



INSTALLATION MANUAL
NX FREQUENCY CONVERTERS

IP54 KIT

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1. GENERAL

Using these instructions, you can enhance the enclosure protection class of your IP21 class frequency converter to IP54. Such a higher protection level may be necessary when the frequency converter is used in such ambient conditions that might constitute a risk for the proper functioning of the converter (moist, dust).

According to standard IEC 60529 (EN 60 529), the IP54 frequency converter enclosure provides protection against dust and water sprayed from all directions. Limited ingress of both is permitted.

2. VACON IP54 KIT CONTENTS

NOTE: An IP54 enclosure does not protect the frequency converter against strong jets of water or the effects of immersion.

The contents of the IP54 kits for different frames are shown in the following pictures.

2.1 FR4 (Type designation code: NXIP54FR4)

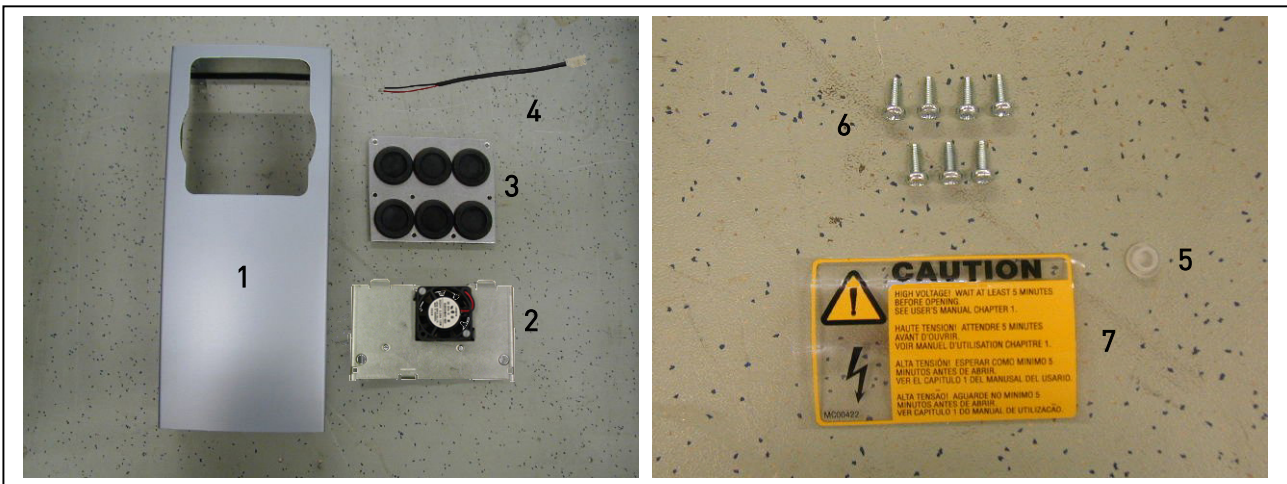


Figure 1. Contents of IP54 kit for FR4

- | | | | |
|---|---|---|-----------------|
| 1 | IP54 enclosure for FR4 | 5 | Plastic sealing |
| 2 | IP54 cable cover with fan | 6 | Screws (4x10) |
| 3 | Cable entry flange with rubber grommets | 7 | Warning sticker |
| 4 | Cable extension for fan | | |

