



INDUSTRIAL COMPUTER SOURCE[®]

Model OEMC Product Manual

MANUAL NUMBER : 00431-096-23A



INDUSTRIAL COMPUTER SOURCE[®]

9950 BARNES CANYON ROAD, SAN DIEGO, CA 92121-2720 (619) 677-0877 (FAX) 619-677-0895

INDUSTRIAL COMPUTER SOURCE EUROPE TEL 01.69.18.74.30 FAX 01.64.46.40.42 • INDUSTRIAL COMPUTER SOURCE (UK) LTD TEL 01243-523500 FAX 01243-532949

FOREWARD

This product manual provides information to install, operate and or program the referenced product(s) manufactured or distributed by Industrial Computer Source. The following pages contain information regarding the warranty and repair policies.

Technical assistance is available at: **1-800-480-0044**.

Manual Errors, Omissions and Bugs: A "Bug Sheet" is included as the last page of this manual. Please use the "Bug Sheet" if you experience any problems with the manual that requires correction.

The information in this document is provided for *reference* only. Industrial Computer Source does not assume any liability arising out of the application or use of the information or products described herein. This document may contain or reference information and products protected by copyrights or patents and does not convey any license under the patent rights of Industrial Computer Source, nor the rights of others.

Copyright © 1995 by Industrial Computer Source, a California Corporation, 9950 Barnes Canyon Rd., San Diego, CA 92121. Industrial Computer Source is a Registered Trademark of Industrial Computer Source. All trademarks and registered trademarks are the property of their respective owners. All rights reserved. Printed in the United States of America. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording , or otherwise, without the prior written permission of the publisher.

Guarantee

A thirty day money-back guarantee is provided on all **standard** products sold. **Special order products** are covered by our Limited Warranty, *however they may not be returned for refund or credit. EPROMs, RAM, Flash EPROMs or other forms of solid electronic media are not returnable for credit - but for replacement only. Extended Warranty available. Consult factory.*

Refunds

In order to receive refund on a product purchase price, the product must not have been damaged by the customer or by the common carrier chosen by the customer to return the goods, and the product must be returned complete (meaning all manuals, software, cables, etc.) within 30 days of receipt and in as-new and resalable condition. The **Return Procedure** must be followed to assure prompt refund.

Restocking Charges

Product returned *after 30 days, and before 90 days*, of the purchase will be subject to a **minimum 20%** restocking charge and any charges for damaged or missing parts.

Products not returned within 90 days of purchase, or products which are not in as-new and resaleable condition, are not eligible for credit return and will be returned to the customer.

Limited Warranty

One year limited warranty on all products sold with the exception of the "Performance Series" I/O products, which are warranted to the original purchaser, for as long as they own the product, subject to all other conditions below, including those regarding neglect, misuse and acts of God. Within one year of purchase, Industrial Computer Source will repair or replace, at our option, any defective product. At any time after one year, we will repair or replace, at our option, any defective "Performance Series" I/O product sold. This does not include products damaged in shipment, or damaged through customer neglect or misuse. Industrial Computer Source will service the warranty for all standard catalog products for the first year from the date of shipment. After the first year, for products not manufactured by Industrial Computer Source, the remainder of the manufacturer's warranty, if any, will be serviced by the manufacturer directly.

The **Return Procedure** must be followed to assure repair or replacement. Industrial Computer Source will normally return your replacement or repaired item via UPS Blue. *Overnight delivery or delivery via other carriers is available at additional charge.*

The limited warranty is void if the product has been subjected to alteration, neglect, misuse, or abuse; if any repairs have been attempted by anyone other than Industrial Computer Source or its authorized agent; or if the failure is caused by accident, acts of God, or other causes beyond the control of Industrial Computer Source or the manufacturer. Neglect, misuse, and abuse shall include any installation, operation, or maintenance of the product other than in accordance with the owners' manual.

No agent, dealer, distributor, service company, or other party is authorized to change, modify, or extend the terms of this Limited Warranty in any manner whatsoever. Industrial Computer Source reserves the right to make changes or improvements in any product without incurring any obligation to similarly alter products previously purchased.



