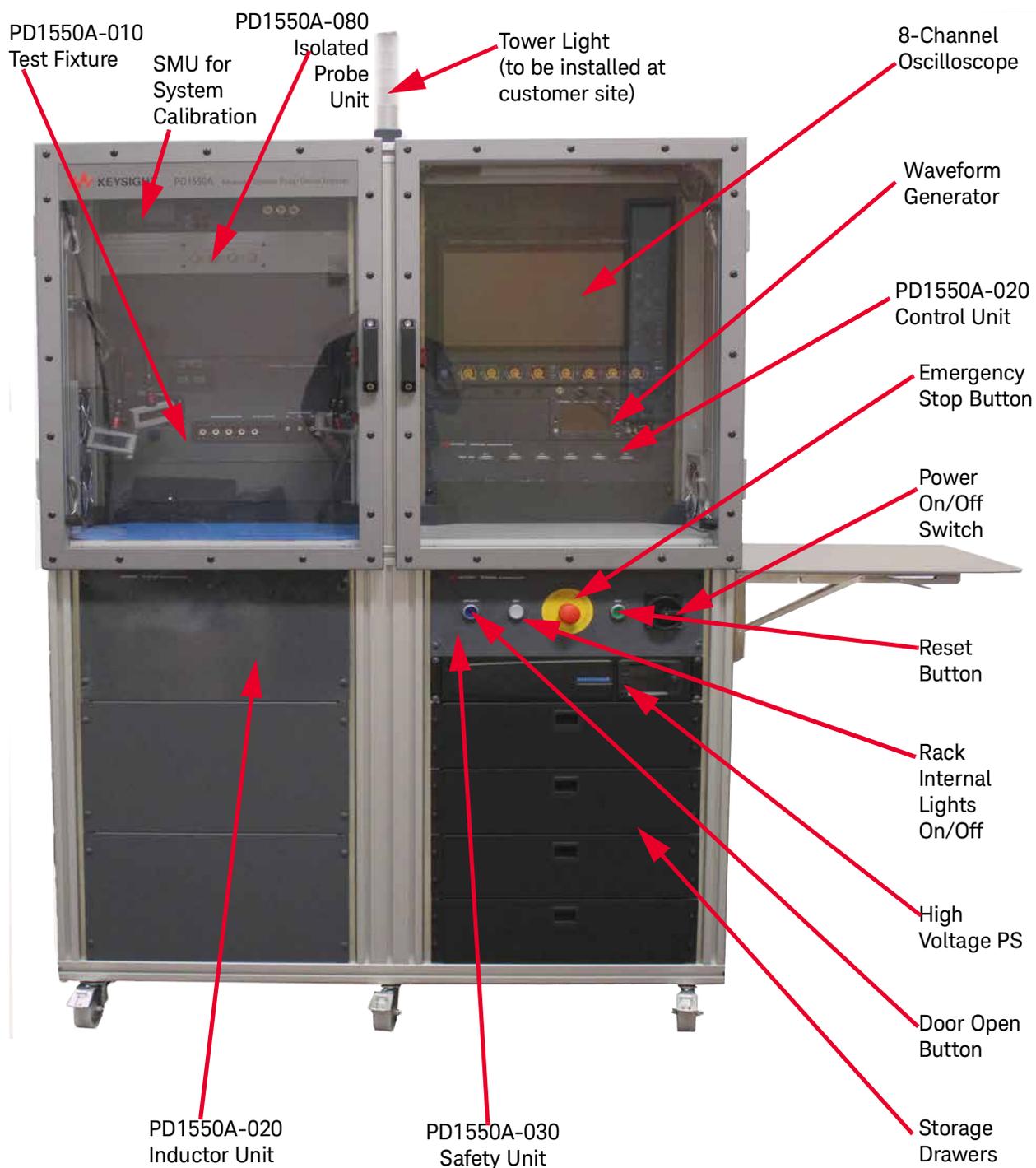


Figure 1 PD1550A Test Rack and Safety Enclosure

Receiving the System

NOTE

For detailed installation information refer to the *PD1550A System Installation Guide*.