2.2 FR5 (Type designation code: NXIP54FR5)

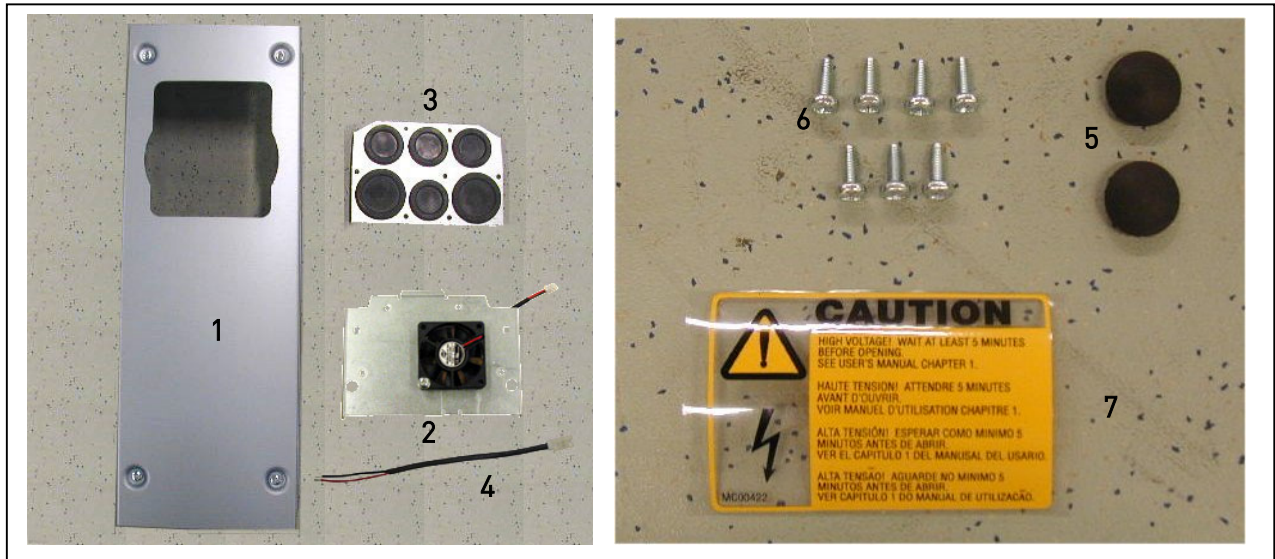


Figure 2. Contents of IP54 kit for FR5

- | | |
|---|-------------------|
| 1 IP54 enclosure for FR5 | 5 Rubber sealings |
| 2 IP54 cable cover with fan | 6 Screws (4x10) |
| 3 Cable entry flange with rubber grommets | 7 Warning sticker |
| 4 Cable extension for fan | |

2.3 FR6 (Type designation code: NXIP54FR6)

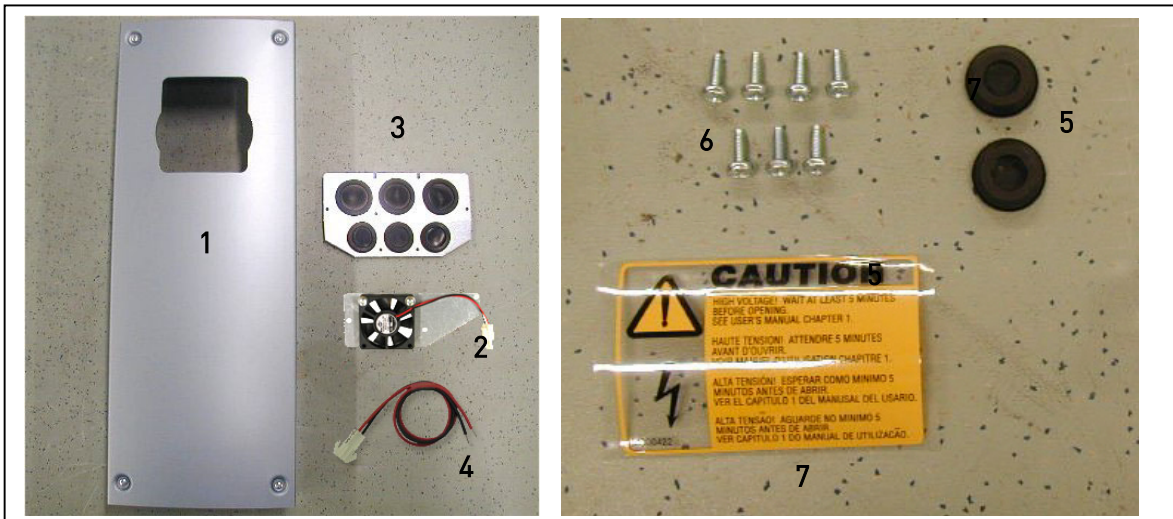


Figure 3. Contents of IP54 kit for FR6

- | | |
|---|-------------------|
| 1 IP54 enclosure for FR5 | 5 Rubber sealings |
| 2 IP54 lid with fan | 6 Screws (4x10) |
| 3 Cable entry flange with rubber grommets | 7 Warning sticker |
| 4 Cable extension for fan | |

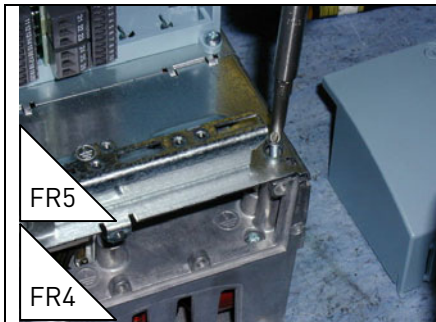
3. INSTALLATION

These instructions guide you through the installation of the IP54 kit that you have purchased for your FR4, FR5 or FR6 size frequency converter enclosure class IP21. **NOTE: If you have purchased your converter before March 2004, follow the installation instructions under 3.2.**

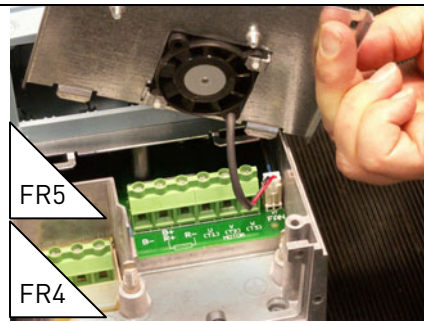
Please note the white triangles in the lower left corners of the installation pictures. They designate the frame(s) the picture applies to. If no triangles exist, the step is applicable to all frames.

3.1 Installation instructions #1

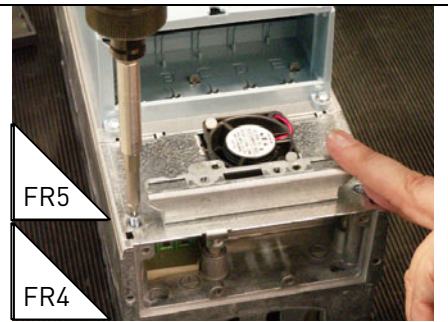
 <p>FR5 FR4</p>	 <p>FR4</p>	 <p>FR5</p>
 <p>FR5 FR4</p>	 <p>FR5</p>	 <p>FR6</p>
 <p>FR6</p>	 <p>FR6</p>	 <p>FR5 FR4</p>



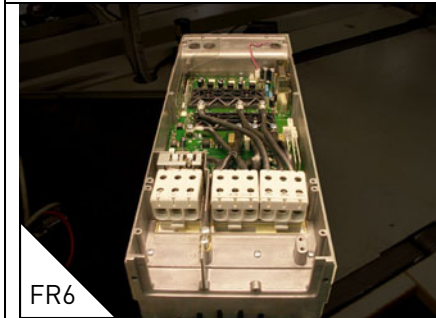
8. Remove the power cable cover and detach the grounding rack



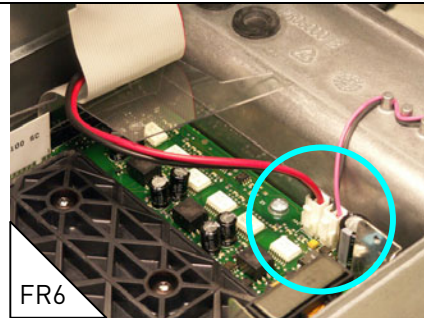
9. Take the IP54 cable cover and connect the fan power cable to connector marked with 'FAN'



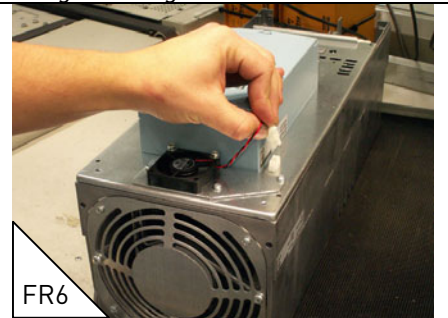
10. Use the attached screws to fix the IP54 cable cover with fan and the grounding rack.



