PAC-125G
10-slot Wall-mount Chassis
Version: 2.2

Quick Installation Guide

ABOUT THE PAC-125G

The 10-slot, heavy-duty steel PAC-125G compact wall-mount industrial chassis is designed to operate reliably in industrial environments where it will be exposed to dust, wide temperature variations, and shocks and vibrations, among other things.

SPECIFICATIONS

- **Form Factor:** 10-slot compact chassis
- **SBC Form Factor:** Full-size, slot CPU cards
- **Construction:** Metal
- **Slots Number:** 10-slot
- **Cooling:** 1 x 8cm fan
- **Drive Bays:**
  - o 2 x 5.25" Optical drive bays
  - o 1 x 3.5" Front accessible FDD (floppy disk drive) or HDD (hard disk drive) bay
  - o 1 x 3.5" Internal HDD bay
- **Dimensions (DxWxH):**
  - o 420mm x 321mm x 176mm
- **Operating Temperature:** 0~40°C
- **Relative Humidity:** 5~95%
- **Vibration:**
  - o 5 to 17Hz, 0.1" double amplitude displacement
  - o 17 to 640Hz, 1.5G acceleration peak to peak
- **Shock:** 10G acceleration peak to peak

PACKING LIST

When you unpack the chassis, make sure the following items have been shipped.

- 1 x Quick Installation Guide
- 1 x Power cord
- 2 x Wall-mount plates
- 2 x Long shock absorbers
- 4 x Short shock absorbers
- 2 x Clip nuts
- 1 x Screw set
- 2 x Keys

DETAILS OF INCLUDED SCREWS

The attached screw set includes five screw types. Screws used for chassis installation are shown below.

Peripherals/Parts	Screw Label (refer to the picture above)
5.25" Optical Drives	4
3.5" FDD	5
3.5" HDD	1
Power Supply Unit	1
Wall-mount Bracket	3
Backplane	3
	2

