

**The information in this document is also available
in the MMC for PC Hardware Manual.**

13 MMC for PC Option Modules

13.1 General

The MMC for PC will accept a MMC for PC Option Module for network communications, either DeviceNet, Profibus or Digital Line Shaft (DLS). The board is mounted 0.8" above the MMC for PC board. When the MMC for PC Option Module is mounted on the MMC for PC board, the combined unit will occupy two slots. The board is located so the network connector will be positioned in a slot aperture of the host PC.

NOTE
Throughout this document, "MMC for PC Option Module" is a generic term that refers to any communication module (DeviceNet, Profibus or Digital Line Shaft (DLS)) that can be installed on the MMC for PC board. It does not refer to a specific type of communication network or module.

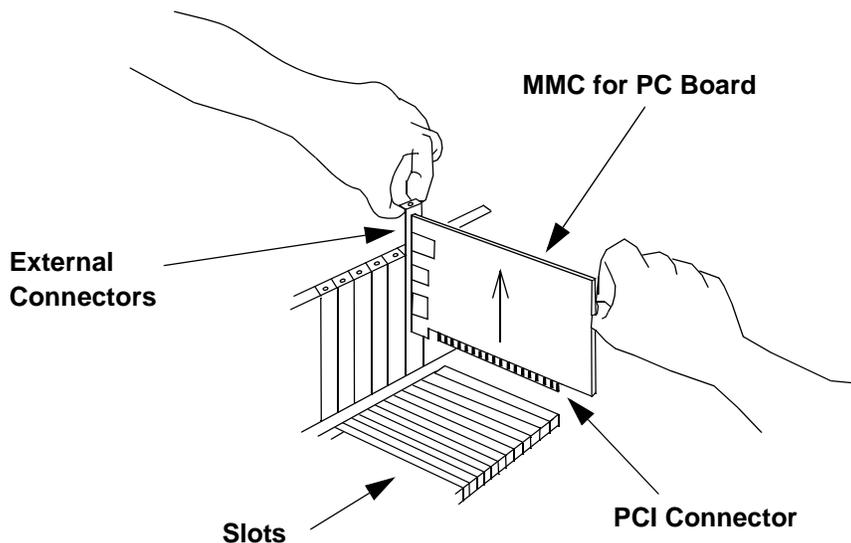
13.2 Mounting the MMC for PC Option Module

1. Shut down and turn off your computer, monitor and all attached peripherals.
2. Unplug each component from the wall electrical outlet or surge protector/power strip.
3. Disconnect all power to the computer and MMC for PC control system.

WARNING	
	<p>Before you mount the MMC for PC Option Module onto the MMC for PC board in the computer, make sure that power is disconnected from the computer and to the devices the MMC for PC is wired to.</p> <p>Make sure the computer is adequately grounded before mounting the MMC for PC Option Module. Any attempt to operate or service the computer without adequate ground may result in serious personal injury and/or damage to the MMC for PC board and control system.</p>

4. Remove the computer cover as described in the documentation for your specific computer.
5. Locate the MMC for PC board.
6. At the back of the computer, remove the screw that secures the MMC for PC board chassis to the back of the computer frame.
7. Remove the MMC for PC board from the slot. Refer to Figure 1 on page 2.
8. Carefully pull the board straight up until the board is completely removed from the slot.

Figure 1: Removing the MMC for PC Board



9. Remove the MMC for PC Option Module from its anti-static bag.

STATIC ELECTRICITY PRECAUTIONS

The MMC for PC board, the MMC for PC Option Module and the internal components of the PC are sensitive to static electricity. The following precautions reduce the possibility of damaging these components:

Wear a grounding wrist strap and attach the ground clip to the computer's metal frame.

Before handling the MMC for PC board or the MMC for PC Option Module or touching anything inside the PC, discharge your body's static electric charge by touching a grounded (earthed) surface. If the PC is connected to a grounded outlet, you can do this by touching the outside metal piece of the PC chassis.

Do not remove the MMC for PC Option Module from its antistatic bag until you are ready to install it.

