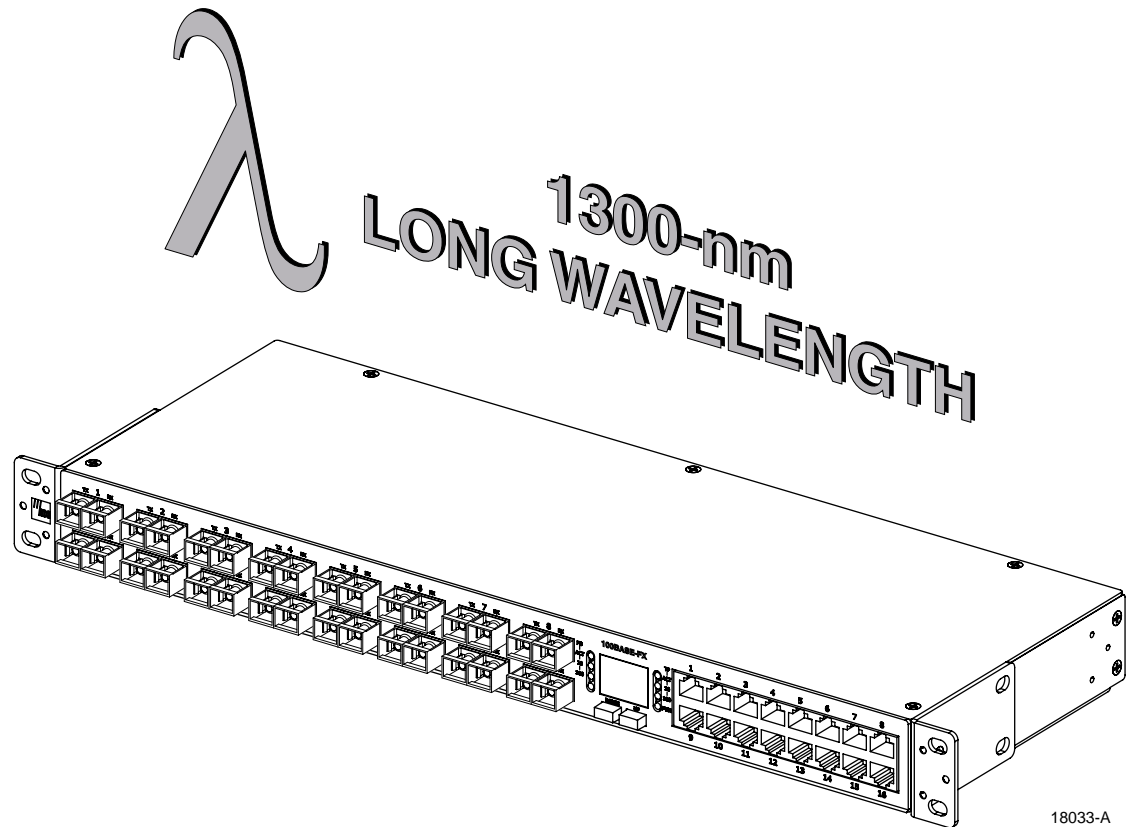# 16-Port, 1300nm SC
Chassis Media Converter
System Manual

16-Port Media Converter

INTRODUCTION

This system manual describes the ADC 16-Port 1300nm Chassis Media Converter with SC connectors, the ADC Single- and Four-Port AC-DC Power Supplies, and the ADC Single- and Four-Port DC-DC Power Supplies. This manual also provides installation and cable routing instructions for the media converter and power supplies.

Contents	Page

Revision History

ISSUE	DATE	REASON FOR CHANGE
1	8/2002	Original

Trademark Information

ADC and ADC Telecommunications are registered trademarks of ADC Telecommunications, Inc.; Velcro is a registered trademark of Velcro Industries, B.V.

Admonishments

Important safety admonishments are used throughout this manual to warn of possible hazards to persons or equipment. An admonishment identifies a possible hazard and then explains what may happen if the hazard is not avoided. The admonishments — in the form of Dangers, Warnings, and Cautions — must be followed at all times. These warnings are flagged by use of the triangular alert icon (seen below), and are listed in descending order of severity of injury or damage and likelihood of occurrence.

⚠ **Danger**: *Danger is used to indicate the presence of a hazard that **will** cause severe personal injury, death, or substantial property damage if the hazard is not avoided.*

⚠ **Warning**: *Warning is used to indicate the presence of a hazard that **can** cause severe personal injury, death, or substantial property damage if the hazard is not avoided.*

⚠ **Caution**: *Caution is used to indicate the presence of a hazard that **will** or **can** cause minor personal injury or property damage if the hazard is not avoided.*

FCC Compliance Statement

The 16-Port Media Converter has been certified to comply with the requirements for Class A computing devices per part 15 of the FCC regulations.

⚠ **Warning**: *This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with limits for a Class A digital device pursuant to Subpart B of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference to TB and radio reception in which case the user, at their own expense, will be required to take whatever measures may be required to correct the interference.*

This equipment does not exceed Class A limits for radio emission for digital apparatus, set out in the radio interference regulation of the authorization methods of Industry Canada. Operation in a residential area may cause unacceptable interference to TV and radio reception requiring the owner or operator to take whatever steps are necessary to correct the interference.

1   DESCRIPTION

1.1   16-Port Media Converter

The 16-Port Media Converter, shown in Figure 1, provides a method for interfacing Ethernet electrical signals on 16 Local Area Network (LAN) segments with optical signals on 16 fiber optic LAN segments. It is typically used in combination with a remotely located rack mount media converter, multiple wall media converters, or vender supplied media converters, to extend network length between same media nodes such as hubs, switches, workstations, routers, and Network Interface Card (NIC) configured devices on the same network. It may also be used to interconnect Ethernet copper nodes to fiber nodes such as hubs, switches, fiber panels, workstations, and routers on the same network.
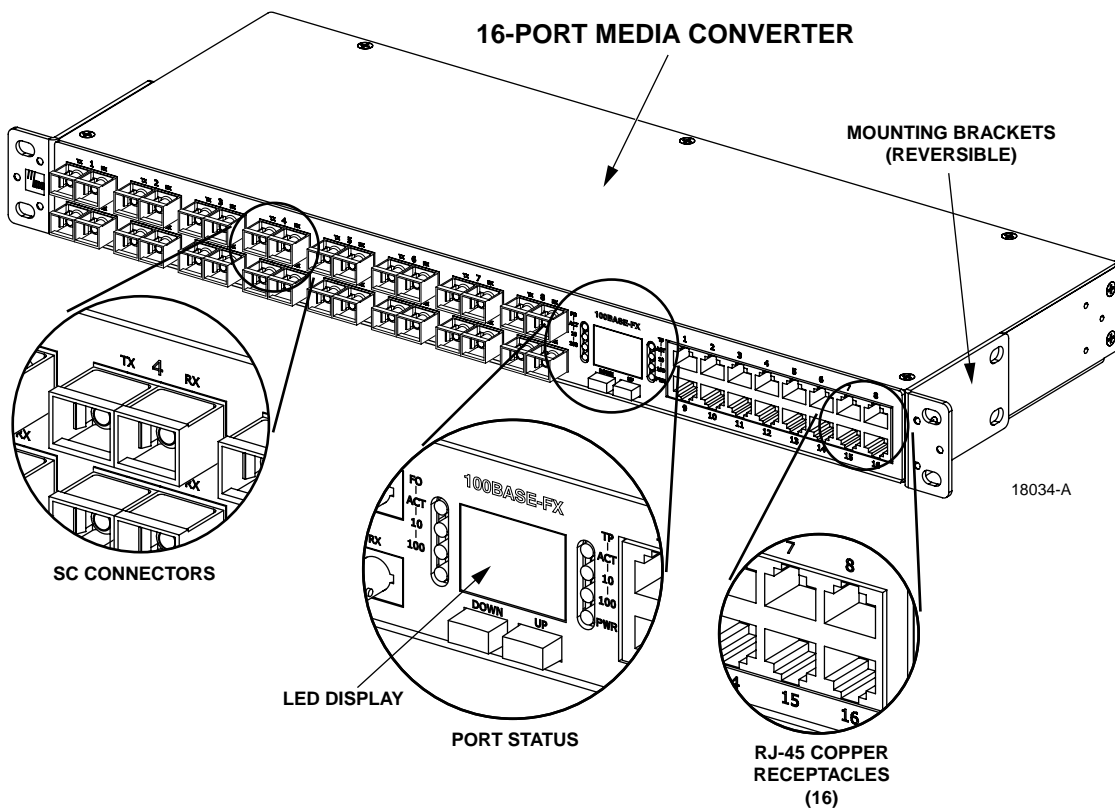
Figure 1. 16-Port Media Converter (Front View)

1.2   Single-Port AC-DC Power Supply

The Single-Port AC-DC Power Supply, shown in Figure 2, provides +12 VDC power to operate a single rack mounted media converter. Refer to the Table 2 for specifications.

Figure 2. Single-Port AC-DC Power Supply

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1.3 Four-Port AC-DC Power Supply

The Four-Port AC-DC Power Supply, shown in Figure 3, provides +12 VDC power to operate up to four rack mounted media converters. Refer to the Table 2 for specifications.
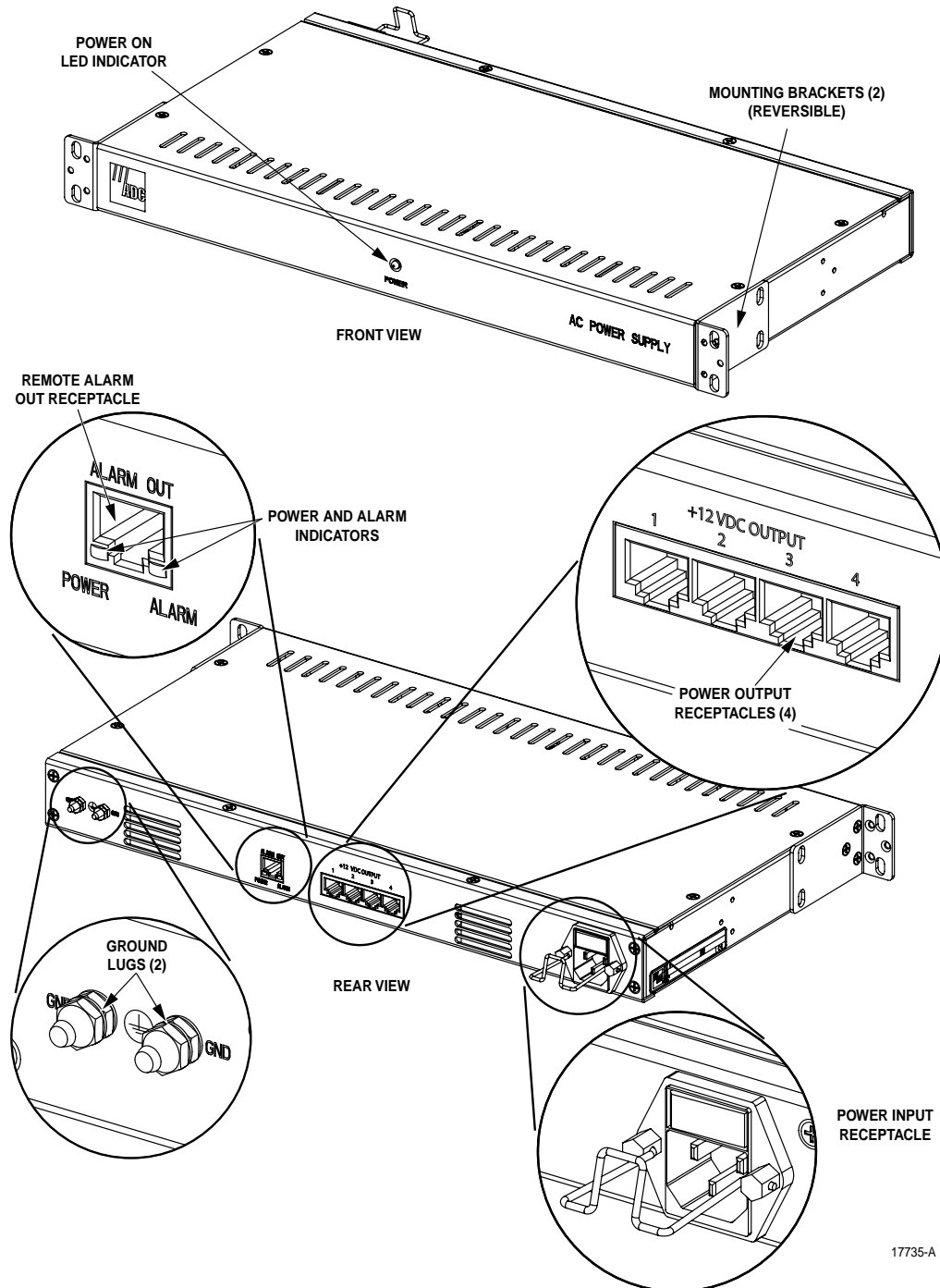
Figure 3. Four-Port AC-DC Power Supply