Table 1: Screws for Peripheral/Parts

DIMENSION DRAWING
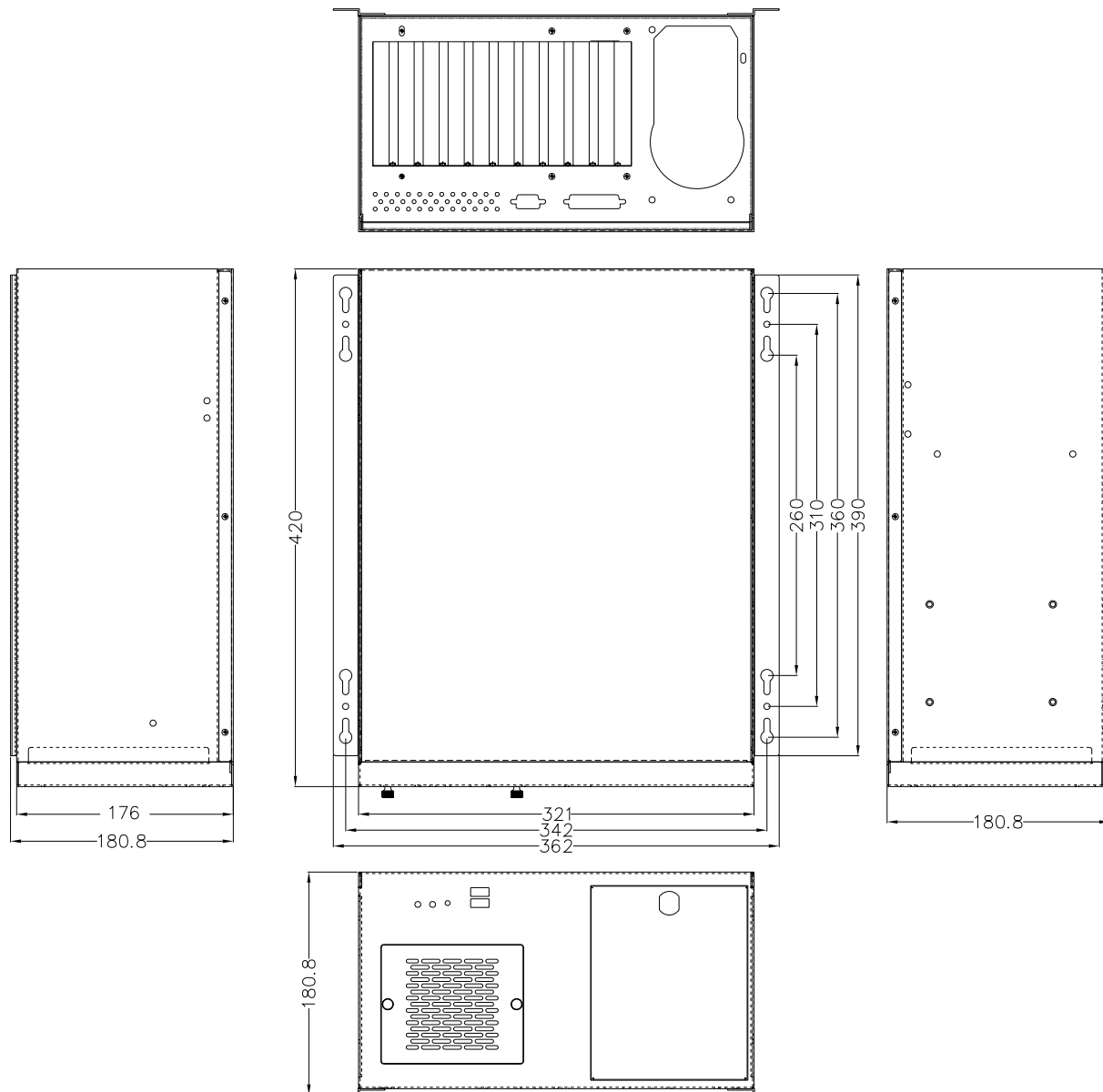
The dimensions of PAC-125G are shown below.

Figure 1: Dimension Drawing (measurement units: millimeter)

INSTALLATION STEPS

To install the PAC-125G chassis, the following installation steps must be completed:

Step 1: Unpack the chassis.

Step 2: Remove the top cover and hold-down clamp.

Step 3: Install the PSU.

Step 4: Install the backplane.

Step 5: Install the disk drives.

Step 6: Install the CPU card.

Step 7: Install the PCI and ISA expansion cards.

Step 8: Connect the cables.

Step 9: Connect the PSU cable and the interface cables.

Step 10: Install the hold-down clamp, shock absorber and the top cover.

Step 11: Install the wall-mount plates.

The installation steps outlined above are described in detail below. Please refer to the relevant section.

STEP 1: UNPACK

The PAC-125G is shipped in a plastic bag that is placed inside a cardboard box. The items are also shipped with the chassis. When you unpack the chassis you must:

- Make sure all the items listed in the **PACKING LIST** section are present.
- Make sure the chassis has not been damaged in any way.

STEP 2: REMOVE THE TOP COVER AND HOLD-DOWN CLAMP

STEP 2.1: REMOVE THE TOP COVER

The top cover is secured by six retention screws on both sides, three on each side of the chassis. To remove the top cover, please follow the steps below.

Step 1: Remove all six top cover retention screws, three retention screws from each side of the chassis.

Figure 2: Top Cover Retention Screws

Step 2: Slide the cover backwards and then lift the cover up gently.

Figure 3: Remove the Top Cover

STEP 2.2: HOLD-DOWN CLAMP REMOVAL

Detach the hold-down clamp by removing the two screws on each side of the chassis and lift the hold-down clamp off the chassis.

Figure 4: Remove the Hold-Down Clamp

STEP 3: INSTALL THE POWER SUPPLY UNIT (PSU)

Once the top cover and hold-down clamp have been removed, the PSU must be installed. Compatible IEI PSUs are listed in **table 2** on *page 4*.

