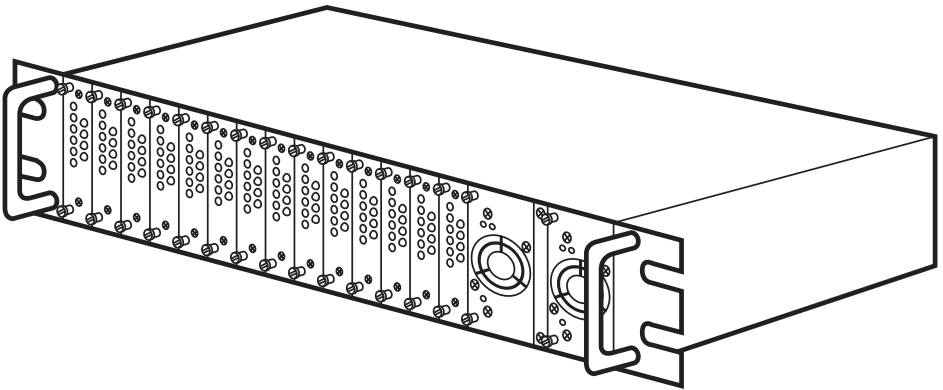




16-Port Managed MicroRACK AC Power Supply for MicroRACK DC Power Supply for MicroRACK



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

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This equipment complies with the requirements of the European EMC Directive 89/336/EEC.




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 conectado 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 física 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 líneas de energía.
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 objetos líquidos 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: Objetos 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.

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1. Specifications

1.1 Specifications of the MicroRACK (RM260)

Compliance:	CE
Interface:	Midplane power and data bus
Connectors:	(6) Card-edge contacts for each of (17) card slots (male toward front cards, female toward rear cards), plus (2) sets of (10) female card-edge contacts for power supplies
Enclosure:	Steel
Power:	From one or two cardmount power supplies, either AC or DC input (comes with one supply installed); see Section 1.2
Size:	3.5"H (2U) x 19"W x 7.25"D (8.9 x 48.3 x 18.4 cm)
Weight:	6.6 lb. (3 kg)

1.2 Specifications of the Power Supplies (PS466A and PS466A-DC)

Compliance:	Both models: CE; FCC Part 15 Subpart B Class A, IC Class/classe A; PS466A: NRTL, US UL/1950, Canada CSA/950, EU EN 60950
Input:	PS466A: Voltage and frequency: 90 to 264 VAC (115 or 230 VAC nominal), 47 to 63 Hz, autosensing; Brownout protection (lowest input voltage at which regulation is maintained with full load): 90 VAC; Hold-up time (to sustain nominal input voltage): 15 ms at 72-watt load, 30 ms at 36-watt load; Current (at 90 VAC with a 72-watt load): 1.8 amps RMS; Protection: User-replaceable external AC-input line fuse: 3.0A, 250V, time delayed, Bussmann type GMD-3A or Wickmann type 198-1300-0-00;

Input (continued): PS466A (continued):

Inrush surge current: Internally limited by thermistor;
38 APK at $V_{in}=264$ VAC (one cycle) and 77°F (25°C);
Input surge suppression (line-to-line through MOV):
300 VAC;

PS466A-DC:

Voltage: -42 to -60 VDC (-48 VDC nominal);
Brownout protection (lowest input voltage at which
regulation is maintained with full load): 36 VDC;
Hold-up time (to sustain nominal input voltage): 15 ms
at 72-watt load, 30 ms at 36-watt load;
Current (at -42 VDC with a 72-watt load): 2.2 amps;
Protection: User-replaceable external DC-input line
fuse: 5.0A, 250V, time delayed, Littelfuse
type 215 005 or Wickmann type 19181-063-FS;
Input surge suppression (TVS): 75 VDC

Output:

Voltage (to midplane bus at 75% load): 12.3 to 12.5 VDC
(12.4 VDC nominal);
Power: 72 watts, continuous;
Turn-on delay (time required for initial stabilization):
3 seconds;
Turn-on rise time (time required for output voltage to
rise from 10% to 90% of capacity): 1 second;
Transient response (recovery time to within 1% of initial
set point due to a 30 to 100% load change): 250 μ s;
Load-sharing accuracy of dual supplies (with a 72-watt
load): To within 1% nominal (within 5% maximum);
Efficiency (at full load, with 115-VAC input for PS466A or
-48-VDC input for PS466A-DC): 78% minimum,
88% maximum

User Controls:

(1) Midplane-mounted jumper to select maintenance
mode (no alarm if power supply is removed)

Indicators:

(3) LEDs mounted on front panel of front card to show
normal operation, power failure, and excessive internal
temperatures

Power-Failure

Warning: TTL compatible;
 Logic LOW to any installed RM262C Control Module (denotes power failure): 0.7 VDC maximum;
 Logic HIGH with internal pullup to output: 10 kilohms maximum;
 Output low-voltage trip point: 11.6 to 12 VDC (11.8 VDC nominal);
 Power-failure trip point (at maximum load with decreasing input):
 PS466A: 85 to 94 VAC (90 VAC nominal);
 PS466A-DC: -30 to -38 VDC (-36 VDC nominal);
 Time before regulation dropout due to loss of input power (at full load):
 PS466A: 5 ms;
 PS466A-DC: 200 μ s

Alarm Contacts: Normally open and normally closed contacts that operate when power failure is detected, accessible through a 3-position terminal block (1 amp at 30 volts)

Overtemperature

Response: Lights overtemperature LED;
 Shifts power-failure signal to a logic LOW state;
 Output voltage falls to 4 to 5 VDC (4.5 VDC nominal)

Dielectric Withstand

Voltage: Input to output, 1 second: 3000 volts RMS;
 Input to chassis, 1 second: 1500 volts RMS

Leakage Current: PS466A: 1 mA at 264 VAC

Temperature

Tolerance: Operating:
 32 to 122°F (0 to 50°C) at up to 100% load;
 Above 122°F (50°C), load capacity is derated linearly by 2.5% for each 1.8°F (1°C) until a maximum temperature of 158°F (70°C) is reached at up to 50% load;
 Storage: -40 to +185°F (-40 to +85°C)

Humidity

Tolerance: Up to 90% noncondensing

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- Size:** Rear card: 3.3"H x 1.5"W x 2.25"D (8.4 x 3.8 x 5.7 cm);
alarm contacts protrude an additional 0.25" (0.6 cm)
from the rear panel;
Front card: 3.3"H x 1.5"W x 5"D (8.4 x 3.8 x 12.7 cm);
screws protrude an additional 0.4" (1 cm) from the
front panel
- Weight:** Net, rear card: 4.1 oz. (116 g);
Net, front card: 8 oz. (227 g);
Total shipping: Approx. 4.5 lb. (2 kg)

2. Introduction

2.1 Overview

The 16-Port Managed MicroRACK (product code RM260) is a compact communication-card rack that occupies only 2U (3.5", 8.9 cm) of vertical space in a 19" rack. Two sturdy front handles allow the rack to be installed, extracted, or transported easily. The rack is shown in Figure 2-1.

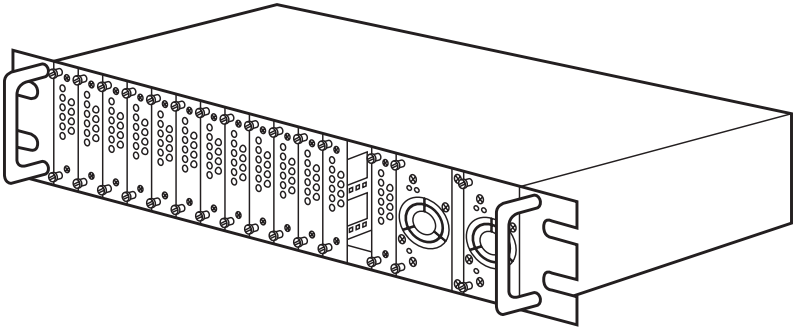


Figure 2-1. The MicroRACK chassis.