Shipments not in compliance with this Guarantee and Limited Warranty Return Policy will not be accepted by Industrial Computer Source.

Return Procedure

For any Limited Warranty or Guarantee return, please contact Industrial Computer Source's Customer Service at **1-800-480-0044** and obtain a Return Material Authorization (RMA) Number. All product(s) returned to Industrial Computer Source for service or credit **must** be accompanied by a Return Material Authorization (RMA) Number. Freight on all returned items **must** be prepaid by the customer who is responsible for any loss or damage caused by common carrier in transit. Returns for Warranty **must** include a Failure Report for each unit, by serial number(s), as well as a copy of the original invoice showing date of purchase.

To reduce risk of damage, returns of product must be in an Industrial Computer Source shipping container. If the original container has been lost or damaged, new shipping containers may be obtained from Industrial Computer Source Customer Service at a nominal cost.

Limitation of Liability

In no event shall Industrial Computer Source be liable for any defect in hardware or software or loss or inadequacy of data of any kind, or for any direct, indirect, incidental, or consequential damages in connection with or arising out of the performance or use of any product furnished hereunder. Industrial Computer Source liability shall in no event exceed the purchase price of the product purchased hereunder. The foregoing limitation of liability shall be equally applicable to any service provided by Industrial Computer Source or its authorized agent.

Some *Sales Items* and *Customized Systems* are **not** subject to the guarantee and limited warranty. However in these instances, any deviations will be disclosed prior to sales and noted in the original invoice. ***Industrial Computer Source reserves the right to refuse returns or credits on software or special order items.***

Advisories

Three types of advisories are used throughout the manual to stress important points or warn of potential hazards to the user or the system. They are the Note, the Caution, and the Warning. Following is an example of each type of advisory:

Note: The note is used to present information which may provide special instruction or extra information which may help to simplify the use of the product.



CAUTION!



A Caution is used to alert you of a situation which if ignored may cause injury or damage equipment.



WARNING!



A Warning is used to alert you of a situation which if ignored will cause serious injury.

Cautions and Warnings are accented with triangular symbols. The exclamation symbol is used in all cautions and warnings to help alert you to the important instructions. The lightning flash symbol is used on the left hand side of a caution or a warning if the advisory relates to the presence of voltage which may be of sufficient magnitude to cause electrical shock.

Use caution when servicing any electrical component. We have tried to identify the areas which may pose a Caution or Warning condition in this manual; however, Industrial Computer Source does not claim to have covered all situations which might require the use of a Caution or Warning.

You must refer to the documentation for any component you install into a computer system to insure proper precautions and procedures are followed.

Table of Contents

FOREWARD	iii
Guarantee	iv
Limited Warranty	iv
Return Procedure	v
Limitation of Liability	v
Advisories	vi
Chapter 1: Introduction	1-1
Features	1-1
Dimensional Drawings	1-2
Chapter 2: Installation	3-1
Side Panels Cutouts	3-1
Card Hold Down Bracket	2-1
Backplanes	2-1
Power Supplies	2-1
Top Cover Installation	2-2
Fan Installation	2-2
Chapter 3: Maintenance	3-1
Returns	3-1
Appendix A: Power Supply Options	A-1
AC Input Power Supplies	A-1
OEMC-P15	A-1
OEMC-P25	A-2
OEMC-P30	A-3
OEMC-P25ATX	A-4
OEMC-P30	A-5
DC Input Power Supplies	A-6
OEMC-PDC24 (24VDC Input)	A-6
240 Watt Maximum Output Power	A-6
OEMC-PDC48 (48VDC Input)	A-7
300 Watt Maximum Output Power	A-7
Appendix B: Cooling Fan Dimensional Drawing	B-1

List of Figures

Figure 1-1: Chassis Dimensions	1-2
Figure 1-2: Mounting Dimensions	1-3
Table 1-1: Chassis Dimension Table	2-3
Figure 2-1: Fan Option Mounting Positioning	2-2
Figure B-1: Fan Dimensional Drawing	B-1

Current Revision 23A

April 1997

Chapter 1: Introduction

The OEMC Series chassis are designed for the OEM user who wishes to incorporate a PC bus computer into a system enclosure such as a control cabinet. The OEMC is the bare necessity enclosure permitting the OEM to design the system into his equipment with only those features that are really needed.

