EMC39-12
12 PORT ETHERNET MEDIA CONVERTER

USER'S GUIDE

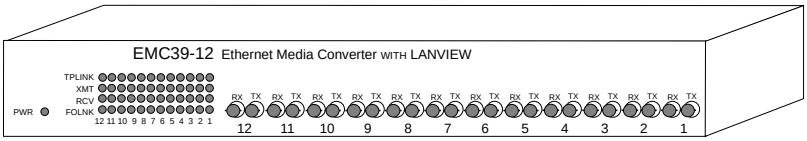

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TABLE OF CONTENTS

CHAPTER 1
INTRODUCTION

Welcome to the Cabletron Systems **EMC39-12 User's Guide**. This manual explains installation instructions and provides specifications for the twelve port Ethernet Media Converter (EMC).

1.1 USING THIS MANUAL

Read through this manual to gain an understanding of the features and capabilities of the EMC39-12. You should have a general working knowledge of Ethernet IEEE 802.3 10BASE-T, and Ethernet IEEE 802.3j 10BASE-FL type data communications networks and their physical layer components when installing the EMC39-12.

Chapter 1, **Introduction**, describes EMC39-12 features and specifications.

Chapter 2, **Installation**, describes how to install the EMC39-12 into a 19-inch rack or as a standalone device.

Chapter 3, **Connecting to the Network**, explains how to connect network segments to the EMC39-12.

Chapter 4, **Using the LANVIEW LEDs**, describes how to use the EMC39-12 LEDs to monitor link and power status.

Appendix A, **Cable Requirements** lists twisted pair and single mode cable requirements for the EMC39-12.

Appendix B, **Twisted Pair Wiring Tables**, lists pinouts for the 50-pin twisted pair connector.

1.2 GETTING HELP

If you need additional support related to the EMC39-12, or if you have any questions, comments, or suggestions concerning this manual, contact Cabletron Systems Technical Support:

By phone	(603) 332-9400 Monday-Friday; 8 A.M. – 8 P.M. Eastern Time
By CompuServe	GO CTRON from any ! prompt
By Internet mail	support@ctron.com
By FTP	ctron.com (134.141.197.25)
Login	*anonymous*
Password	*your email address*

1.3 EMC39-12 OVERVIEW

The EMC39-12 converts Ethernet IEEE 802.3 10BASE-T signals to Ethernet IEEE 802.3j 10BASE-FL signals. The rear panel has a 50-pin Champ connector (RJ71) that supports twelve twisted pair segments. The front panel has twelve 10BASE-FL single mode ST ports. Figure 1-1 shows the EMC39-12 ports. The 10BASE-FL connectors are backward compatible with FOIRL connectors.

Each of the rear panel twisted pair ports has a corresponding fiber port. For example: Twisted pair Port 1 converts signals to fiber optic port 1, twisted pair port 2 converts signals to fiber optic port 2, etc.

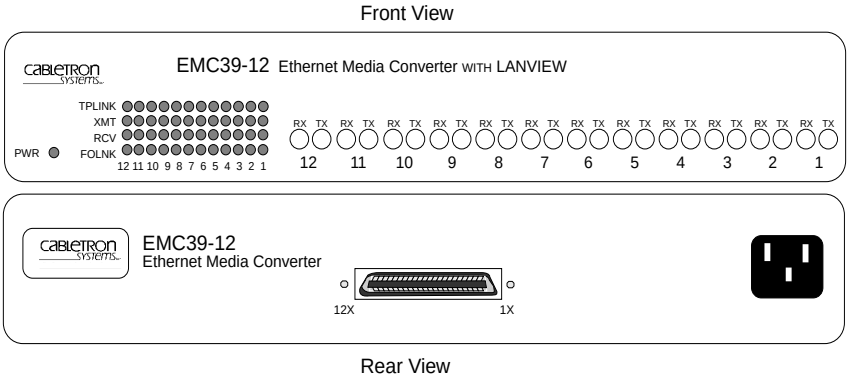


Figure 1-1 The EMC39-12

1.4 EMC39-12 FEATURES

The EMC39-12 Ethernet Media Converter provides connectivity for up to twelve singlemode fiber optic connections. The network connection is made through a 50-pin connector on the rear of the unit.

The EMC39-12 supports the following:

- Automatic Transmit Port Disable
- Full Duplex Ethernet Support
- LANVIEW Diagnostic LEDs
- Connectivity

The following sections discuss these features.

1.4.1 Automatic Transmit Port Disable

The EMC39-12 automatically disables the Transmit port when its corresponding Receive port does not have a link.