1.4   Single-Port DC-DC Power Supply

The Single DC-DC Power Supply, shown in Figure 4, provides +12 VDC power to operate a single rack mounted media converter. Refer to the Table 3 for specifications.
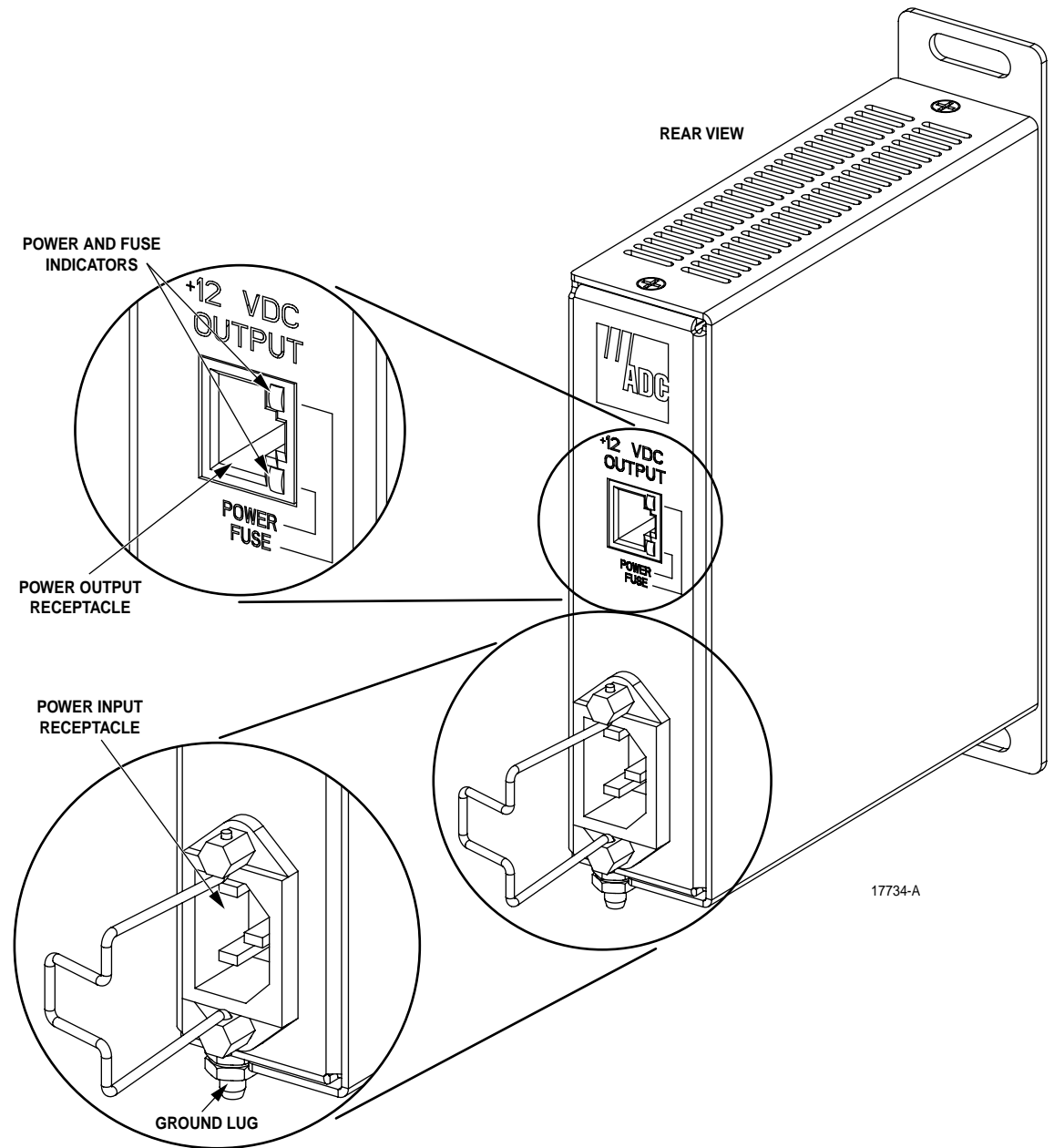

Figure 4. Single-Port DC-DC Power Supply

1.5   Four-Port DC-DC Power Supply

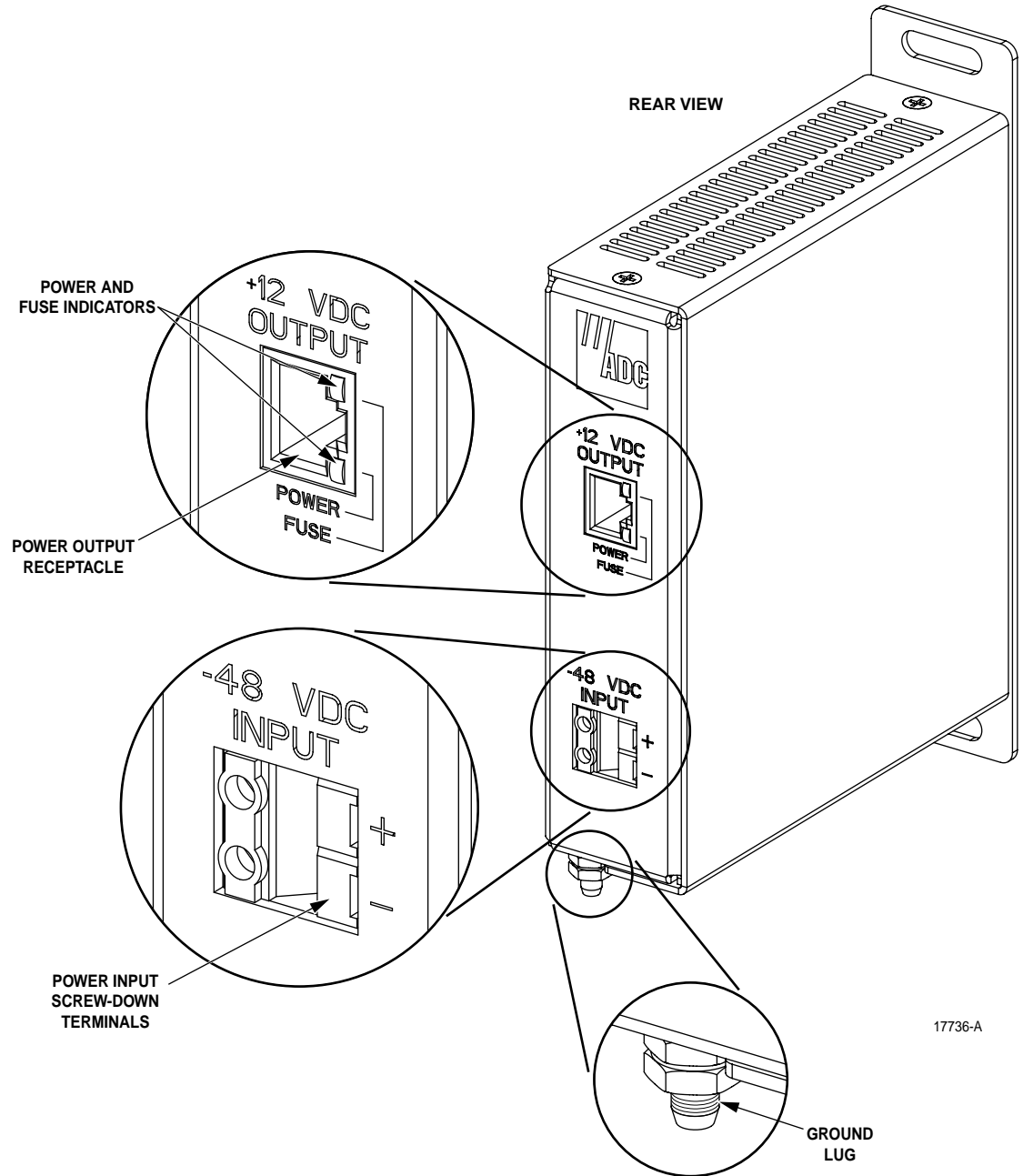The Four-Port DC-DC Power Supply, shown in Figure 5, provides +12 VDC power to operate up to four single rack mounted media converters. Input wires can be terminated to either of the –48 VDC input screw-down connectors located on the rear of the power supply. Refer to the Table 3 for specifications.
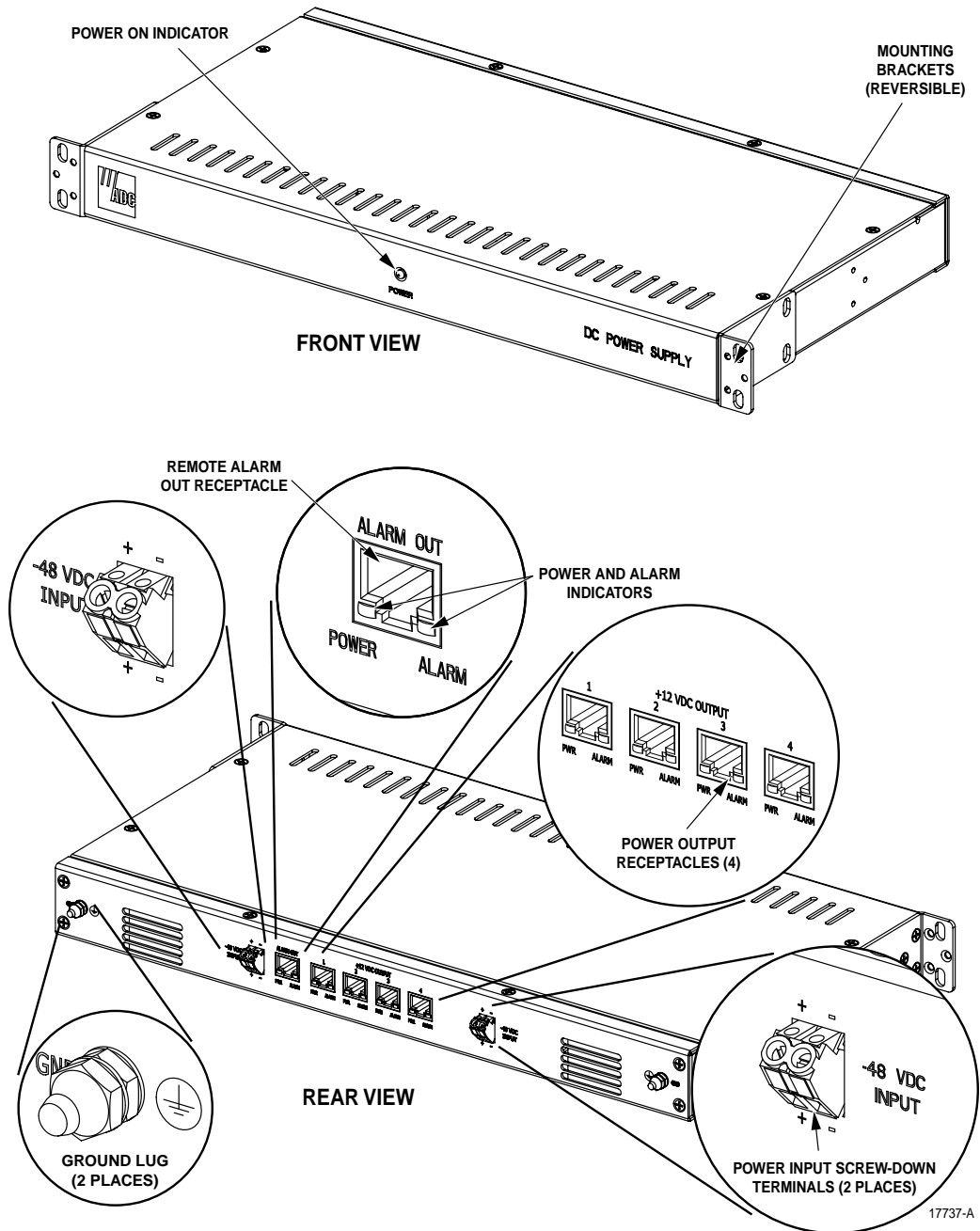

Figure 5. Four-Port DC-DC Power Supply

2 INSTALLATION

⚠ **Danger**: *Never install equipment during lightning storm or in a wet location. When installing or modifying communication lines, disconnect lines at the network interface before working with uninsulated lines or terminals.*

2.1 General Safety Precautions

If the chassis is installed in a closed or multi-rack assembly, the operating temperature of the rack environment may be greater than the ambient temperature. Be sure to install the chassis in an environment that is compatible with the maximum rated ambient temperature. See technical specifications.