Your PD1550A DPT system shipment arrives in one large shipping crate and one or more boxes for accessories and options. Before unboxing/uncrating the system, carefully inspect the crate for any damage that may have occurred during shipment such as:

- dents
- scratches
- cuts
- water damage

If any damage is discovered, leave the instruments in the shipping containers. Report any damage to the shipping agent immediately and request an inspection. Shipping damage is not covered by the Keysight warranty.

The packaged physical specifications for the PD1550A are listed in the “System Dimensions and Weight” on page 19. Floor elevators and lifting equipment must be of sufficient capacity.

Inventory the Shipment

Use the packing list that came with your system to determine if the system was fully received. Carefully examine the boxes for shipping damage. If you suspect the system was damaged in shipment, contact your Keysight representative.

Uncrating the System

The customer should remove the crate from any shipping pallet. Smaller boxes contain tools and accessory items. These smaller boxes should be opened first.

Placing the System

- **Moving the System** - Place the system exactly as the system plan drawing shows. Remember that cable length will be critical. Ensure the leveling feet are raised before moving the rack.
- **Immobilizing and Leveling the System** - Immobilize and level the PD1550A system by locking the six casters on the bottom of the system.

IMPORTANT: Make sure that all doors, elevators, and passageways in route to the site are large enough to accommodate the rack enclosure and are capable of carrying the weight.

Plan the Rack and Safety Enclosure Site Installation

Customer Responsibilities

The final location at customer site must meet the following requirements prior to the installation.

-
- Receive the PD1550A Double-Pulse Test System.

 - Uncrating – You should remove the PD1550A system the shipping crate. You may inventory the shipment using the enclosed packing list.

 - Site Preparation and Maintenance – Ensure the operating environment (space, noise, etc.) is suitable.

 - Electrical and environmental requirements are met. Wiring primary power to the system is your responsibility, as is installing communications cabling to the system. The actual power connection to the system will be made after the Keysight representative has removed the system from the pallet and moved it to the desired location.

 - Host Computer requirements are met.

 - All necessary software licenses and software are installed on the host computer.

 - Additional supplies including but limited to host computer, LAN cable, etc. These are not included with the PD1550A.
-

Keysight's PD1550A Rack and Safety Enclosure is a free-standing rack with test instruments installed in a Safety Enclosure. Consider your anticipated location and requirements to ensure safety and optimize access to test and control instrumentation.

NOTE

For detailed installation information, refer to the *Keysight PD1550A System Installation Guide*.

NOTE

A Keysight Application Engineer can come to your site to install the Rack and Safety Enclosure and test it for functionality.

Electrical and Environmental Requirements

Input Voltage	Operating Temperature	Operating Humidity	Operating Environment
MAX 12A/200-240V/2800W/50/60Hz	+20 °C to +30 °C	50% to 80% RH, Non-condensing	Indoor location only

CAUTION

The Test Rack and Safety Enclosure is designed to operate on 200 to 250 VAC single phase. Do not attempt to operate the DPT Rack and Safety Enclosure on 120 VAC.

WARNING

Avoid overloading an electrical circuit. Ensure your AC line matches the AC Input requirements. If you need to power down the equipment in an emergency, make sure that you have clear and quick access to the primary disconnect. Refer to “Mains Disconnect” in the *PD1550A System Installation Guide*.

Rack and Safety Enclosure Dimensions and Weight



	Weight	Height	Depth	Width
Shipping Crate (with DPT Rack and Safety Enclosure inside)	~ 567 kg (~ 1250 lbs)	2.1 M (83 in)	1.27 M (50 in)	1.5 M (59 in)
Rack and Safety Enclosure (all test equipment and fixtures installed)	~ 234 kg (~715 lbs)	2.0 M (78 in.)	1.1 M (42 in.)	1.27 M (50 in.)

Rack Ventilation

The Rack and Safety Enclosure has six air intake fans and eight exhaust fans. See the graphic below.

CAUTION

For proper air flow through the Rack and Safety Enclosure, do not block air vents or rack cooling fans. Allow a minimum of 1 M on each side, above the rack, and on the rear of the Rack and Safety Enclosure for ventilation.

