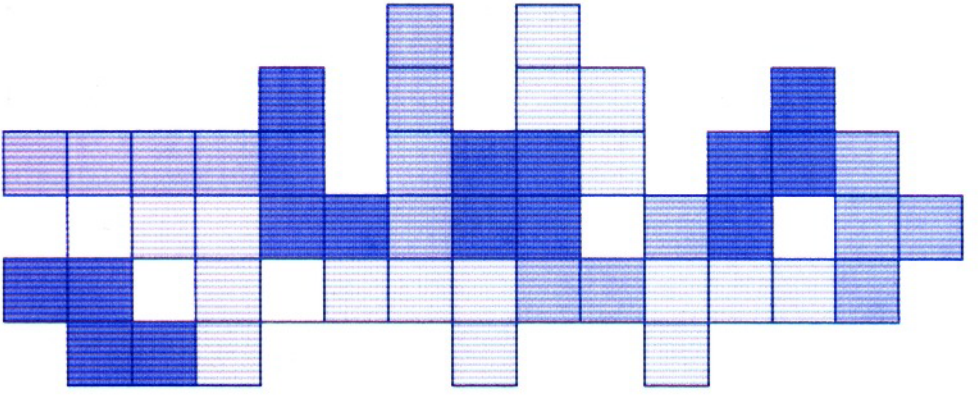
USER'S MANUAL

AMB-618/318
Series

Industrial Workstation
With Flat-Panel Display



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About This Manual

Welcome to the AMB-318/618 series of industrial workstation. This manual will introduce the AMB-318/618 series to you in very detail. In addition, it will help you understand how to set up and use AMB-318/618 series industrial workstation.

This manual contents three chapters and two appendixes.

Chapter 1 Gives you an overview of the industrial workstation.

Chapter 2 Tell you how they are basically constructed and what procedures you should take for system setup.

Chapter 3 Tell you how to maintain

Appendix A Gives detailed specifications of power supply.

Appendix B Gives a picture of exploded diagram on them.

Important safety Instructions

- Please read this manual completely before operating the unit and retain it for future reference.
- Before you start any of the actions, make sure that you have the correct version of the unit. So far the series have AMB-318HT (without keypad) and AMB-618HT (with keypad).

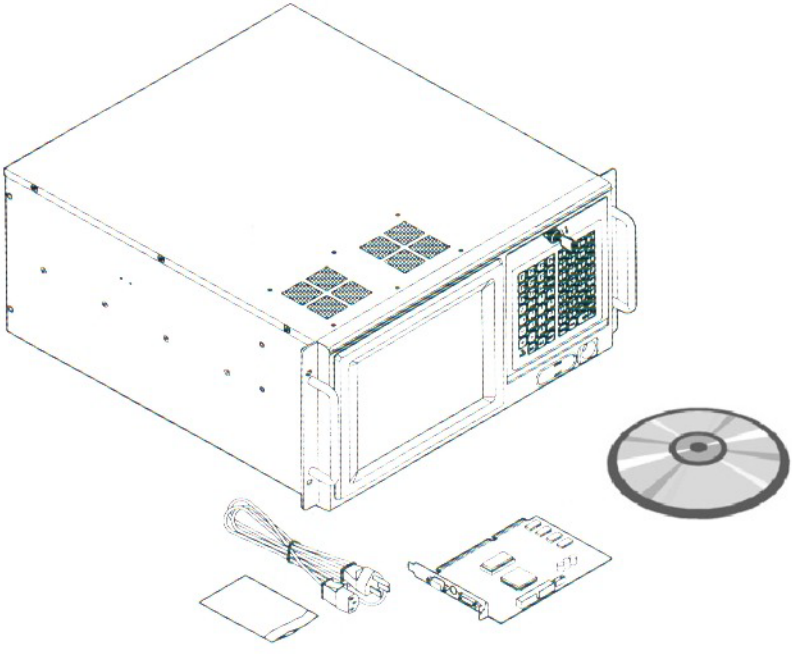
  AMB-318HT-☐ (Optional touchscreen)
  AMB-618HT-☐ (Optional touchscreen)

- Please unplug this product from the wall outlet before cleaning. If the surface of the LCD cells needs to be cleaned, wipe it swiftly with cotton or other soft cloth. If the product is still not completely clear, blow on its surface and wipe it.
- Please pay attention not to scratch on the surface of the front panel polarizer, because it is easily damage.
- Do not use this product close to water. And avoid exposing this product to the direct sunlight, strong ultraviolet light, etc. for a long time.
- This product must be operated from the type of power source specified. If you are not sure which type of power source is available, please refer to appendix A.