When mounting the equipment in the rack make sure mechanical loading is even to avoid a hazardous condition, such as loading heavy equipment in the rack unevenly. The rack should safely support the combined weight of all equipment it supports.

When connecting the equipment to the supply circuit, be sure to check equipment nameplate ratings to avoid overloading circuits which may cause damage to over-current protection devices and supply wiring.

Be sure to maintain reliable earthing for rack-mounting equipment. Pay particular attention to supply connections.

Do not attempt to service this product yourself, as opening or removing covers and/or components may expose you to dangerous high voltage points or other risks. Refer all servicing to qualified service personnel.

2.1.1 DC-DC Power Supply Safety Precautions

⚠ **Caution**: *This unit has two power inputs. For total isolation from electrical shock and energy hazard, disconnect both power inputs.*

This equipment is to be installed only in Restricted Access Areas (dedicated equipment rooms, equipment closets, etc.) in accordance with Articles 110-16, 110-17, and 110-18 of the National Electrical Code, ANSI/NFPA 70.

Connect the equipment to a 48V DC supply source that is electrically isolated from the AC source. The 48V DC source is to be reliably earthed.

This equipment chassis shall be connected directly to the DC supply system-grounding electrode conductor or to a bonding jumper from a grounding terminal bar or bus to which the DC supply system grounding electrode conductor is connected.

The DC supply source is to be located within the same premises as this equipment.

All DC input wiring shall be routed away from any sharp edges and properly secured in place to prevent chaffing and to provide strain relief. This may be achieved by tie-wrapping the wires to the rack frame, or by equivalent means.

2.2 16-Port Media Converter Mounting Configurations

The 16-Port Media Converter is shipped configured for installation in a 19-inch EIA/WECO rack with the mounting brackets (reversible) installed flush with the front of the chassis. The mounting brackets may be reversed for 23-inch EIA/WECO rack mount applications. See Figure 6.
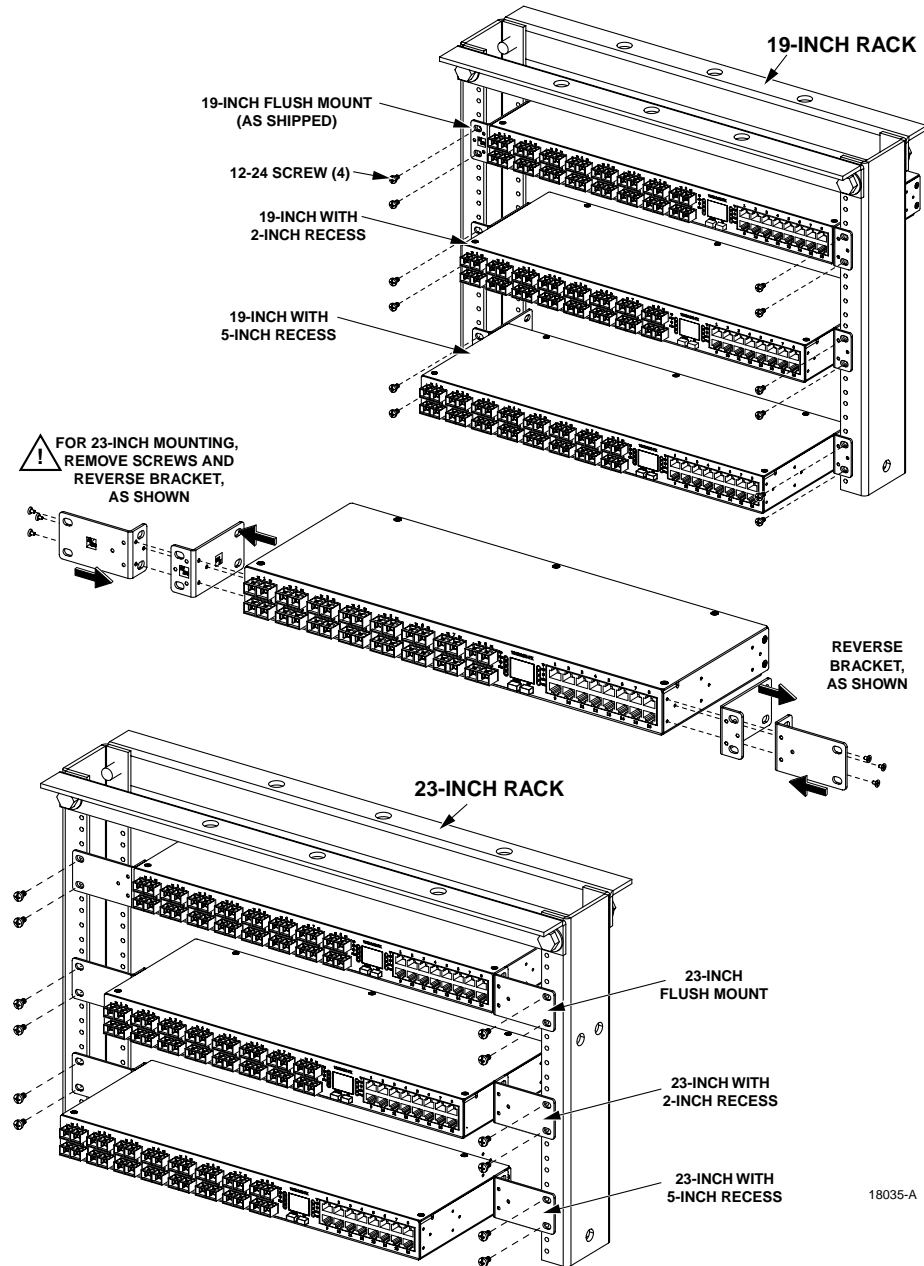

Figure 6. 16-Port Media Converter Installation

2.3 Single-Port AC-DC and DC-DC Power Supply Mounting Configurations

The Single-Port AC-DC and DC-DC Power Supplies are both installed in the same manner. Figure 7 shows the Single-Port AC-DC Power Supply installed in a 19-inch rack using the standard mounting bracket (shipped with unit), the offset mounting bracket (ordered separately), and the multiple offset mounting bracket (ordered separately). When installing the multiple offset bracket in a 23-inch rack, an extender bracket (ordered separately) is required (Figure 8).
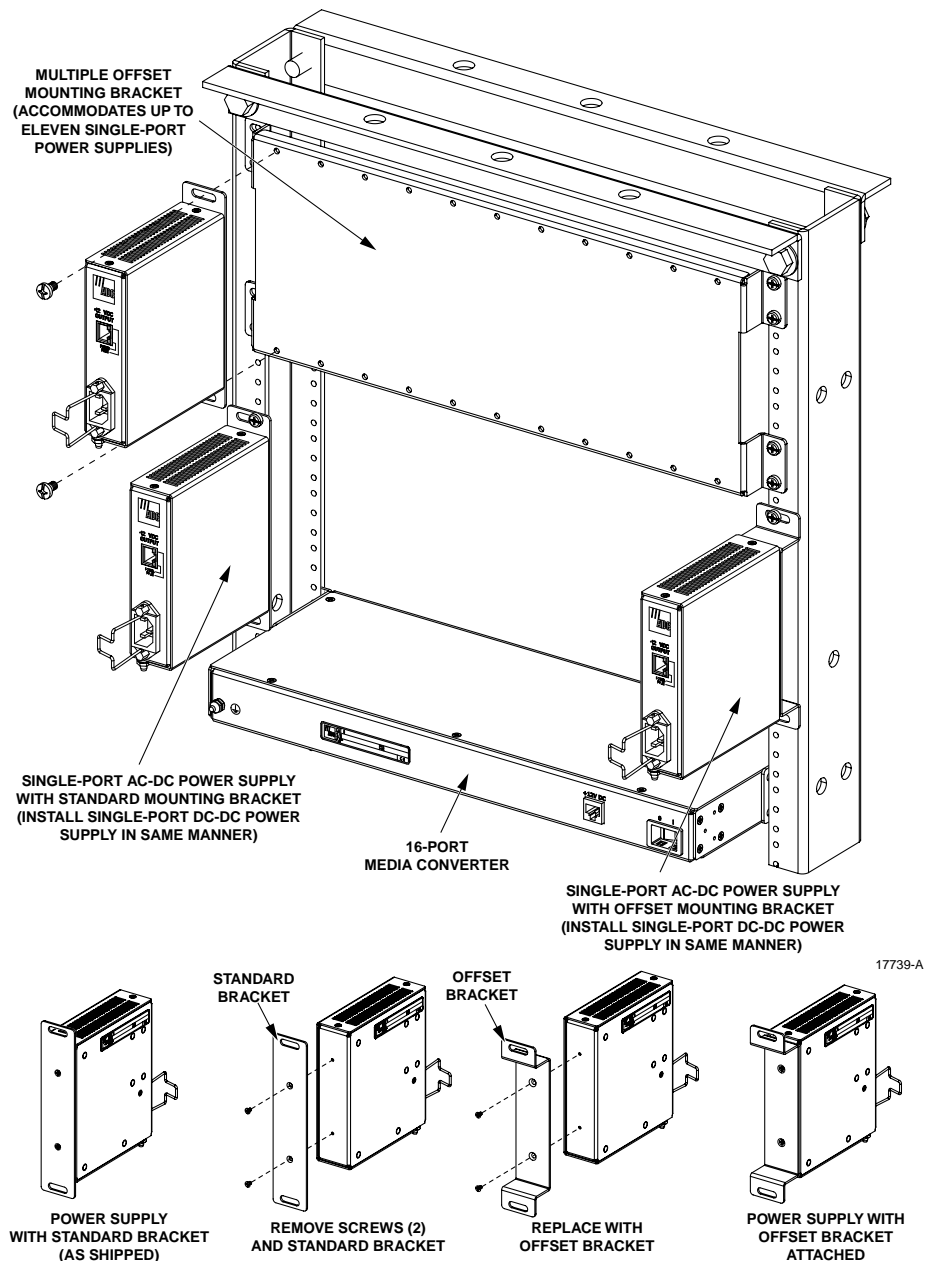
MULTIPLE OFFSET MOUNTING BRACKET (ACCOMMODATES UP TO ELEVEN SINGLE-PORT POWER SUPPLIES)

SINGLE-PORT AC-DC POWER SUPPLY WITH STANDARD MOUNTING BRACKET (INSTALL SINGLE-PORT DC-DC POWER SUPPLY IN SAME MANNER)

16-PORT MEDIA CONVERTER

SINGLE-PORT AC-DC POWER SUPPLY WITH OFFSET MOUNTING BRACKET (INSTALL SINGLE-PORT DC-DC POWER SUPPLY IN SAME MANNER)

17739-A

STANDARD BRACKET

OFFSET BRACKET

POWER SUPPLY WITH STANDARD BRACKET (AS SHIPPED)

