
E4470AZ, E4471AZ Extractor Fan Kit

Fits Keysight 19-inch EIA Cabinets

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Safety Information

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.

Safety Information

The following general safety precautions must be observed during all phases of operation of this instrument. 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 instrument. Keysight Technologies assumes no liability for the customer's failure to comply with these requirements.

General

Do not use this product in any manner not specified by the manufacturer. The protective features of this product 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 unit before applying power. Note the external markings described under "Safety Symbols".

Ground the Instrument

Keysight chassis are provided with a grounding-type power plug. The instrument chassis and cover 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.

Do Not Operate in an Explosive Atmosphere

Do not operate the module/chassis in the presence of flammable gases or fumes.

Do Not Operate Near Flammable Liquids

Do not operate the module/chassis in the presence of flammable liquids or near containers of such liquids.

Cleaning

Clean the outside of the Keysight module/chassis 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 this product have been impaired, either through physical damage, excessive moisture, or any other reason, REMOVE POWER and do not use the product until safe operation can be verified by service-trained personnel. If necessary, return the product to an 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 a chassis 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 an 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.

CAUTION

Do NOT block vents and fan exhaust: To ensure adequate cooling and ventilation, leave a gap of at least 50mm (2") around vent holes on both sides of the chassis.

WARNING

Operator is responsible to maintain safe operating conditions. To ensure safe operating conditions, modules should not be operated beyond the full temperature range specified in the Environmental and physical specification. Exceeding safe operating conditions can result in shorter lifespan, improper module performance and user safety issues. When the modules are in use and operation within the specified full temperature range is not maintained, module surface temperatures may exceed safe handling conditions which can cause discomfort or burns if touched. In the event of a module exceeding the full temperature range, always allow the module to cool before touching or removing modules from the chassis.

Safety 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 symbols:



Warning, risk of electric shock



Refer to manual for additional safety information.



Earth Ground.



Chassis Ground.



Alternating Current (AC).



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



Antistatic precautions should be taken.

CAT I IEC Measurement Category I, II, III, or IV
CAT II
CAT III
CAT IV

For localized Safety Warnings, Refer to Keysight Safety document (p/n 9320-6792).



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.



Notice for European Community: This product complies with the relevant European legal Directives: EMC Directive (2004/108/EC) and Low Voltage Directive (2006/95/EC).



The Regulatory Compliance Mark (RCM) mark is a registered trademark. This signifies compliance with the Australia EMC Framework regulations under the terms of the Radio Communication Act of 1992.

ICES/NMB-001

ICES/NMB-001 indicates that this ISM device complies with the Canadian ICES-001.



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.



South Korean Class A EMC Declaration. this equipment is Class A suitable for professional use and is for use in electromagnetic environments outside of the home.

A 급 기기 (업무용 방송통신기자재)
이 기기는 업무용 (A 급) 전자파적합기
기로서 판 매자 또는 사용자는 이 점을 주
의하시기 바라 며 , 가정외의 지역에서
사용하는 것을 목적이 로 합니다.



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

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

Product Category: With reference to the equipment types in the WEEE directive Annex 1, this product is classified as a "Monitoring and Control instrumentation" product.

Do not dispose in domestic household waste.

To return unwanted products, contact your local Keysight office for more information.



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Safety and Regulatory Information

For your protection, this product has been tested for conformance to various national and international regulations and standards. The scope of this regulatory testing includes electrical and mechanical safety, electromagnetic emissions, immunity, ESD, acoustics, and hazardous materials.

Where required, certifications are obtained from third party test agencies. Certification marks appear on the product label. In addition, various regulatory bodies require information under the headings below.

Please refer to the *Safety Information* guide provided with the extractor fan for additional important information.

This product and related documentation must be reviewed for familiarization with safety markings and instructions before operation.

WARNING

The WARNING sign denotes a hazard. It calls attention to a procedure, practice, or situation which, if not done correctly or adhered to, could result in injury. Do not proceed beyond a WARNING sign until the indicated conditions are fully understood.

CAUTION

The CAUTION sign denotes a hazard. It calls attention to an operating procedure, practice, or situation which, if not done correctly or adhered to, could damage, or destroy part or the entire product. Do not proceed beyond a CAUTION sign until the indicated conditions are fully understood and met.

Safety Warnings

The following warnings and cautions are applicable to all Keysight rack products. Please observe all safety precautions and warnings.

This product has not been evaluated for connection to an IT power system, an AC distribution system having no direct connection to earth (ground), according to EN60950.

Grounding

The Extractor Fan Kit is grounded through its power cable provided the kit is installed in an Keysight 19-inch EIA Instrument Rack (E3661B, E3662B, or E7690A) as described in this manual.