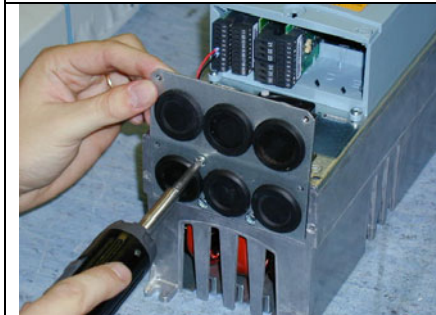
11. Open the cover of the FR6 power unit.



12. Connect the other end of the fan cable extension to the +24V terminal on the power board.



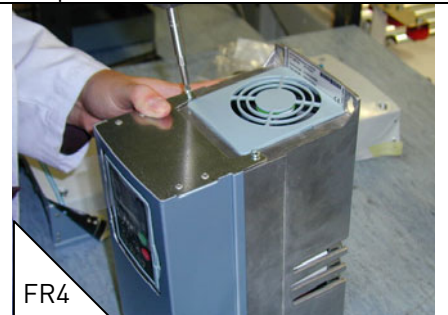
13. Push the other end of the extension cable through the cover, fix the cover and connect finally the fan power cable to its extension.



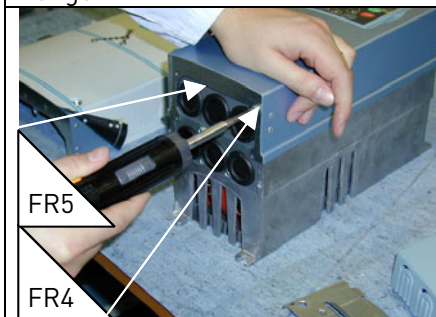
14. Fix the IP54 cable entry flange placing it with the old grommets down and the new ones up. Fix the lower side with screws from the old flange.



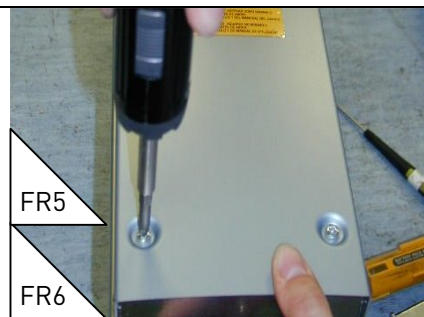
15. Fit the IP54 cover in its place. Keypad end first, then cable end.



16. Use the attached screws (#5) to fix the IP54 cover on the upper end of the converter.



17a. Then fix the screws (4x10) on the lower end of the converter. Note the different fixing places for different frames.

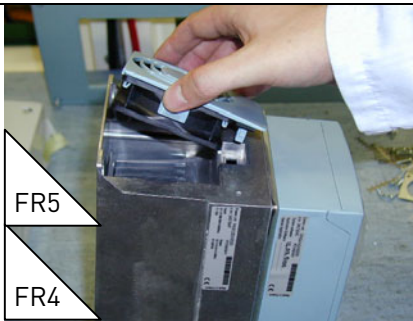
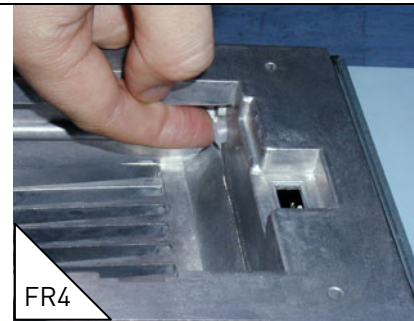

