

Introduction

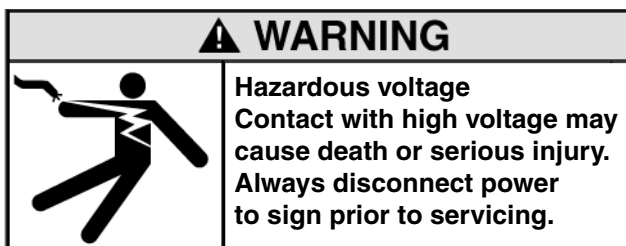
ALPHA signs, with and without the Smart Alec option, have an internal EPROM that is used to control the sign. From time to time, the firmware in this EPROM is updated and the EPROM should be changed.

These instructions show how to change the EPROM on the following signs:

Models	
<ul style="list-style-type: none"> • ALPHA PPD™ • Series 200 (215C, 215R, 220C, and BETA-BRITE® models 1026 and 1040) • BIG DOT® • Series 300 (320C, 330C) • Series 4000 (4120C, 4120R, 4160C, 4160R, 4200C, 4200R, 4240C, and 4240R) • Series 7000 (7120C, 7160C, and 7200C) • ALPHA™ Director™ • ALPHA™ Solar™ • ALPHAVISION™ full matrix (1FMvwwwP03zzz) and character matrix (2CMxxxxyyP03zzz) • NEMA 2 Series 4000 (N024120C, N024120R, N024160C, N024160R, N024200C, N024200R, N024240C, and N024240R) • NEMA 2 Series 7000 (N027120C, N027160C, and N027200C) 	<ul style="list-style-type: none"> • NEMA 2, 2.1-inch character matrix (N02CM040008P03TRI, N02CM040012P03TRI, and N02CM040016P03TRI) • NEMA 2, 3.2-inch character matrix (N02CM040008P045TRI, N02CM040012P045TRI) • NEMA 4 Series 7000 (N047120, N047160, and N047200) • NEMA 4x Series 7000 (7120, 7160, 7200) • NEMA 12 ALPHA Series 4000 (4120R, 4240R, 4120C, 4240C) • NEMA 12 ALPHA 420
<p>NOTE: ¹ vv = number of LED columns, www = number of LED rows, zzz = LED color (RED, SBR, or TRI) ² xxx = characters/line, yyy = number of lines, zzz = LED color (RED, SBR, or TRI)</p>	

Safety

Before you begin to change a sign's EPROM, or start any other procedure involving disassembly of the sign, always disconnect the power connection to the sign.

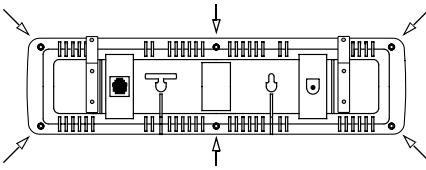
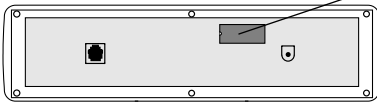