1.4.2 Full Duplex Ethernet Support

All of the EMC39-12 ports support Full Duplex Ethernet provided that the device at the other end of the port supports Full Duplex Ethernet also. Full Duplex Ethernet allows the EMC39-12 to transmit and receive signals simultaneously for a 20 Megabit bandwidth through-put.

1.4.3 LANVIEW Diagnostic LEDs

Cabletron Systems equips the EMC39-12 with a visual diagnostic and monitoring system called LANVIEW. LANVIEW LEDs help you quickly identify Power and Link status. Chapter 4 describes the LEDs in detail.

1.4.4 Connectivity

The rear panel of the EMC39-12 has a 50-pin Champ connector (RJ71) that supports twelve twisted pair segments. The front panel has twelve 10BASE-FL single mode ST ports. Each single mode ST port has a Receive connector and a Transmit connector.

1.5 EMC39-12 SPECIFICATIONS

This section describes operating specifications for the EMC39-12. Cabletron Systems reserves the right to change these specifications at any time without notice.

1.5.1 Physical Specifications

Dimensions: 17" L x 9.4" W x 1.7" H

Weight: 4 lbs.

1.5.2 Power Requirements

Input:

100 to 125 Volts ac, 1.0A

200 to 240 Volts ac, 0.5A

50 to 60 Hz

1.5.3 Environmental Requirements

Operating Temperature: 5° to 40°C (41° to 104°F)

Non-operating Temperature: -30° to 90°C (-22° to 194°F)

Operating Humidity: 5% to 95% (non-condensing)

1.5.4 Safety and Approvals

This unit meets the safety requirements of UL 1950, CSA C22.2 NO 950, and EN 60950; the EMI requirements of FCC Class A and EN 55022 Class A, VCCI Class I; and the EMC requirements of EN 50082-1.

CHAPTER 2
INSTALLATION

This chapter explains how to install the EMC39-12 in a 19-inch rack and also provides requirements for installing the EMC39-12 on a tabletop or shelf.

2.1 UNPACKING THE EMC39-12

Unpack the EMC39-12 as follows:

1. Remove the shipping box material covering the EMC39-12.
2. Carefully remove the EMC39-12 from the shipping box.
3. Remove the EMC39-12 from its non-conductive bag. If you notice any signs of damage, contact Cabletron Systems Technical Support immediately.

2.2 INSTALLING THE EMC39-12

Do not remove the cover from the EMC39-12. There are no user configurable devices inside and the electronics are static sensitive.

You can install the EMC39-12 in a 19-inch rack or place it on any horizontal surface (e.g. a table or shelf). Cabletron Systems provides an accessory kit with the EMC39-12 that includes Rackmount Brackets and Mounting Screws.

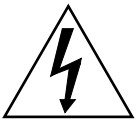
The following sections provide instructions for installing the EMC39-12. Select one of the following subsections and perform the steps that are applicable to your installation needs.

2.2.1 Rack Mounting the EMC39-12

Before installing the EMC39-12, care must be taken to ensure that the rack used will support the unit and that the rack remains stable with the EMC39-12 installed. In order to allow for proper cooling within the rack, there must be a two-inch clearance on either side of the unit. Refer to Chapter 1, **Introduction** for power and environmental requirements.

The following procedures explain how to install the EMC39-12 in a 19-inch rack.

1. Remove four cover screws (two from each side) located along the front edges of each side of the EMC39-12. Figure 2-1 shows the location of the screws.



Do not remove the cover from the EMC39-12. There are no user configurable devices inside and the electronics are static sensitive.

2. Using the four cover screws removed in step 1, attach the rack mounting brackets to each end of the EMC39-12.

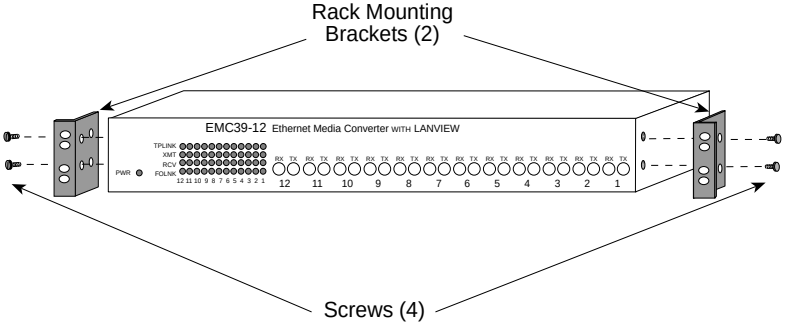


Figure 2-1 Installing the Rackmount Brackets

3. With the rack mounting brackets installed, position the EMC39-12 between the vertical frame members of the 19-inch rack and fasten it securely with the mounting screws as shown in Figure 2-2.