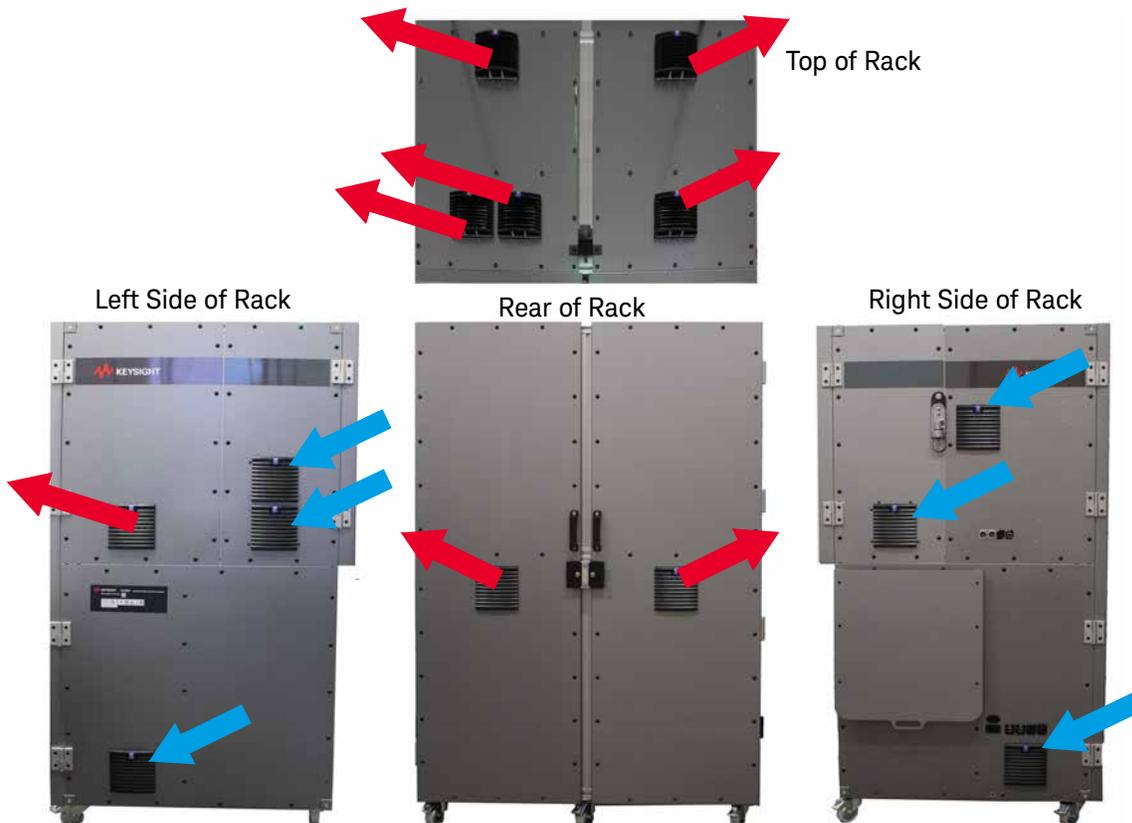


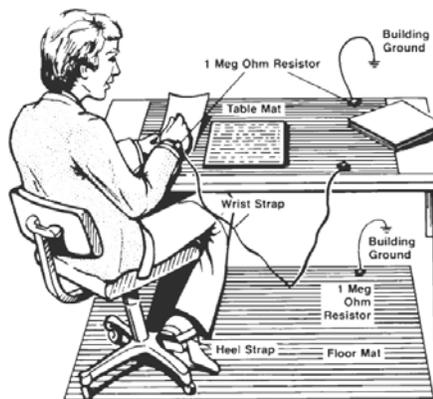
Figure 2 Air Flow through the DPT Rack and Safety Enclosure

Static-safe Handling Procedures

Electrostatic discharge (ESD) can damage or destroy electronic components. Use a static-safe work station to perform at work on electronic assemblies. This figure shows a static-safe work station using two types of ESD protection:

- Conductive table-mat and wrist-strap
- Conductive floor-mat and heel-strap

Both types, when used together, provide a significant level of ESD protection. Of the two, only the table-mat and wrist-strap combination provides adequate ESD protection when used alone. To ensure user safety, the static-safe accessories must provide at least 1 MΩ of isolation from ground.