WARNING

This is a safety class I product and has a protective earthing (grounding) terminal. There must be an uninterruptible safety earth ground from the main power source to the product's input wiring terminals, power cord, or supplied cord set. Whenever it is likely that the protection has been impaired, disconnect the power cord until the ground has been restored.

No Replaceable Parts

WARNING

Do not attempt to repair the Extractor Fan Kit or its components. If the Extractor Fan Kit power cord, other wiring, or components are frayed, cut, or damaged, replace the entire Extractor Fan Kit.

Intended Use of Equipment

The Keysight E4470AZ and E4471AZ Extractor Fan Kits are intended for installation and use in standard Keysight 19-inch EIA Instrument Racks (E3661B, E3662B, and E7690A). The Extractor Fan Kits must be installed as described in this manual.

NOTE

The Keysight Extractor Fan Kits are designed to be installed in the current Keysight E3661B, E3662B, and E7690A products, as well as previous versions of the Keysight EIA 19-inch Instrument Rack System products. For information about rack accessories compatibility, see the Web page and Keysight Enclosures Solutions Product Catalog at <http://www.keysight.com/find/racks>, or contact your Keysight Sales.

Cleaning

Disconnect the power from the instrument rack before cleaning the instrument rack and accessories, including the fans. Use only a damp cloth to clean the surfaces.

Specifications

Description	
Power Requirements	Model E4470AZ: 100-120 V, 50/60 Hz (1.0 A)
	Model E4471AZ: 200-240 V, 50/60 Hz (0.5 A)
Operating Temperature*	0 °C to 55 °C
Operating Humidity	Maximum Relative Humidity (non-condensing): 80% RH up to 40 °C, decreasing linearly to 37% at 55°C ^a
Operating Environment	Indoor Location
Altitude	2000m

* The fan AC mains cable should not be subjected to temperatures greater than 60 °C

* From 40 °C to 55 °C, the maximum % Relative Humidity follows the line of constant dew point.

CAUTION

This product is designed for use in INSTALLATION CATEGORY II and POLLUTION DEGREE 2.

NOTE

The instrument can operate with mains supply voltage fluctuations up to $\pm 10\%$ of the nominal voltage.

General Information

This installation note provides all information required to install and maintain the extractor fan kit. Before installing the extractor fan in your computer cabinet or instrument rack, ensure that its voltage matches that of the power distribution unit (PDU) that is already installed in your rack. (Keysight E4470AZ = 120 V, E4471AZ = 240 V)

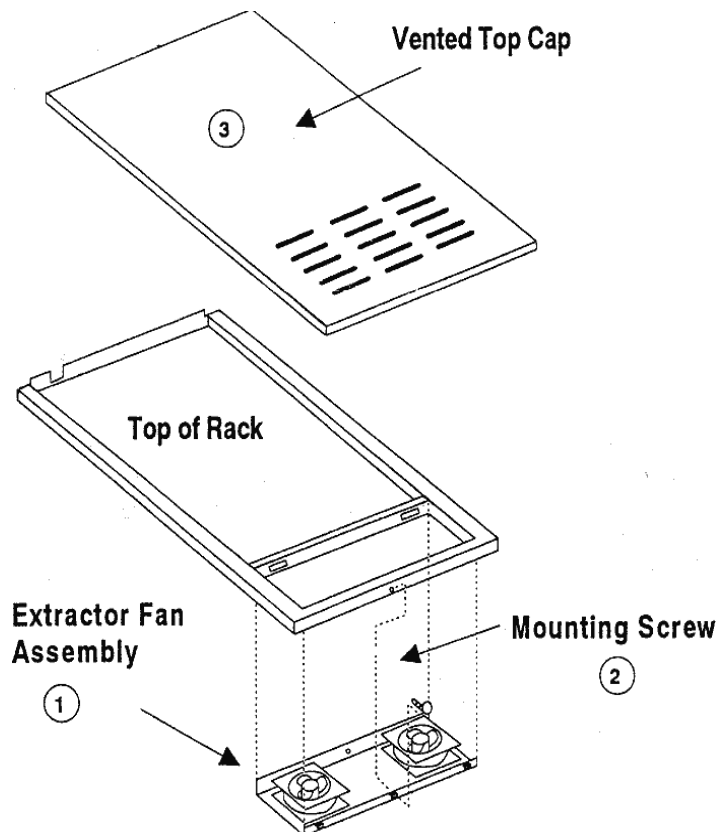


Figure 1. Extractor Fan Kit

Contents

The Extractor Fan Kit contains the following items.