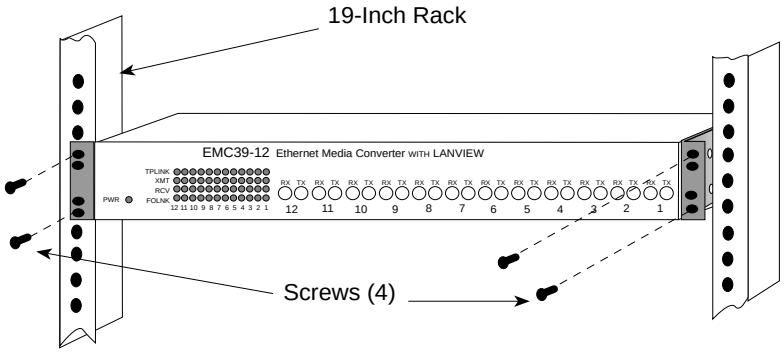


Figure 2-2 Installing the EMC39-12 in a 19-Inch Rack

2.2.2 Free-Standing Shelf or Tabletop Installation

Figure 2-3 shows the surface requirements for installing the EMC39-12 on a shelf or tabletop. Shelving units must support 30 pounds of static weight. Before you install the EMC39-12, ensure the power source and environmental conditions meet the requirements specified in Chapter 1, **Introduction**.

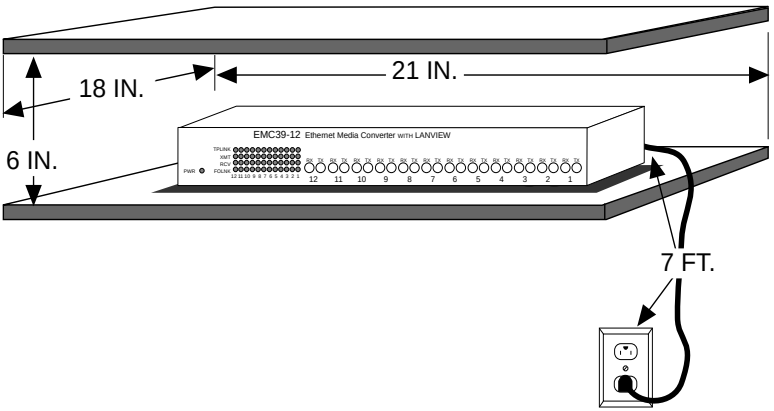
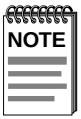


Figure 2-3 Shelf or Tabletop Installation

2.3 CONNECTING THE EMC39-12 TO THE POWER SOURCE



The EMC39-12 has a universal power supply. This allows you to connect the EMC39-12 to power sources from 100 Vac to 125 Vac, 50-60 Hz or 200 Vac to 240 Vac, 50-60 Hz

To connect the EMC39-12 to the power source:

1. Plug the power cord into the back panel of the EMC39-12.
2. Plug the other end of the power cord into a grounded wall outlet.
3. Verify that the **PWR** LED is on; this indicates that the EMC39-12 is receiving power.

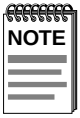
CHAPTER 3
CONNECTING TO THE NETWORK

This chapter outlines the procedure for connecting the EMC39-12 to your network.

3.1 CONNECTING A TWISTED PAIR SEGMENT TO THE EMC39-12

The rear panel of the EMC39-12 has a 50-pin Champ connector. The configuration outlined in this section explains how to attach a twisted pair cable to the EMC39-12 and to a 10BASE-T compliant Ethernet device that has a 50-pin Champ connector (e.g. Cabletron Systems' ELM or TPRMIM).

You can also run a 50-pin feeder cable from the EMC39-12 to a punch down block. The Champ connector supports twelve 10BASE-T, twisted pair segments.



Refer to **Appendix B** for information about wiring the EMC39-12 to a punch down block.

To connect the EMC39-12 to a 10BASE-T compliant Ethernet device:

1. Attach a 50-pin feeder cable to the Champ connector on the EMC39-12 as shown in Figure 3-1.

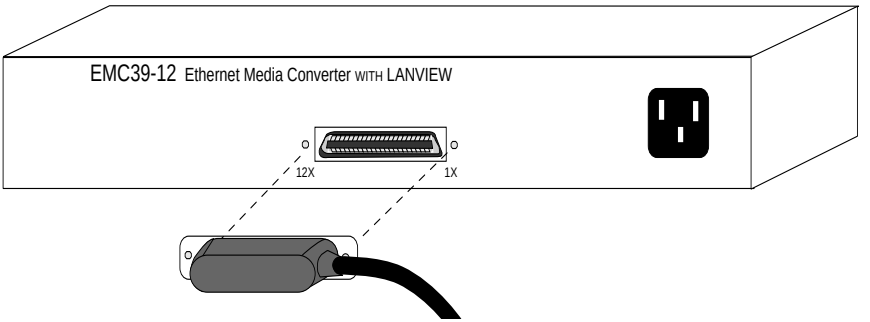


Figure 3-1 EMC39-12

2. Attach the other end of the 50-pin feeder cable to the Champ connector on the 10BASE-T compliant Ethernet device.
3. Check that the link LED on the 10BASE-T ethernet device and the applicable **TPLNK** LED on the EMC39-12 are on. If the LEDs are not on, perform each of the following steps until the LEDs are on:
    a. Check that the 10BASE-T device and the EMC39-12 have power.
    b. Verify the cabling between the EMC39-12 and the 10BASE-T device.
    c. Check the cable for continuity.

If a link has not been established, contact Cabletron Systems Technical Support.

3.2 CONNECTING A FIBER OPTIC LINK SEGMENT

When connecting a fiber optic link segment to the EMC39-12 keep the following in mind:

- ST connectors attach to ST ports much like BNC connectors attach to BNC ports. Insert the connector into the port with the alignment key on the connector inserted into the alignment slot on the port. The connector is then turned to lock it down.
- The physical communication link consists of two strands of fiber optic cabling: the Transmit (TX) and the Receive (RX). The transmit strand from the applicable port on the module will be connected to the Receive port of a fiber optic Ethernet device at the other end of the segment. For example, TX of the applicable port on the module will go to RX of the other fiber optic device. The Receive strand of the applicable port on the module will be connected to the Transmit port of the fiber optic Ethernet device. For example, RX of the applicable port on the module will go to TX of the other fiber optic device.

We recommend that you label the fiber optic cable to indicate which fiber is Receive and which is Transmit. When you buy fiber optic cable from Cabletron Systems, it is labeled so that at one end of the cable, one fiber is labeled 1, and the other fiber is labeled 2. This pattern is repeated at the other end of the cable. If you did not purchase your cable from Cabletron Systems, be sure you label your cable as described above.

Do not touch the ends of the fiber optic strands, and do not let the ends come in contact with dust, dirt, or other contaminants. Contamination of the ends can cause problems in data transmissions. If the ends become contaminated, clean them with alcohol using a soft, clean, lint free cloth.

To connect a fiber optic link segment to the EMC39-12, perform the following steps:

1. Remove the protective plastic covers from the fiber optic ports on the applicable port on the module and from the ends of the connectors on each fiber strand.
2. Attach the fiber labeled 1 to the applicable Receive port, labeled **RX**, on the module. See Figure 3-2.

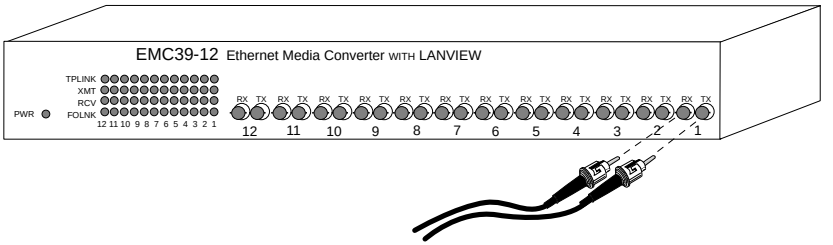


Figure 3-2 Connecting a Fiber Link to the EMC39-12

3. Attach the fiber labeled 2 to the applicable Transmit port labeled **TX**, on the module.
4. At the other end of the fiber optic cable, attach the fiber labeled 1 to the Transmit port of the device.
5. Attach the fiber labeled 2 to the Receive port.
6. Check that the **FOLNK** LED on the ECM39-12 is on. If the LED is not on, perform the following steps until it is:
    a. Check that the power is turned on for the device at the other end of the link.
    b. Verify proper “receive to transmit” connection of fiber strands between the applicable port on the module and the fiber optic device at the other end of the fiber optic link segment.
    c. Verify that the fiber connection meets the dB loss specifications outlined in Appendix A.

If a link still has not been established, contact Cabletron Systems Technical Support.

3.3 FINISHING THE INSTALLATION

The EMC39-12 is now ready for operation. Before placing the network into service, test the installation thoroughly, making sure that you can address all stations and that the EMC39-12 and all stations are indicating normal operation. Ensure that the networking software is configured properly to match the installed network. If you encounter errors or abnormal operation, contact Cabletron Systems Technical Support.

CHAPTER 4
USING THE LANVIEW LEDs

This chapter describes how to use the LANVIEW Diagnostic LEDs to monitor EMC39-12 status and diagnose problems.