The MicroRACK can not only save you space and effort, but it also has slots for a pair of power supplies that provide redundant power to keep your mission-critical applications alive. There are two types of MicroRACK Power Supplies. The AC power supply (PS466A) plugs into any standard AC outlet (90 to 264 volts, 50 to 60 Hz); the rack comes with one of these power supplies already installed. The DC power supply (PS466A-DC) can be attached to a site's -48-VDC power (actual voltage range can be from -42 to -60 VDC). Each of these power supplies consists—as do all of the function cards designed for the MicroRACK—of a front-mounted “front card” and a rear-mounted “rear card”; these cards meet at a midplane interface inside the rack.

A MicroRACK can be fitted with any combination of these power supplies. If you use a pair of power supplies, system operations will not come to a standstill if one supply fails. The second supply simply takes over! In this situation, any CSU/DSUs, baseband modems, and G.703 modems installed in the MicroRACK continue to operate as normal.

When redundancy isn't required, a single power supply may be used to power a MicroRACK, even if it's fully loaded with 16 function cards. When you use two power supplies for full redundancy, they take up two extra slots in the MicroRACK

chassis because there has to be an empty slot between them. The remaining 14 slots can be used for function cards. A wide variety of function cards are available for the MicroRACK, including cards that provide high-speed G.703 access, router links, or short-haul modem hook-ups.

Although this manual is for both the MicroRACK itself and its power supplies, it mainly covers the installation, servicing, and operating instructions for the power supplies. This gets fairly technical, and describes procedures that only qualified personnel should do. If you only need to do basic rack installation and operation:

- To add a function card to, or remove a card from, the MicroRACK, see **Section 3.1**.
- To attach an alarm cable to a power supply, see **Section 3.4**.
- To power up the MicroRACK, see **Section 3.5** if you're using an AC power supply or **Section 3.6** if you're using a DC supply.
- To make sure what a power supply's LEDs mean, see **Chapter 4**.

2.2 Power-Supply Features

- Low-profile midplane architecture design.
- With two power supplies, provides redundant power for up to 14 rack cards.
- With a single supply, provide power to up to 16 rack cards.
- Easily replaceable front and rear cards.
- LED Indicators: 12V, Fail, and Temperature.

2.3 Safety Precautions

WARNING! High-Voltage Service-Access Area

The MicroRACK's power-input cavities and power-supply cards are part of a Service-Access Area. This is designated by the “electric shock” symbol located on the front and rear panels. Only qualified service personnel should be permitted to access, install, remove, service, or configure power-supply cards. Qualified service personnel are defined as persons who have the appropriate technical training and experience necessary to (a) perform tasks in the Service-Access Area of the equipment, and (b) be aware of the hazards to which they are exposed in performing a task, and of measures to minimize the danger to themselves or other persons.

To comply with published safety standards, the following precautions must be observed when using or installing the power supply cards.

1. Hazardous voltages exist in the primary circuits of AC-input power supplies. Beware of potentially lethal internal voltages due to charged capacitors even after the AC input is disconnected. A minimum of 3 minutes should be allowed after input power is disconnected before servicing the AC power supply cards.
2. Normal operating temperature range is 32 to 122°F (0 to 50°C) at full rated output power. Derate linearly to 50% of full load from 122 to 158°F (50 to 70°C).
3. All chassis ventilation holes and fan-intake openings must remain open and unobstructed.
4. The power supply cards are components of the MicroRACK system. When installing the cards and making input connections, the relevant safety standards—IEC950/VDE 0805, UL® 1950, and EN 60950—must be complied with.
5. For continued safe operation, the power supplies must be operated with the appropriate fuses installed. For the AC supply, the fuse should only be replaced by a 3.0A, 250V, time delayed, Bussmann® type GMD-3A or Wickmann® type 198-1300-0-00. For the DC supply, the fuse should only be replaced by a 5.0A, 250V, time delayed, Littelfuse® type 215 005 or Wickmann type 19181-063-FS.
6. If you need to disconnect the input-line voltage, do so by pulling the mains plug (AC supply) or disconnecting the DC source from the rear card (DC supply).