Item	Quantity	Description	Part Number
1	1	Extractor Fan Assembly—100-120 VAC, or Extractor Fan Assembly—200-240 VAC	C2786-60024 C2786-60005
2	2	TubeAxial Fan, Extractor—100-120 VAC, or TubeAxial Fan, Extractor—200-240 VAC	3160-0378 3160-0228
3	1	TORX Screw, 10-32 x0.5"	2680-0278
4	1	TORX Toot	8710-1817
5	1	Installation Note	E4470-90001

Tools Required

To install the Extractor Fan Kit, you will need the following tools:

- T25 TORX screwdriver (P/N 8710-1817).

Installation Procedure

Refer to Figure 1 and the instructions below.

CAUTION

The fan assembly weighs approximately 6 pounds.

Exercise caution when handling the fan assembly, especially when working with it over your head.

Fan Assembly Installation

1. Raise the fan assembly into the rear rack frame opening.
2. Slide the fan assembly forward and into the rack until it is fully seated toward the front of the rack.
3. Insert the mounting screw. Tighten the screw.
4. Connect the fan power cord from the fan assembly to the top receptacle of the PDU.
5. The rear door can now be closed.

Extractor Fan Maintenance

The Tubeaxial fans can be replaced if necessary. See the following figure and follow the instructions.

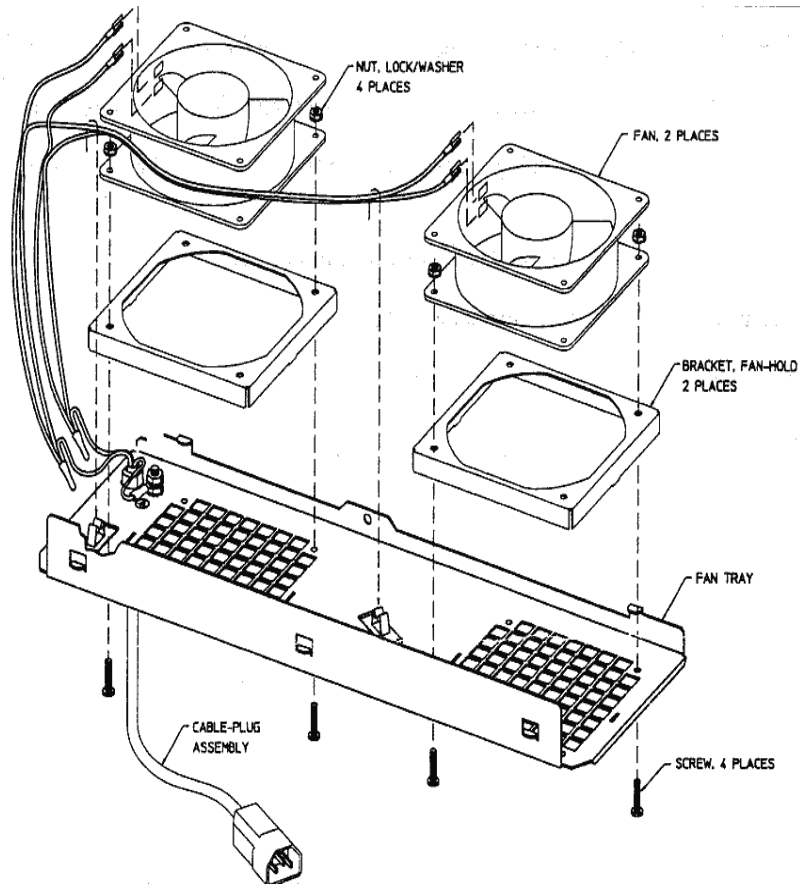


Figure 2. Extractor Fan Assembly

Extractor Fan Removal

1. Open the rear door.
2. Disconnect the fan power cord from the PDU. Allow the fans to stop spinning.
3. Remove the one mounting screw at the top rear rack frame bar.
4. Grasp the fan assembly from the bottom and pull toward the rear of the rack.
5. The fan assembly should release from the rack and can be lowered out of the rack.

Extractor Fan Replacement

1. Position the fan over the fan bracket/tray mounting holes so that the power lugs are at the rear of the fan tray, and on the right side of the fan (as viewed from the back of the assembly). Also verify that the air flow arrow points up.
2. Insert the mounting screws up through the bottom of the fan tray/bracket and fan.

3. Attach the mounting nuts/washers on the mounting screw. Tighten the screws and nuts.
4. Attach the cable plug assembly connectors to the terminals on the fan (polarity does not matter).
5. Replace the fan assembly (refer to fan assembly installation).

This completes installation of the extractor fan kit.

Place this Note with your rack documentation.

Notes:

