

P1/P1P PC/104 Installation Guide

Introduction

The PC/104 backshell expansion covers are designed to protect P1 and P1 Pentium (P1P) PC/104 expansion cards (8-bit and 16-bit, +5V, +12V only), and to fit securely on the back of the unit. These covers are strong, vented enclosures with detachable slots on the side panels.

There are two available PC/104 expansion kits. Each kit includes an expansion cover with removable side panels, securing screws, all necessary mounting hardware, and a grounding wrist strap. This document provides instructions for installing the single, and double/triple PC/104 expansion covers to the back of the P1 and P1P PowerStation.

Note You can install up to three PC/104 expansion cards on the PowerStation, provided that the cards do not exceed the total available power to the expansion cards. See *Table 1*.

PowerStation	PC/104 Card Specifications
P1	Supports 8-bit and 16-bit PC/104 expansion cards only +5V @ 0.75A +12V @ 0.1A
P1 Pentium (P1P)	Supports a 16-bit PC/104 subset <ul style="list-style-type: none">+5V @ 1.25 A+12V @ 0.1A Note: -5V and -12V are not supplied.

Table 1 PC/104 Expansion Card Specifications

Before you begin, read the section on *Electrostatic Discharge Precautions* on page 2.

Electrostatic Discharge Precautions

Modern integrated electronic devices, especially CPUs and memory chips, are extremely sensitive to electrostatic discharges (ESD) and fields. Before you install a PC/104 expansion cover, be sure to follow these precautions to protect you and the PowerStation from harm resulting from ESD.



1. To avoid electric shock, always disconnect the power from the PowerStation before you remove the backshell cover or separate the backshell from the front panel. Do not touch any components of the CPU card or other cards while the PowerStation is on.
2. Disconnect power before making any hardware configuration changes. The sudden rush of power as you connect a jumper or install a card may damage sensitive electronic components.
3. Only handle internal components in an ESD safe location using appropriate grounding methods.
 - Always ground yourself to remove any static charge before you touch the CPU card.
 - Be particularly careful not to touch the chip connectors.
 - Keep the adapter in its anti-static packaging when it is not installed in the PowerStation, and place it on a static dissipative mat when you are working on it.
 - Wear a grounding wrist strap for continuous protection.

Installing a PC/104 Card/Cover

The following steps include instructions for installing one PC/104 card or the cover for one PC/104 card.

Installing One PC/104 Card

Follow these steps to install a single PC/104 card:

1. Turn off the PowerStation.
2. Disconnect the power source from the PowerStation.

Important The PC/104 expansion cover kit includes an ESD wrist strap. To prevent static discharge, you must wear this wrist strap, or an equivalent one, connected to a known earth ground.

3. If you plan to install a cover, copy the PowerStation serial number from the backshell label onto the label located on the expansion cover.
4. Select one of the following:

PowerStation	Action
P1	Remove the two fastening screws that secure the original metal PC/104 protective cover. Note: This will expose the PC/104 connector and the two pre-installed standoffs on the cover.
P1 Pentium (P1P)	Remove the four fastening screws from the back of the PowerStation shell.

5. Choose one of the following:

PowerStation	Action
P1	Install the 2 short standoffs included with the PC/104 cover kit into the empty screw holes on the back of the P1.
P1 Pentium (P1P)	Note: The short standoffs are in the accessory kit that came with the P1 Pentium. Install the 4 short standoffs included with the PC/104 cover kit into the empty screw holes on the back of the P1.

Important Be careful not to overtighten the standoffs.

6. Install the PC/104 card securely onto the PC/104 connector.
The PC/104 card should rest evenly on the standoffs.

Important CTC Parker Automation recommends using PC/104 expansion covers to protect the PC/104 card.

7. Choose one of the following:

PC/104 Card Cover	Action
Do not install a cover	<ul style="list-style-type: none">• Fasten the PC/104 card to the standoffs with the 4 metric screws provided with the card.• Continue with step 8.
Install a cover	Skip to <i>Installing the PC/104 Card Cover</i> .

8. Perform any cable connections or further setup required for the PC/104 card.
9. Mount the PowerStation back in its enclosure.

Installing the PC/104 Card Cover

Follow these steps to install the expansion cover for a single PC/104 card:

1. Snap off the detachable plastic slots of the PC/104 cover side panels, as needed, for any PC/104 card connector(s) to show through the side panel(s).
2. Place the new PC/104 expansion cover on the backshell and align over the PC/104 card. The cover will align with the standoffs in only one orientation for securing to the backshell; the solid side of the cover should face the top of the unit
3. Secure the PC/104 cover to the backshell using the four longer, slotted screws provided with the PC/104 expansion cover kit.
4. Perform any cable connections or further setup required for the PC/104 card.
5. Mount the PowerStation with its expansion cover back in its enclosure.