Model No.	Input	Type	Watt	Output Range						
				+3.3V	+5V	+12V1	+12V2	-5V	-12V	+5Vsb
ACE-925AP-U-RS	AC	AT	250W	N/A	22A	11A	N/A	0.5A	0.7A	N/A
ACE-940AP-RS	AC	AT	390W	N/A	40A	15A	N/A	0.3A	0.8A	N/A
ACE-832AP-RS	AC	ATX	300W	28A	30A	15A	N/A	0.3A	0.8A	2A
ACE-841AP-S-RS	AC	ATX	400W	28A	33A	20A	N/A	0.5A	1A	2A
ACE-850AP-RS	AC	ATX	500W	27A	29A	18A	18A	0.3A	0.8A	2A

Table 2: Compatible IEI PSUs.

The PSU is installed at the rear of the chassis and secured to the chassis with six retention screws, four retention screws at the rear of the chassis and two on the right side of the chassis. To install a compatible PSU, please follow the steps below:

Step 1: Slide the two clip nuts onto the two clips on the cable side of the PSU.

Figure 5: Slide Two Clip Nuts onto the Two Clips of PSU

Step 2: Install the PSU to the rear of the chassis. Make sure the power socket and the PSU fan face outwards.

Step 3: Secure the PSU to the rear of the chassis with six retention screws. To do this, insert four retention screws from the rear and two retention screws from the right side of the chassis.

Figure 6: PSU Retention Screws

STEP 4: BACKPLANE INSTALLATION

The IEI backplanes listed below are compatible with the PAC-125G chassis.

Model No.	SBC Type	PCI	ISA	PSU
BP-10S-RS-R30	ISA	0	10	AT
PCI-10S-RS-R30	PICMG 1.0	4	5	ATX/AT
PX-10S-RS-R30	PICMG 1.0	7	3	ATX/AT
IP-10S-RS-R30	PCISA	4	5	ATX/AT
IPX-9S-RS-R30	PCISA	8	0	ATX/AT

Table 3: Compatible Backplane Modules

To install a compatible backplane, please follow the instructions below:

Step 1: Insert eleven copper pillars into the eleven predrilled elevated screw holes in the base of the chassis.

Figure 7: Locations of Copper Pillars

Step 2: Mount the backplane onto the copper pillars. Make sure the backplane screw holes are aligned with the screw holes in the copper pillar.

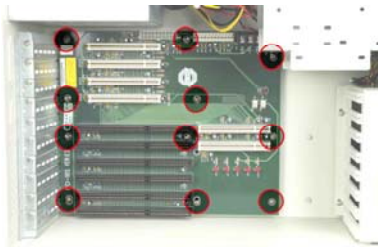**Step 3:** Secure the backplane to the base of the chassis with eleven retention screws.

Figure 8: Backplane Retention Screws

STEP 5: DISK DRIVE INSTALLATION

The PAC-125G chassis has the capacity for two 5.25"
Optical drives, one 3.5" front accessible drive (FDD or HDD)
and one 3.5" internal HDD.

To install the drives please follow the steps outlined in the
sections below.

STEP 5.1: DRIVE BRACKET REMOVAL

To remove the drive bracket, please follow the steps below:

Step 1: Open the front panel cover.

Step 2: Remove the five drive bracket retention screws,
four from the right side of the chassis and one
from the front panel.

Figure 9: Drive Bracket Retention Screws

Step 3: Slide the drive bracket backwards and lift the
drive bracket up gently.

STEP 5.2: 3.5" INTERNAL HDD INSTALLATION

To install a 3.5" HDD into the drive bracket, please follow
the steps below:

Step 1: Mount a 3.5" HDD onto the drive bracket. Make
sure the HDD PCB board is against the left side
of the drive bracket, and the power connector and
IDE/SATA connector are at the rear of the drive
bracket.

