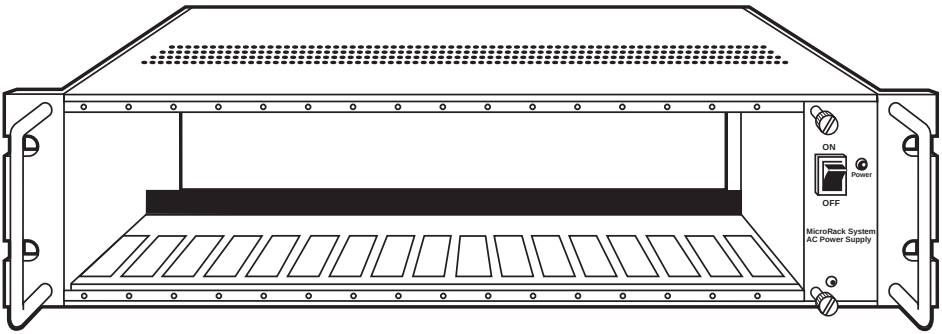
APRIL 2004

RM202
RM204
RM208
RM216
PS460A
PS460AE
PS461A
PS462A
PS463A

MicroRACK



CUSTOMER SUPPORT INFORMATION

Order **toll-free** in the U.S. 24 hours, 7 A.M. Monday to midnight Friday: **877-877-BBOX**
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FEDERAL COMMUNICATIONS COMMISSION
AND
INDUSTRY CANADA
RADIO FREQUENCY INTERFERENCE STATEMENTS

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from igital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

NORMAS OFICIALES MEXICANAS (NOM)
ELECTRICAL SAFETY STATEMENT

INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc..
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser connectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.

12. Precaución debe ser tomada de tal manera que la tierra fisica y la polarización del equipo no sea eliminada.

13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.

14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.

15. En caso de existir, una antena externa deberá ser localizada lejos de las lineas de energia.

16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.

17. Cuidado debe ser tomado de tal manera que objectos liquidos no sean derramados sobre la cubierta u orificios de ventilación.

18. Servicio por personal calificado deberá ser provisto cuando:

    A: El cable de poder o el contacto ha sido dañado; u

    B: Objectos han caído o líquido ha sido derramado dentro del aparato; o

    C: El aparato ha sido expuesto a la lluvia; o

    D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o

    E: El aparato ha sido tirado o su cubierta ha sido dañada.

1. Specifications

Specification for the MicroRack Chassis and Power Supply modules.

MicroRacks (RM202, RM204, RM208, RM216)

Indicators — Indicators are on the front of cards installed.

Number of Slots — RM202: 2; RM204: 4; RM208: 8; RM216: 16

Power Source — Internal

Input Voltage — 120 VAC

Input Current/Amps — 200 mA

Input Connector Type — IEC 320

Connector Style — On rear of cards installed

Operating Temperature — 32° to 114°F (0° to 45°C)

Storage Temperature — -40° to 176°F (-40° to 80°C)

Humidity — 0 to 95%, noncondensing

Size — RM202: 3.5"H x 3.5"W x 7.5"D (8.9 x 8.9 x 19.1 cm); RM204: 3.5"H x 5.5"W x 7.5"D (8.9 x 14 x 19.1 cm); RM208: 3.5"H x 9.5"W x 7.5"D (8.9 x 24.1 x 19.1 cm); RM216: 3.5"H x 19"W x 7.5"D (8.9 x
48.3 x 19.1 cm)

Weight — RM202, RM204, RM208: 4 lb. (1.8 kg); RM216: 5 lb. (2.2 kg)

Power Supply (PS460A)

Power Source — Internal

Input Voltage — 120 volts AC

Power Supply (PS460AE)

Power Source — Internal

Fuses — (4) Included (2 in the drawer and 2 spares)

Input Voltage — 120 or 240 volts AC, autosensing

Power Supply (PS461A)

Power Source — Internal

Input Voltage — 48 volts DC

Input Connector Type — PS461A: Terminal screw connections

Indicators — Power, DC input

Size — 3.5"H x 1.5"W x 7"D (8.9 x 3.8 x 17.8 cm)

Weight — 1 lb. (0.5 kg)

Power Supplies (PS462A and PS463A)

FRONT POWER-SUPPLY CARD

Power Supply —	PS462A: 24 VDC; PS463A: 12 VDC
Input Voltage —	PS462A: 13–36VDC; PS463A: 10–20 VDC
Input Protection —	PS462A: Triggered at 39 VDC; PS463A: Triggered at 22 VDC
Maximum Input Current —	PS462A: 2A @ 18 VDC; PS463A: 4A @ 10 VDC
Isolation Voltage —	500V RMS, input to output
Output Voltage —	12 VAC @ 2A
Output Power —	24W
Switches —	Power on / off
Indicators —	Power, DC Input

REAR POWER-SUPPLY CARD

Connection — Cage-clamp terminal block with +DC In, -DC In, Frame Ground, Alarm, Alarm C, +DC Out, -DC Out

Wire — 26-14 solid or stranded cable

Alarm — Opens when power is attached and closes when power is disconnected

2. Installation

This chapter describes the functions of the MicroRack chassis, tells how to install front and rear power supply cards into the chassis, and provides diagrams for wiring the interface connections correctly.

The MicroRacks come in two, four, eight, or sixteen avalible card slots, plus its own power supply. Measuring only 3.5 inches high, the MicroRack is designed to occupy only 2U in a 19-inch rack. Sturdy front handles allow the MicroRack 16 to be extracted and transported conveniently.