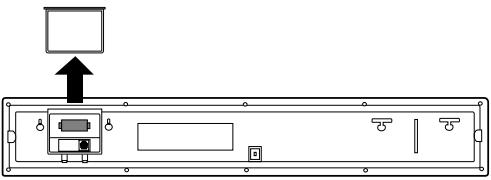
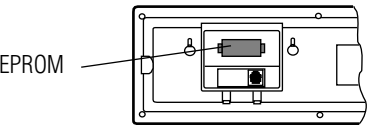
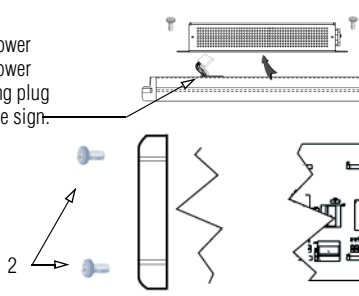
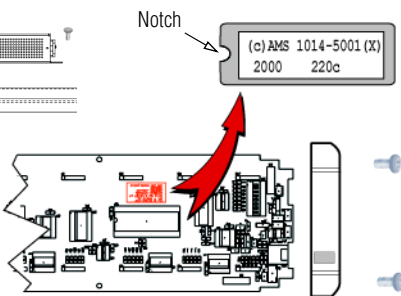
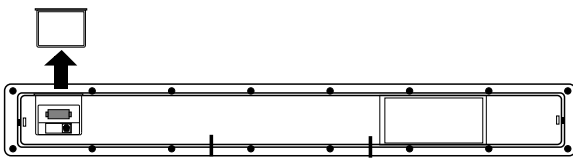
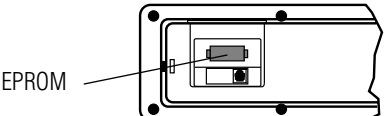
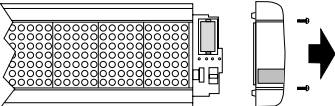
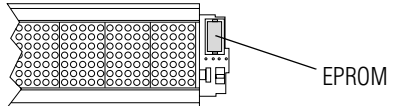
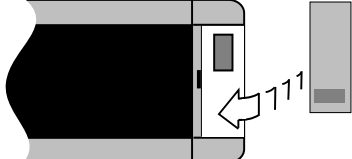
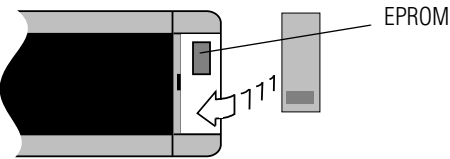


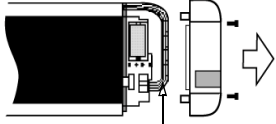
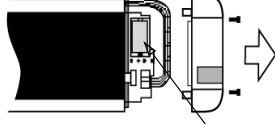
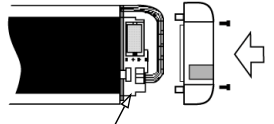
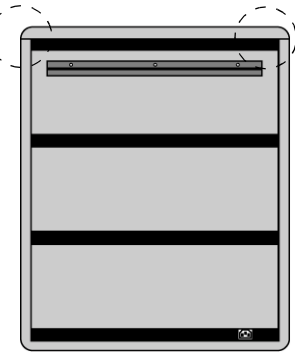
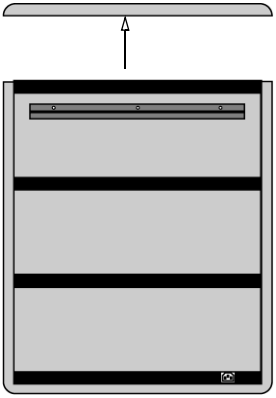
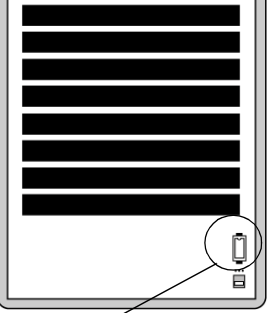
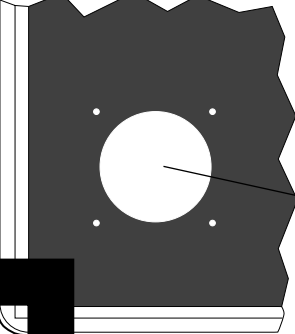
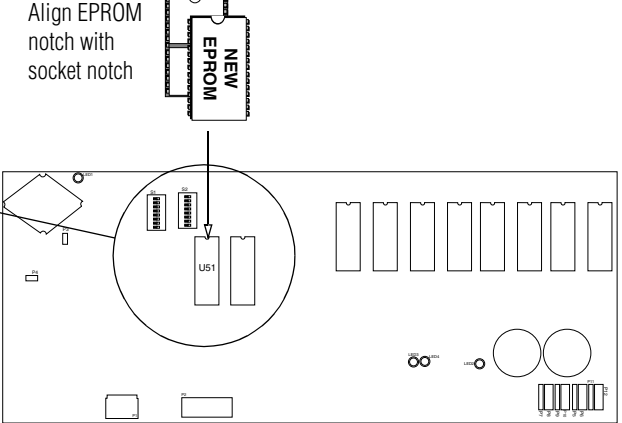
Controlling electrostatic discharge damage