Step 2: Align the retention screw holes in the 3.5" HDD
with the retention screw holes in the 3.5" internal
HDD drive bay.

Step 3: To secure the HDD to the drive bracket, insert
four retention screws, two from each side of the
HDD.

Figure 10: 3.5" Internal HDD Retention Screws

STEP 5.3: 3.5" FRONT ACCESSIBLE FDD/HDD INSTALLATION

To install a 3.5" drive (FDD or HDD) into the drive bracket,
please follow the steps below:

Step 1: Remove the 3.5" drive bay front cover by
removing the two front cover retention screws,
one from each side of the front cover.

Figure 11: 3.5" Drive Bay Front Cover Retention Screws

Step 2: Slide a 3.5" drive (FDD or HDD) into the 3.5"
drive bay.

Step 3: Align the retention screw holes in the 3.5" drive
(FDD or HDD) with the retention screw holes in
the 3.5" drive bay.

Step 4: To secure the 3.5" drive (FDD or HDD) to the 3.5"
drive bay, insert four retention screws, two on
each side of the 3.5" drive (FDD or HDD).

Figure 12: FDD Retention Screws

STEP 5.4: 5.25″ OPTICAL DRIVE INSTALLATION

To install a 5.25" drive into the drive bracket, please follow the steps below:

Step 1: Remove the 5.25" drive bay front cover. To do this, remove the two front cover retention screws, one from each side of the front cover.

Figure 13: 5.25″ Drive Bay Front Cover Retention Screws

Step 2: Slide a 5.25" optical drive into the 5.25" drive bay. Make sure the power connector and the IDE/SATA connector are at the rear of the drive bracket.

Step 3: To secure the 5.25" optical drive to the 5.25" drive bay, insert four retention screws, two from each side of the drive bay.

Figure 14: 5.25″ Optical Drive Retention Screws

STEP 5.5: DRIVE BRACKET REINSTALLATION

After the disk drives have been properly installed into the drive brackets, reinstall the drive brackets into the chassis. To reinstall the drive brackets into the chassis please follow the steps below:

Step 1: Place the drive bracket into the chassis. Make sure the power connector and the IDE/SATA interface connector are all facing the rear of the chassis, and the clip at the bottom of the bracket slides into the bracket at the base of the chassis.
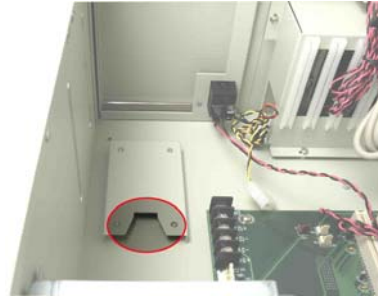

Figure 15: Bottom Clip of the Drive Bracket

Figure 16: Bracket at the Base of the Chassis

Step 2: Secure the drive bracket to the chassis by reinserting the five previously removed retention screws, four from the right side of the chassis and one from the front panel.

STEP 6: CPU CARD INSTALLATION

To install a CPU card please follow the instructions below:

Step 1: Remove the slot cover at the back of the chassis. To do this, remove the slot cover retention screw at the top of the slot cover.
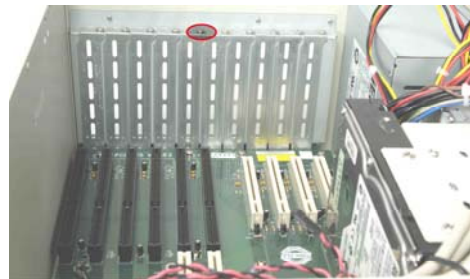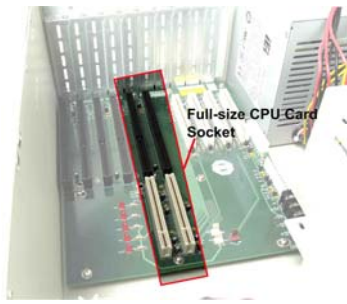

Figure 17: Remove the Slot Cover Retention Screw

Step 2: Slide a full-size CPU card into the socket on the backplane reserved for the CPU card.