The enclosure consists of a pan which holds the passive backplane or the mother board, depending on model. Two side pieces are provided with identical cutouts for mounting connectors normally associated with PC's such as serial port, parallel port, keyboard, etc. You may use these in addition to the normal connectors found on the mounting brackets of the typical adapter cards.

Power for the OEMC is brought in through the side panel and connects to the motherboard or passive backplane via molex type connectors as are normally provided on PC power supplies.

The chassis is available with optional cooling fans and top covers. The fans provide air movement across installed option boards within the cabinet. The top covers provide protection from tools and fingers when the equipment cabinet is open.

Passive backplanes are available in 4, 6, 10, and 15 slot versions as the OEMC-04, OEMC-06, OEMC-10 and OEMC-15 chassis models. The 4 and 6 slot chassis are also available in a short version. This allows you to save space if full length cards are not needed. All versions are available with the ISA standard. The 10 and 15 slot backplanes are also available with EISA or PCI. A selection of passive backplane CPU cards are available from Industrial Computer Source supporting the latest micro-processor versions. ATX and baby AT motherboards are also supported by the OEMC family through the OEMC-8MB (baby AT) and OEMC-ATX models.

Features

- Selection of sizes to fill most needs
- ISA, EISA, or VESA compatible backplanes accept all compatible cards
- 4 layer, low capacitance PCB offers EMI, RFI rejection
- Optional covers to protect interior and cards
- Optional fan assemblies to provide cooling inside cabinets
- Choice of CPUs available for a wide variety of application requirements
- All steel construction for durability and strength

Dimensional Drawings

The width dimension of the chassis, as shown in Figure 1-1, varies with the number of slots in the backplane. The OEMC-8MB motherboard mount version has the same dimensions as the OEMC-10 backplane version but has no backplane mounted in the chassis and provides for a motherboard mounted keyboard connector.