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7. The earth wire must be connected only to the chassis' earthing points marked with the "earth ground" symbol.
8. In case of failure or malfunction, the power supplies must be returned to Black Box for servicing to ensure continued compliance with all safety requirements.

3. Installation

The sections of this chapter describe in detail how to properly:

- Install function cards in the 16-Port Managed MicroRACK (see **Section 3.1**);
- Configure the alarm operation of the power supplies' rear cards (see **Section 3.2**);
- Install power supplies in the rack (see **Section 3.3**);
- Make alarm-relay connections (see **Section 3.4**);
- Power the rack with an AC power supply (see **Section 3.5**);
- Power the rack with a DC power supply (see **Section 3.6**);
- Replace an AC power supply's front card (see **Section 3.7**); and
- Replace a DC power supply's front card (see **Section 3.8**).

3.1 Installing Function Cards in the Rack

Like the MicroRACK's power supplies, the rack's function cards (modems, line drivers, etc.) will come in two parts: a front card and a rear card. Follow this procedure to install a function card's front and rear cards in one of the rack's slots:

1. Slide the rear card into the slot from the back of the rack chassis, along the metal rails. (Keep in mind that slot #17 is reserved for the rack's first or single power supply; slots #15 and #16 will be needed for the redundant power supply if you'll be installing one; and slot #14 should be used only for control cards such as the RM261C-SNMP SNMP/HTTP Card or the RM262C Control Module.)
2. Secure the rear card in place using the provided metal screws.
3. Slide the front card into the slot from the front of the chassis. It should meet the rear card when it's almost all the way into the chassis.
4. Push the front card *gently* into the rear card's card-edge receptacle. It should "click" into place.
5. Secure the front card in place using its captive thumbscrews.

3.2 Configuring Power-Supply Alarm Operation

The rear cards of the MicroRACK's power supplies contain a PC-board-mounted jumper to allow the customization of the alarm operation. The jumper is located adjacent to the blue 8-pin power connector. With the jumper installed on the two posts (default position), the relay contacts will *not* indicate an alarm condition when a power supply's front card is physically removed from the rack chassis. With the jumper installed on only *one* post (or removed), the relay contacts will indicate an alarm condition if a power supply's front card is removed from the chassis (or is not properly seated). Configure this jumper as required for your application on the preinstalled AC power supply, or on the rear card of any other other power supply before you install it.

3.3 Installing Power Supplies in the Rack

The MicroRACK's power supplies consist of two cards: a rear-mounted "rear card" and a front-mounted "front card." The cards meet inside the rack chassis and plug into each other using multi-pin connectors. The rack comes with one AC power supply preinstalled, which can power up to 16 installed cards; if you're content to use just that supply, you can skip this section. But if you want to install a second, redundant supply, or if you want to replace the installed supply (with a DC model, for example), follow the instructions in the remainder of this section.

3.3.1 INSTALLING REAR CARDS

The power supplies' rear cards occupy the rightmost slots on the rack system (as viewed from the front). Refer to Figure 3-1 on the next page and follow the instructions in this section to properly install the rear cards of one or (if you're removing the preinstalled supply) two power supplies in the MicroRACK chassis. The rear cards must be in place and securely fastened before the power supply's front cards can be installed.

CAUTION!

To avoid electric shock, *never* install, service, or remove any power supply's rear card while the input voltage source is connected.

The power-supply cards contain static-sensitive circuitry. Failure to use proper ESD precautions while you're installing or removing a card may result in damage to the power-supply circuits.

To install a power supply's rear card, take these steps:

1. *If you're taking out the existing supply:* Unscrew the two screws that secure the power supply's rear card to the MicroRACK chassis. Slide the card out carefully, far enough that you can reach the ground stud along the inside wall of the chassis. Loosen the retaining nut, remove the ground lug, and slide the rear card the rest of the way out of the chassis.