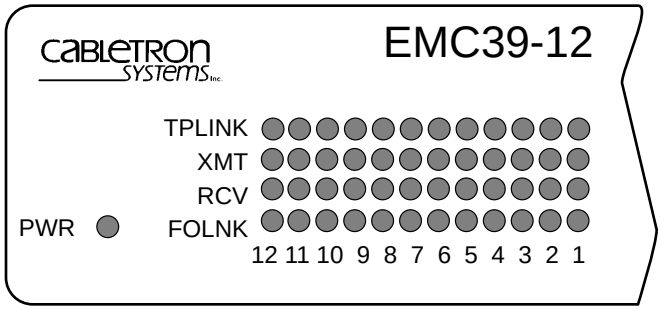


Figure 4-1 LANVIEW LEDs

4.1 **PWR** (Power)

- **On** (Green) - Indicates that the EMC39-12 is receiving power.
- **Off** - Indicates that the unit is not receiving power. Check the input power source (circuit breakers, fuse, power cord, etc.). If the proper source is present, the problem could be with the unit.

4.2 **XMT** (Transmit)

- **On** (Flashing Green) - Indicates that the unit is transmitting data packets from the twisted pair port to the fiber optic port. The flash of the LED is pulse stretched for viewing effect. The LED could be on solid because of this viewing effect.
- **Off** - No activity

4.3 **RCV** (Receive)

- **On** (Flashing Yellow) - Indicates that the unit is receiving data packets from the associated fiber optic port and transmitting them to the twisted pair port. The flash of the LED is pulse stretched for viewing effect. The LED may be on, but appear not to flash because of the pulse stretched viewing effect.
- **Off** - No activity

4.4 **TPLNK** (Twisted Pair Link)

- **On** (Green) - Indicates an established link between the associated twisted pair segment and the 10BASE-T device at the other end of the segment. The LED will remain on as long as there is a link between the devices and power is supplied to each linked device.
- **Off** - No link

4.5 **FOLNK** (Fiber Optic Link)

- **On** (Green) - Indicates an established link between the associated fiber segment and the 10BASE-FL device at the other end of the segment. The LED will remain on as long as there is a link between the devices and power is supplied to each linked device.
- **Off** - No link

APPENDIX A
CABLE REQUIREMENTS

This appendix provides cable requirements for each of the EMC39-12 ports.

A.1 10BASE-T TWISTED PAIR REQUIREMENTS

When you connect a 10BASE-T twisted pair segment to the EMC39-12, the device at the other end of the twisted pair segment must meet IEEE 802.3 10BASE-T specifications. Your 10BASE-T twisted pair segment must meet the following requirements.

Segment Length

The IEEE 802.3 10BASE-T standard requires that 10BASE-T devices must be able to transmit from 0 to at least 100 meters (328 feet) per segment of 24-gauge unshielded twisted pair (UTP) cable.

Insertion Loss

The maximum insertion loss allowed for a 10BASE-T segment is 11.5 db at all frequencies between 5.0 and 10.0 MHz. This includes the attenuation of the cable, connectors, and patch panel.

Impedance

10BASE-T specifies cable impedance between 85 and 110 ohms.

A.2 SINGLE MODE FIBER OPTIC NETWORK

When connecting a single mode fiber optic link segment to a hub, ensure the network meets the following requirements:

Cable Type

Fiber optic link segments should consist of 8/125 to 12/125 μm single mode fiber optic cabling. You can also use 62.5/125 μm multimode cable however, multimode cable allows for greater optical loss, and limits the possible distance to 2 km.

Attenuation

You must test the fiber optic cable with a fiber optic attenuation test set adjusted for a 1300 nm wavelength. This test verifies that the signal loss in a cable falls within the acceptable level of 10.0 dB or less for any given single mode fiber optic link.

Budget and Propagation Delay

When you determine a maximum fiber optic cable length, you must calculate and consider the fiber optic budget (a total loss of 10.0 dB or less between stations) and total network propagation delay.

To determine the fiber optic budget, combine the optical loss due to the fiber optic cable, in-line splices, and fiber optic connectors. Typical loss for a splice and connector (together) equals 1 dB or less.

Network propagation delay is the amount of time it takes a packet to travel from the sending device to the receiving device. Total propagation delay for the entire network must not exceed 25.6 µs in one direction (51.2 µs round trip). If the total propagation delay exceeds 25.6 µs, you must use bridges or switches to re-time the signal.

Length

If you meet all system budgets, the fiber optic ports will drive the signal a minimum distance of 5 km and comply with the IEEE 802.3 10BASE-FL specification.