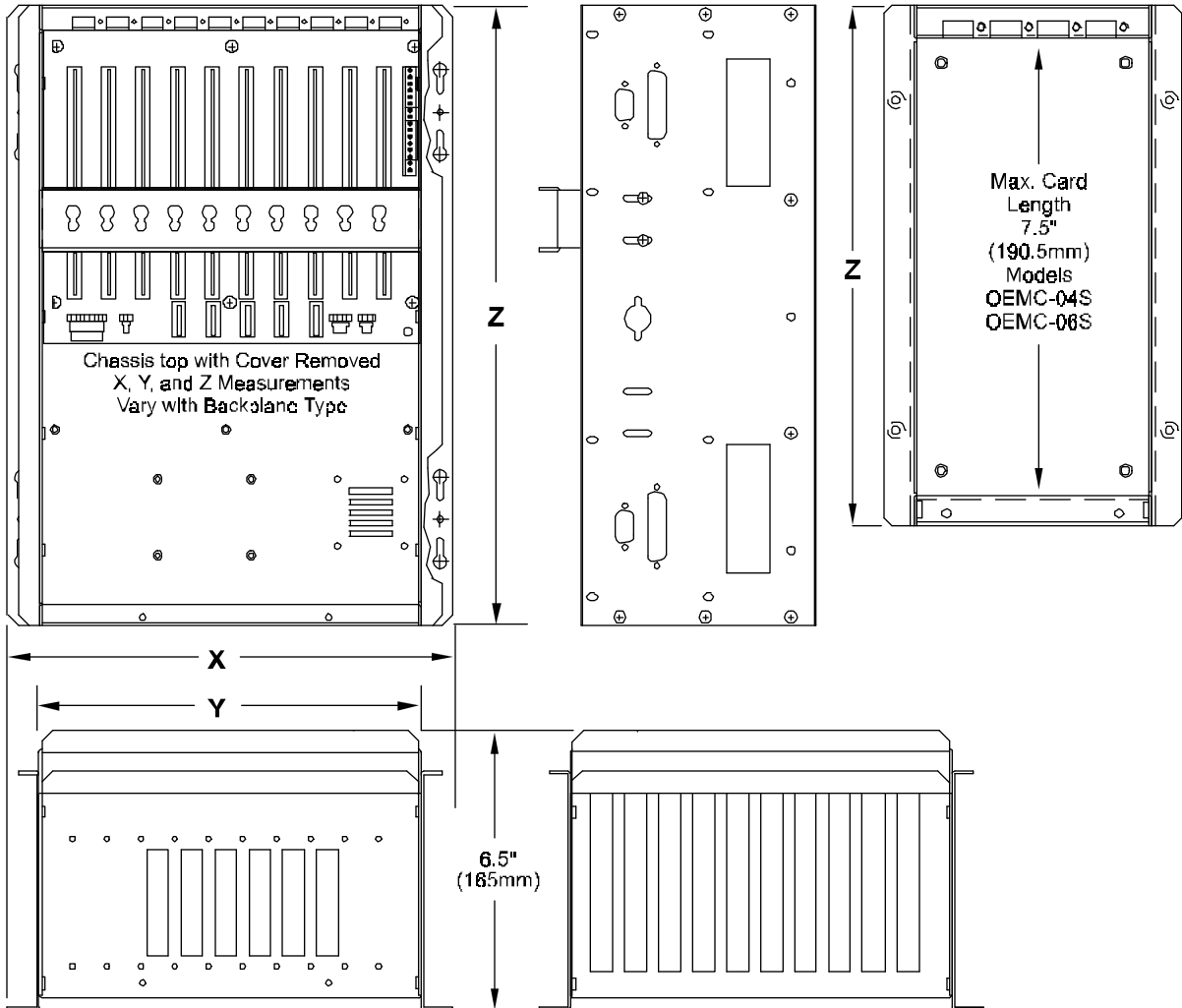


Figure 1-1: Chassis Dimensions

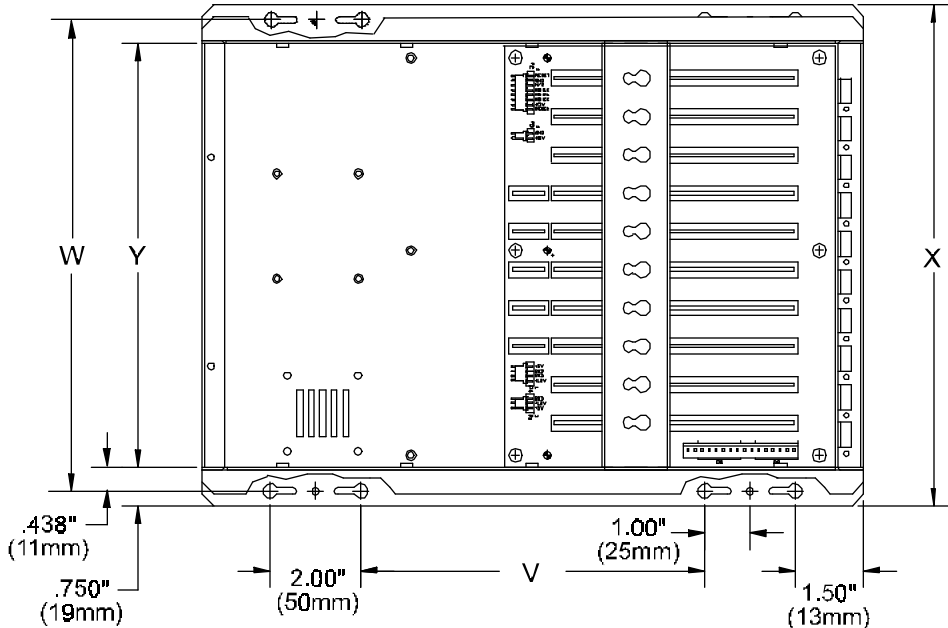


Figure 1-2: Mounting Dimensions

Chassis Dimensions: Inches (millimeters)					
Model	Dimensions				
	X	Y	Z	V	W
OEMC-04	5.5 (139.7mm)	4.00 (101.6mm)	14.58 (370mm)	7.58 (193mm)	4.88 (124mm)
OEMC-04S	5.5 (139.7mm)	4.00 (101.6mm)	8.75 (222mm)	4.14 (105mm)	4.88 (124mm)
OEMC-06	7.28 (185mm)	5.78 (147mm)	14.58 (370mm)	7.58 (193mm)	6.66 (169mm)
OEMC-06S	7.28 (185mm)	5.78 (147mm)	8.75 (222mm)	4.14 (105mm)	6.66 (169mm)
OEMC-10/10P/10E	10.48 (266.2mm)	8.98 (228.1mm)	14.58 (370mm)	7.58 (193mm)	9.86 (250mm)
OEMC-15/15P/15E	14.48 (367.8mm)	12.98 (329.7mm)	14.58 (370mm)	7.58 (193mm)	13.86 (352mm)
OEMC-8MB	10.48 (266.2mm)	8.98 (228.1mm)	14.58 (370mm)	7.58 (193mm)	9.86 (250mm)
OEMC-ATX	14.48 (367.8mm)	12.98 (329.7mm)	14.58 (370mm)	7.58 (193mm)	13.86 (352mm)

NOTE: All OEMC Chassis are 6.5" (165mm) in Height

Table 1-1: Chassis Dimension Table

This page intentionally left blank

Chapter 2: Installation

Installation of the OEMC into the cabinet is accomplished by using the empty chassis as a template to mark the mounting hole pattern. There are two mounting hole patterns along each side of the OEMC. They can be fit over studs mounted inside your cabinet or simply be used with screws into pre-tapped holes or with screws and nuts through drilled holes in the cabinet wall.

Mount the OEMC with the card guide end up to have adapter card cables exit from the bottom of the cage. If you prefer to have cable access at the top of the cage, it can be mounted in that orientation also. The optional cooling fans will mount on the chassis end opposite the cable connections.

Side Panels Cutouts

Each side panel of the chassis is identical in dimensions and cutouts to optimize versatility in installation positioning. The cutouts permit the installer to attach connectors as may be required for the application. Cutouts are provided for a keyboard DIN connector, two DB9 pin connectors and two DB25 pin connectors per side.

Additionally, there is a large rectangular cutout to permit easy connection of power supply connectors to the backplane or to the motherboard.

Card Hold Down Bracket