Packing List

The following items will be contained in the package. If any of these items are missing or damaged you should contact your dealer immediately.

- One AMB-318/618 industrial workstation with flat panel display and 56-key membrane keypad
- One power cord
- A pack of accessory
- One CD-Title
- One flat panel/CRT display control card



Chapter 1 Overview

1.1 General

To fulfill customer satisfaction, AMB-318/618 series are concerned about quality, reliability, and cost. They are specially designed to keep normal operation under harsh environment which meet all the requirements for an industrial man-machine interface.

They come equipped with a flat panel displays which are 9.4" and color DSTN or high brightness(250cd/m^2) /long life-time (25,000 Hrs) 10.4" color TFT LCD display, a 62-key membrane keypad, an analog resistive or capacitive touchscreen (option), a universal 250W switching power supply (refer to appendix A for options), a space for one 3.5" FDD, two 3.5"HDD and one 5.25"CD-ROM drive. All of them are enclosed with a heavy-duty steel chassis and a high-quality plastic front panel which meet the NEMA 4/12 industrial and environmental protection standards.

All the controllers and connectors are placed on the rear panel, users can connect the industrial workstation to other devices via them.

NOTE Touchscreen or DC power supply is optional as users' order and to ask for additional price table.

1.2 Features

* Compact size 9.4" color DSTN or high brightness(250cd/m^2) /long life-time (25,000 Hrs) 10.4" color TFT LCD display
* Universal 250W switching power supply (or other options)
* Analog resistive touchscreen (option)
* 19" rack mount or desktop application
* Two 64 CFM cooling fans
* Space for one 3.5" FDD, two 3.5" HDD and one 5.25" CD-ROM
* Brightness & contrast controllers, external keyboard connector, FDD slot behind a lockable door on the front panel
* Blank or with 62-key seal-membrane keypad lockable front door
* Hold-down clamp for keeping add-on cards from vibration
* 14-slot ISA-Bus or PCI-Bus passive backplane
* Universal 250W switching power supply or redundant power supply (option)
* Analog resistive touchscreen (option)

1.3 Specifications

1.3.1 General Specification of AMB-318/618 Series

Power Supply	250 Watts
Front Panel	62-key membrane keypad, CD-ROM drive, Keyboard connector, contrast and brightness Controllers
Disk Bay	One 3.5" FDD, two 3.5" HDD and one 5.25" CD-ROM
Inner Cooling	Two 64-CFM fans
Operating Temperature	0°C to 50°C
Storage Temperature	-20°C to 60°C
Relative Humidity	5 to 95%, non-condensing
Altitude	10,000ft (3000 meters)
Vibration	5 to 17 Hz, 0.1" double-amplitude displacement 17 to 500Hz, 1.5G peak to peak
Shock	10G-peak acceleration (11-msec. duration)
Safety	meets UL/CSA/TUV
EMI	meets FCC/VDE Class A
Dimensions	483 (W) x 222 (H) x 470 (D) mm
Net Weight	16Kgs