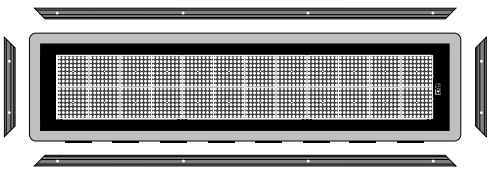
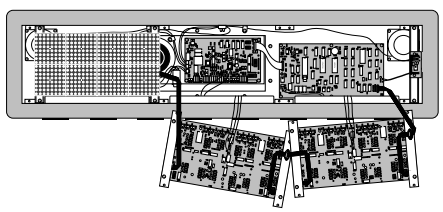
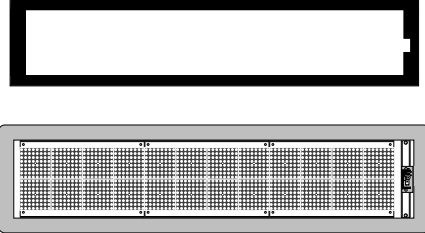
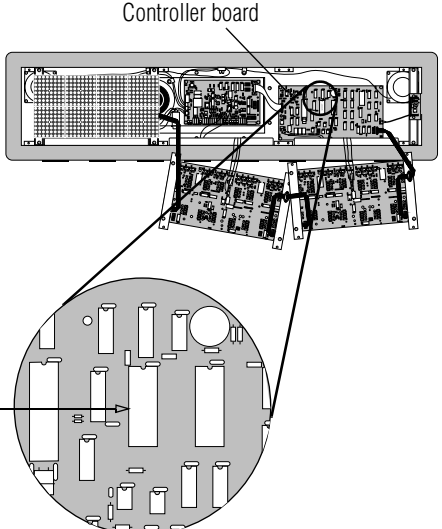
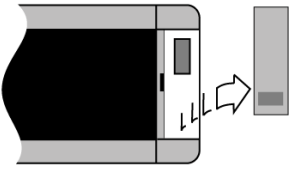
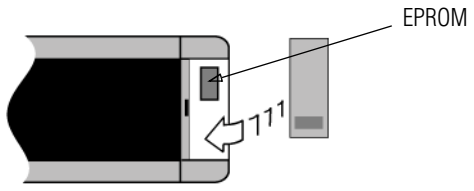
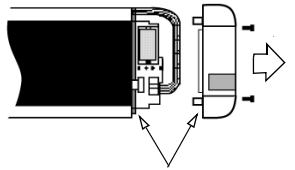
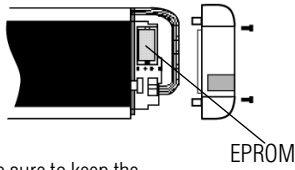
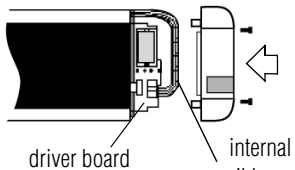
ALPHA signs contain components that may be damaged by "static electricity", or electrostatic discharge. To prevent this from happening, follow these guidelines:

- Discharge any static charge you may have built up before handling static-sensitive devices. Touch something metal before putting your hand on sensitive components.
- Put on a grounded, anti-static wristband or heel strap.
- Until you're ready to handle them, keep static-sensitive parts in an anti-static container.
- Do NOT touch EPROM leads. If they become bent, use a tool to straighten them.
- Do your work on a static-free surface and always use grounded soldering, test and assembly tools.
- For more information, refer to Adaptive Tech Memo 00-0005, "Guidelines for Controlling Electrostatic Discharge Damage", available our web site at www.ams-i.com.