CAUTION

Some of the material in the safety enclosure can generate static electricity. Take care if you are using ESD sensitive devices in its vicinity.

PD1550A System Documentation

Keysight test instruments comes complete with its own documentation. Country-specific power cords and other cables or accessories may be discarded. All necessary power cords and cables are included in the DPT system Rack and Safety Enclosure.

- **PD1550A Control Software Guide:** Provides detailed information to install, configure, and use the PD1000A Control Software for the PD1550A DPT system. PN: PD1550-90001
- **PD1550A Operation and General Maintenance Guide:** Provides detailed information to operate and maintain the PD1550A Test Rack and Safety Enclosure. PN: PD1550-90003
- **PD1550A System Installation Guide:** Provides detailed information for Keysight personnel to install the Double-Pulse Rack and Safety Enclosure at a customer's site. PN: PD1550-90002
- **PD1000A Control Software Help File:** Provides the same information as this Software Guide plus additional information for using the PD1000A Control Software.

Documentation and software are available at: www.keysight.com/find/PD1550A

For detailed information about any of the test instruments, refer to the documentation provided with the instrument. Instrument documentation, data sheets, firmware updates, software updates, specifications, and more can be found on the product web pages listed below.

www.keysight.com/find/PD1000A (for Control Software, and PD1000A general information)

www.keysight.com/find/MXR108A 8-Channel Oscilloscope

www.keysight.com/find/33512B Waveform Generator, 2-Ch with ARB

www.keysight.com/find/B2902B Precision Source/Measurement Unit

www.Heinzinger.com High Voltage Power Supply Model EVO

NOTE

Adobe Reader is required to view PDF files. It is available free at: <https://get.adobe.com/reader>.

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Safety Concepts in the DPT Rack and Safety Enclosure

- Safety Relays separate the HV power supply from the Test Fixture while the Safety Doors are open or not locked.
- The Safety Doors can be opened only when no high voltage is present.
- Safety is maintained during a power outage; the Safety Doors cannot be opened.

WARNING



Never attempt to bypass the safety functions and features of the PD1550A Double-Pulse Test system Rack and Safety Enclosure. To avoid contact with extremely high voltages, the rack cabinet must be operated with all side, front, and rear panels in place and the Safety Doors must remain closed. There are no user-serviceable parts inside.

NOTE

IMPORTANT: to open the doors on the PD1550A:

- Power must be supplied to the system
- System must be turned on
- Green Tower Light must be on - no other tower lights on

Rack Operational Controls



Power On/Off Switch

The Rack and Safety Enclosure is supplied by one main AC voltage input. Turn the system on or off with the main power switch at the front of the rack.

- 1 Turn the power switch to the **OFF** position.
- 2 Make sure **Emergency Stop** is pulled out.
- 3 Turn the power switch to the **ON** position. The **red** and **amber** tower lights turn on.
- 4 Press the **Reset** button. You should hear a few clicks as the safety relays energize. After a few moments, the **amber** tower light turns off followed by the **red** tower light. The **green** tower light turns on. The system is now operational.

To power off the complete system, turn the power switch to **OFF**.



Power Switch Off



Power Switch On

NOTE

In general, you should turn off the PD1550A system when it will not be used for long periods of time. This is to prevent a problem with the Heinzinger HV power supply. If the system has been left on and cannot communicate with the HV power supply, do the following:

1. Shut down the PD1550A DPT system.
 2. Disconnect the PD1550A from the ac power socket.
 3. Wait a few minutes.
 4. Reconnect the PD1550A system to the ac power socket.
 5. Turn on the PD1550A.
-

Emergency Stop Push Button

The **Emergency Stop** button functionality works in two steps:

- In case of an emergency, press the **Emergency Stop**. This shuts off power to the test instruments. If the Safety Doors are closed, they remain locked.
- To reset, turn the main power switch to the **OFF** position. Pull out the **Emergency Stop** button. Turn the main power switch to the **ON** position. Reset the Emergency Stop circuit by pressing the **Reset** button.