REMOVE SCREWS (2) AND STANDARD BRACKET

REPLACE WITH OFFSET BRACKET

POWER SUPPLY WITH OFFSET BRACKET ATTACHED

Figure 7. Single-Port AC-DC Power Supply Installation

2.4 Four-Port AC-DC and DC-DC Power Supply Mounting Configurations

The Four-Port AC-DC and DC-DC Power Supplies are shipped configured for installation in a 19-inch EIA/WECO rack with the mounting brackets (reversible) installed flush with the front of the chassis. The mounting brackets may be reversed for 23-inch EIA/WECO rack mount applications. Figure 8 shows the installation and mounting configurations for the Four-Port DC-DC Power Supply (install the Four-Port AC-DC Power Supply in the same manner).
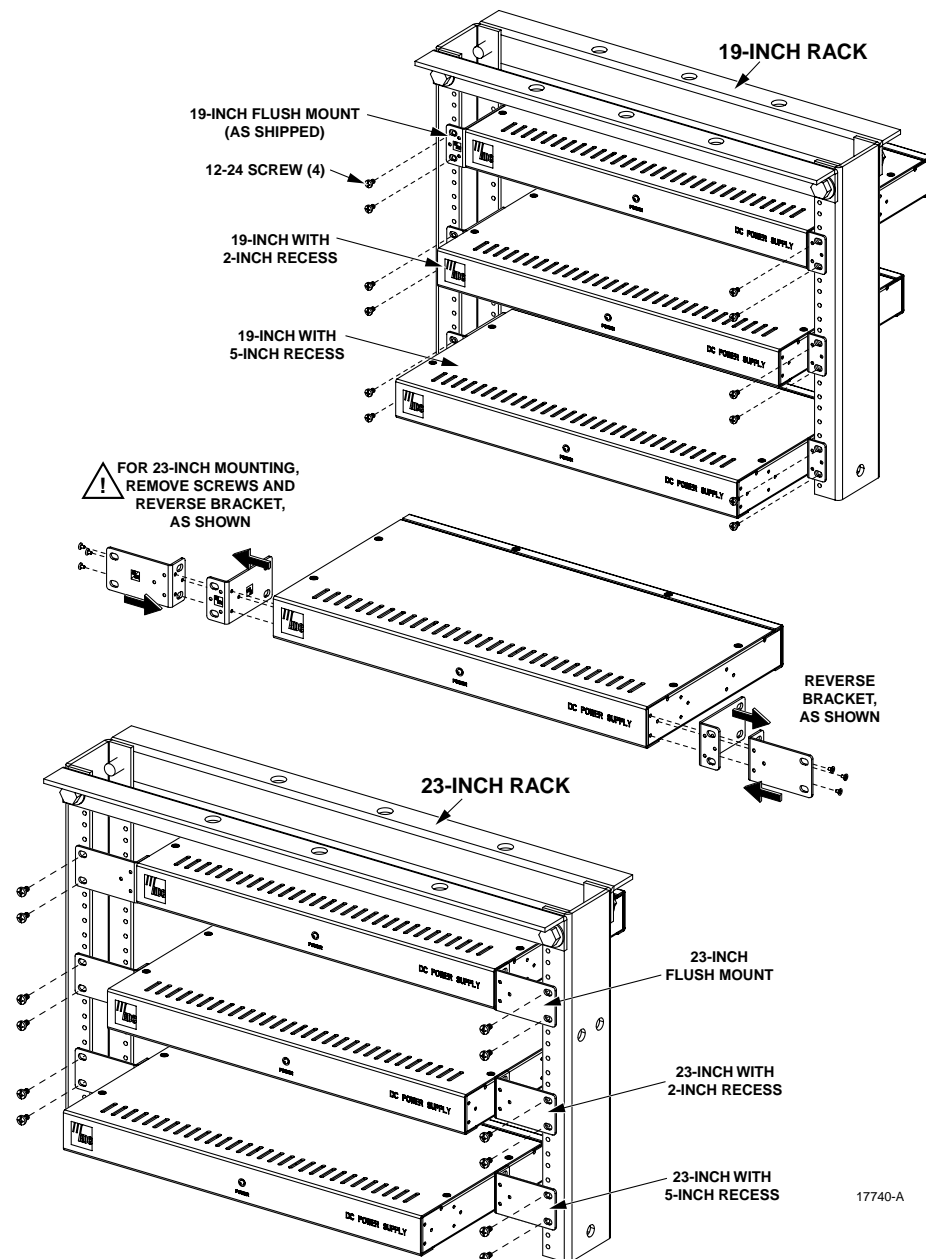
Figure 8. Four-Port AC-DC and DC-DC Power Supply Installation

© 2002, ADC Telecommunications, Inc.

3   CABLE ROUTING

3.1   AC and DC Power Cables and Ground Cable Connections

3.1.1   Media Converter using Single-Port AC-DC Power Supply

Using Figure 9 as reference, connect the power and ground cables as follows:

1. Terminate an RJ-45 type cable (not provided) to the **+12 VDC OUTPUT** power receptacle on the power supply (Figure 9-A).

2. Route and secure the RJ-45 type cable to the inside tie-down lances, separate from the AC power cable, as shown.

3. Terminate the opposite end of the RJ-45 type cable to the **+12V DC** input power receptacle on the media converter (Figure 9-B).

▶ **Note**: Using 18 AWG wire (not provided), ground the power supply to the rack in accordance with local practice (Figure 9-C).

▶ **Note**: Using 18 AWG wire (not provided), ground the media converter to the rack in accordance with local practice (Figure 9-D).

4. Terminate the AC power supply power cord (provided) to the **INPUT** power receptacle on the power supply (Figure 9-E).

5. Route and secure the AC power cable to the outside cable lances to a properly configured AC wall socket.

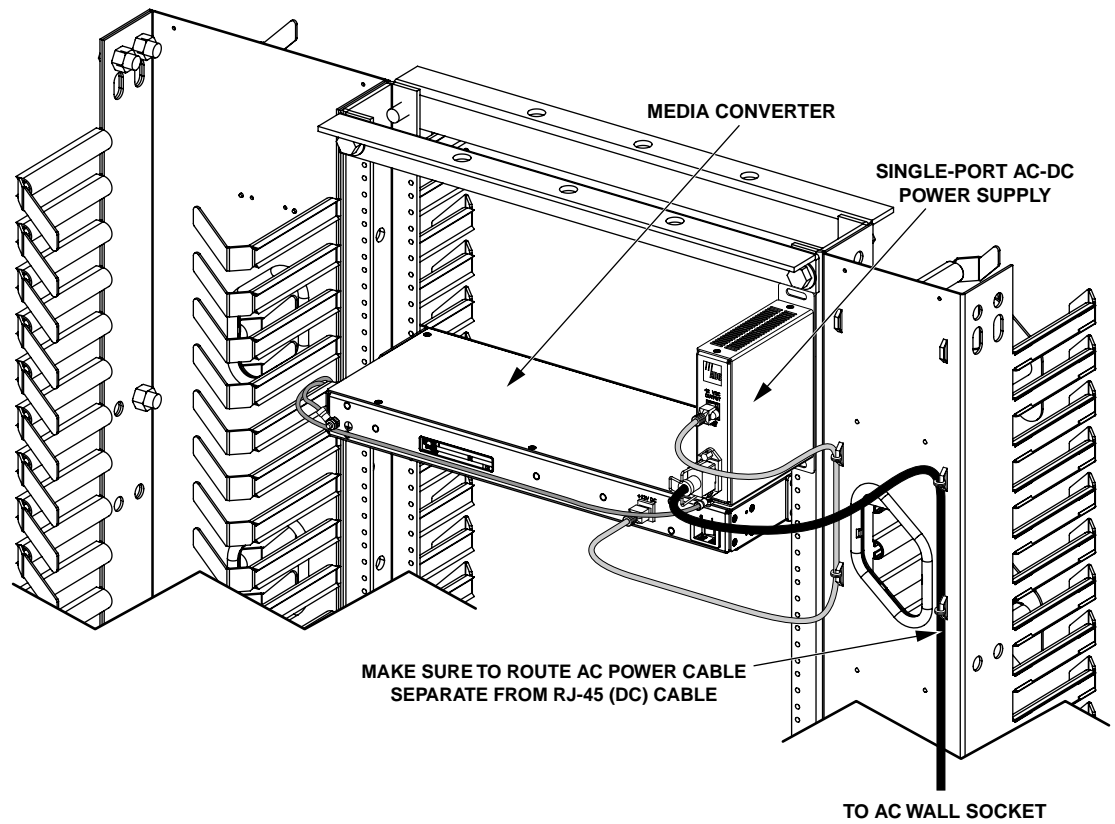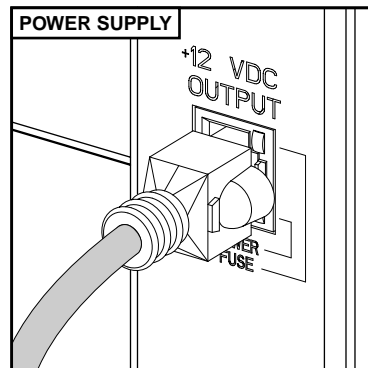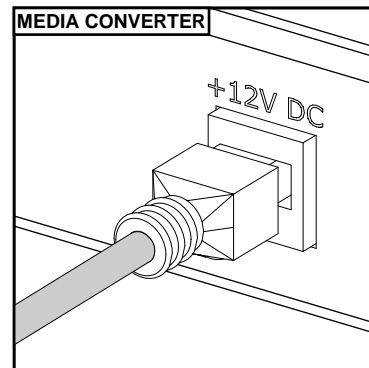▶ **Note**: Make sure to route AC power cable separate from RJ-45 (DC), as shown in Figure 9.

MEDIA CONVERTER

SINGLE-PORT AC-DC
POWER SUPPLY

MAKE SURE TO ROUTE AC POWER CABLE
SEPARATE FROM RJ-45 (DC) CABLE

TO AC WALL SOCKET

FIGURE 9-A

POWER SUPPLY

+12 VDC
OUTPUT

FIGURE 9-B

MEDIA CONVERTER

+12V DC

17741-A

FIGURE 9-C

POWER SUPPLY

FIGURE 9-D

MEDIA CONVERTER
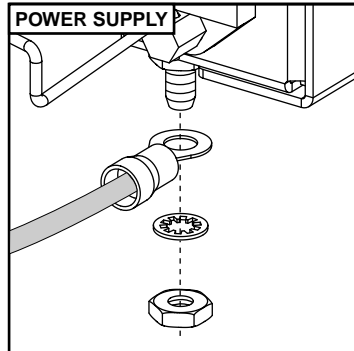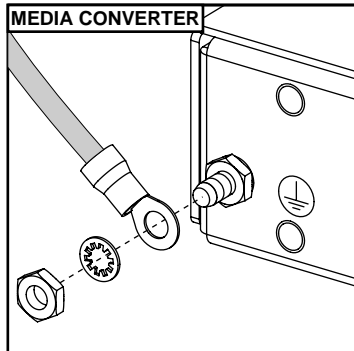
FIGURE 9-E
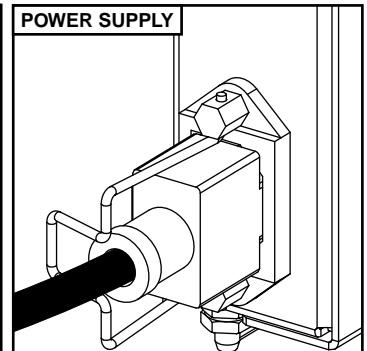
POWER SUPPLY

Figure 9. Single-Port AC-DC Power Supply

3.1.2   Media Converter using Four-Port AC-DC Power Supply

Using Figure 10 as reference, connect the power and ground cables as follows:

1. Terminate an RJ-45 type cable (not provided) to one of the four **+12 VDC OUTPUT** power receptacles on the power supply (Figure 10-A).

2. Route the RJ-45 type cable via the cable management system, as shown.

3. Terminate the opposite end of the RJ-45 type cable to the **+12V DC** input power receptacle on the respective media converter (Figure 10-B).

▶   **Note**: Using 18 AWG wire (not provided), ground the power supply to the rack in accordance with local practice (Figure 10-C).