Upgrade instructions, by model number:

Model	Upgrade instructions	
<p>ALPHA PPD</p>	<p>1. Remove power from the sign, unscrew the 6 screws (arrows below) from the back of the sign, and remove the back of the sign.</p> 	<p>2. Carefully pry out the sign's EPROM (circled below) using a small screwdriver, place the new EPROM in the empty socket, and replace the back of the sign.</p>  <p>Align EPROM notch with socket notch</p> 
<p>Series 200 (215C, 215R, BETA-BRITE models 1026 and 1040) *Model 220C, see below.</p>	<p>1. Remove power from the sign. Then slip off the access panel on the back of the sign:</p> 	<p>2. Using the top and bottom tabs on the EPROM socket, gently pull the EPROM out of the sign. Then place the new EPROM in the empty socket and replace the access cover.</p> 
<p>Series 200 (*220C only)</p>	<p>1. Remove power from the sign. 2. Remove both screws holding power supply to back of sign. Undo power supply connector and tuck wiring plug through hole into the back of the sign. 3. Loosen <i>all 4</i> end-cap screws. Remove the <i>right</i> end-cap screws (side farther from power supply), pull off the end-cap and slide controller-board out of the case.</p> 	<p>4. Carefully pry out the EPROM (see drawing at left), place new EPROM in the empty socket with notch aligned as shown, and gently press into place. Replace end cap.</p>  <p>Notch</p> <p>(c) AMS 1014-5001 (X) 2000 220c</p>
<p>BIG DOT</p>	<p>1. Remove power from the sign. Then slip off the access panel on the back of the sign:</p> 	<p>2. Using the top and bottom tabs on the EPROM socket, gently pull the EPROM out of the sign. Then place the new EPROM in the empty socket and replace the access cover.</p> 
<p>Series 300 (320C, 330C)</p>	<p>1. Remove power from the sign. Then use a screwdriver to remove the two screws that hold the end cap to the sign (as shown below):</p> 	<p>2. Using the top and bottom tabs on the EPROM socket, gently pull the EPROM out of the sign. Then place the new EPROM in the empty socket and replace the end cap.</p> 
<p>Series 4000 (4120C, 4120R, 4160C, 4160R, 4200C, 4200R, 4240C, and 4240R)</p>	<p>1. Remove power from the sign. Then use your fingers to remove the EPROM cover (as shown below):</p> 	<p>2. Using the top and bottom tabs on the EPROM socket, gently pull the EPROM out of the sign. Place the new EPROM in the empty socket. Replace EPROM cover.</p> 

Model	Upgrade instructions		
<p>Series 7000 (7120C, 7160C, and 7200C)</p>	<p>1. Remove power from the sign. Then use a screwdriver to remove the two screws that hold the end cap to the sign (as shown below):</p>  <p>internal ribbon cable</p>	<p>2. Using the top and bottom tabs on the EPROM socket, pull the EPROM out of the sign. Replace with new EPROM.</p>  <p>EPROM</p>	<p>3. Move the internal ribbon cable forward from the edge of the driver board. Replace the end cap, as shown below.</p>  <p>driver board</p>
<p>ALPHA Director</p>	<p>1. Remove power from the sign. Then use a screwdriver to remove the two screws (circled) that hold the top cap to the sign:</p> 	<p>2. Remove the top cap:</p> 	<p>3. Pull up and remove the clear plastic lens on the sign's front:</p> 
<p>ALPHAVISION full matrix and character matrix</p>	<p>1. Remove power from the sign. Then use a screwdriver to remove the cover plate on the back of the sign.</p> 	<p>2. Using a small screwdriver, place the blade underneath the top of the EPROM and gently pry it off the Controller board. Then insert the new EPROM and re-assemble the sign.</p> <p>Align EPROM notch with socket notch</p> 	