Note Access to the Compact Flash (CF) card on the P1 PowerStation is restricted once the PC/104 expansion cover is installed on the PowerStation. If you wish to remove or replace the CF card on the PowerStation, the PC/104 cover will need to be removed.

The expansion cover will not restrict access to the CF on the P1 Pentium PowerStation

Installing Multiple PC/104 Cards or the Cover

Installation of a PC/104 Expansion Cover for two cards is similar to the installation of the cover for one card, except for a few additional steps.

Installing a Second or Third PC/104 Card

Follow these steps to install a second or third PC/104 card:

1. Turn off the PowerStation.
2. Disconnect the power source from the PowerStation.

Important The PC/104 expansion cover kit includes an ESD wrist strap. To prevent static discharge, you must wear this wrist strap, or an equivalent one, connected to a known earth ground.

3. If you plan to install a cover, copy the PowerStation serial number from the backshell label or the single expansion cover onto the new expansion cover.
4. Fasten the four long standoffs provided to the previously installed PC/104 card.
5. Align the pins on the new PC/104 card with the connector on the previously installed PC/104 card.
6. Press down until the PC/104 card is firmly seated.

The screw holes on the second PC/104 card should align with the longer set of standoffs.

Warning If you are installing a PC/104 card on top of a MachineLogic Control Adapter, be sure that no metallic parts of the card are touching the relay of the Control Adapter (metallic box on bottom of the card). Otherwise, a short may occur and damage the MachineLogic Control Adapter.

If you are installing a PC/104 MachineLogic Control Adapter with a UCS adapter, it must be installed last (top card) in order for the card to fit properly within the expansion cover.

Important CTC Parker Automation recommends using a PC/104 expansion cover to protect the PC/104 card.

7. Complete one of the following:

PC/104 Card Cover	Action
Do not install a cover	<ul style="list-style-type: none">• Fasten the PC/104 card to the standoffs with the 4 metric screws provided with the card.• Continue with step 8.
Install a cover	Skip to <i>Installing a Second or Third PC/104 Card</i> .

8. Perform any cable connections or further setup required for the PC/104 card.
9. Mount the PowerStation in its enclosure.

Installing a Cover over Multiple PC/104 Cards

Follow these steps to install the expansion cover for two or three cards:

1. Fasten 4 long standoffs to the previously installed PC/104 card . See *Figure 1*.

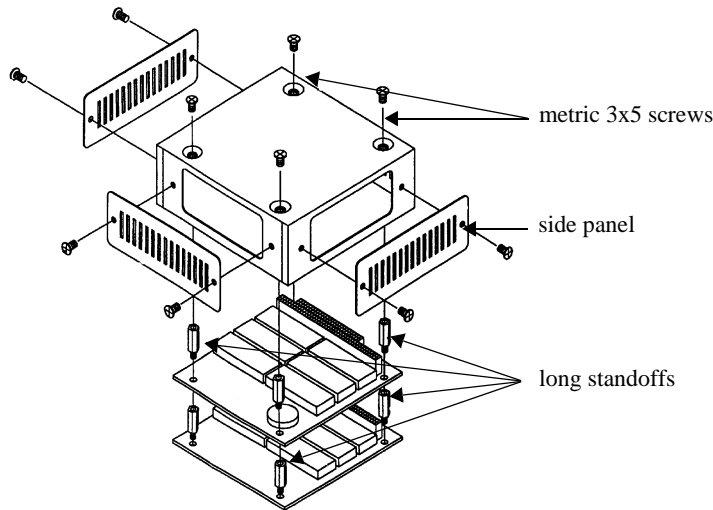


Figure 1 PC/104 Cards and Cover

2. Remove the detachable side panels of the PC/104 cover, as needed, to allow the connectors of the PC/104 cards to show through the side panel.

3. Place the new PC/104 expansion cover on the backshell and align over the PC/104 card. Make sure the non-detachable side of the cover is facing the top of the unit.
4. Secure the PC/104 cover to the backshell using four metric 3x5 (M3x5) screws provided with the PC/104 expansion cover kit.
5. Perform any cable connections or further setup required for the PC/104 card.
6. Mount the PowerStation with the expansion cover back in its enclosure.

Note Access to the Compact Flash (CF) card on the P1 PowerStation is restricted once the PC/104 expansion cover is installed on the PowerStation. If you wish to remove or replace the CF card on the PowerStation, the PC/104 cover will need to be removed.

The expansion cover will not restrict access to the CF on the P1 Pentium PowerStation