APPENDIX B
TWISTED PAIR WIRING TABLES

This appendix contains twisted pair wiring tables which will assist you if you are using a Punch Down Block (see Figure B-1) to wire your twisted pair segments. The following tables are included in this appendix:

- Table B-1 Twisted Pair Wiring from an EMC39-12 to a Punch Down Block
- Table B-2 Twisted Pair Wiring from a Punch Down Block to a 10Base-T Device

B.1 TWISTED PAIR WIRING FROM AN EMC39-12 TO A PUNCH DOWN BLOCK

Pins 25 and 50 on the Champ connector are not used.

Table B-1 EMC39-12 to a Punch Down Block

From EMC39-12	Into and Out of 50 Pin Feeder Cable	Into Punch Down Block
Port 12		
Pin	Pin	Pin
TX+ 48	48 Violet/GreenTX+	A45 Violet/Green TX+
TX-23	23 Green/VioletTX-	A46 Green/Violet TX-
RX+49	49 Violet/BrownRX+	A47 Violet/Brown RX+
RX-24	24 Brown/VioletRX-	A48 Brown/Violet RX-
Port 11		
Pin	Pin	Pin
TX+46	46 Violet/BlueTX+	A41 Violet/Blue TX+

Table B-1 EMC39-12 to a Punch Down Block (Continued)

From EMC39-12	Into and Out of 50 Pin Feeder Cable	Into Punch Down Block
TX-21	21 Blue/VioletTX-	A42 Blue/Violet TX-
RX+47	47 Violet/OrangeRX+	A43 Violet/Orange RX+
RX-22	22 Orange/VioletRX-	A44 Orange/Violet RX-
Port 10		
Pin	Pin	Pin
TX+44	44 Yellow/Brown TX+	A37 Yellow/Brown TX+
TX-19	19 Brown/Yellow TX-	A38 Brown/Yellow TX-
RX+45	45 Yellow/Gray RX+	A39 Yellow/Gray RX+
RX-20	20 Gray/Yellow RX-	A40 Gray/Yellow RX-
Port 9		
Pin	Pin	Pin
TX+42	42 Yellow/Orange TX+	A33 Yellow/Orange TX+
TX-17	17 Orange/Yellow TX-	A34 Orange/Yellow TX-
RX+43	43 Yellow/Green RX+	A35 Yellow/Green RX+
RX-18	18 Green/Yellow RX-	A36 Green/Yellow RX-
Port 8		
Pin	Pin	Pin
TX+40	40 Black/GrayTX+	A29 Black/GrayTX+
TX-15	15 Gray/BlackTX-	A30 Gray/BlackTX-
RX+41	41 Yellow/Blue RX+	A31 Yellow/BlueRX+
RX-16	16 Blue/YellowRX-	A32 Blue/YellowRX-
Port 7		
Pin	Pin	Pin
TX+38	38 Black/GreenTX+	A25 Black/GreenTX+
TX-13	13 Green/BlackTX-	A26 Green/BlackTX-
RX+39	39 Black/BrownRX+	A27 Black/BrownRX+
RX-14	14 Brown/BlackRX-	A28 Brown/BlackRX-

Table B-1 EMC39-12 to a Punch Down Block (Continued)

From EMC39-12	Into and Out of 50 Pin Feeder Cable	Into Punch Down Block
Port 6		
Pin	Pin	Pin
TX+36	36 Black/BlueTX+	A21 Black/BlueTX+
TX-11	11 Blue/Black TX-	A22 Blue/BlackTX-
RX+37	37 Black/OrangeRX+	A23 Black/OrangeRX+
RX-12	12 Orange/BlackRX-	A24 Orange/BlackRX-
Port 5		
Pin	Pin	Pin
TX+34	34 Red/BrownTX+	A17 Red/BrownTX+
TX-9	9 Brown/RedTX-	A18 Brown/RedTX-
RX+35	35 Red/GrayRX+	A19 Red/GrayRX+
		A20 Gray/RedRX-
RX-10	10 Gray/RedRX-	
Port 4		
Pin	Pin	Pin
TX+32	32 Red/OrangeTX+	A13 Red/OrangeTX+
TX-7	7 Orange/RedTX-	A14 Orange/RedTX-
RX+33	33 Red/GreenRX+	A15 Red/GreenRX+
RX-8	8 Green/RedRX-	A16 Green/RedRX
Port 3		
Pin	Pin	Pin
TX+30	30 White/GrayTX+	A9 White/Gray TX+
TX-5	5 Gray/WhiteTX-	A10 Gray/WhiteTX-
RX+31	31 Red/BlueRX+	A11 Red/BlueRX+
RX- 6	6 Blue/RedRX-	A12 Blue/RedRX-
Port 2		

Table B-1 EMC39-12 to a Punch Down Block (Continued)