Figure 18: CPU Card Sockets

Step 3: To secure the CPU card, reinsert the previously removed slot cover retention screw.

STEP 7: PCI/ISA EXPANSION CARD INSTALLATION

The PAC-125G chassis supports up to 9 PCI/ISA expansion cards. If you wish to install a PCI expansion card or an ISA expansion card please follow the instructions below.

Step 1: Remove the slot cover at the back of the chassis. To do this, remove the slot cover retention screw at the top of the slot cover.

Step 2: Slide the PCI/ISA expansion card into a reserved PCI/ISA socket on the backplane.

Step 3: To secure the PCI/ISA expansion card, reinsert the previously removed slot cover retention screw.

STEP 8: CABLING

There are buttons, LEDs and ports on the front panel of the PAC-125G chassis.

- o 1 x Power LED
- o 1 x HDD LED
- o 1 x Power switch
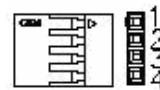- o 1 x Reset button
- o 2 x USB cables

These components are all connected to the CPU card with cables. To correctly connect these cables, please refer to the technical documentation that came with your CPU card. The connectors that are provided with the chassis are listed below.

No.	Name
1	Power LED cable
1	Reset Switch cable

1	HDD LED cable
1	Power switch cable
2	USB cable

Table 4: Chassis Connectors

The pin definitions for the USB cable are shown below.

PIN No.	Description	Color
1	+5V	Red
2	D-	Dark Yellow
3	D+	Yellow
4	GND	Brown

Table 5: Pin Definitions of USB Cable

STEP 9: PSU CABLE AND INTERFACE CABLE CONNECTIONS

To connect the power and ribbon cables please follow the instructions below.

Step 1: Connect the PSU cables from the PSU to the backplane, full-size CPU card, HDD, FDD, cooling fans and optical drives power connector.

Step 2: The drive interface connectors must be connected to the CPU card.

STEP 10: INSTALL THE HOLD-DOWN CLAMP, SHOCK ABSORBER AND THE TOP COVER.

After you have completed the above procedures, the hold-down clamp, shock absorbers and top cover can be installed. To do this, please follow the steps outlined below:

STEP 10.1: HOLD-DOWN CLAMP REINSTALLATION

To reinstall the hold-down clamp, please follow the steps below:

Step 1: Reinstall the hold-down clamp. Make sure the end with further apart retention screw holes is installed on the right side of the chassis.

Figure 19: Right Side Further Apart Retention Screw Holes

Step 2: Align the retention screw holes on both ends of the hold-down clamp with the retentions screw holes in both sides of the chassis.

Step 3: To secure the hold-down clamp to the chassis, insert the four previously removed hold-down clamp retention screws.

STEP 10.2: SHOCK ABSORBER INSTALLATION

The PAC-125G chassis is shipped with two long shock absorbers and four short shock absorbers used for securing PCI/ISA expansion cards. To install a shock absorber, please follow the instructions below:

Step 1: Choose a shock absorber with proper length according to the height of the installed PCI/ISA card.

Step 2: Press the rubber of the shock absorber against the PCI/ISA card.

Step 3: Align the retention screw hole in the shock absorber with the predrilled retention screw hole in the hold-down clamp.

Step 4: Insert one retention screw to secure the shock absorber to the hold-down clamp.
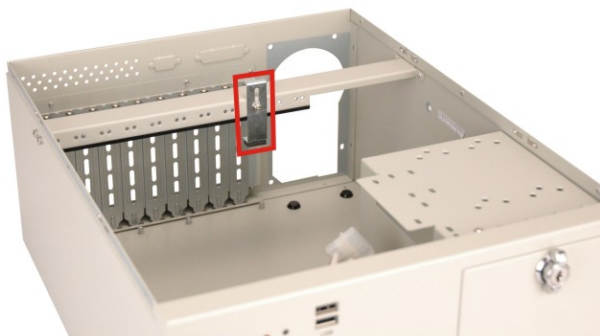

Figure 20: Shock Absorber

STEP 10.3: TOP COVER REINSTALLATION

Slide the cover back over the chassis and reinsert the six previously removed retention screws.