The card hold down bracket is provided with rubber bumpers to insert in card positions where “XT” size cards will be installed. “AT” size cards will be held in place by the foam stripping across the hold down bracket without the added height of the bumpers.

Backplanes

The backplane provides the bus platform for all feature cards. It is available in ISA, EISA, or PCI standards. Backplanes for the OEMC come with a number of different slots, ranging from four to fifteen slots. Your chassis will include a separate manual for the specific type of backplane you received.

Power Supplies

Industrial Computer Source offers several models of power supplies as accessories to the OEMC chassis. AC input power supplies are available with 150 watts, 250 watts, or 300 watts output. ATX versions are available with 250 or 300 watts output. These supplies are switching type power supplies which provide maximum output with minimum heat generation and weight. A 48VDC input supply is also available. Please refer to Appendix A for further information.

These are not the only power supplies that may be used. You may install the OEMC chassis with most “clone” power supplies which offer the IBM PC/XT/AT type power connector, generally labelled P8 and P9, or the ATX power connector. The model, i.e. power capacity, of supply chosen is dependent upon the number of slots in the backplane and the power requirements of installed option boards. The mounting of the power supplies is left to the discretion of the installer.

Top Cover Installation

The optional top cover is available to prevent accidental insertion or dropping of foreign objects into the enclosure. It is installed by lining up the holes on the side with the holes on the top side extensions of the chassis and securing with B-32 X 1/4" to 3/8" pan head screws.

Fan Installation

Optional cooling fans are offered to increase air flow across the installed circuit boards. The fans operate off +12VDC and offer 45CFM each. A fan is installed by lining up the mounting holes with the holes provided in the end of the chassis opposite the mounting brackets of the circuit boards. The fifteen slot chassis may have one or two fans installed according to the application requirements. For dimensional drawings of the cooling fan, please refer to Appendix B.