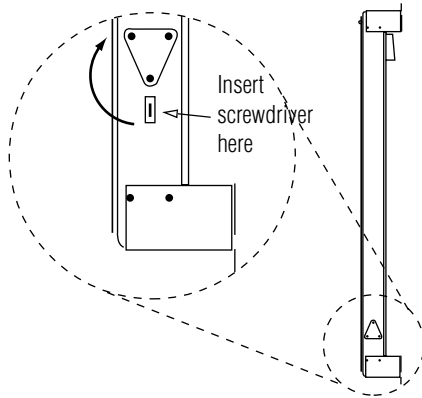
Model	Upgrade instructions	
<p>ALPHA Solar</p>	<p>1. Remove power from the sign. Then use a screwdriver to remove all four lens brackets from the front of the sign.</p> <p>NOTE: A Torx head screwdriver bit will be needed to remove one or more of the lens brackets screws.</p>  <p>3. Remove the mounting screws from the <i>two, rightmost</i> LED driver boards and let them hang from the sign.</p> <p>NOTE: While the two LED driver boards are hanging from the sign, be careful not to damage the sensitive components on either board.</p> 	<p>2. Using a small screwdriver, pry up one end of the lens. Then gently remove the entire lens from the sign case.</p> <p>NOTE: There is a waterproofing strip between the lens and the sign case. Be careful not to damage this strip.</p>  <p>4. Using a small screwdriver, place the blade underneath the top of the EPROM and gently pry it off the Controller board. Then insert the new EPROM and re-assemble the sign.</p>  <p>Align EPROM notch with socket notch</p>
<p>NEMA 2 Series 4000 (N024120C, N024120R, N024160C, N024160R, N024200C, N024200R, N024240C, and N024240R)</p>	<p>1. Remove power from the sign. Then use your fingers to remove the EPROM cover (as shown below):</p> 	<p>2. Using the top and bottom tabs on the EPROM socket, gently pull the EPROM out of the sign. Then place the new EPROM in the empty socket and replace the EPROM cover.</p> 
<p>NEMA 2 Series 7000 (N027120C, N027160C, and N027200C)</p>	<p>1. Remove power from the sign. Then use a screwdriver to remove the two screws that hold the end cap to the sign (as shown below):</p>  <p>In order for the sign to keep its NEMA 2 rating, make sure to keep the rubber gaskets (arrows) in place when re-assembling the sign.</p>	<p>2. Using the top and bottom tabs on the EPROM socket, pull the EPROM out of the sign. Replace with the new EPROM.</p>  <p>3. Move the internal ribbon cable forward from the edge of the driver board. Replace the endcap (as shown below):</p> 

Model

Upgrade instructions

1. Remove power from the sign. Then remove the two lower screws from the triangular plate on each side of the sign. Swing each plate up.

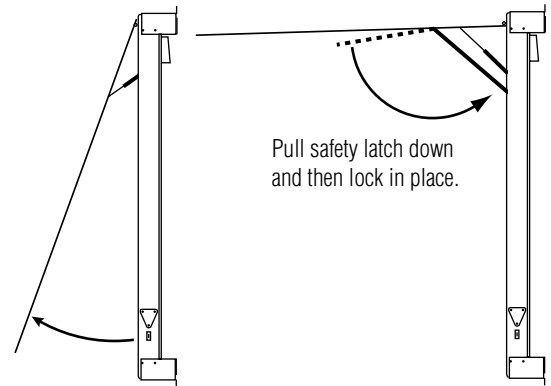
Use a screwdriver to push up the latch on each side of the sign:



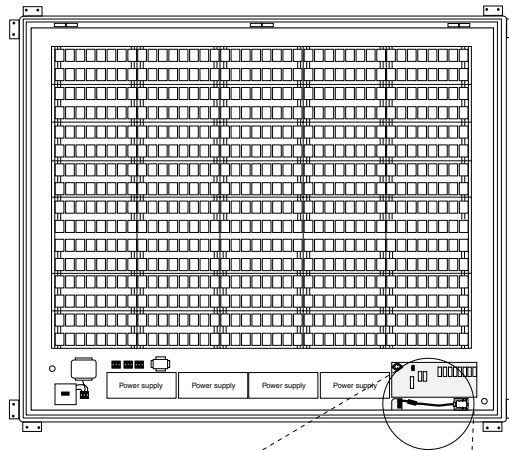
2. Pull the access door up. There will be moderate resistance in lifting the door until the pistons engage. Then pull down and lock the safety latch on each side of the door:

NOTE: Opening the door using one person on each side of the sign is recommended.

