



SOLAR STIK®

Solar Stik Technical Bulletin 21

Effective Date: 20190625

AES PRO-Verter and Power Hub Air Filter Maintenance

Background: Dirty Filters = Increased Heat = Derating and Possible Shutdown

Frequent cleaning and timely replacement of dirty filters on the equipment is vital to keep it running smoothly. The air filters on the PRO-Verter and Power Hub must be checked monthly under normal operating conditions and cleaned, or replaced if not cleanable. The frequency of checking, cleaning, and replacing the filters must be increased appropriately if the equipment is operating in very dusty conditions. A dirty filter will reduce airflow, which will lead to increased operating temperature. If the operating temperature exceeds the rated value, the **Power Hub** or **PRO-Verter** will run less efficiently, a phenomenon called derating. Derating can progress to the point that the equipment shuts down until the internal components cool to within the normal operating temperature. Derating and temporary shutdown due to dirty filters can be especially problematic in dusty, windy, and hot climates. In such environments, the filters must be checked and cleaned or replaced more frequently.

Beginning June 2109 Solar Stik, as part of the manufacturing process, has been stowing a single (1) set of replacement filters behind the Information Plate (I-Plate) in the lids of PRO-Verter and Power Hubs. The I-Plate must be removed to access these filters. Use these replacements when the current filters cannot be restored to fully mission capable condition. If there are no replacement filters behind the PRO-Verter or Power Hub I-Plate, contact supply chain point of contact, POC or Solar Stik to order them. A table with the Solar Stik Part Number for replacement filters is at the end of this document.

Required Tools

- #2 Cross-tip screwdriver
- Long-shaft #1 cross-tip screwdriver

CAUTION

Power down the System prior to performing maintenance procedures.



Air Vent Filter Maintenance Instructions Power Hub

The Power Hub has a single air intake vent with a louvered vent cover on the back of the case. The exhaust vent is on the front and does not have a filter. Check the exhaust vent for obstructions when performing filter maintenance.



Figure 1. Power Hub air intake location on back side (left) and exhaust vent on the front side (right)

1. Remove the two (2) set screws (if present; circled in Figure 2) using a #1 cross-tip screwdriver with a long shaft (like the one shown) or an offset screwdriver (not shown). Pull the louvered vent cover straight away from the case to remove it. Save the hardware for reassembly.

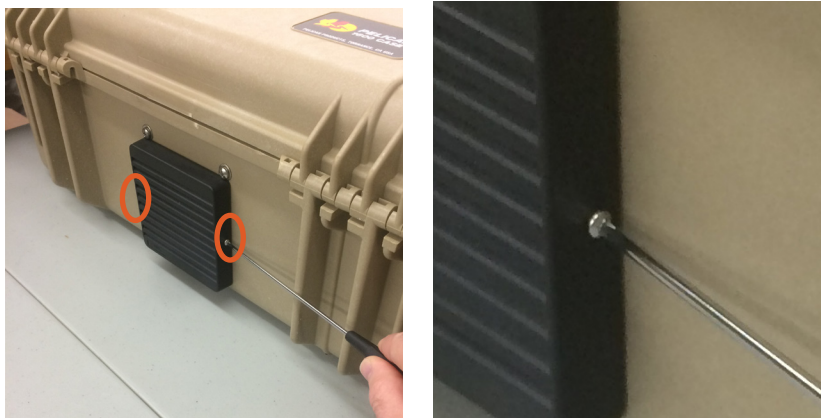


Figure 2. Removing the Power Hub louvered vent cover to expose the filter



Figure 3. Exposed filter and vent



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2. If the filter is dirty, wash it with water and dry it as shown in Figure 4. Allow the filter to dry completely. Washing with water is an effective method even for extremely dirty filters.



Figure 4. Washing the Power Hub filter

3. Replace the filter if it cannot be cleaned or is damaged to the point that is not able to pass air freely and block the entry of particulates. If the filter must be replaced, use a spare filter found behind the I-Plate. If there are no replacement filters behind the I-Plate, contact Solar Stik.
4. Reinstall the clean, dry (or new) filter and replace the louvered vent cover.



Power Hub: Installation of Updated Filter Material

Power Hubs produced from June 2019 onward are not built with the blue and white filters (Figure 4). Instead, they use black foam filter (Figure 5), the same filter material as the PRO-Verters. The procedure for replacing the blue and white filters with the black foam filter is the same as described in Steps 1-4 above.

Use the black filter to replace the blue and white filter material when the blue and white filter is no longer functional.

The procedure for cleaning the black filters is the same as described in Steps 1-4 above.



Figure 5. Installation of updated air intake vent filter material



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PRO-Verter

Vent Locations

The PRO-Verter has three (3) air intake vents and two (2) exhaust vents. Each of the intake vents has a filter that is accessed from the case exterior. There are no filters on the exhaust vents.