From EMC39-12	Into and Out of 50 Pin Feeder Cable	Into Punch Down Block
Pin	Pin	Pin
TX+28	28 White/GreenTX+	A5 White/GreenTX+
TX-3	3 Green/WhiteTX-	A6 Green/WhiteTX-
RX+ 29	29 White/BrownRX+	A7 White/BrownRX+
RX- 4	4 Brown/WhiteRX-	A8 Brown/WhiteRX-
Port 1		
Pin	Pin	Pin
TX+26	26 White/BlueTX+	A1 White/BlueTX+
TX-1	1 Blue/WhiteTX-	A2 Blue/WhiteTX-
RX+27	27 White/OrangeRX+	A3 White/OrangeRX+
RX-2	2 Orange/WhiteRX-	A4 Orange/WhiteRX-

B.2 TWISTED PAIR WIRING FROM A PUNCH DOWN BLOCK TO A 10BASE-T DEVICE

Table B-2 Punch Down Block to a 10BASE-T Device

From Punch Down Block	To RJ45 Wallplate	Into Office Drop	Into 10BASE-T Device
Port 12	Pin	Pin	Pin
B45 Violet/GreenRX+	3 RX+	3 RX+	3 RX+
B46 Green/VioletRX-	6 RX-	6 RX-	6 RX-
B47 Violet/BrownTX+	1 TX+	1 TX+	1 TX+
B48 Brown/VioletTX-	2 TX-	2 TX-	2 TX-
Port 11	Pin	Pin	Pin
B41 Violet/BlueRX+	3 RX+	3 RX+	3 RX+
B42 Blue/VioletRX-	6 RX-	6 RX-	6 RX-

Table B-2 Punch Down Block to a 10BASE-T Device (Continued)

From Punch Down Block	To RJ45 Wallplate	Into Office Drop	Into 10BASE-T Device
B43 Violet/OrangeTX+	1 TX+	1 TX+	1 TX+
B44 Orange/VioletTX-	2 TX-	2 TX-	2 TX-
Port 10	Pin	Pin	Pin
B37 Yellow/BrownRX+	3 RX+	3 RX+	3 RX+
B38 Brown/YellowRX-	6 RX-	6 RX-	6 RX-
B39 Yellow/GrayTX+	1 TX+	1 TX+	1 TX+
B40 Gray/YellowTX-	2 TX-	2 TX-	2 TX-
Port 9	Pin	Pin	Pin
B33 Yellow/OrangeRX+	3 RX+	3 RX+	3 RX+
B34 Orange/YellowRX-	6 RX-	6 RX-	6 RX-
B35 Yellow/GreenTX+	1 TX+	1 TX+	1 TX+
B36 Green/YellowTX-	2 TX-	2 TX-	2 TX-
Port 8	Pin	Pin	Pin
B29 Black/GrayRX+	3 RX+	3 RX+	3 RX+
B30 Gray/BlackRX-	6 RX-	6 RX-	6 RX-
B31 Yellow/Blue TX+	1 TX+	1 TX+	1 TX+
B32 Blue/YellowTX-	2 TX-	2 TX-	2 TX-
Port 7	Pin	Pin	Pin
B25 Black/GreenRX+	3 RX+	3 RX+	3 RX+
B26 Green/BlackRX-	6 RX-	6 RX-	6 RX-
B27 Black/BrownTX+	1 TX+	1 TX+	1 TX+

Table B-2 Punch Down Block to a 10BASE-T Device (Continued)

From Punch Down Block	To RJ45 Wallplate	Into Office Drop	Into 10BASE-T Device
B28 Brown/BlackTX-	2 TX-	2 TX-	2 TX-
Port 6	Pin	Pin	Pin
B21 Black/BlueRX+	3 RX+	3 RX+	3 RX+
B22 Blue/Black RX-	6 RX-	6 RX-	6 RX-
B23 Black/OrangeTX+	1 TX+	1 TX+	1 TX+
B24 Orange/Black TX-	2 TX-	2 TX-	2 TX-
Port 5	Pin	Pin	Pin
B17 Red/BrownRX+	3 RX+	3 RX+	3 RX+
B18 Brown/RedRX-	6 RX-	6 RX-	6 RX-
B19 Red/GrayTX+	1 TX+	1 TX+	1 TX+
B20 Gray/RedTX-	2 TX-	2 TX-	2 TX-
Port 4	Pin	Pin	Pin
B13 Red/OrangeRX+	3 RX+	3 RX+	3 RX+
B14 Orange/RedRX-	6 RX-	6 RX-	6 RX-
B15 Red/GreenTX+	1 TX+	1 TX+	1 TX-
B16 Green/RedTX-	2 TX-	2 TX-	2 TX-
Port 3	Pin	Pin	Pin
B9 White/GrayRX+	3 RX+	3 RX+	3 RX+
B10 Gray/WhiteRX-	6 RX-	6 RX-	6 RX-
B11 Red/BlueTX+	11 TX+	1 TX+	1 TX+
B12 Blue/RedTX-	2 TX-	2 TX-	2 TX-