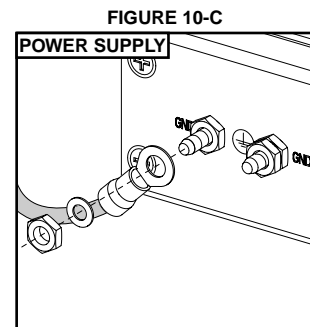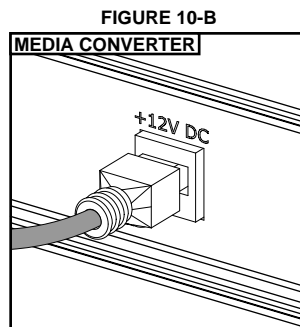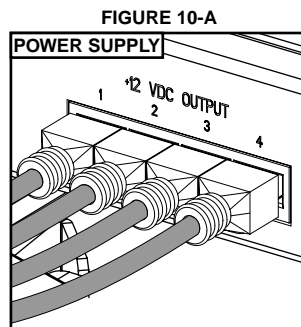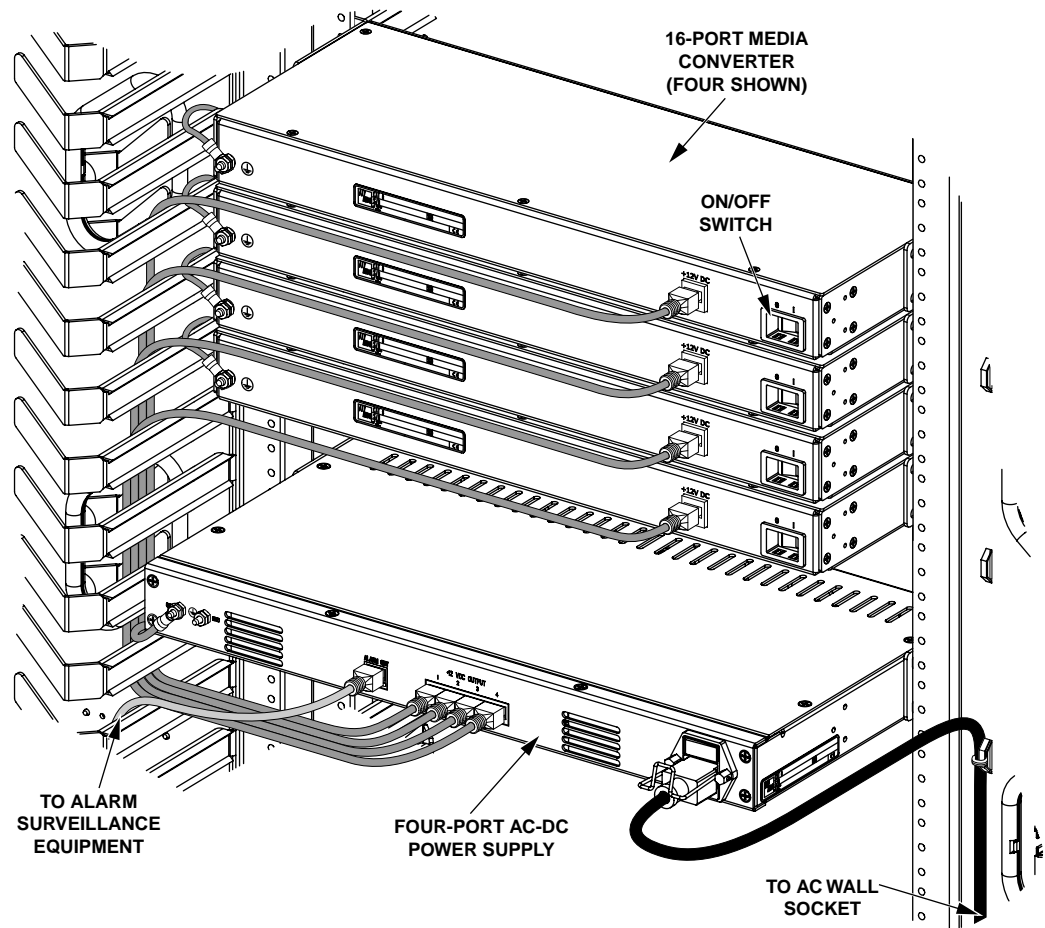▶   **Note**: Using 18 AWG wire (not provided), ground the media converter to the rack in accordance with local practice (Figure 10-D).

4. Terminate an RJ-45 type cable (not provided) to the **ALARM OUT** receptacle on the rear of the power supply (Figure 10-E).

5. Route the opposite end of the RJ-45 type cable to local alarm surveillance equipment.

6. Terminate the AC power supply power cord (provided) to the **INPUT** power receptacle on the power supply (Figure 10-F).

7. Route the AC power cable via the cable management system to a properly configured AC wall socket.

▶   **Note**: Make sure to route AC power cable separate from RJ-45 (DC) cable in the cable management system, as shown in Figure 10.
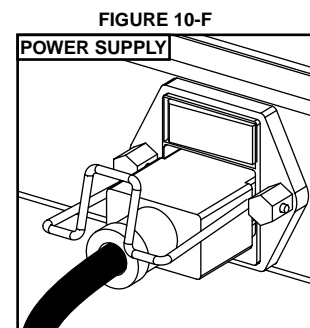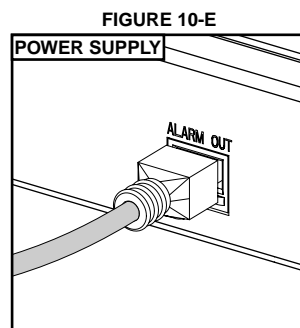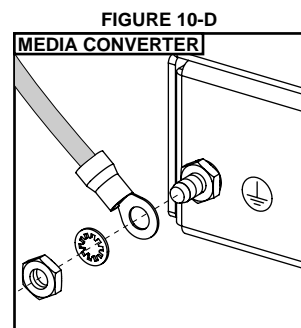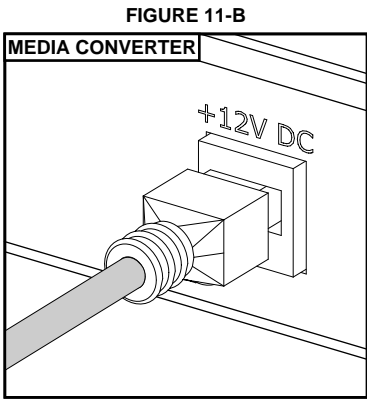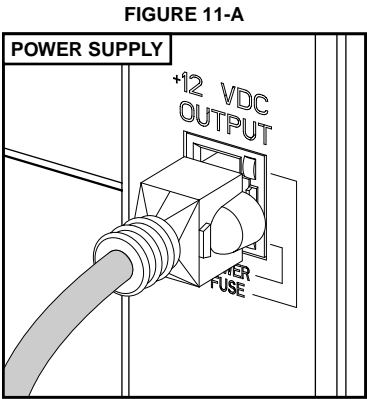
Figure 10. Four-Port AC-DC Power Supply

3.1.3   Media Converter using Single-Port DC-DC Power Supply

Using Figure 11 as reference, connect the power and ground cables as follows:

1. Terminate an RJ-45 type cable (not provided) to the **+12 VDC OUTPUT** power receptacle on the power supply (Figure 11-A).

2. Route the RJ-45 type cable via the cable management system, as shown.

3. Terminate the opposite end of the RJ-45 type cable to the **+12V DC** input power receptacle on the media converter (Figure 11-B).

▶ **Note**: Using 18 AWG wire (not provided), ground the power supply to the rack in accordance with local practice (Figure 11-C).

▶ **Note**: Using 18 AWG wire (not provided), ground the media converter to the rack in accordance with local practice (Figure 11-D).

4. Terminate the 16-20 AWG input power wires (not provided) to the **–48 VDC INPUT** power screw-down terminals on the power supply (Figure 11-E).

5. Terminate the opposite ends of the 16-20 AWG power wires to a properly configured –48 VDC fuse and alarm panel.

▶ **Note**: Make sure to route 16-20 AWG power wires separate from RJ-45 cable, as shown in Figure 11.

▶ **Note**: ADC recommends that the fuse and alarm panel(s) be installed in the same rack as the power supply to provide for a readily accessible disconnect device.

MEDIA CONVERTER

**TO -48 VDC FUSE AND
ALARM PANEL**

**SINGLE-PORT DC-DC
POWER SUPPLY**

FIGURE 11-A

POWER SUPPLY

+12 VDC
OUTPUT

FUSE

FIGURE 11-B

MEDIA CONVERTER

+12V DC

17743-B

FIGURE 11-C

POWER SUPPLY

FIGURE 11-D

MEDIA CONVERTER
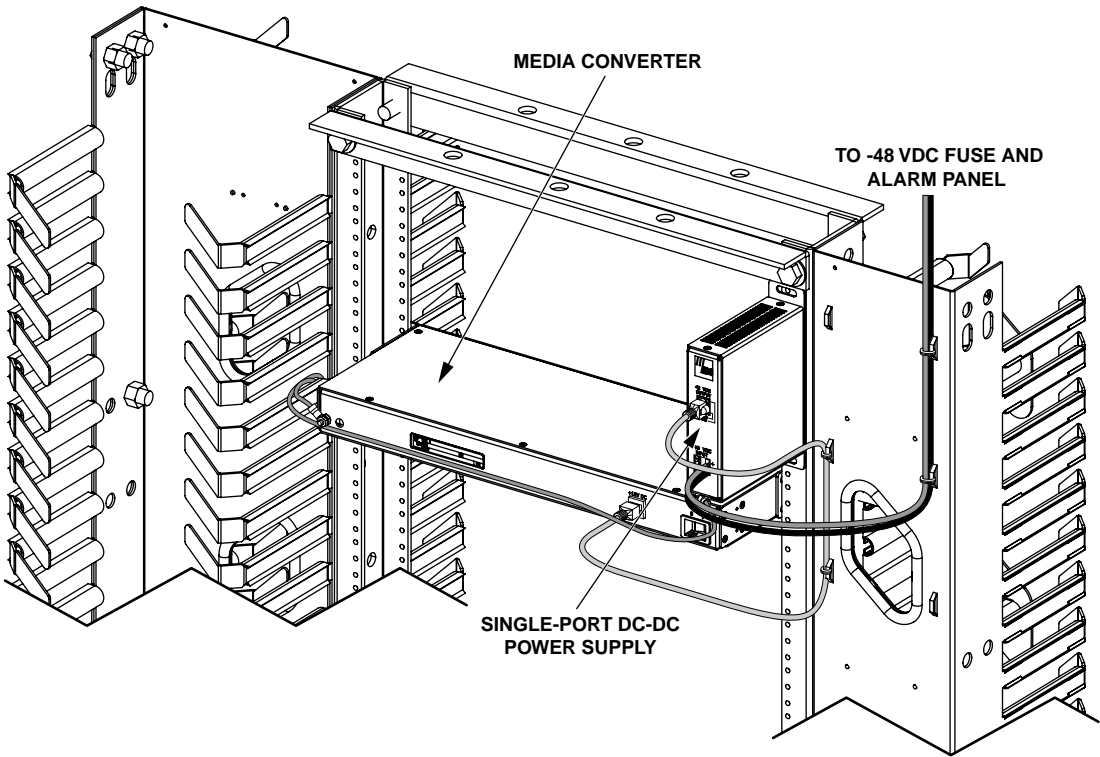
FIGURE 11-E

POWER SUPPLY

-48 VDC
INPUT

+

−

Figure 11. Single-Port DC Power Supply

3.1.4   Media Converter using Four-Port DC-DC Power Supply

Using Figure 12 as reference, connect the power and ground cables as follows:

1. Terminate an RJ-45 type cable (not provided) to one of the **+12 VDC OUTPUT** power receptacles on the power supply (Figure 12-A).

2. Route the RJ-45 type cable via the cable management system, as shown.

3. Terminate the opposite end of the RJ-45 type cable to the **+12V DC** input power receptacle on the respective media converter (Figure 12-B).

▶ **Note**: Using 18 AWG wire (not provided), ground the power supply to the rack in accordance with local practice (Figure 12-C).

▶ **Note**: Using 18 AWG wire (not provided), ground the media converter to the rack in accordance with local practice (Figure 12-D).

4. Terminate an RJ-45 type cable (not provided) to the **ALARM OUT** receptacle on the rear of the power supply (Figure 12-E).

5. Terminate the opposite end of the RJ-45 type cable to local alarm surveillance equipment.

6. Terminate the 16 AWG input power wires (not provided) to either one of the **–48 VDC INPUT** power screw-down terminals on the power supply (Figure 12-F).

7. Route and terminate the opposite ends of the 16 AWG input power wires to a properly configured –48 VDC fuse and alarm panel.

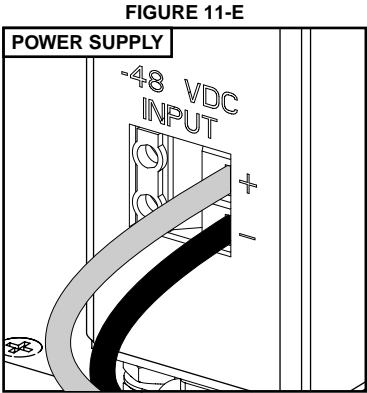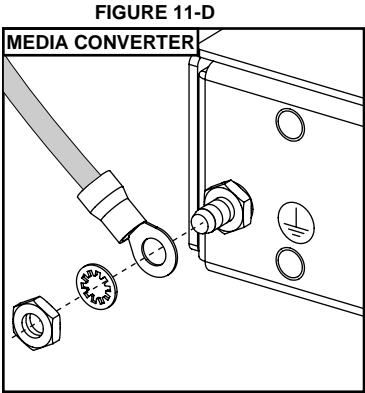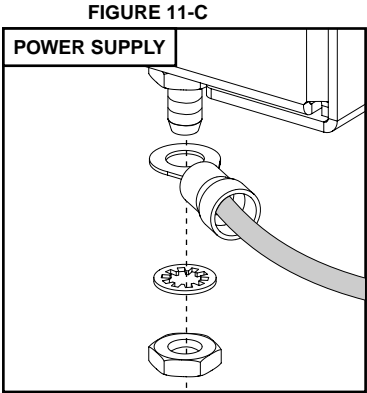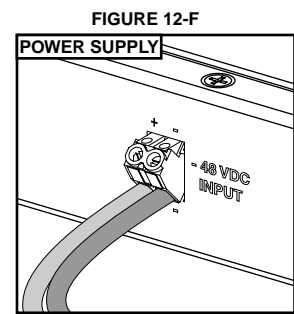▶ **Note**: ADC recommends that the fuse and alarm panel be installed in the same rack as the DC power supply to provide for a readily accessible disconnect device. Also, make sure to route DC input power wires separate from RJ-45 (DC) cables, as shown in Figure 12.