NOTE

1. Model Number System
   Product Names

   AMB-618HT: High brightness/long life-time color TFT LCD Display

   AMB-318HT: Same as AMB-618HT without keypad

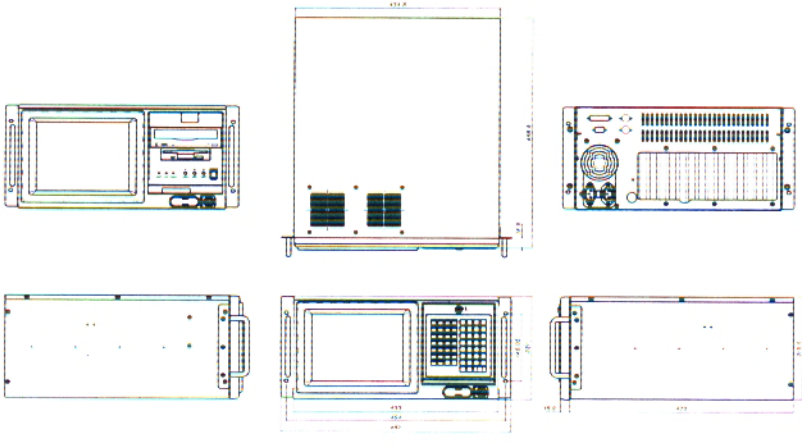
2. The colors of display are 256

1.3.2 Display Option and Specification

Item	Color DSTN	Color TFT	Color TFT Hi-brightness/Long-life time
Diagonal	9.4"	10.4"	10.4"
Resolution	640x480	640x480	640x480
Color or gray scale	256 colors	64k colors	64k colors
Dot size (H x V(mm))	0.08x0.28	0.330x0.330	0.33x0.33
Contrast ratio	20	150	100
Luminance (cd/m^2)	70	70	250
View angle(Horizontal)	45°	90°	90°
Operating Temperature	0-50°	0-50°	0-50°
Backlight Life-time (Hrs)	10,000	10,000	20,000

1.4 Dimensions

Unit: mm



Chapter 2 System Setup And Operating

2.1 General

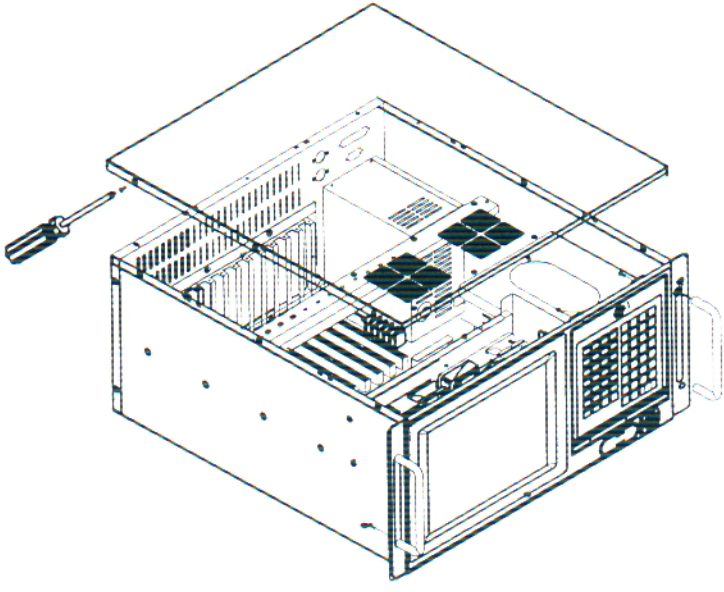
In order to let users realize the AMB-318/618 series in constructions, this chapter will illustrate the step of sequence for users. Users will learn how to set up this system and apply it step by step. As regards quality, AMB-318/618 series warrant the quality for customers. This is because, AMB-318/618 series have been setup and tested at R&D Department of Astech before they were shipped.

IMPORTANT Do not plug in any power source when you start to setup the system. Also remember whenever you want to open the industrial workstation again for either upgrading or maintenance you have to switch all the power off and unplug them.

2.2 Opening The Top Cover

The top cover is fastened to the chassis with six screws, so you need to unfasten them to open the cover.

When you opened the top cover, you will see a hold-down clamp which stretches across the chassis. You have to remove it before you install your add-on cards.