Table B-2 Punch Down Block to a 10BASE-T Device (Continued)

From Punch Down Block	To RJ45 Wallplate	Into Office Drop	Into 10BASE-T Device
Port 2	Pin	Pin	Pin
B5 White/GreenRX+	3 RX+	3 RX+	3 RX+
B6 Green/WhiteRX-	6 RX-	6 RX-	6 RX-
B7 White/BrownTX+	1 TX+	1 TX+	1 TX+
B8 Brown/WhiteTX-	2 TX-	2 TX-	2 TX-
Port 1	Pin	Pin	Pin
B1 White/BlueRX+	3 RX+	3 RX+	3 RX+
B2 Blue/WhiteRX-	6 RX-	6 RX-	6 RX-
B3 White/OrangeTX+	1 TX+	1 TX+	1 TX+
B4 Orange/WhiteTX-	2 TX-	2 TX-	2 TX-

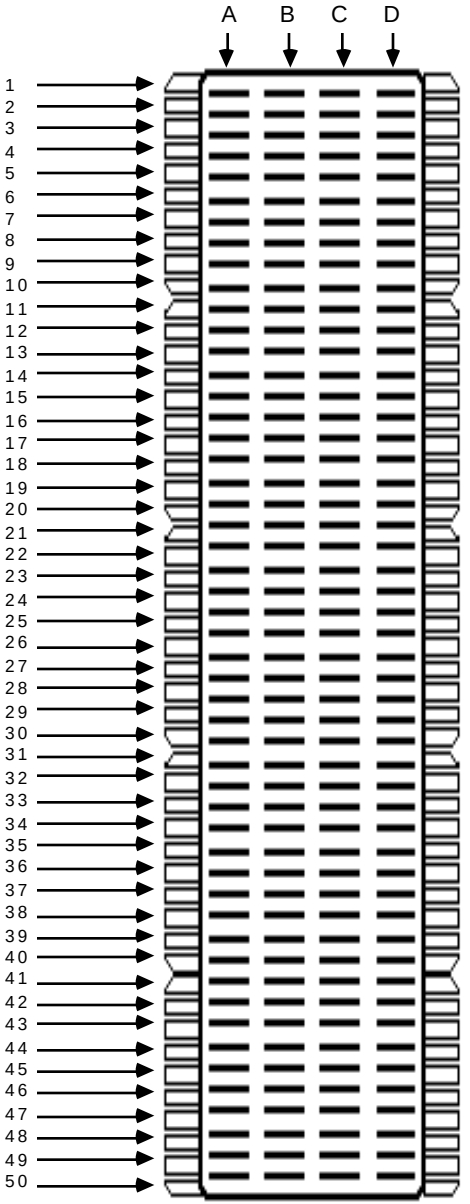


Figure B-1 Punch Down Block Pins

POWER SUPPLY CORD

The main cord used with this equipment must be a 2 conductor plus ground type with minimum 0.75 mm square conductors and must incorporate a standard IEC appliance coupler on one end and a main plug on the other end which is suitable for the use and application of the product and that is approved for use in the country of application.

GERMAN:

Die Netzleitung, die mit diesem Geraet benuetzt wird, soll einen zwei Leiter mit Erdleiter haben, wobei die Leiter mindestens 0.75 mm sind, mit einer normalen IEC Geraetesteckdose an einem Ende und einem Geraetestecker am anderen Ende versehen sind, der fuer den Gebrauch und die Anwendung des Geraetes geeignet und der zum Benuetzen im Lande der Anwendung anerkannt ist.

SPANISH:

El cable principal de la red eléctrica utilizado con este equipo debe tener 2 conductores y 1 toma de tierra con un mínimo de 0.75 mm2 cada uno y necesita tener un aparato de acoplamiento standard IEC en un extremo y un enchufe para el cable principal de la red eléctrica en el otro extremo, lo cual sea adecuado para el uso y applicación del producto y lo cual sea aprobado para uso en el pais de applicación.

FRENCH:

Le cordon d' alimentation reliant cet appareil au secteur doit obligatoirement avoir deux fils conducteurs de 0.75 mm2 minimum et un fil de terre. It doit également être équipé du côté appareil d'une fiche agrée IEC et du côte secteur, d'une prise adaptée à l'usage du produit et aux normes du pays où l'appareil est utilisé.