Safety Enclosure Internal Lights Switch

This switch turns the safety enclosure internal lights off and on.

Safety Enclosure Door Open Button

Under normal conditions, the Safety Doors remain locked when the system is powered and functional, *even when not running a test*; they must remain closed during all DPT tests.

To open the safety enclosure doors, make certain the **green** light in the light tower is on. Press and hold the door **Open** button while opening the doors.

NOTE

If high voltage is applied to the system, the safety enclosure doors are locked and cannot be opened.

NOTE

IMPORTANT: The rack must be powered on to open the safety doors. In the event of a power outage, the doors do not unlock.

NOTE

IMPORTANT: When closing the safety doors, ensure that the safety ground cable does not get pinched between the door and the rack.

Ground cable shown pinched between door and rack



In Case of a Power Outage

In case of a power outage, the PD1550A safely discharges the internal bank capacitors. However, it may take several minutes depending on the remaining charge. The safety enclosure doors remain locked in the event of a power outage.

Light Tower on top of Rack

- Green Light** -- High voltage is off. It is safe to open the Safety Doors
- Amber Light** -- At power on or **Emergency Stop** button has been pushed.
- Red Light** -- Safety Doors locked and cannot be opened. High Voltage present.
- Blue Light** -- A DPT test is in progress.

Operation of the Safety Doors Interlock

Under normal conditions, the Safety Doors remain locked when the system is powered and functional. To open the doors, press and hold the door **Open** button while opening the doors.

Open the Doors in Case of System Failure

If the system ceases to be functional but the **red** tower light is on **AND** the front panel of the Heinzinger power supply shows that high voltage is present, disable the high voltage circuit and open the safety doors by:

- 1 Locate the keys to the rear safety doors.
- 2 Unlock and open the rear safety doors of the PD1550A Rack.
- 3 Locate and turn the Service Switch key on the rear of the PD1550A-020 Safety Unit to the **OFF** position.