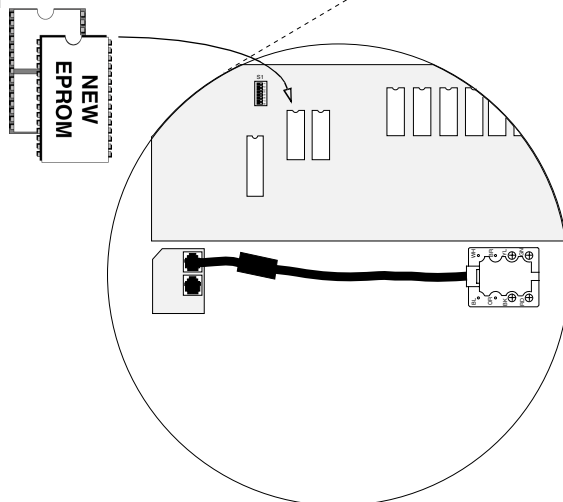
NOTE: To close the access door, push the door down until each latch clicks twice.



3. Using a small screwdriver, place the blade underneath the top of the EPROM and gently pry it off the Controller board. Then insert the new EPROM and close the access door:



Align EPROM notch with socket notch



**NEMA 2
2.1-inch
character
matrix**

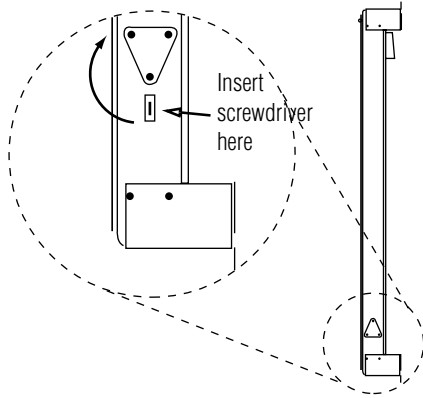
(N02CM040008P03TRI,
N02CM040012P03TRI, and
N02CM040016P03TRI)

Model

Upgrade instructions

1. Remove power from the sign. Then remove the two lower screws from the triangular plate on each side and the bottom of the sign. Swing each plate up.

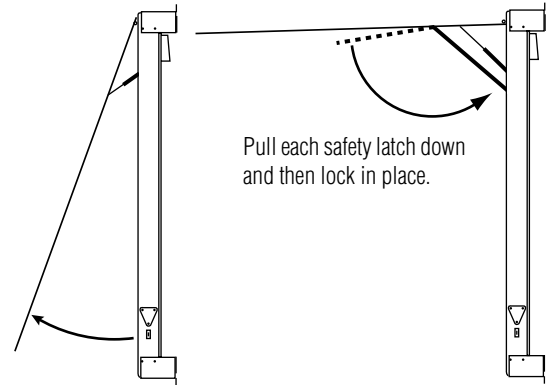
Use a screwdriver to push up the latch on each side of the sign:



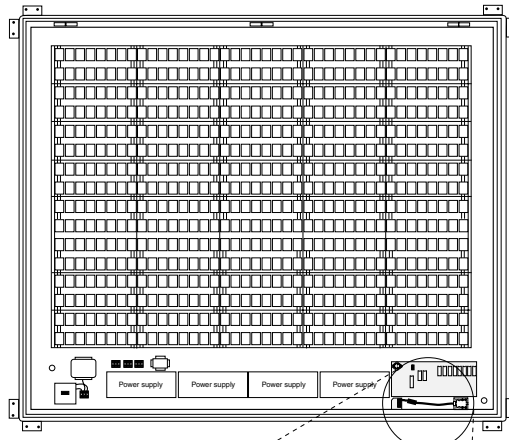
2. Pull the access door up. There will be moderate resistance in lifting the door until the pistons engage. Then pull down and lock the safety latch on each side of the door:

NOTE: Use one person on each side of the sign to open the door.