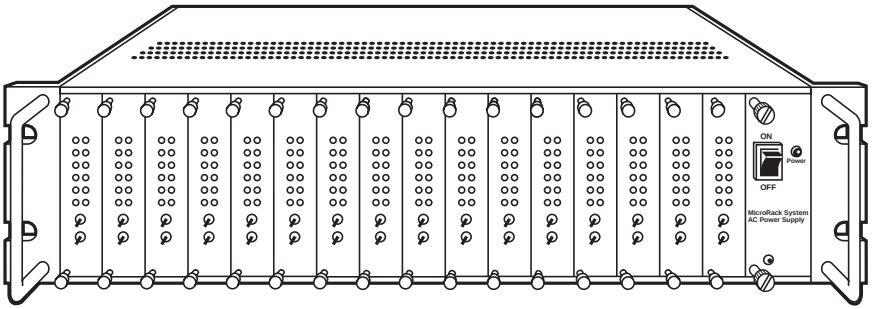

Figure 1. The MicroRack 16.

The power supply consists of two cards: a front power-supply card and the rear power entry card. The two cards meet inside the rack chassis and plug into each other by means of a multipin connector. Use the steps on the next page as a guide for installing the power-supply module.

Rear (Power Entry) Card Installation

1. Attach the ground wire using the star washer and the #6-32 nut. Use a wrench to tighten the nut securely.

2. Slide the power entry card into the back of the chassis along the metal guide rails provided.

3. Secure the rear card using the #4-40 metal screws provided.

CAUTION

To avoid shock, do not connect power cables until the power-supply module is fully assembled.

Front (Power Supply) Card Installation

1. Make sure the power switch is in the OFF position.

2. Slide the power-supply card into the front of the chassis. It should meet the rear card when it's almost all the way into the chassis.

3. Push the front card gently into the multipin connector on the rear card.

4. Secure the front card using the thumbscrews.

Rear Card Power Connection for the AC Power Supply

The PS460A rear card is equipped with a shrouded male IEC-320 AC power interface. This interface accepts a domestic U.S. power cord or any number of international power cords.

DC Rear Card Power Connection

The power supply's rear card comes equipped with a cage-clamp terminal block. The steps below will help you install the rear card.

CAUTION

Connect the equipment to a SELV DC supply source that is electrically isolated from the AC power sources. The DC power source should also be reliably connected to earth ground.

1. Strip back the insulation on each of the wires about a quarter of an inch.

2. Use a small flatblade screwdriver to open the cage clamp as shown in Figure 2. Insert the stripped portion of the wire into the opening and remove the screwdriver. The cage clamp will clamp the wire, producing a reliable connection. Make sure all strands of wire are captured and that there is no exposed wire.

3. Connect the earth ground wire to the frame ground terminal.

4. Connect the +VDC power wire to the +DC In terminal. Connect the -VDC power wire to the -DC In terminal. The power-supply card is protected against accidental reversal of polarity. If the DC-Input LED does not light, check the polarity of the input wiring.

5. Connect the Alarm contacts as needed by your application.

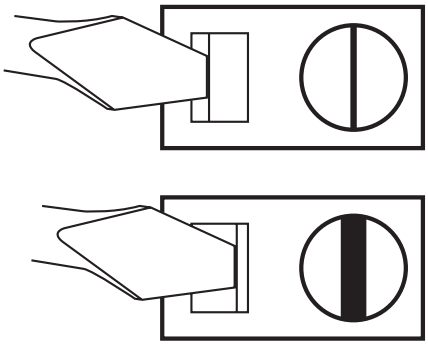

Figure 2. Connecting bare wires to the rear power-entry card.

Replacing the Power Supply Fuse

The rack chassis power supply uses a 400 mA fuse for 120-VAC circuits, and a 200 mA fuse for 240-VAC circuits. The fuse compartment is located just below the AC socket on the rear card. To replace the fuse, follow the steps on the next page:

1) Turn the power switch off and remove the power cord.

2) Using a small screwdriver, pop the compartment open (it will slide open like a drawer). Depending upon the exact part used, the drawer may slide completely out of the fuse holder or it may stop partway out.

3) Note that there are two fuses in the drawer. The front fuse is the spare, and the rear fuse is the "active" fuse.

4) If the active fuse appears to be blown, remove it from the clips and replace it with the spare from the front compartment. Note the size and rating of the blown fuse before discarding it.

5) Buy a replacement fuse at an electronics store. (Note: For continued protection against the risk of fire, replace only with the same type and rating of fuse.)

Switching the Power Supply Between 120 and 240 Volts

The power supply module should be installed in the rack chassis before any CSU/DSU cards. Here are the steps to select the switch for the proper voltage level.

1) Locate the two-position switch near the back of the card. Slide the switch to the desired voltage. (Note: The actual values on the switch may be "110/220" or "115/230.")

2) Verify that the existing fuse is the correct value (400 mA for the 120-volt, 200 mA for the 240-volt).

3) Connect the power supply cord.

Operating the Power Supply

The AC power supply has a single power LED on the front panel, which lights when the power switch is turned on and the unit is connected to an AC power source.

The DC power supplies feature two front-panel LEDs that indicate the condition of the power line. The "Power " LED will only light when the power switch is turned on and the low voltage AC power is available to the function cards installed in the rack. The "DC Input" LED will light whenever a power source is present (with correct polarity), regardless of whether or not the power switch is turned on.

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