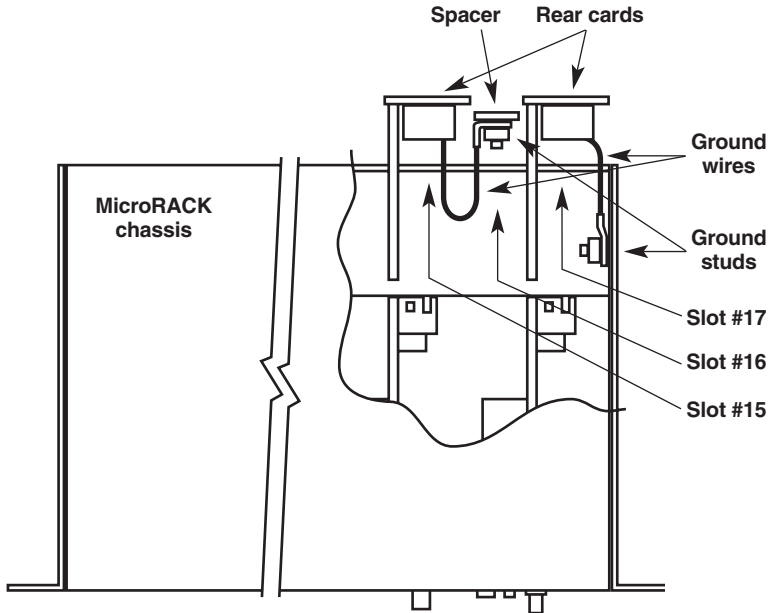


Figure 3-1. Installing power supplies' rear cards in the MicroRACK (viewed from above).

2. Attach the ground wire (green with yellow tracer) of the rear card of any power supply that you'll be installing in the primary power-supply slot (slot #17) to the stud along the inside wall of the chassis. The star washer should be between the chassis and the ground lug. Securely tighten the retaining nut. Failure to connect the ground wire may result in a hazardous condition.
3. Slide this power supply's rear card into slot #17 in the rear of the chassis. Secure the card using the two screws provided.

Steps 4 through 6 are for applications using redundant power supplies only:

4. Attach the ground wire of the second power supply's rear card to the bare metal side of the rear spacer. (Spacers is included with each power supply.) The spacer has two ground studs and is powder-coat finished on only one side. The star washer should be installed between the spacer and the ground lug. Securely tighten the retaining nut.
5. Secure the rear spacer to slot #16 using the two screws provided.
6. Install the second power supply's rear card into slot #15. Secure the card using the two screws provided.

3.3.2 INSTALLING THE FRONT CARDS FOR THE FIRST TIME

To install a power supply's front card into the MicroRACK chassis for the first time (as opposed to replacing a front card that has already been installed—see **Section 3.7**), follow the instructions below:

1. Make sure that the associated rear card is securely installed in the rack chassis as described in **Section 3.3.1**.
2. Install a front card for the first time by carefully aligning the card with the chassis guides. Gently slide the card, along the metal rails provided, into the front of the chassis. The card's connectors will meet the midplane bus when the card is almost all the way into the chassis.
3. After the connectors meet, gently apply even pressure to the top and bottom of the front panel to seat the card. Do *not* force the card into the chassis. This may damage the connector pins.
4. Use a flat-blade screwdriver to tighten the captive screws.

Steps 5 and 6 are for applications using redundant power supplies only:

5. If necessary, repeat steps 1 through 4 for the second power supply's front card.
6. Secure the front spacer to slot #16 using the two screws provided.

3.4 Making Alarm-Relay Connections

The rear cards of the MicroRACK's power supplies (shown in Figure 3-2 on the next page) feature a 3-position, screw-type terminal plug for the alarm connections. Both normally-open (NO) and normally-closed (NC) relay contacts are provided. Choose the appropriate set of contacts for the intended application:

- “NO” Contacts: The “NO” (normally-open) contacts are open for normal operating conditions and close when a fault condition occurs (loss of input power, overheating, or card failure).
- “NC” Contacts: The “NC” (normally-closed) contacts are closed for normal operating conditions.

The alarm-terminal plug accepts wire from 12 to 26 AWG in diameter, solid or stranded. For ease of hookup, the terminal plug can be removed from the rear panel's alarm port by loosening the two securing screws. After connections to the plug have been made, insert the plug back into the alarm port on the rear panel and tighten the securing screws.