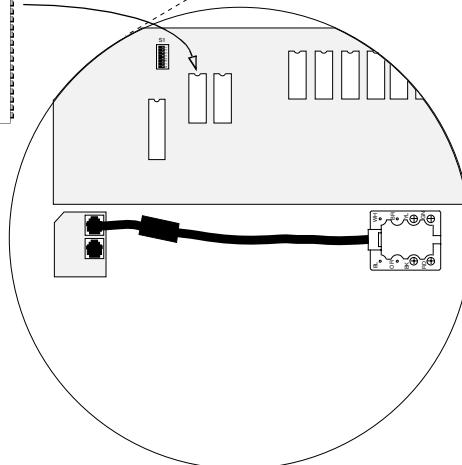
NOTE: To close the access door, push the door down until each latch clicks twice.



3. Using a small screwdriver, place the blade underneath the top of the EPROM and gently pry it off the Controller board. Then insert the new EPROM and close the access door:



Align EPROM notch with socket notch



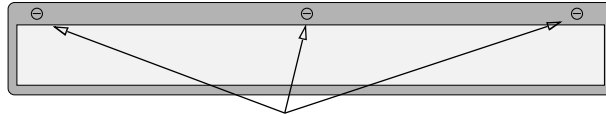
NEMA 2
3.2-inch character matrix
(N02CM040008P045TR|
N02CM040012P045TR|)

Model

Upgrade instructions

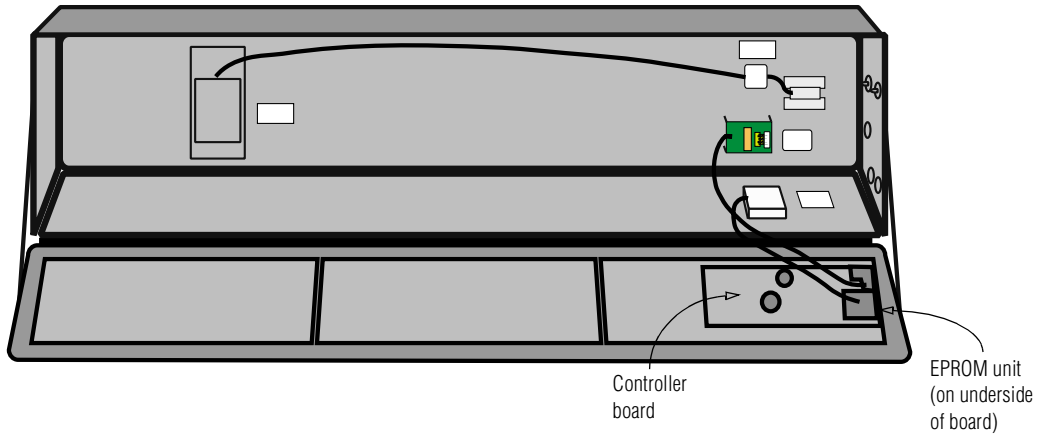
1. Open the front of the sign case by turning the quarter-turn latches to the left with a large screwdriver or a coin. (On the N047120, there are 2 quarter-turn latches; on the N047160 and the N047200, there are 3.) Carefully let the front of the case drop forward.