TO -48 VDC
FUSE AND ALARM
PANEL

TO ALARM
SURVEILLANCE EQUIPMENT

FOUR-PORT DC-DC
POWER SUPPLY

FIGURE 12-A
POWER SUPPLY

FIGURE 12-B
MEDIA CONVERTER

FIGURE 12-C
POWER SUPPLY

FIGURE 12-D
MEDIA CONVERTER

FIGURE 12-E
POWER SUPPLY

FIGURE 12-F
POWER SUPPLY
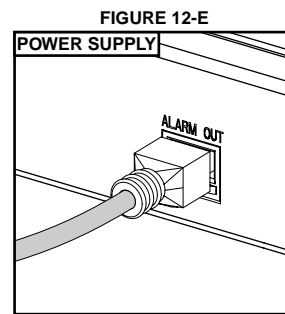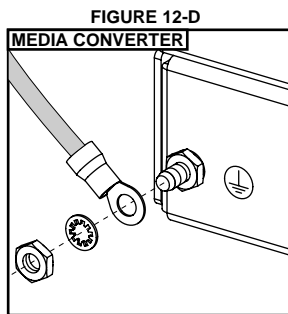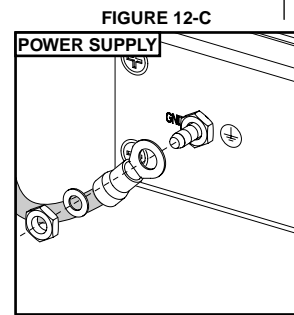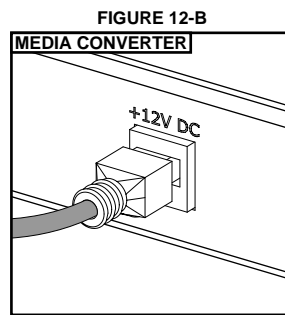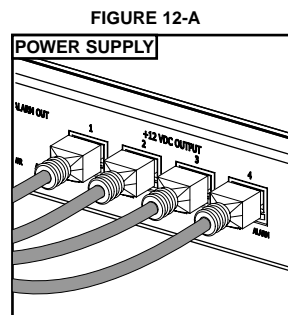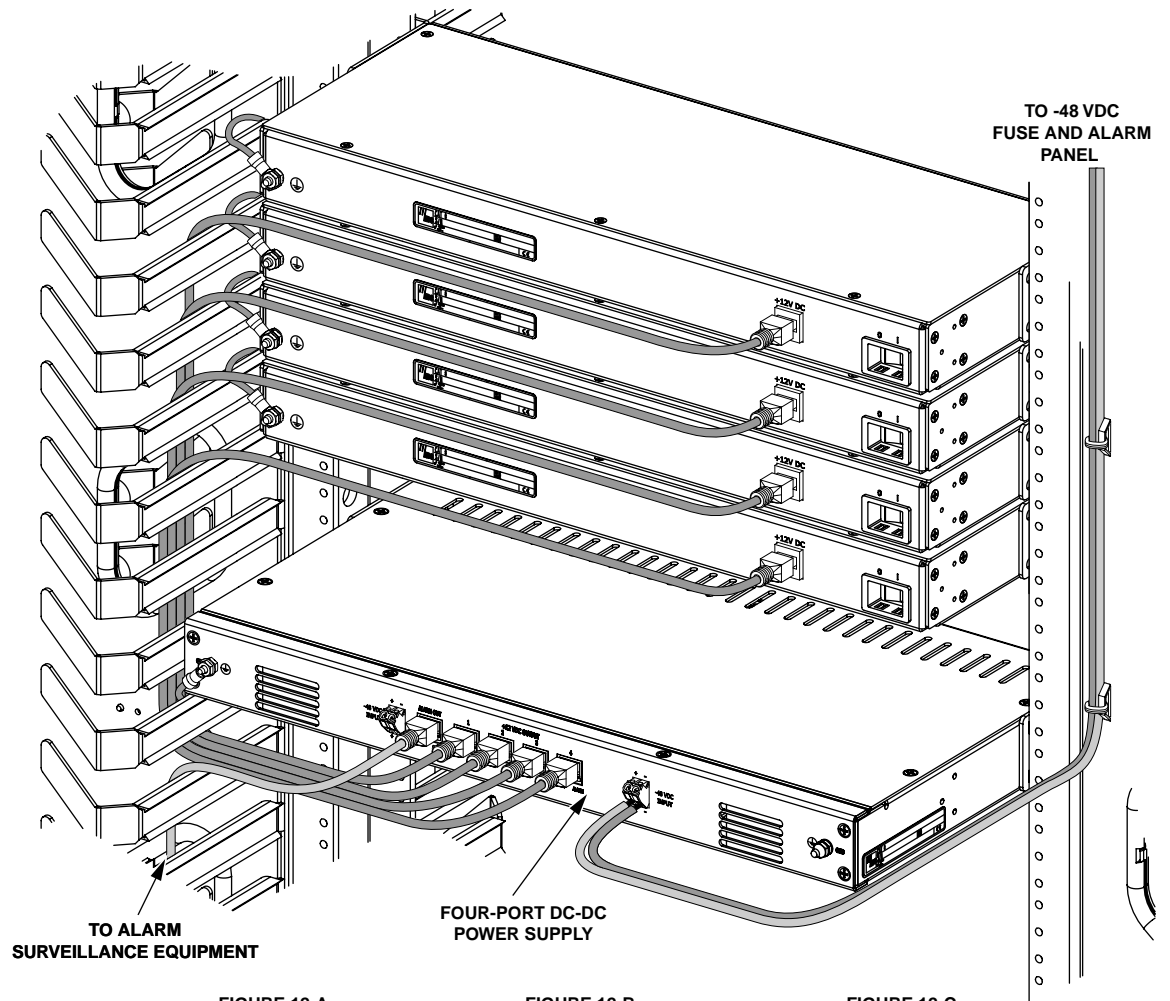
17744-B

Figure 12. Four-Port DC-DC Power Supply

3.2   Fiber and Copper Cable Routing Example

Using Figure 13 as reference, route and terminate the fiber and copper cables as follows:

1. Attach the fiber cable "TX" and "RX" connectors to the corresponding "TX" and "RX" receptacles on the media converter.

2. Attach the Ethernet cables to the corresponding RJ-45 receptacles on the media converter.

"TX" AND "RX" RECEPTACLES

16-PORT MEDIA CONVERTER

RJ-45 RECEPTACLES

ROUTE ALL FIBER
CABLES ON THIS
SIDE OF RACK

ROUTE ALL COPPER
CABLES ON THIS
SIDE OF RACK

FL-2000 48-POSITION
TERMINATION/SPLICE
PANEL

FL-2000 HORIZONTAL
INTERBAY MANAGEMENT
PANEL

FL-1000 FANNING
PANEL

16-PORT MEDIA
CONVERTER, SEE ART
ABOVE

FMT BULK STORAGE
TRAY
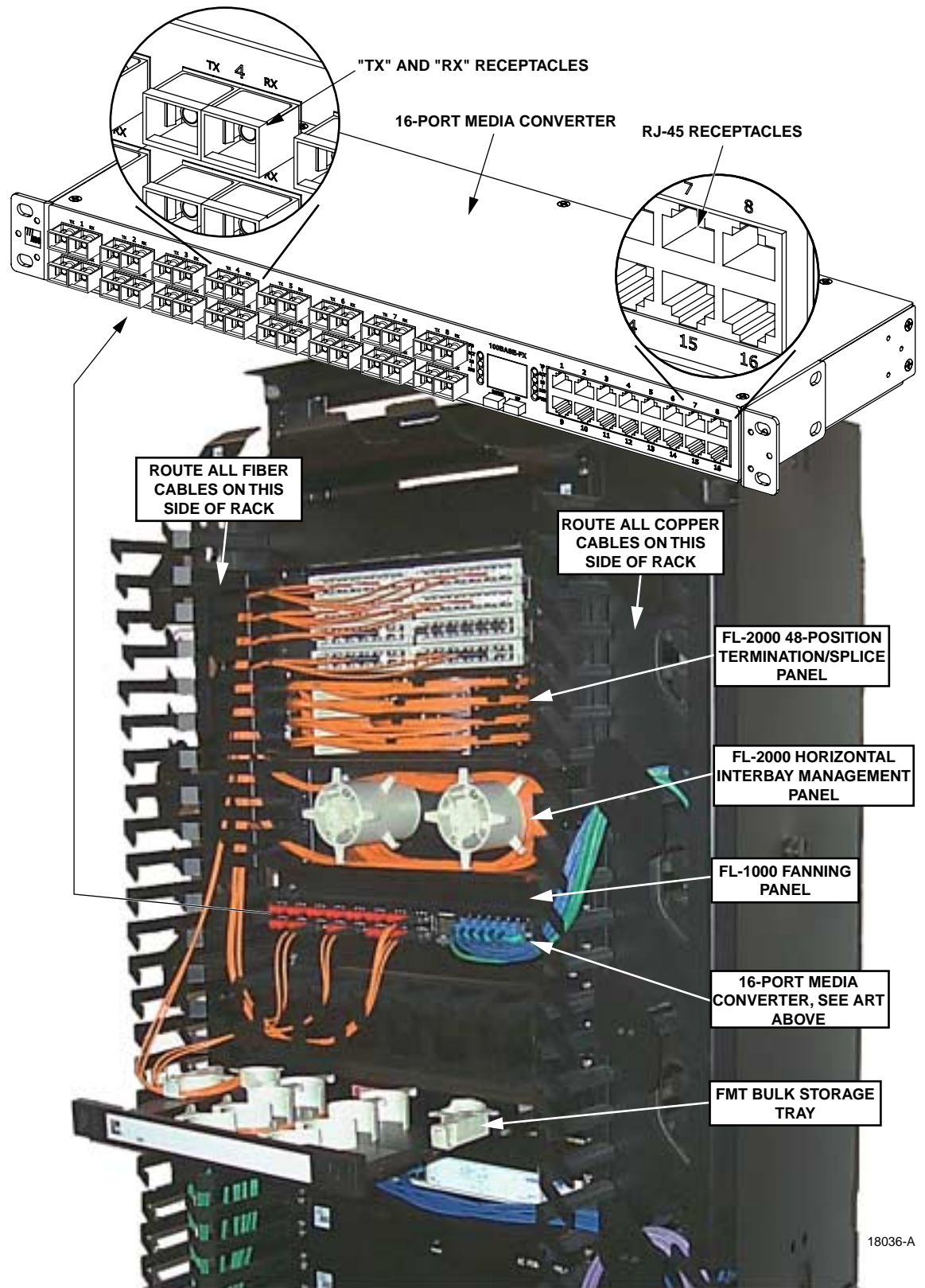
18036-A

Figure 13. 16-Port Media Converter Cable Routing Example

4   SPECIFICATIONS

4.1   16-Port Media Converter

Table 1 lists the 16-Port Media Converter specifications for Ethernet copper and fiber network segments.