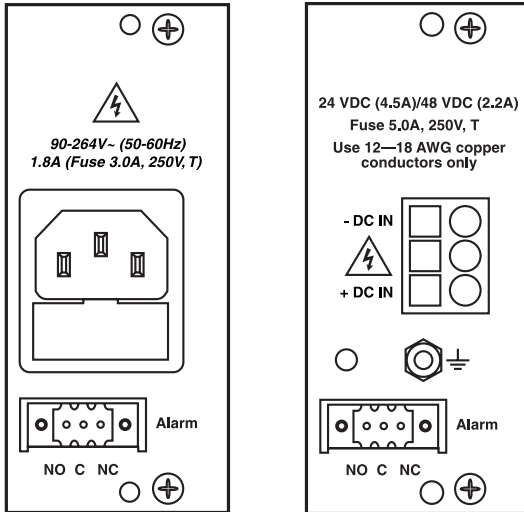


Figure 3-2. The rear panels of the AC (left) and DC (right) rear cards.

3.5 Powering the MicroRACK with an AC Power Supply (PS466A)

CAUTION!

AC power supplies' rear cards are to be used **ONLY** with three-wire grounded outlets.

For an AC main connection, the rear card of the AC power supply (PS466A) is equipped with a shrouded male IEC-320 compatible power entry connector. This connector contains an integral fuse and accepts a domestic US power cord or any of several international AC power cords. Only three-wire power cords containing an earth ground lead may be used. After the power cord is properly connected to a working standard AC outlet (90 to 264 VAC, 50 to 60 Hz), the MicroRACK will power up automatically. The green “12V” LED on the corresponding front card’s front panel will light and the fan will operate. Voltage selection is automatic. There is no on/off switch.

3.6 Powering the MicroRACK with a DC Power Supply (PS466A-DC)

For a –48-VDC connection, the rear card of the DC power supply (PS466A-DC) has a three-position, clamp-style terminal block. Only the two outermost terminals are used. In addition to the terminal block, an external lug is provided for connecting earth ground. Follow the steps below to make the DC power connections:

CAUTION!

Use 12 to 18 AWG copper conductors only.

1. Connect the earth ground of the DC source (–42 to –60 VDC) to the exterior lug on the DC power supply's rear card using the hardware provided. The earthing conductor must be equivalent to, or larger than, the conductors used for the rear-card connections.
2. Strip back the insulation on each of the wires approximately $\frac{1}{4}$ " (0.6 cm).
3. Use a small flat-blade screwdriver to open the cage clamp of the terminal block. Insert the stripped end of the positive lead into the "+DC input" of the terminal block and remove the screwdriver. Repeat the procedure for the negative lead, using the "–DC input" of the terminal block. Make sure that all strands of wire are captured and that there is no exposed wire.

After the DC power-supply leads are properly connected and power is applied, the MicroRACK will power up automatically. The green "12V" LED on the corresponding front card's front panel will light and the fan will operate. There is no on/off switch.

3.7 Replacing the Front Card of an AC Power Supply (PS466A)

To replace the already-installed front card of an AC power supply (PS466A), follow these instructions (you'll need a flat-blade screwdriver):

CAUTION!

Hazardous voltages are present. To avoid electric shock or personal injury, follow the card-replacement instructions exactly as stated.

1. Loosen the two captive securing screws on the front card's front panel. Do not remove the screws from the card.
2. Using two hands, grasp the captive screws and slowly separate the card from the MicroRACK until the front panel is approximately one inch (2.5 cm)—no farther—from the edge of the rack chassis. This disconnects the front card from the AC-voltage source. **DO NOT COMPLETELY REMOVE THE CARD FROM THE RACK CHASSIS!**

EXTREME CAUTION!

Hazardous voltages exist in the primary circuits of the AC power supply's front card. Beware of potentially lethal internal voltages due to charged capacitors even after the AC input is disconnected. A minimum of 3 minutes should be allowed after AC input power is disconnected before removing or handling the front card.