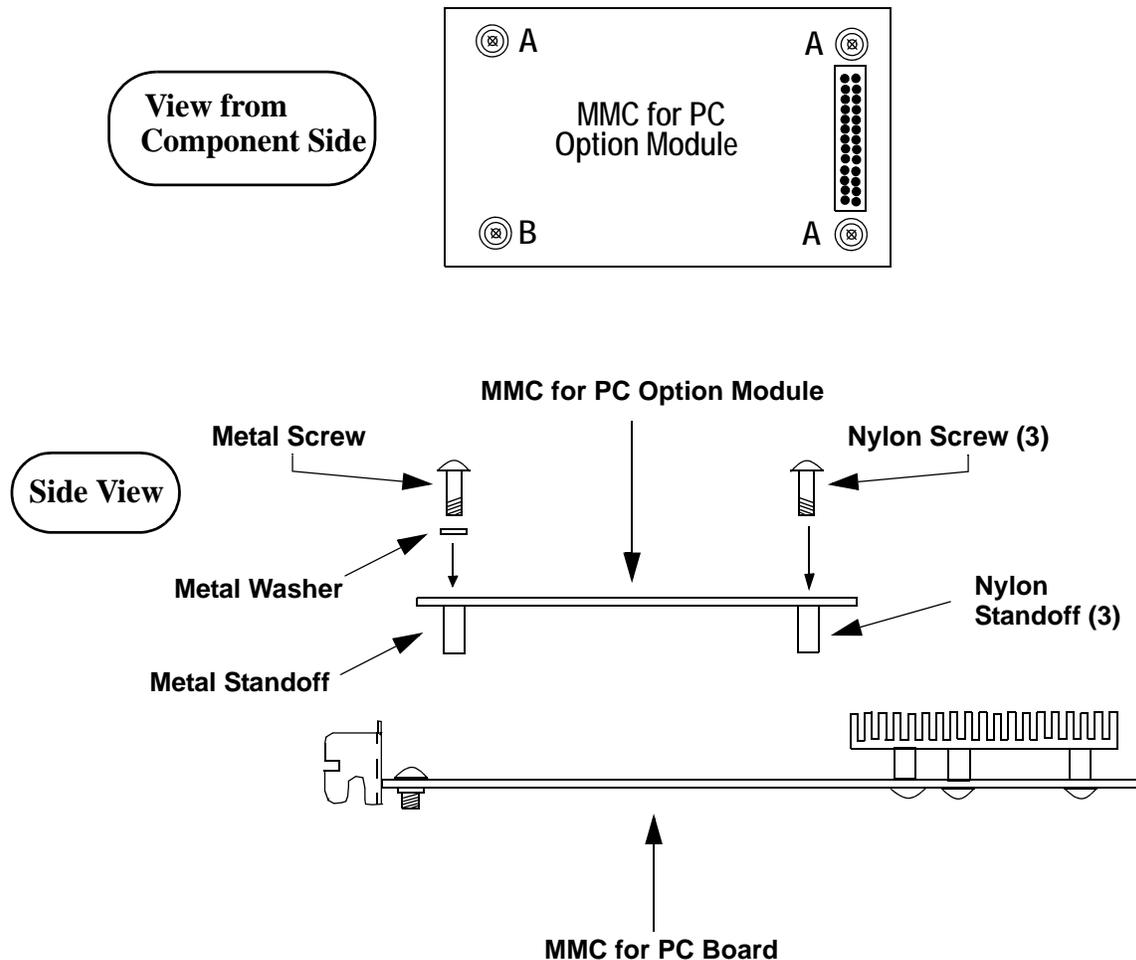
When removing the module from the anti-static bag, hold it by the edges. Avoid touching components on the module.

Do not slide the module over any surface.

Avoid plastic, vinyl and styrofoam in your work area.