Table 1. 16-Port Media Converter Specifications

ITEM	DESCRIPTION
Copper Media Specifications	
Protocol	10Base-T, 100Base-TX (IEEE 802.3 compliant)
Cable Type	Unshielded Twisted Pair (UTP), Category 5
Electrical Connector	Shielded RJ-45 jack (DTE), 16 ports
Maximum Segment Length	100 meters
Fiber Optic Media Specifications	
Protocol	10Base-FL (IEEE 802.3, Clause 18 compliant using 1300nm optics)
Center Wavelength	1300nm 100Base-FX (IEEE 802.3, Clause 26 compliant)
Optical Connector	SC 16 ports
Core/Cladding Diameter (microns)	50/125[1] or 62.5/125 multi-mode
Maximum Segment Length	2 kilometers
Light Source	LED
16-Port Media Converter Chassis	
Input Voltage Requirement	+12 VDC
Physical Dimensions (W x H x D)	17.1 x 1.7 x 6.3 in. (43.4 x 4.3 x 16.0 cm)
+12 VDC Power Cable (not provided)	Standard RJ-45 patch cable-11 ft. (3.4 m) max. length
Weight	8 lb. (3.63 kg)
Power Dissipation	20 Watts maximum
Environmental Specifications	
Operating Temperature	32° to 122° F (0° to 50° C)
Storage Temperature	-4° to 140° F (–20° to 60° C)
Operating Humidity	5% to 85% (non-condensing)
Storage Humidity	5% to 85% (non-condensing)

[1]Subtract 3db from launch power when using 50/125 micron fibers.

4.2   Single- and Four-Port AC-DC Power Supplies

Table 2 lists the Single- and Four-Port AC-DC power supply specifications.

Table 2. Single- and Four-Port AC-DC Power Supply Specifications

ITEM	DESCRIPTION	
	SINGLE-PORT POWER SUPPLY	FOUR-PORT POWER SUPPLY
Physical Specifications Dimensions (H × W × D)	1.4 x 5.4 x 5.0 in. (3.6 x 13.7 x 12.7 cm)	17.1 x 1.7 x 8.5 in. (43.4 x 4.3 x 21.6 cm)
Weight	1.14 lb. (0.52 kg)	10.3 lb. (4.7 kg)
Electrical Specifications Power Rating	30 Watts (maximum) input AC fuse: 1A/250V output PTC Re-Settable fuse: 2.5A/60V	110 Watts redundant, 220 Watts maximum input AC current: 2.9A/PSU output PTC Re-Settable fuse: 2.5A/60V per port
Cooling	convection	Two 15 cfm (425 cu m/min.) rear-mounted fans
Source Voltage	90 to 264 VAC, single phase	
Frequency	47-63 Hz	
Output Voltage	+12 VDC	
+12 VDC Power Cable (not provided)	Standard RJ-45 patch cable–11 ft. (3.4 m) maximum length	
AC Power Cord (provided)	PN 1125540, 8 ft. (2.4m), IEC 320	
Environmental Specifications Operating Temperature Storage Temperature Operating Humidity Storage Humidity	32° to 122° F (0° to 50° C) –4° to 140° F (–20° to 60° C) 0% to 80% (non-condensing) 5% to 95% (non-condensing)	
Accessories Single Offset Rack Bracket Multiple Offset Rack Bracket	Cat. No. ADC01PSUS0BRK02 Cat. No. ADC01PSU12BRK02	

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4.3   Single- and Four-Port DC-DC Power Supplies

Table 3 lists the Single- and Four-Port DC-DC power supply specifications.

Table 3. Single- and Four-Port DC-DC Power Supply Specifications

ITEM	DESCRIPTION	
	SINGLE-PORT POWER SUPPLY	FOUR-PORT POWER SUPPLY
Physical Specifications Dimensions (H × W × D)	1.4 x 5.4 x 5.0 in. (3.6 x 13.7 x 12.7 cm)	17.1 x 1.7 x 8.5 in. (43.4 x 4.3 x 21.6 cm)
Weight	1.0 lb. (0.54 kg)	7.8 lb. (3.54 kg)

Electrical Specifications
    Power Rating
 	
    Input DC Fuse:
    Output PTC Re-Settable Fuse:
    Recommended Fuse:
	30 Watts (maximum)
	
	1A
	2.5A/60V
	1A
		150 Watts redundant,
		300 Watts maximum
		4A
		2.5A/60V (per port)
		3A

Cooling	Convection	Two 15 cfm (425 cu m/min.) rear-mounted fans
Source Voltage	–48 VDC (–42 to –56 VDC)	
Output Voltage	+12 VDC	
+12 VDC Power Cable (not provided)	Standard RJ-45 patch cable–11 ft. (3.4 m) maximum length	

Environmental Specifications
    Operating Temperature
    Storage Temperature
    Operating Humidity
    Storage Humidity
	23° to 122° F (–5° to 50° C)
	–40° to 158° F (–40° to 70° C)
	5% to 90% (non-condensing)
	5% to 95% (non-condensing)	

Accessories
    Offset Rack Bracket
    Multiple Offset Rack Bracket
	Cat. No.
	ADC01PSUS0BRK02
	Cat. No.
	ADC01PSU12BRK02	

5   POWER-UP/CHECK OUT PROCEDURE

5.1   Single- and Four-Port AC-DC Power Supplies

Activate the power supply by connecting the power cord to source power. When lit, the **POWER** indicators on the front (Figure 14-A) and back (Figure 14-B) of the Four-Port Power Supply show the unit is on. The **ALARM** indicator on the rear of the power supply (Figure 14-B) lights to indicate a failure in one of the internal power supplies or a failure in one of the fans. This failure can be detected remotely using the **ALARM OUT** RJ-45 receptacle (Figure 14-B) on the rear of the power supply for use with local alarm surveillance equipment. When the Single-Port Power Supply is on, the Power and Fuse indicators are illuminated (Figure 14-C).
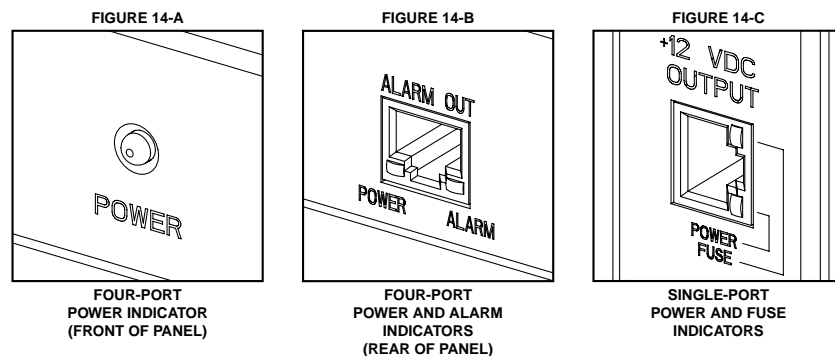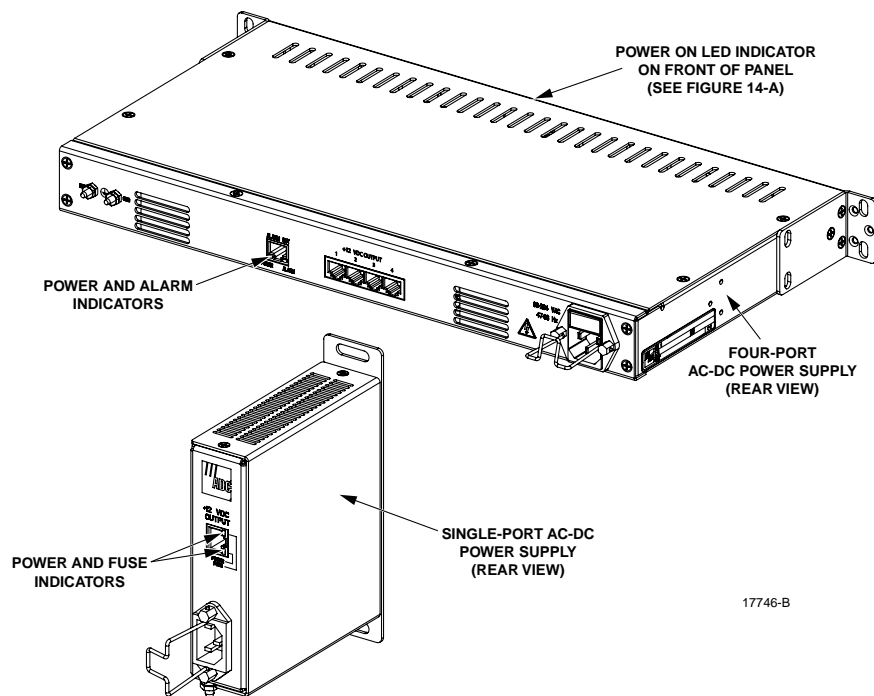
Figure 14. Power, Alarm and Fuse Indicators

The normal and alarm pin-outs for the four-port Alarm receptacle are shown in Figure 15.
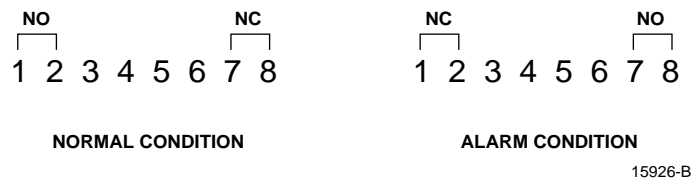
NO   NC   NC   NO

1 2 3 4 5 6 7 8   1 2 3 4 5 6 7 8

NORMAL CONDITION   ALARM CONDITION

15926-B

Figure 15. Four-Port Alarm Receptacle Pin-outs

Table 4 contains a complete description of all user interface items on the Single- and Four-Port AC-DC Power Supplies.

Table 4. Single Port AC-DC Power Supply User Interface

USER INTERFACE	DESCRIPTION
POWER Indicator	Indicates the power supply is on.
Input Power Receptacle	Provides an attachment point for input AC power.
Output Power Receptacles	Provides attachment points for output +12 VDC power.
Ground Lugs	Provides attachment points for ground cable connections between the power supply and the rack.
Alarm Port	Provides a remote means of detecting when the power supply has failed.

5.2   Single- and Four-Port DC-DC Power Supplies

To activate a DC power supply, connect two 16 AWG wires (+ and -) between the **–48 VDC INPUT** distribution panel and input terminals of the DC power supply. Observe the polarity during the connection process (Figures 4 and 5).

When lit, the **POWER** indicators on the front (Figure 16-A) and back (Figure 16-B) of the Four-Port Power Supply show the unit is on. The **ALARM** indicator on the rear of the power supply (Figure 16-B) lights to indicate a failure in one of the internal power supplies or a failure of one of the fans. This failure can be detected remotely using the **ALARM OUT** RJ-45 receptacle (Figure 16-B) on the rear of the power supply for use with local alarm surveillance equipment.

When the Single-Port Power Supply is on, the Power and Fuse indicators are illuminated (Figure 16-C).
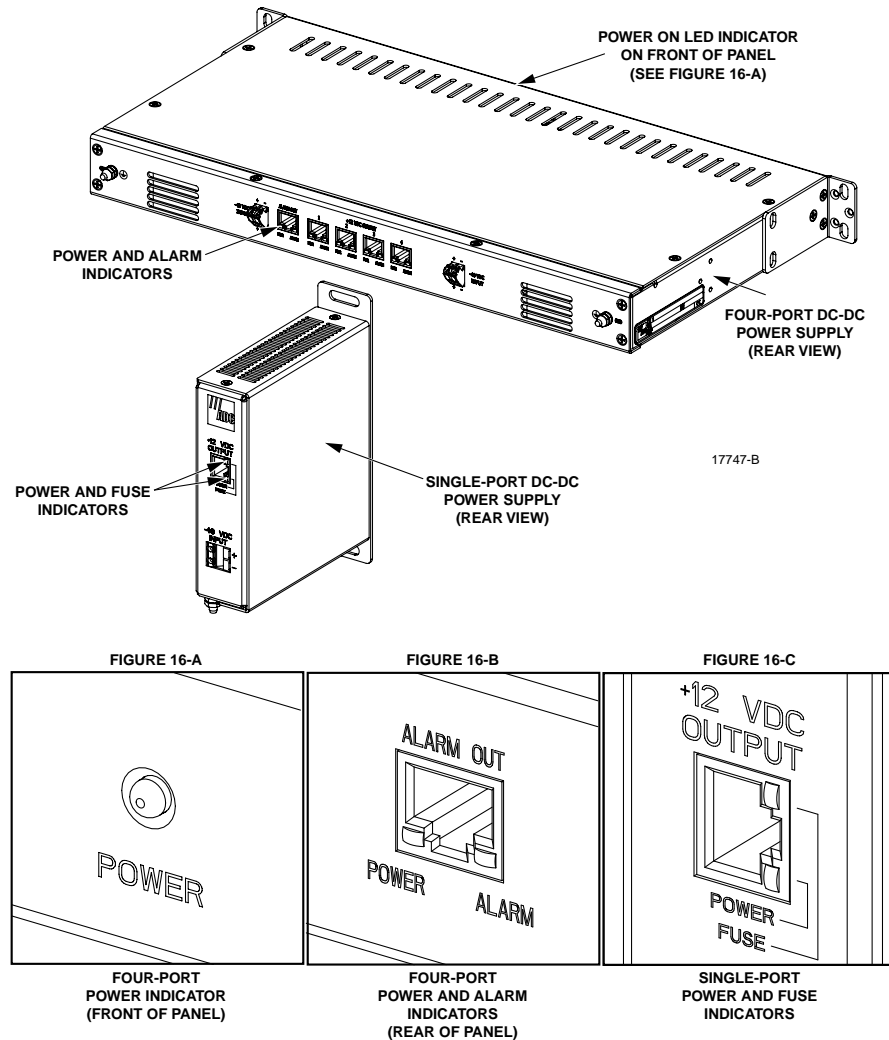

Figure 16. Power, Alarm and Fuse Indicators

Table 5 contains a complete description of all user interconnection on the Single- and Four-Port DC-DC Power Supplies.