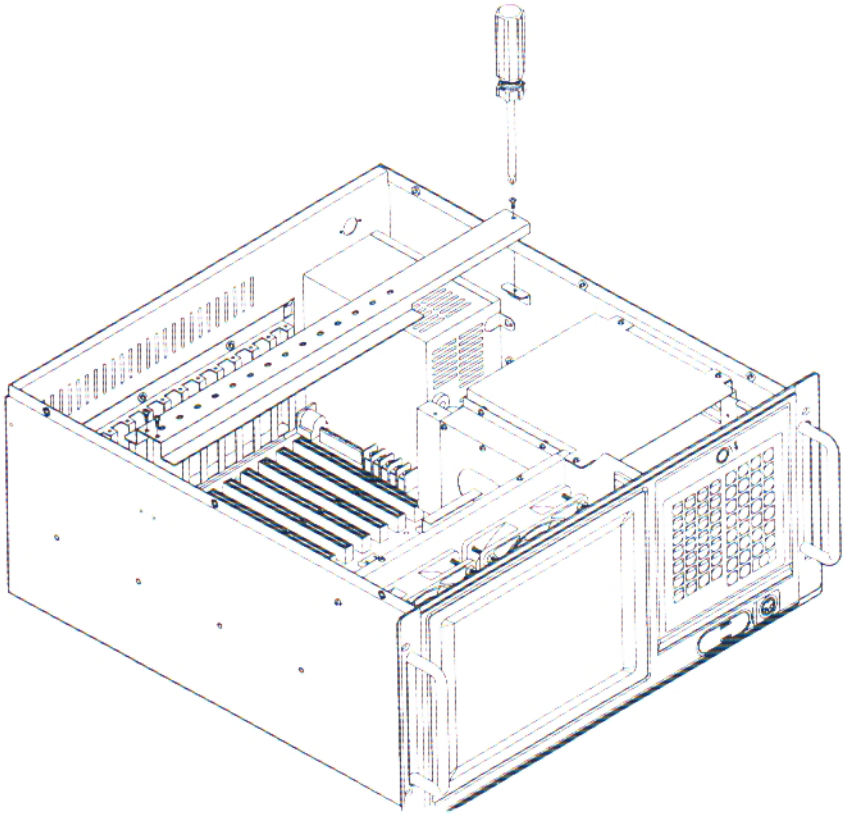


2.3 Remove the hold-down clamp

The clamp is designed to hold the add-on cards which you are going to install from vibration during operation. It lies across the chassis and fasten with three screws on two stoppers. Therefore you need to unfasten the three screws to remove the clamp.

When you removed you will see two long rubber bands going down the clamp which are the part that will come pressing down on the AT add-on cards that you may install.

Do remember to put the clamp back and secure it in place when you have finished installing all your add-on cards.

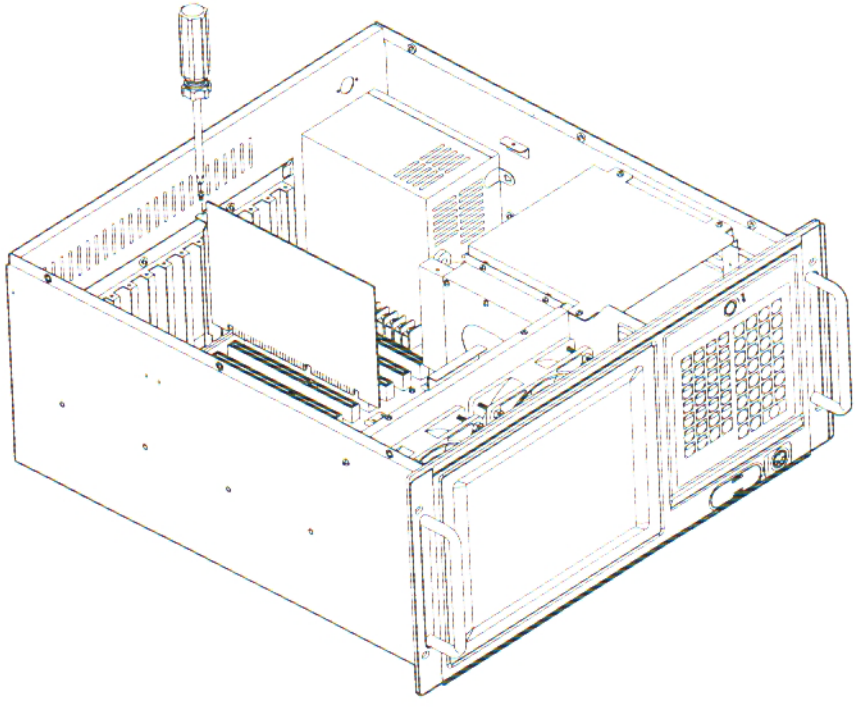


2.4 Install add-on cards

There are 14 slots on the passive backplane. You should firstly install an all-in-one SBC and and the flat-panel/CRT display control card which comes with the chassis before taking up any of other I/O cards.