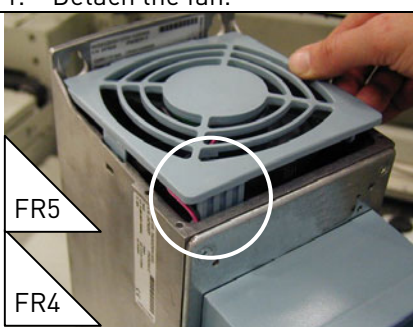
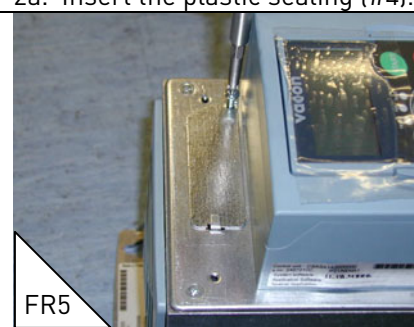
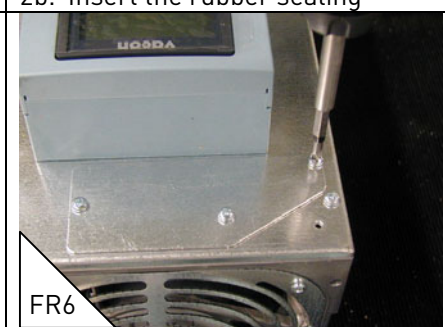
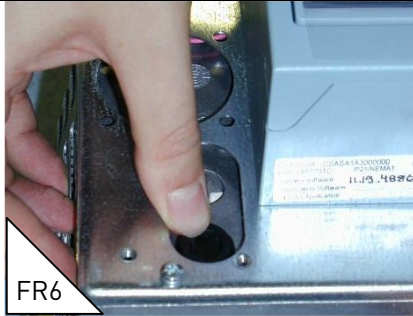
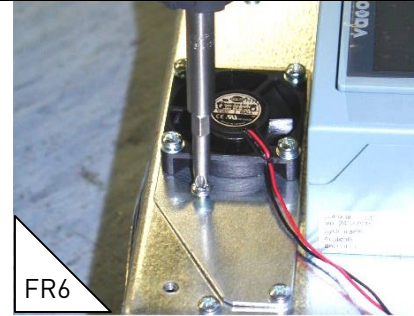
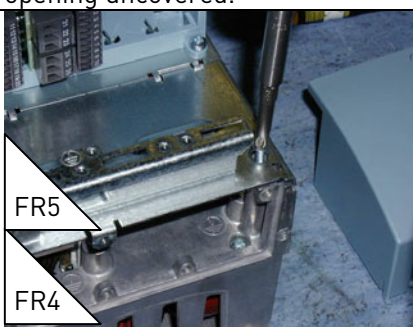
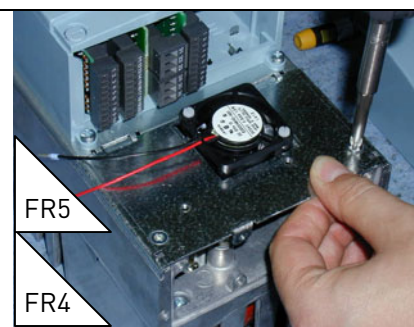
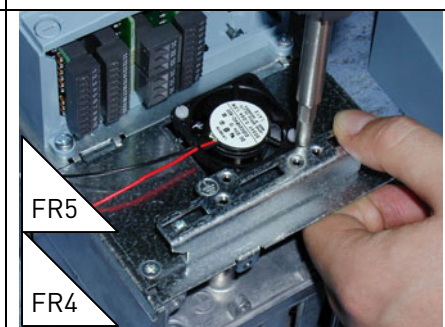


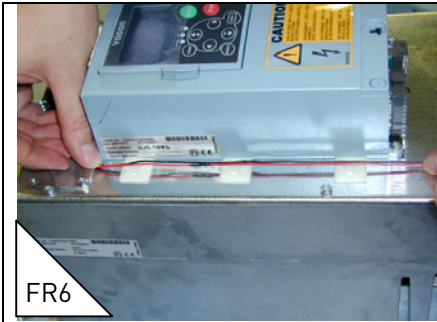
17b. Tighten the four screws on the IP54 cover to fix it in its place.



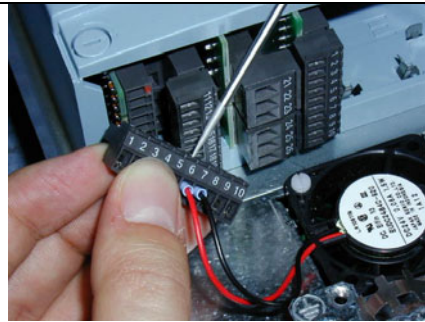
18. Attach the warning sticker (#6/ #7) on the IP54 cover.