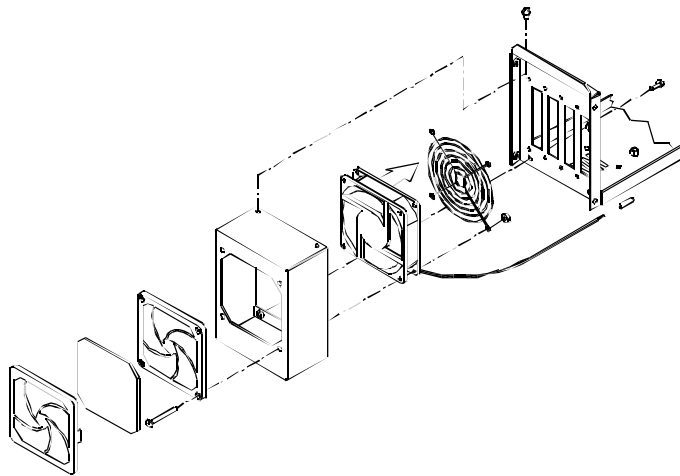


Figure 2-1: Fan Option Mounting Positioning

Chapter 3: Maintenance

There is no maintenance required for the chassis. Optional fan assemblies are sealed and also do not require maintenance.

Should you have any questions on the installation or termination of the backplane, you may call our Customer Service Department at 1-800-480-0044 between 8:00 AM and 5:00 PM, Pacific Coast time, Monday through Friday.

Returns

If you need to return a product to Industrial Computer Source for any reason, the following applies:

- A) Call Customer Service for an RA number. Our phone number is 1-800-480-0044. The RA number must be visible on the outside of the box you pack the product into for return shipment. Shipments without an RA number will not be accepted by Customer Service Receiving.
- B) Properly pack the product:
 - 1) If your fixed disk is not auto-parking, run the necessary utility to park it. Backup the hard disk if you can (as required).
 - 2) Insert a shipping protector in the floppy drives.
 - 3) Remove any protruding keys, light pens, keyboards, cables, etc.
 - 4) Secure all plug-in cards with screws. Screw down the lid. Be sure the drive cage is screwed down as applicable and that floppy drive doors are closed.
 - 5) Put the computer in a bag to prevent moisture and dirt from entering the drive and card areas.
 - 6) Provide adequate packaging. If possible, use the original box and packing the system arrived in. A minimum of 4 inches of proper packing material is required around all sides of computer systems. Double thick cardboard is preferred. Styrofoam peanuts or loose fill is not sufficient. Assume the box will be dropped several feet during shipping.
 - 7) Do not ship by truck. Use a carrier such as Burlington, Airborne, or Federal Express.

This page intentionally left blank

Appendix A: Power Supply Options

AC Input Power Supplies

OEMC-P15

150 Watt Output

+5V @ 16A

+12V @ 5.5A

-5V @ 0.5A

-12V @ 0.5A

To maintain rated load specifications, the power supply requires a minimum load of 2.5 Amps on the +5V output and .5 Amps on the +12V output.

AC Input

95 to 135V / 190 to 260V Switch Selectable Input Voltage

50/60 Hz (± 3 Hz)

Inrush Current

50A Max.

Rise Time

100ms Max.

Ripple / Noise

70mV @ +5V

100mV @ +12V

120mV @ -5V

150mV @ -12V

Overload Protection

Provided when output power is 110% to 150% of the rated nominal value

Short Circuit Protection

Will shutdown if short circuit occurs at any DC output

Operating Temperature

0°C to +50°C at 0% to 90% non-condensing relative humidity

Storage Temperature

-20°C to +85°C at 0% to 95% non-condensing relative humidity

OEMC-P25

250 Watt Output

+5V @ 26A
+12V @ 9.0A
-5V @ 0.5A
-12V @ 0.5A

To maintain rated load specifications, the power supply requires a minimum load of 2.5 Amps on the +5V output and 1 Amp on the +12V output.

AC Input

90 to 135V / 180 to 260V Switch Selectable Input Voltage
50/60 Hz (± 3 Hz)

Inrush Current

70A Max.

Rise Time

100ms Max.