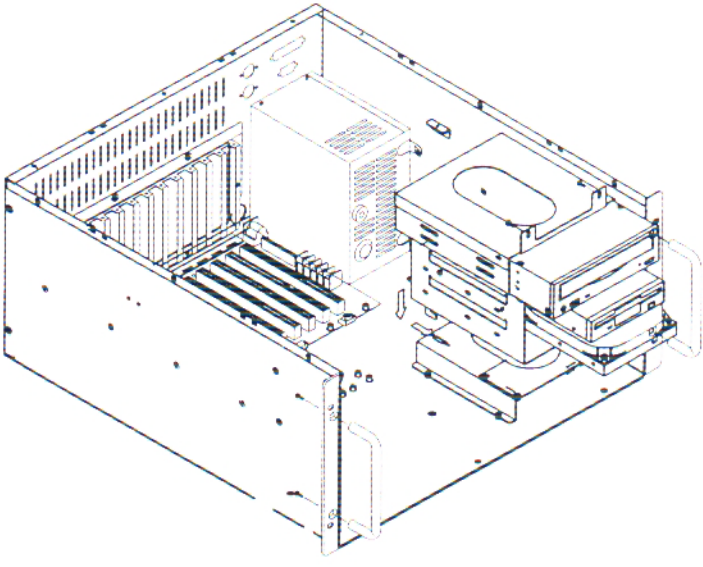
Steps for installing are:

1. Take up a card and slide it slowly into a slot until its bracket goes well down a groove on the securing panel.
2. Match the screw hole on the bracket with the one on the groove and drive a screw tight through.



2.5 Install the disk drives

There is one disk drive housing equipped in the chassis. It has four drive bays respectively for you to install one 3.5" FDD, two 3.5" HDD and one 5.25" CD-ROM. You need to unfasten the three screws which secure it in two stoppers to take the drive bay out, if you need to install the software.



2.5 Connecting external keyboard

1. **Buying with CPU card:**
   If you buy AMB-318/310/311 or 610/611/618/632 with CPU card, you may just plug in keyboard on the front side of control box.
2. **Buying without CPU card:**
   Please connect “keyboard internal cable” and “keyboard connecter on CPU card”. Then, you may plug in keyboard on the front side of control box.
3. **Using motherboard:**
   Please connect the “PS 2 port on the motherboard” and “mini-DIN port on the rear side of control box” with cable provided. Then, you may plug in keyboard on the front side of control box.

Chapter 3 Maintenance

3.1 General

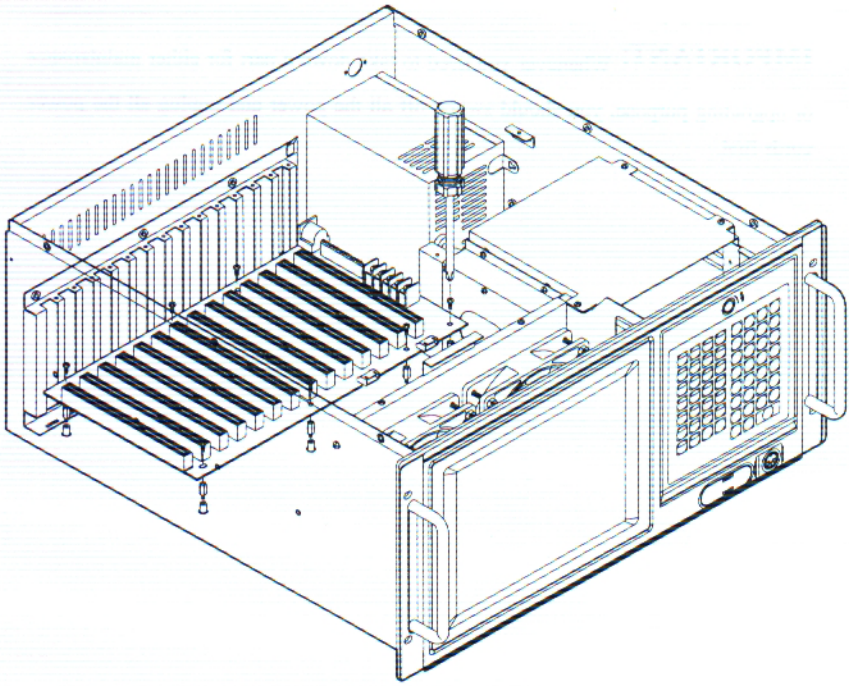
There are other essential parts which have not mentioned of so far, but you will need to know them sooner or later during the operation for the purpose of either maintenance or upgrading. The following sections will introduce to you one by one.