3.2 Installation instructions #2

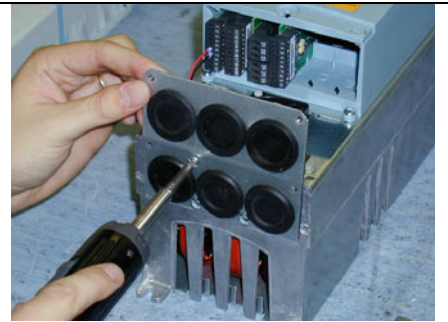
 <p>FR5 FR4</p>	 <p>FR4</p>	 <p>FR5</p>
<p>1. Detach the fan.</p>  <p>FR5 FR4</p>	<p>2a. Insert the plastic sealing (#4).</p>  <p>FR5</p>	<p>2b. Insert the rubber sealing</p>  <p>FR6</p>
<p>3. Carefully re-install the fan ensuring that the connector clip fits accurately. DO NOT SLAM, DO NOT FORCE!!</p>	<p>4a. Remove the plastic cover of the frequency converter and open the small lid on the power unit cover. Leave the opening uncovered.</p>	<p>4b. Remove the plastic cover of the frequency converter and open the small lid on the power unit cover.</p>
 <p>FR6</p>	 <p>FR6</p>	 <p>FR5 FR4</p>
<p>5. Seal the air inlets with the rubber sealings (#4). Leave the opening uncovered.</p>	<p>6. Fix the IP54 lid with fan (#2) on the power unit cover.</p>	<p>7. Open the control cable cover and remove the cable entry flange.</p>
 <p>FR5 FR4</p>	 <p>FR5 FR4</p>	 <p>FR5 FR4</p>
<p>8. Remove the power cable cover and detach the grounding rack.</p>	<p>9. Use the attached screws to fix the IP54 cable cover with fan (#2).</p>	<p>10. Re-attach the grounding rack that you detached at step 8.</p>



FR6
11. Attach the fan cable anchors (#6) as shown in the picture and use the straps (#7) to fasten the cable on the power unit.



12. Connect the fan cables to terminals #6 (red) and #7 (black) of the basic I/O board (NXOPTA1 or NXOPTA8)*



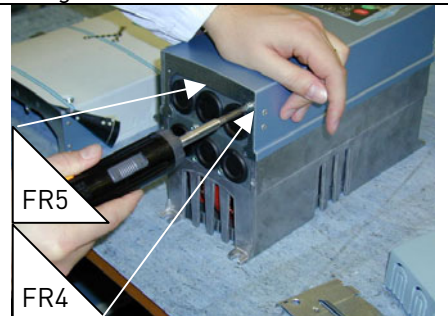
13. Fix the IP54 cable entry flange placing it with the old grommets down and the new ones up. Fix the lower side with screws from the old flange.



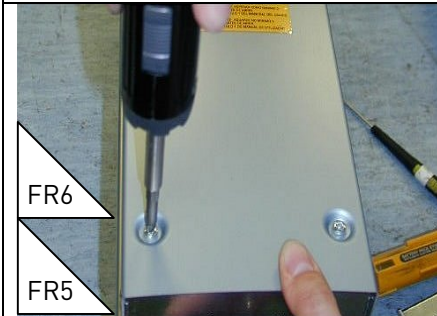
14. Fit the IP54 cover in its place; keypad end first, then cable end.



FR4
15. Use the attached screws (#5) to fix the IP54 cover on the upper end of the converter.



FR5
FR4
16a. Then fix the screws (4x10) on the lower end of the converter. Note the different fixing places for different frames.



FR6
FR5
16b. Tighten the four screws on the IP54 cover to fix it in its place.



17. Attach the warning sticker (#6/#7) on the IP54 cover.

* Or any other free 24Vout terminal on your available I/O

4. INFORMATION STICKER

Each IP54 upgrade kit delivered by the factory includes a sticker (shown below). Please check *IP54/Collar* (1) and mark the installation date (2) on the sticker. Finally, attach the sticker on your drive.

Drive modified:			
1	<input type="checkbox"/>	Option board: NXOPT.....	Date:.....
		in slot: A B C D E	
	<input checked="" type="checkbox"/>	IP54 upgrade/Collar	Date:.....
	<input type="checkbox"/>	EMC level modified: H to T / T to H	Date:.....

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