Ripple / Noise

80mV @ +5V
100mV @ +12V
120mV @ -5V
120mV @ -12V

Overload Protection

Provided when output power is 110% to 130% of the rated nominal value

Short Circuit Protection

Will shutdown if short circuit occurs at any DC output

Operating Temperature

0°C to +50°C at 8% to 80% non-condensing relative humidity

Storage Temperature

-40°C to +70°C at 5% to 90% non-condensing relative humidity

OEMC-P30

300 Watt Output

+5V @ 30A
+12V @ 12A
-5V @ 0.5A
-12V @ 0.5A

To maintain rated load specifications, the power supply requires a minimum load of 2.5 Amps on the +5V output and 1 Amp on the +12V.

AC Input

90 to 135V / 180 to 260V Switch Selectable Input Voltage
50/60 Hz (± 3 Hz)

Inrush Current

70A Max.

Rise Time

100ms Max.

Ripple / Noise

50mV @ +5V
100mV @ +12V
120mV @ -5V
120mV @ -12V

Overload Protection

Provided when output power is 110% to 150% of the rated nominal value

Short Circuit Protection

Will shutdown if short circuit occurs at any DC output

Operating Temperature

0° C to +50° C at 8% to 80% non-condensing relative humidity

Storage Temperature

-40° C to +70° C at 5% to 90% non-cendensing relative humidity

OEMC-P25ATX

250 Watt Output

+3.3V @ 14A

+5V @ 25A

+12V @ 9.5A

-5V @ 1A

-12V @ 1A

To maintain rated load specifications, the power supply requires a minimum load of 1 Amp on the +5V output and 0.3 Amps on the +3.3V output.

AC Input

80 to 140V / 175 to 265V Switch Selectable Input Voltage

50/60 Hz (± 3 Hz)

Inrush Current

20A Max. @ 115VAC

40A Max. @ 230 VAC

Ripple / Noise

50mV @ 3.3V

50mV @ +5V

100mV @ +12V

50mV @ -5V

100mV @ -12V

Operating Temperature

10° C to +50° C at 5% to 95% non-condensing relative humidity

OEMC-P30ATX

300 Watt Output

+3.3V @ 14A

+5V @ 30A

+12V @ 12A

-5V @ 1A

-12V @ 1A

To maintain rated load specifications, the power supply requires a minimum load of 1 Amp on the +5V output and 0.3 Amps on the +3.3V output.

AC Input

80 to 140V / 175 to 265V Switch Selectable Input Voltage

50/60 Hz (± 3 Hz)

Inrush Current

20A Max. @ 115VAC

40A Max @ 230VAC

Ripple / Noise

50mV @ +3.3V

50mV @ +5V

100mV @ +12V

50mV @ -5V

120mV @ -12V

Operating Temperature

10° C to +50° C at 5% to 95% non-condensing relative humidity

DC Input Power Supplies

The OEMC Series chassis are offered with DC input power options versus standard AC input power options. The difference between the two types of power inputs relative to the chassis configuration, is the actual power supply module used and the rear panel configuration. Rather than the standard three prong AC utility plug, the rear panel is fitted with a terminal block with three screw fittings for DC input power wiring. All DC power supplies are four output supplies: +5VDC, +12VDC, -5VDC, and -12VDC.

NOTE: With the DC power supplies, the power switch does not light when power is applied.

OEMC-PDC24 (24VDC Input)

240 Watt Maximum Output Power

+5V @ 30.0A

+12V @ 6.0A/10APK

-5V @ .5A

-12V @ 2.0A

To maintain rated load specifications, the 24VDC power supply requires a minimum load of 1.5 Amps on the +5V output and 1 Amp on the +12V output.

DC Input Voltage Range

+20V to +32V

Inrush Current

18 Amps

Current Limit

130%

Load Regulation

±3% at +5V

±5% at +12V

±5% at -5V

±5% at -12V

Thermal Shutdown Protection

The converter will shut down when the temperature at the FET reaches 110°C . This will self recover when the temperature returns to normal.

Operating Temperature

0° to 50° C

Storage Temperature

-20°C to +85°C

OEMC-PDC48 (48VDC Input)**300 Watt Maximum Output Power**

+5V @ 35A

+12V @ 8A/10APK

-5V @ .5A

-12V @ 2.0A

To maintain rated load specifications, the 48VDC power supply requires a minimum load of 3 Amps on the +5V output supply and 1 Amp on the +12V supply.