IMPORTANT: Whenever you need to take down a part for either maintenance or upgrading purpose, you should switch off all the power and unplug all the power cords first.

3.2 Passive Backplane

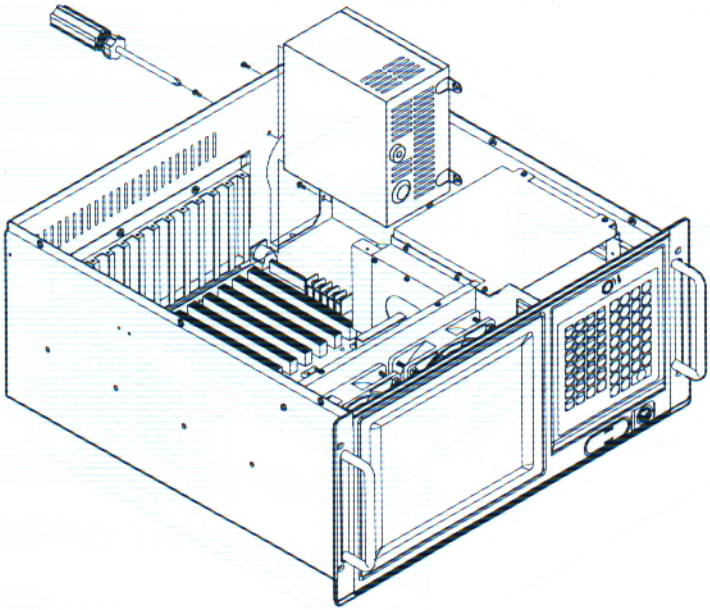
As we said in section 1.1 the chassis come with either an 14 slot ISA-bus or PCI-bus backplane, or for motherboard. When the backplane is involved you need to take it down for purpose of either maintenance or upgrading.

1. Remove all the add-on cards and connecting cords on it
2. Unfasten the 9 screws which fasten it to the bracket behind



3.3 Power suppply

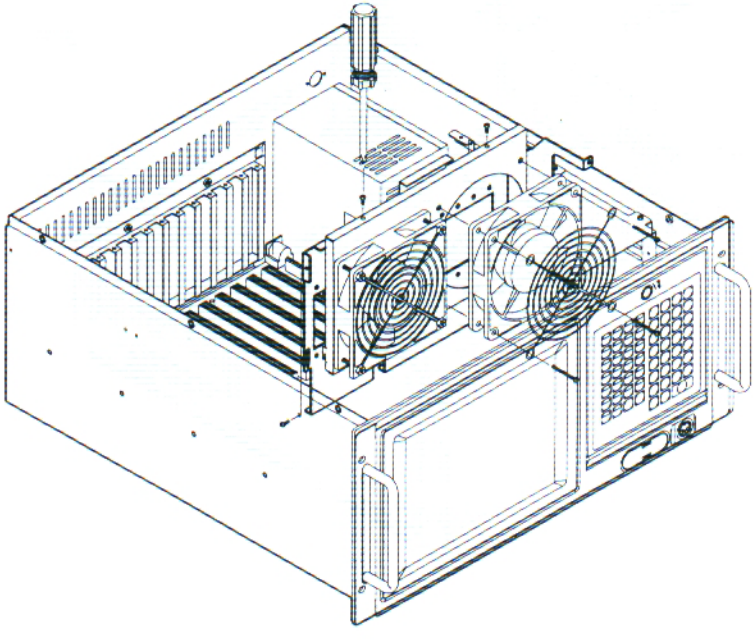
A universal 250W switching power supply is provided in the chassis. It is placed on the back right corner of the chassis with three screws fastening it from outside. You need to unfasten the three screws to take it out.