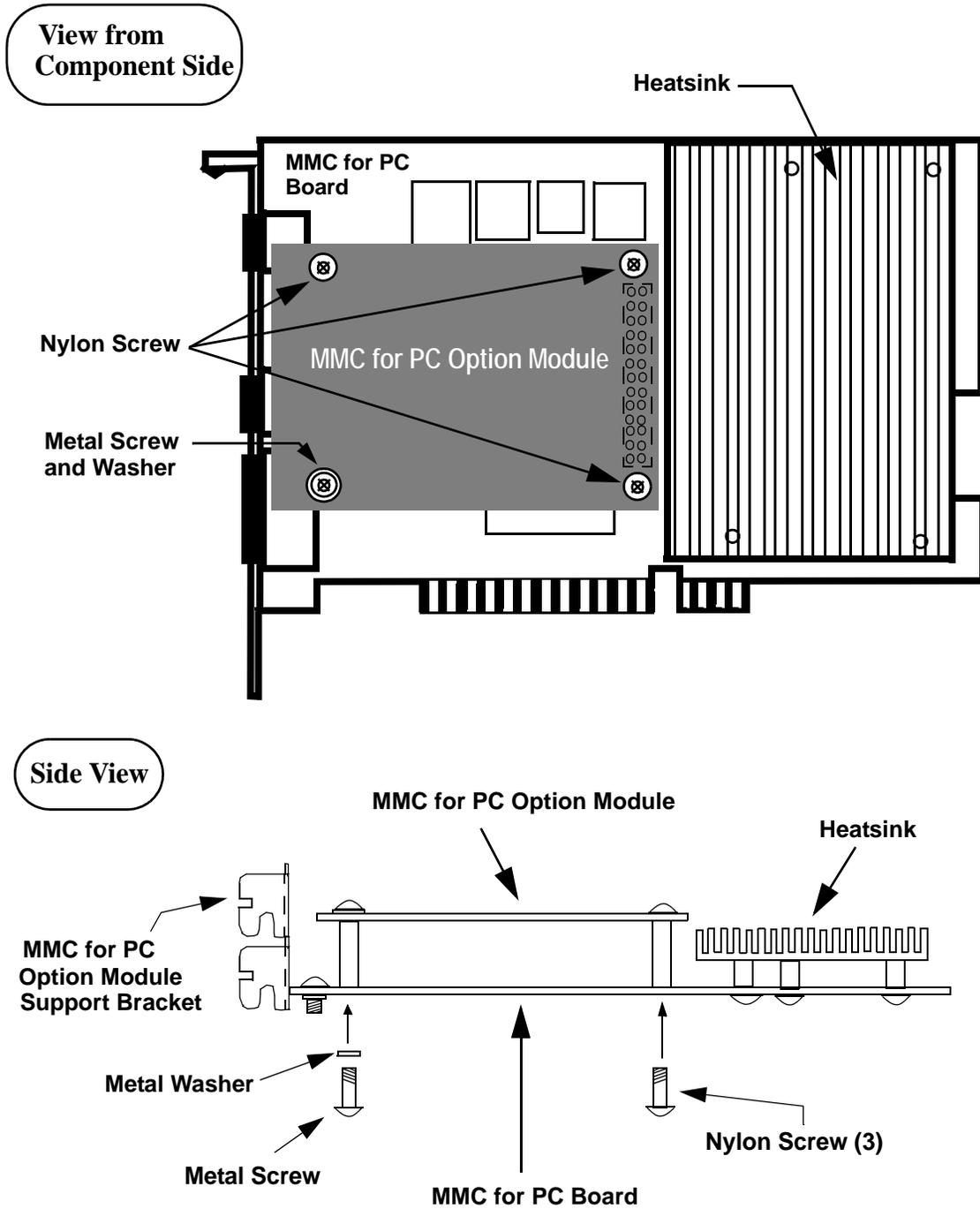
After you remove the MMC for PC Option Module from the MMC for PC board, immediately place it in an antistatic bag until it is used again.

Figure 2: Positioning MMC for PC Option Module on the MMC for PC Board



10. Refer to Figure 2 on page 4. At the three locations marked “A”, place a *nylon* standoff on the solder side of the MMC for PC Option Module (on the DLS module if you are installing both a DLS module and a DeviceNet module) and secure the standoff to the module using a 4-40 x 1/4" nylon screw inserted from the component side of the module.
11. Refer to Figure 2 on page 4. At the location marked “B”, place a *metal* standoff on the solder side of the MMC for PC Option Module and secure the standoff to the module using a #4 star washer and a 4-40 x 3/8" *metal* screw inserted from the component side of the module.
12. Refer to Figure 2 on page 4. Position the MMC for PC Option Module on the component side of the MMC for PC Board. Make sure that the connector on the MMC for PC Option Module is properly aligned with the connector on the MMC for PC board.

Figure 3: Attaching MMC for PC Option Module to the MMC for PC Board



13. Refer to Figure 3 on page 5. Carefully press down on the MMC for PC Option Module so the MMC for PC Option Module standoffs contact the MMC for PC Board and the Header Pin Connector on the MMC for PC Option Module connects to the Header Socket Connector on the MMC for PC board.
14. Refer to Figure 3 on page 5. At the three locations with nylon standoffs, secure the MMC for PC Option Module to the MMC for PC board using 4-40 x 1/4" nylon screws inserted from the solder side of the MMC for PC board.
15. Refer to Figure 3 on page 5. At the location with the metal standoff, secure the MMC for PC Option Module to the MMC for PC board using a #4 star washer and a 4-40 x 3/8" metal screw inserted from the solder side of the MMC for PC board.
16. Carefully tighten all four screws until the MMC for PC Option Module is firmly attached to the MMC for PC board.

IMPORTANT

It is very important that the MMC for PC Option Module is firmly attached to the MMC for PC board. Failure to do so may cause poor connections to external devices or damage to the board. However, do not overtighten the screws. Overtightening the screws may cause damage to the MMC for PC Option Module or the MMC for PC board.