DC Input range

40V to 60V

Inrush Current

25 Amps

Current Limit

130%

Load Regulation

±3% at +5V

±5% at +12V

±5% at -5V

±5% at -12V

Thermal Shutdown Protection

The converter will shut down when the temperature at the FET reaches 110°C . This will self recover when the temperature returns to normal.

Operating Temperature

0° to 50°C

Storage Temperature

-20°C to +85°C

This page intentionally left blank

Appendix B: Cooling Fan Dimensional Drawing

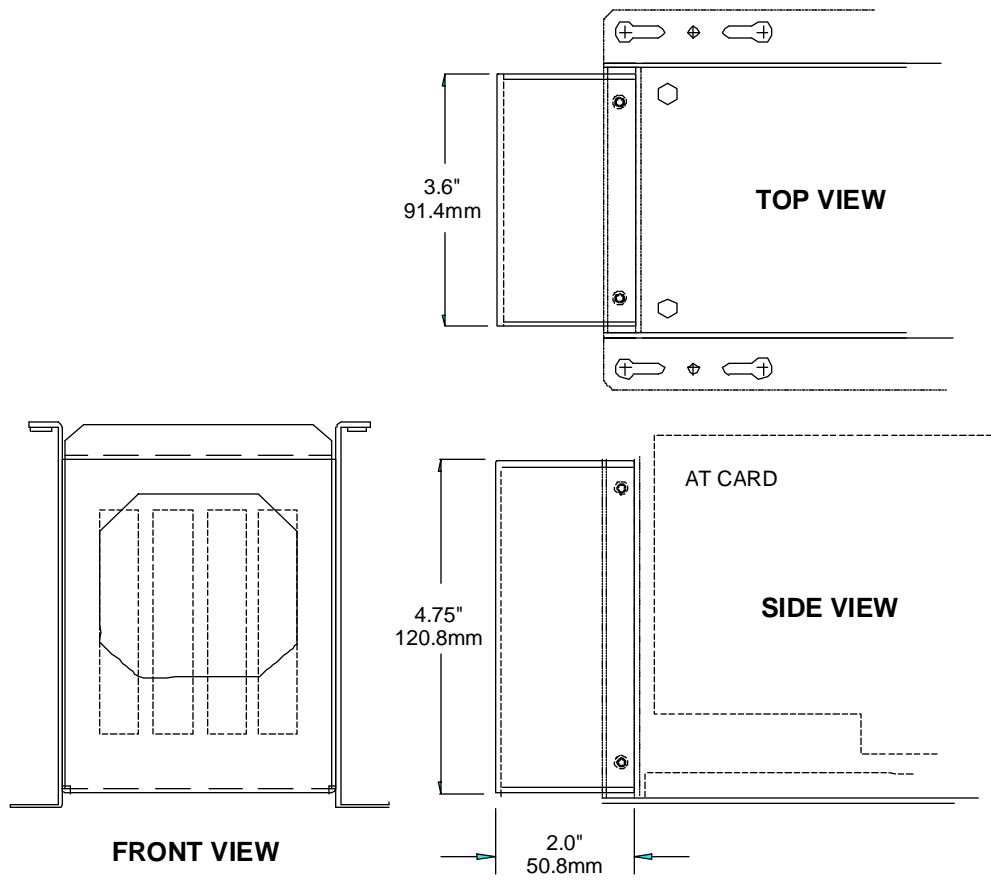


Figure B-1: Fan Dimensional Drawing

This page intentionally left blank

BUG REPORT

While we have tried to assure this manual is error free, it is a fact of life that works of man have errors. We request you to detail any errors you find on this BUG REPORT and return it to us. We will correct the errors/problems and send you a new manual as soon as available. Please return to:



INDUSTRIAL COMPUTER SOURCE®

Attn: Documentation Department
P. O. Box 910557
San Diego, CA 92121-0557

Your Name: _____

Company Name: _____

Address 1: _____

Address 2: _____

Mail Stop: _____

City: _____ State: _____ Zip: _____

Phone: (____) _____

Product: **OEMC**

Manual Revision: **00431-096-23A**

Please list the page numbers and errors found. Thank you!