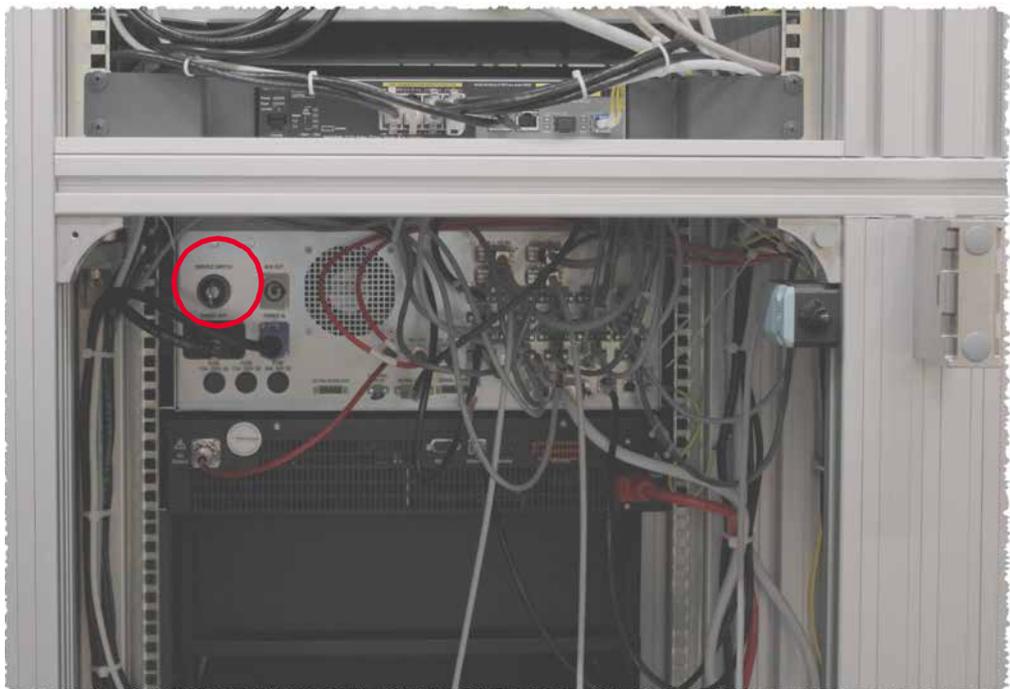


Figure 3 Service Switch Location on PD1550A-020 Safety Unit

- 4 Wait a few minutes for the high voltage circuit to completely discharge.
- 5 Open the front doors of the safety enclosure.

WARNING

The front and rear safety doors must be closed and locked while running any Double-Pulse Test. High voltage is present when running a Double-Pulse test. Do not attempt to operate the Double-Pulse test system with any safety doors open or bypass the safety interlock feature.

NOTE

After correcting the fault, you must turn the safety key to the **ON** position. Leave the key in the switch.

Rack and Safety Enclosure Maintenance

There are no specific parts in the Rack and Safety Enclosure that require periodic replacement. Nevertheless, regularly check all parts in the system for changes like broken cables, defective fans, loose connections, etc.

Operate the DPT Rack and Safety Enclosure only in a clean environment with air that contains no dust or aggressive industrial gases. Clean the system rack and all fans and air exhaust vents periodically to guarantee appropriate air flow through the test system. After any maintenance work, the responsible safety engineer must approve the system before recommissioning.

Maintenance of the Safety Doors

Regularly check the Safety Doors as follows:

- Verify the functionality of the open and close mechanism.
- Verify that the safety switch is functional and the doors remain locked when power is off.

CAUTION

Some of the material in the safety enclosure can generate static electricity. Take care if you are using ESD sensitive devices in its vicinity.

Recommended Maintenance Intervals

- **Weekly:** Check the safety equipment and the proper function of all safety features at the test system. Check all strain reliefs. Visual inspection for changes like bent pins or contacts, defective connectors, cracks on the enclosure or other signs of wear.
- **Monthly:** Check all mechanical parts in the system. For example loose screws on the rack, loose connectors. Visually inspect the system wiring and isolation.
- **Every 6 months:** Clean the system and the fans from dust. Check all connectors and contacts for abrasive wear. Clean if necessary. The two fans at the bottom of the rack (one fan on each side) have foam filters. No other fans or vents have filters. Clean dust from the filter with a vacuum or with a damp cloth.

CAUTION

Do not wash the air filters or install the filters in the chassis if they are wet.

- **12 months:** Perform the safety related tests according to DIN VDE 0701 / VDE 0702 or the corresponding standard valid in the country of operation of the test system. The tests should include the following measurements:
 - Isolation
 - Earth current
 - Ground bond
 - Correct installation

3 Service Information

This chapter contains:

Service Information [page 29](#)

When transporting the Rack and Safety Enclosure for long distances or outside a building always make sure that the environmental conditions like humidity, temperature and air pollution never exceed the related instrument specification. The ambient temperature should not exceed -20 °C to +60 °C.

Service Information

CAUTION

There are no user-serviceable parts inside. Do not open the rear doors or remove side covers from the Rack and Safety Enclosure.

NOTE

Do not return the entire PD1550A Test Rack and Safety Enclosure to Keysight for repair. Identify and remove individual instruments from the rack and return that instrument to Keysight. Refer to the *PD1550A Rack and Safety Enclosure Service Guide* for detailed information.

If you need to return a test instrument to Keysight for service or calibration, contact Keysight for an Application Engineer to remove the individual instrument(s) from the rack. Attach a tag indicating the type of service required, your return address, and model number of the device to be repaired.

Repackaging the device requires original shipping containers and materials or their equivalents. Keysight can provide packaging materials for the individual test instruments. Contact Keysight as per “Sales and Technical Support” in the front matter of this manual.



This information is subject to change without notice.

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Printed in Malaysia

Edition 3, December 2023



PD1550-90003

www.keysight.com