Table 5. Single- and Four-Port DC-DC Power Supply User Interface

USER INTERFACE	DESCRIPTION
POWER Indicator	Indicates the power supply is on.
Input Power Receptacle	Provides an attachment point for input DC power.
Output Power Receptacles	Provides attachment points for output +12 VDC power.
Ground Lugs	Provides attachment points for ground cable connections between the power supply and the rack. The ground lugs also provide an attachment point for a ground cable connection between the power supply and fuse and alarm panel.
Alarm Port	Provides a remote means of detecting when the power supply has failed.

5.3 16-Port Media Converter

▶ **Note**: Even thought the 100BASE-FX Rack Mount Media Converter is designed specifically for 100BASE-TX/FX (Long Wavelength) applications, the auto-negotiation functionality as defined in TIA/EIA-785 is still functional. Auto-negotiation allows the unit to automatically select the highest performance level for COPPER or FIBER. If the media converter port detects 10 Mb/s activity on either the COPPER or FIBER side of the link, it will negotiate a 10 Mb/s link that is functionally compatible with 10BASE-FL but operating at 1300nm. This backward compatibility allows legacy 10 Mb/s devices to be supported over 1300nm links. The far end workstation device has to be equipped with a media converter that supports 10 Mb/s and 100 Mb/s over COPPER and FIBER using 1300nm optics such as the ADC 100BASE-FX Wall Outlet Media Converter (ADC6S1FXSTMM00).

Power up the media converter by depressing the power switch (Figure 17-A) located on the right rear of the converter from 0 to 1. The indicator (green LED) located on the switch should illuminate to indicate that +12 VDC power is applied to the media converter circuits. If switch indicator does not illuminate perform the following steps:

1. Verify that the cable connection between the media converter and the power supply is secure.

2. Insure that the power indicator on the power supply output port is illuminated (green LED).

3. Verify that the input power to the power supply is on.

4. Replace the power supply.

Once the media converter has been powered up, perform a LAMP TEST to verify that all LEDs on the front panel display are operational. Press the **UP** and **DOWN** buttons (Figure 17-C) simultaneously and release. This will initiate the LAMP TEST and all display LEDs will illuminate for approximately 3 seconds. When the LAMP TEST cycle is complete all LEDs will turn off with the exception of the **PWR** indicator. The numeric display will be reset to 1. This test is initiated automatically when the power is turned on.

Use the **UP/DOWN** buttons (Figure 17-C) and cycle through all ports. The numeric display should count up or down. If no cables are connected to the port being viewed, all indicators should be off with the exception of the **PWR** indicator (Figure 17-B) and the number of the port being viewed (Figure 17-C). If the **PWR** indicator begins to blink, a power fault has occurred on a specific port or at a sub-system level (i.e., 8-ports). Contact ADC technical support.

The activity indicators are separated into the FO (Fiber Optic) group (left side of the numeric display) and into the TP (Twisted Pair) group (right side of the numeric display)

The **ACT** indicator will illuminate when either auto negotiation is in process or when actual data packets are being detected.

The **10** indicator (orange LED) will be illuminated if the port is in 10 Mb/s Ethernet mode. The **100** indicator (green LED) will be illuminated if the port is in the 100 Mb/s Ethernet mode. When a link is established, the FO 10 or 100 indicator and the TP 10 or 100 indicator should be matched (TP 10–FO 10 or TP 100–FO 100). If they are not matched, the numeric display will blink indicating a mismatched link or the loss of the FO or UTP side of the link.

▶ **Note**: Automatic MDI, MDIX crossover is supported for each of the TP ports.

Connect the switch or workstation port to a TP port on the media converter using a RJ-45 patch cord. Select the port for viewing using the **UP/DOWN** buttons. If the **TP 10** indicator illuminates when the TP patch cable is connected, the media converter has been connected to a 10BASE-T port with no auto negotiation. The optical transmitter will be activated and placed into the 10BASE-FL mode. When the fiber cables have been connected to the optical side of the port, the **FO 10** indicator will illuminate and a 10BASE-T to 10BASE-FL (10 Mb/s only) link has been established.

If the **FO 10** indicator illuminates when no TP patch cable is connected, the media converter has been connected to a 10BASE-FL port with no auto negotiation and the TP side will be activated and placed into the 10BASE-T mode. When the TP cables have been connected to the TP side of the port, the **TP 10** indicator will illuminate and a 10BASE-T to 10BASE-FL (10 Mb/s only) link has been established.

If the **TP ACT** indicator illuminates for 2-3 seconds when the TP patch cable is connected, the media converter has been connected to a device that supports auto negotiation. The optical transmitter will be active only when the **TP ACT** indicator is illuminated. When the fiber cables have been have been connected to the optical side of the port, the media converter will select the correct mode, 10 or 100 Mb/s, based on auto negotiation. Either the **10** or **100** indicator will be illuminated based on the highest performance level that the link partners can support. If no fiber optic link has been established, the **TP ACT** lamp will illuminate periodically.

If the **FO ACT** indicator illuminates for 2-3 seconds when no TP patch cable is connected, the media converter has been connected to a far end device that supports auto negotiation. The optical transmitter will be active only when the **TP ACT** indicator is illuminated. When the TP patch fiber cables have been have been connected to the TP side of the port, the media converter will select the correct mode, 10 or 100 Mb/s, based on auto negotiation. Either the **10** or **100** indicator will be illuminated based on the highest performance level that the link partners can support. If no TP link has been established, the **FO ACT** lamp will illuminate periodically.

▶ **Note**: If an optical power test set is being used to verify the launch power of a port, the TP side of the port must be connected to an active switch or workstation port. The optical transmitter will not function until a valid TP link has been detected or during the auto negotiation periods.
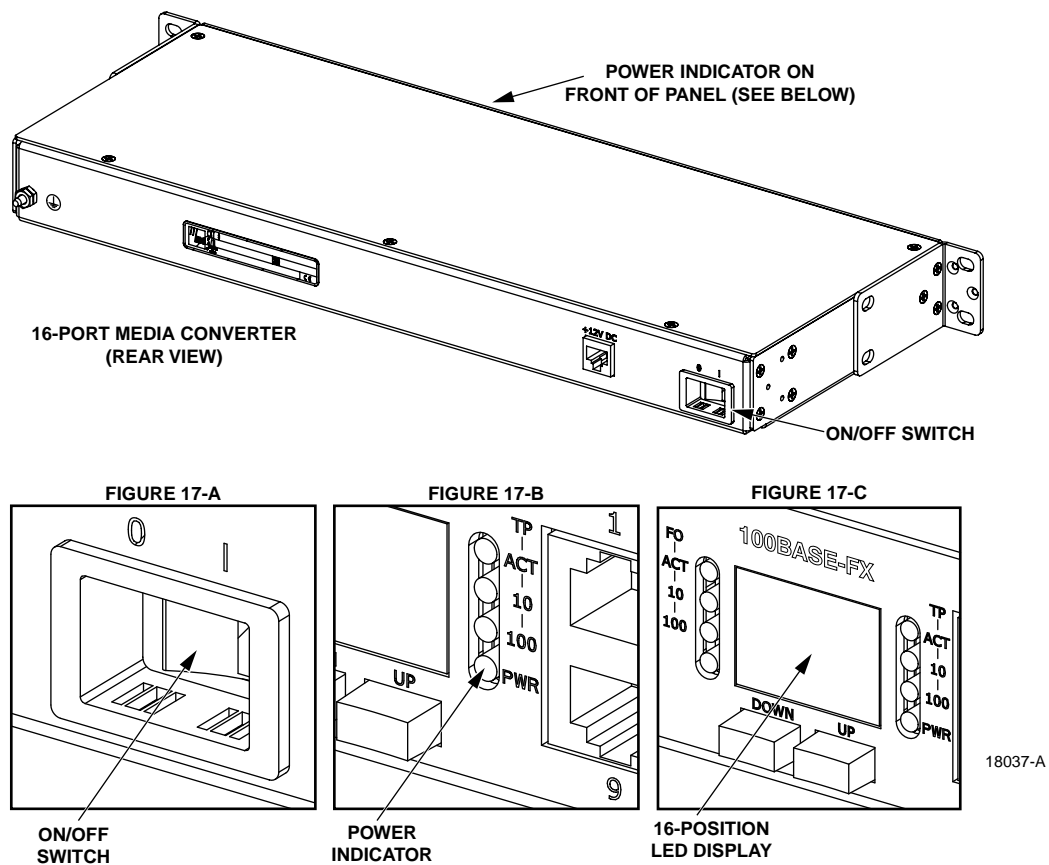

Figure 17. 16-Port Media Converter

Table 6 contains a complete description of all user interface items on the 16-port media converter.

Table 6. 16-Port Media Converter User Interface

USER INTERFACE	DESCRIPTION
Power (PWR) Indicator	Indicates all power systems are functioning normally.
Power Switch	Provides DC power on/off control and over current protection.
FO Side 　Activity (ACT) Indicator	Indicates that auto negotiation is in progress or data packets have been detected on the optical side of the link.
10	Fiber optic link is in the 10 Mb/s mode.
100	Fiber optic link is in the 100 Mb/s mode.
TP Side 　Activity (ACT) Indictor	Indicates that auto negotiation is in progress or data packets have been detected on the TP side of the link.
10	TP link is in the 10 Mb/s mode.
100	TP link is in the 100 Mb/s mode.
Front Panel Buttons 　UP	Increments the port display up by 1.
DOWN	Decrements the port display down by 1.
LAMP TEST	Press UP/DN simultaneously to invoke a lamp test.
PORT Display	Displays the PORT (1-16) selected using the UP/DOWN buttons.
Fiber Ports (1-16)	Provides attachment points for transmit (TX) and receive (RX) optical fiber cables.
Copper Ports (1-16)	Provides attachment points for RJ-45 Ethernet data cable connectors.
DC Power Receptacle	Provides an attachment point for the RJ-45 +12 VDC power cable connector.
Ground Lug	Provides an attachment point for a ground cable connection between the media converter and the rack.

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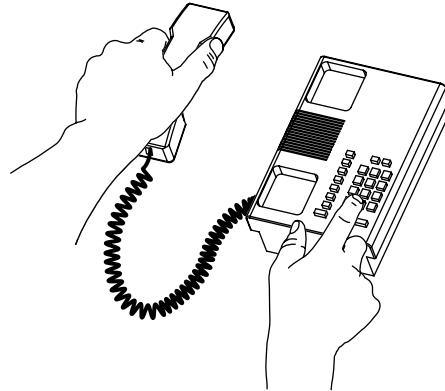Technical Assistance: 1-800-366-3891 Extension 73475

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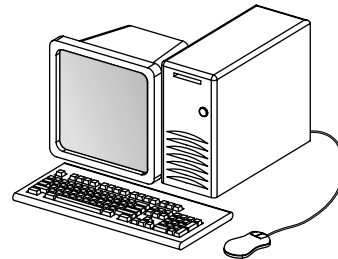**BELGICASTRAAT 2,**
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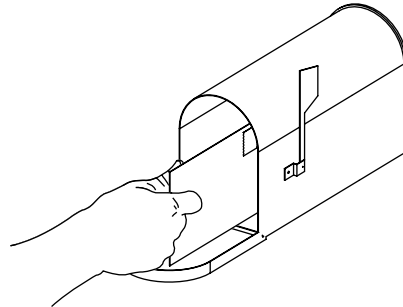
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