Front view, closed



Quarter-turn latches on an N047200 sign

Front view, open

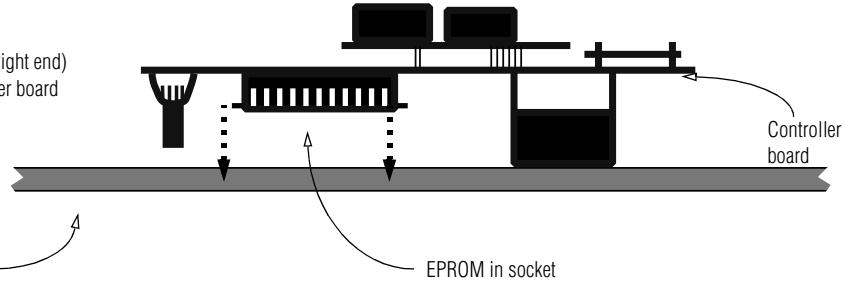


NEMA 4
Series 7000
(N047120C120,
N047120C230,
N047160C120,
N047160C230,
N047200C120,
N047200C230)

2. On the underside of the Controller board, firmly pull down on the end tabs of the EPROM. Carefully pull it out of the socket.

End view (right end) of Controller board

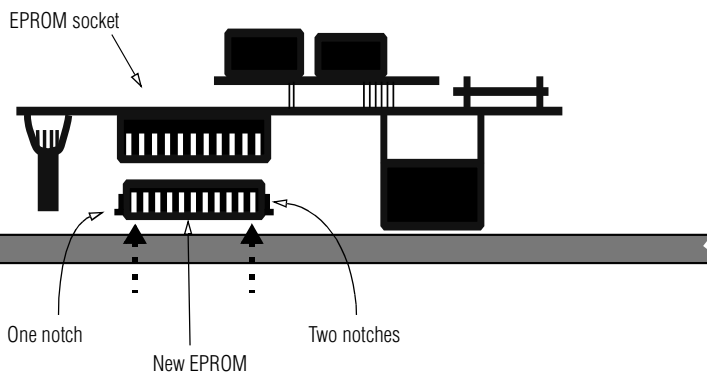
Edge of sign case



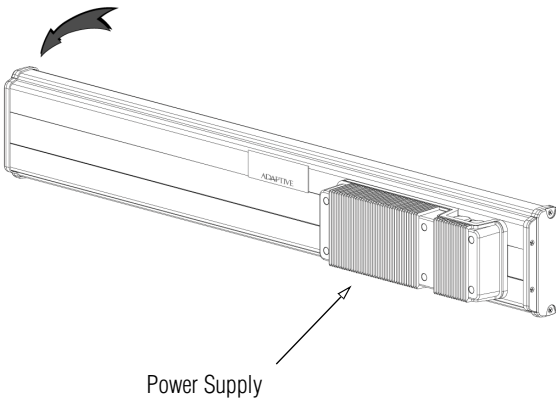
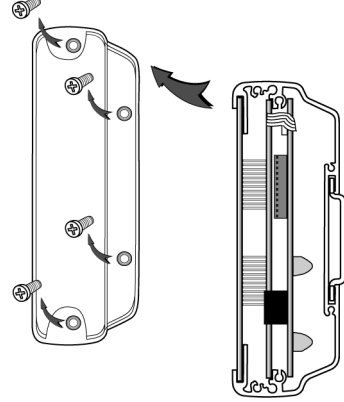
3. Matching the side notches of the new EPROM to the socket, press the new EPROM firmly into the socket.

End view (right end) of Controller board

Edge of sign case



4. Carefully close the front of the sign and turn the quarter-turn latches to the right with a large screwdriver or a coin.

Model	Upgrade instructions
<p>NEMA 12 ALPHA Series 4000 (4120R, 4240R, 4120C, 4240C)</p>	<p>The firmware chip is easily accessible, at the end of the sign opposite the power supply.</p>  <p>Power Supply</p> <p>#2 Phillips screwdriver required</p> <p>Remove the four screws holding the end cover.</p> 
<p>NEMA 12 ALPHA 420</p>	<p>Replace the firmware chip. Replace the end cover and screws.</p> <ul style="list-style-type: none"> • Torque end cover screws to 24 inch-pounds 