17. The Profibus Module has a support bracket attached at the factory, the DeviceNet Module and the DLS Module do not. If you are installing a DeviceNet Module or a DLS Module, you must install the supplied support bracket using the screw provided. Make sure the screw is firmly tightened.
Note: If a DeviceNet module is being mounted on top of the DLS module, see "Mounting a DeviceNet Module to a DLS Module" on page 7.
18. Insert the MMC for PC board back into the computer and secure the bracket with the mounting screw. If you are installing a Profibus Module, also secure the Module Support Bracket with a screw. Make sure all screws are firmly tightened.
19. Reattach and secure the screws for the computer cover.
20. Plug in all power cords and turn on the monitor. Turn on the computer. If you do not get the proper start-up display, check all connections and make the necessary changes.

13.3 Mounting a DeviceNet Module to a DLS Module

Figure 4: DLS Module Attached to MMC for PC Option Module

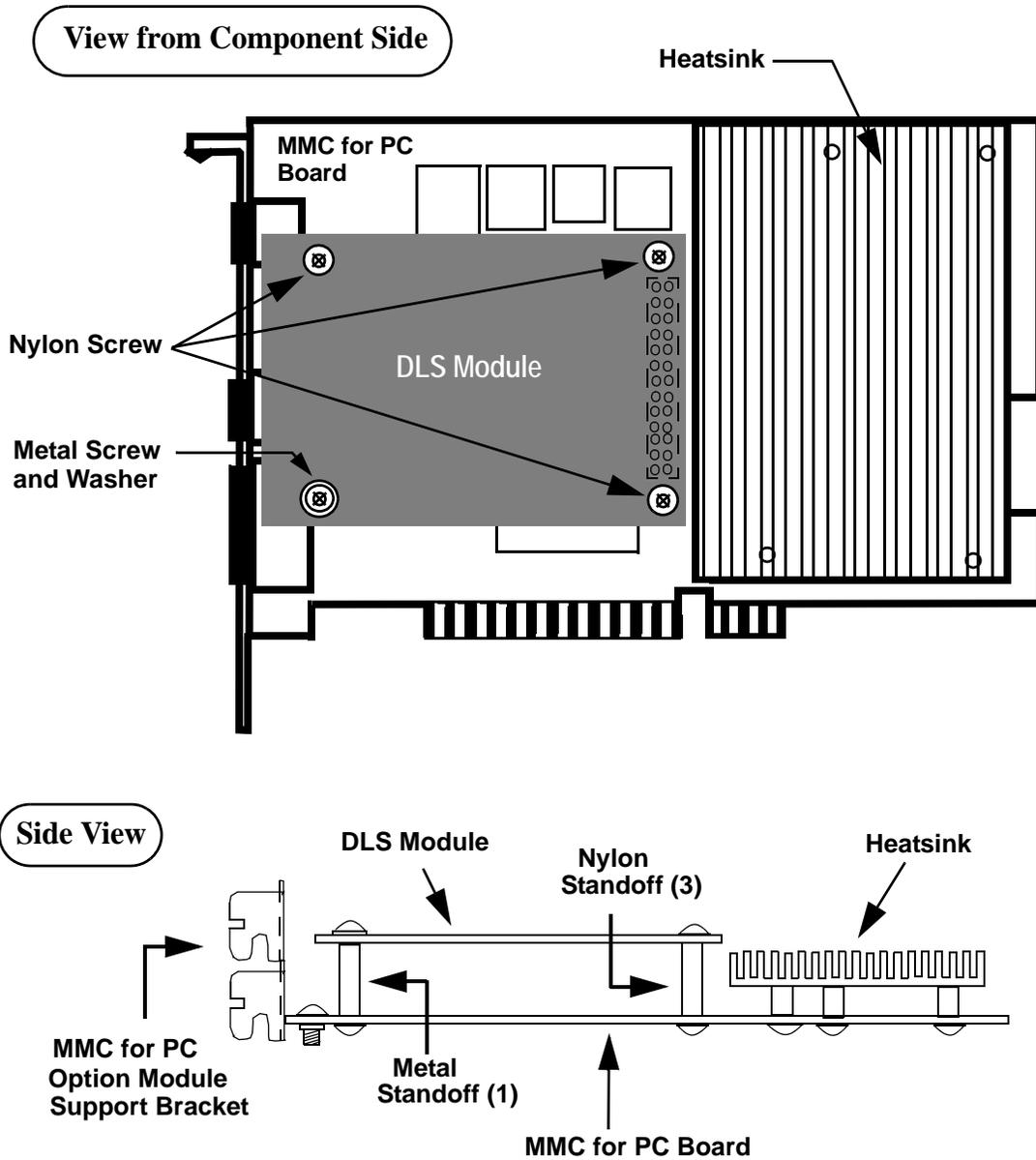
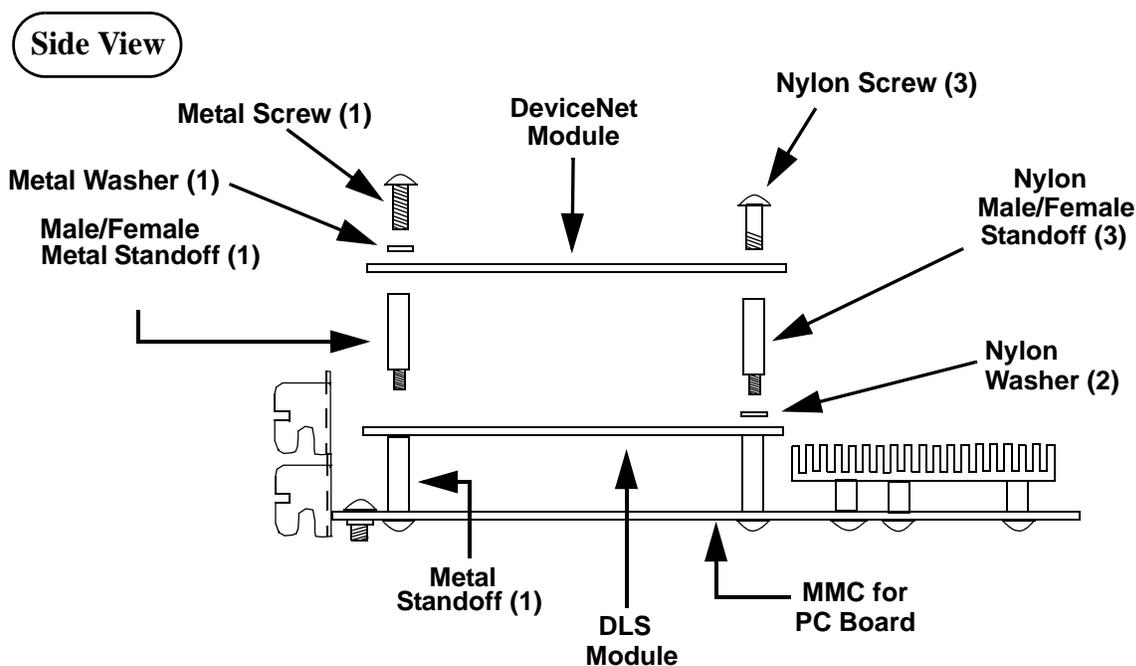