STEP 11: WALL-MOUNT PLATES INSTALLATION

Two wall-mount plates are shipped with the PAC-125G chassis. The wall-mount plates are installed on the sides, at the bottom of the chassis. Each plate is secured to the chassis by three retention screws. To install the wall-mount plates, please follow the steps below:

Step 1: Align the retention screw holes on the side of the chassis with the retention screw holes in the wall-mount plate.

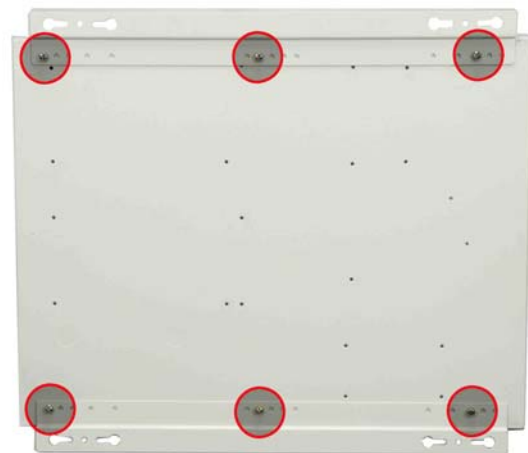**Step 2:** Insert three retention screws for each wall-mount plate.

Figure 21: Wall-mount Plate Retention Screws

CHASSIS MAINTENANCE

■ **FAN REPLACEMENT**

 NOTE:

Please ensure that the power of the computer is switched off before you replace a fan.

There is one 8 cm cooling fan inside the PAC-125G chassis. To replace a fan, please follow the steps below:

Step 1: Loosen the fan filter bracket thumbscrews from the front panel.

Figure 22: Fan Filter Bracket Thumbscrews

Step 2: Unplug the power cable that is connected to the fan.
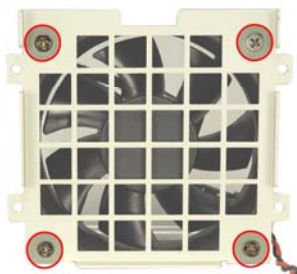

Figure 23: Unplug the Fan Power Cable

Step 3: Remove the four fan filter bracket retention screws on the four corners of the fan filter bracket from the inside.

Figure 24: Fan Filter Bracket Retention Screws

Step 4: Remove the four retention screws that attach the fan to the fan filter plate.

Figure 25: Fan Retention Screws

Step 5: Replace the fan and reinsert the four previously removed retention screws to secure the fan to the fan filter plate.

Step 6: Reinstall the fan with the fan filter plate to the fan filter bracket

Step 7: Reconnect the fan power cable.

Step 8: Reinstall the fan filter bracket and fasten the thumbscrews.

■ **FAN FILTER REPLACEMENT**

To replace the fan filter, please follow the steps below:

Step 1: Pull the fan filter pad out of the space between the fan filter plate and fan filter bracket.

Figure 26: Pull the Fan Filter Pad Out

Step 2: Insert a new fan filter pad in the space between the fan filter plate and fan filter bracket.

Step 3: Reinstall the fan filter bracket and fasten the two thumbscrews to secure the fan filter bracket to the chassis.

■ **CABINET INSTALLATION**

Supporting rails, rack trays, or slide rails can be implemented using the mounting holes on the sides of the chassis. The four mounting holes in the two wall mount plates on the sides of the chassis are shown below.

Figure 27: Wall Mounting Holes

NOTE:

If the system is running critical applications, please find the appropriate time to backup data and properly shut down the system.