3.4 Cooling fan

To keep the inside of the chassis cool, two 64 CFM fans are installed on the front left corner of the chassis with two screws fastening them from top within a bracket. You are expected to clean the two fans from time to time.

1. Unfasten the two screws and pull by a handle on the top
2. Unfasten the four screws to strip down the two fans



Appendix A: Power Supply Specification

Power supply constitutes an essential part of the chassis, so we make this section to let you know more about the power supply used in them. It is a universal 250W AC switching power supply (default).

Industrial Features:

- 47-440Hz input frequency
- 85-265 VAC input
- 100% equipped "NIPPON CHEMI-CON" super high reliability aluminum electrolytic capacitors
- 60KHz switching frequency control IC inside
- -20°C to 70°C operating temperature
- High precision and stable DC outputs for long term operation

General Specifications

Ripple and Noise: The peak to peak ripple and noise for each output is less than 1% at rated load. Measuring is done by 15MHz brand width limited oscilloscope and terminated at each output with a 47 uF capacitor.

Line Regulation: The line regulation for each output is less than +/-1% while measuring at load and +/-10% of input voltage changing.

Load Regulation: The output voltage load regulation is less than the values in the following table by changing each output load +/-40% from 60% rated load, and keep all other outputs at 60% rated load.
Output # +5V: +/-3% +12V: +/-5%

Hold-up Time: Hold-up time is longer then 16ms by measuring from the last AC line changing pulse to the point that +5V drop down to +4.75V

Output Protection: The built-in over voltage protection circuit will shut down the outputs to prevent damaging external circuits. The trip point of crowbar circuit is around 5.9V to 7.0V. The power supply will go into latch off against short circuit or over load conditions, and will have to OFF and ON the input line to restart the power supply.

Efficiency: The efficiency is higher than 73% by measuring at normal line and rated load.

Safety: Designed to meet the following standards

UL 478, 1012, 1950 D3

TUV EN60 950

CSA 22.2 No.234

EMI: Designed to meet the following standards

FCC docket 20780 curve "B"

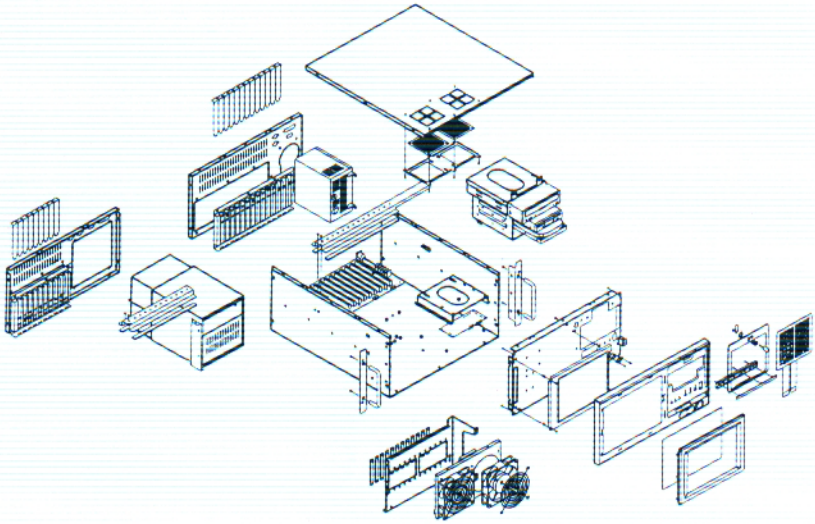
EN50081-2: CISPP22 "B"

Operating Temperature: -20°C to 70°C

Storage Temperature: -30°C to 85°C

Power Supply Selection Table

Output spec. at 50°C

Model	Input Voltage	Max. Output Current	
		+5V	+12V
Universal/250W	85-265VAC	22A	7A
24VDC/250W	19-30VDC	25A	6A
12VDC/160W	8.5-16VDC	20A	4A

Appendix B: Exploded diagram