Figure 5: Attaching DeviceNet Module to DLS Module

1. Remove the metal screw, the metal washer and the three nylon screws that were used to attach the DLS module to the standoffs on the MMC for PC board.
2. Locate the four mounting holes on the DLS Module.
3. Locate the mounting hole over the metal standoff used to mount the DLS module to the MMC for PC board.
4. At the mounting hole that matches up with the metal standoff mentioned in step 3, carefully turn a metal male/female standoff clockwise into the hole on the DLS module as shown in Figure 5 on page 8. Turn the metal standoff until it is firmly attached to the DLS module. **DO NOT OVERTIGHTEN.**
5. At the holes on either side of the 26 pin connector, place one nylon washer over each mounting hole. Carefully turn a nylon male/female standoff clockwise into the remaining three holes on the DLS module as shown in Figure 5 on page 8. Turn the nylon standoffs until they are firmly attached to the DLS module. **DO NOT OVERTIGHTEN.**
6. Position the DeviceNet module over the DLS module as shown in Figure 5 on page 8. Make sure that the connector on the DeviceNet module is properly aligned with the connector on the DLS module.
7. Carefully press down on the DeviceNet module so the DLS standoffs contact the DeviceNet module and the Header Pin Connector on the DeviceNet module connects to the Header Socket Connector on the DLS module.

8. At the three locations with nylon standoffs, secure the DeviceNet module to the DLS module using the 4-40 x 1/4" nylon screws.
9. At the location with the metal standoff, secure the MMC for PC Option Module to the MMC for PC board using a #4 star washer and the 4-40 x 3/8" metal screw.
10. Carefully tighten all four screws until the DeviceNet option module is firmly attached to the DLS module.
11. Continue with installation at Step 18 on page 6.

IMPORTANT

It is very important that the DeviceNet module is firmly attached to the DLS module. Failure to do so may cause poor connections to external devices or damage to the board. However, do not overtighten the screws. Overtightening the screws may cause damage to the DeviceNet module or DLS module.