3. After a minimum of three minutes have elapsed after disconnecting the AC-voltage source, the front card may be safely removed from the rack chassis.
4. Install a new front card by carefully aligning it with the chassis guides. Gently slide the card into the chassis along the metal rails provided. The card's card-edge connectors will meet the midplane bus when the card is almost all the way into the chassis.
5. After the connectors meet, gently apply even pressure to the top and bottom of the front panel to seat the card. Do not force the card into the chassis. This may damage the connector pins.
6. Tighten the captive screws. The card's green "12V" LED should light and the fan should operate.

3.8 Replacing the Front Card of a DC Power Supply (PS466A-DC)

To replace the already-installed front card of a DC power supply (PS466A-DC), follow the same procedures described in **Section 3.7** for replacing the front card of an AC power supply. However, since the PS466A-DC uses only non-hazardous, low DC voltage, it may be safely removed from the MicroRACK chassis immediately after loosening the captive screws.

4. Operation

Once you've installed a power supply in the 16-Port Managed MicroRACK and properly connected the power supply to a power source, the rack will begin operating automatically; it has no on/off switch. While it operates, you can check the status of the power supply's front card by looking at the three LED indicators on its front panel, shown in Figure 4-1:

- **12V:** Green LED lights when the card is operating normally and is supplying 12 VDC to the rack's midplane.
- **FAIL:** Red LED lights when the card fails, when it overheats, or (when you have two power supplies installed) when this card loses input power but the other power supply's front card doesn't.
- **TEMP:** Red LED lights when the card's temperature exceeds its maximum operating temperature due to fan failure, overload, or extremely high ambient temperature. During an over-temperature condition, the card's output power is drastically reduced. After the card has sufficiently cooled, normal operation is restored.

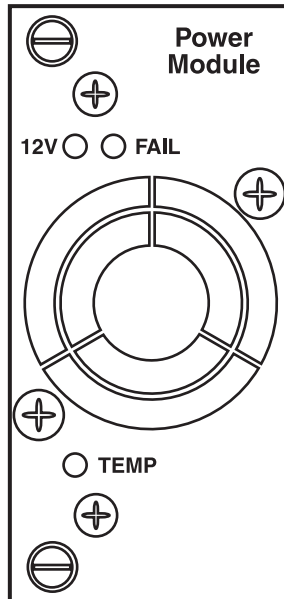


Figure 4-1. The front card's front panel.

5. Troubleshooting

5.1 Calling Black Box

If you determine that your 16-Port Managed MicroRACK, one of its power supplies, or any of its cards is malfunctioning, *do not attempt to alter or repair it*. It is not user-serviceable. Contact Black Box Technical Support at 724-746-5500.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description, including:

- the nature and duration of the problem;
- when the problem occurs;
- the components involved in the problem;
- any particular application that, when used, appears to create the problem or make it worse; and
- the results of any testing you've already done.

5.2 Shipping and Packaging

If you need to transport or ship your MicroRACK, one of its power supplies, or any MicroRACK card:

- Package it carefully. We recommend that you use the original container.
- If you are returning the unit, include everything you received with it. Before you ship the unit back to Black Box for repair or return, contact us to get a Return Authorization (RA) number.

Appendix: Plenum Installation for Power and Fire Safety

Compliance with NRTL/UL 1950/EN 60950

Safety-agency regulations require the use of an approved plenum with each MicroRACK installation. A rack chassis fitted with the plenum constitutes an agency-recognized fire enclosure. All MicroRACK installations require at least one plenum to be fitted underneath the bottommost chassis in the system for continued compliance with agency regulations.

Thermal Management

Due to the small size and high performance of the MicroRACK system, a fully-loaded rack chassis may generate a considerable amount of heat. To ensure long equipment life, it is important the thermal management guidelines are adhered to in all MicroRACK installations. In high-density stacked configurations, additional plenums may be required between each chassis to improve system thermal performance. Ambient air temperature, total rack power dissipation, and the number of stacked units must all be considered when determining cooling requirements.

NOTES



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