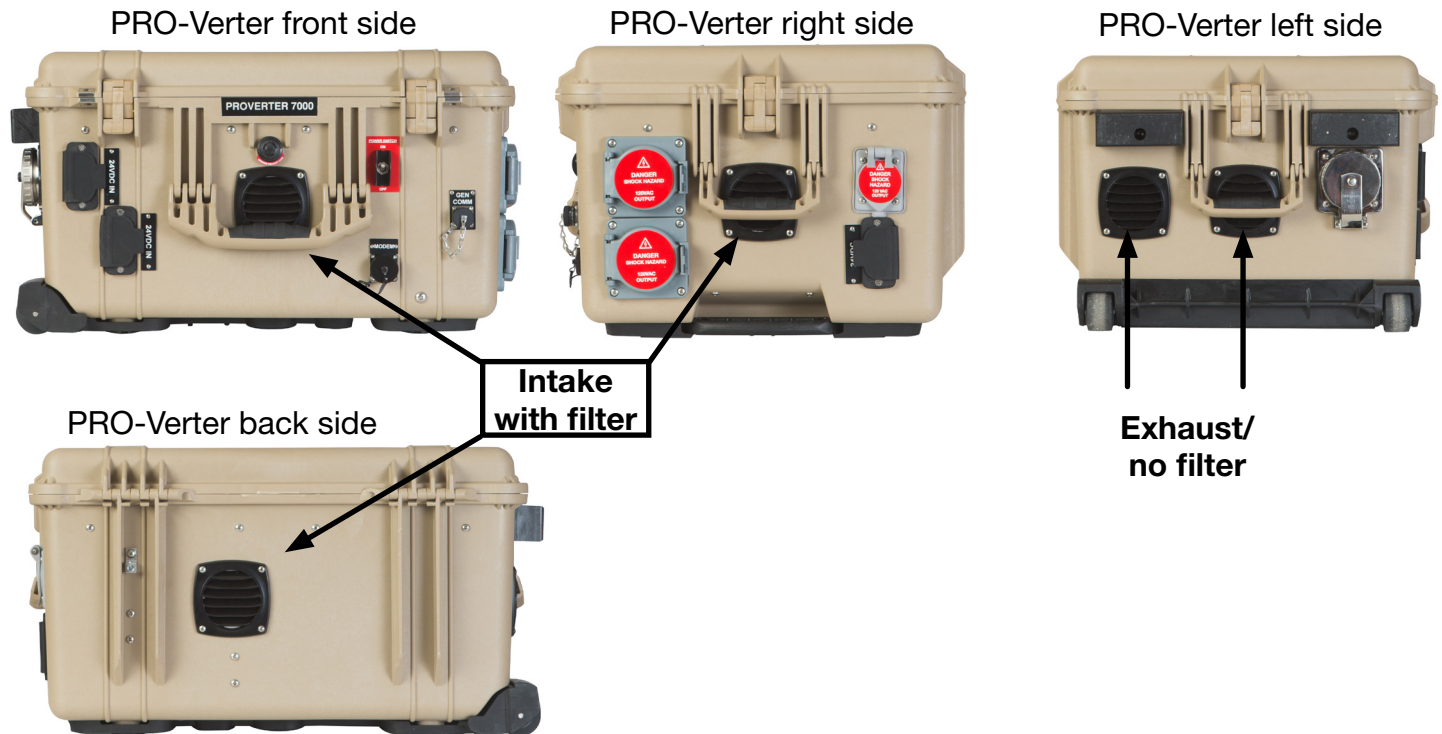


Figure 6. Locations of PRO-Verter intake and exhaust vents

The original PRO-Verter 7000 was built with all vents covered only by louvered vents with no vent shroud (Figure 7). The upgrade and all newly manufactured PRO-Verter include a vent shroud on each exhaust and intake vent (Figure 8).

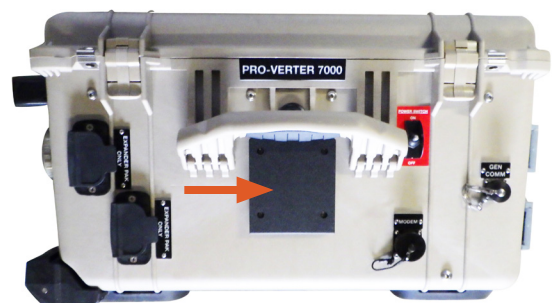


Figure 7. Original PRO-Verter design with no vent shroud

Figure 8. Upgraded/new PRO-Verter design with vent shroud





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Filter Removal and Cleaning or Replacement

1. Use a #2 cross-tip screwdriver to remove the four (4) fasteners from the louvered vent cover (original version; see Figure 9) or vent shroud (upgraded/new version; see Figure 10) and remove the louvered vent cover to access the filter.



Figure 9. Removing fasteners from louvered vent cover (original version)

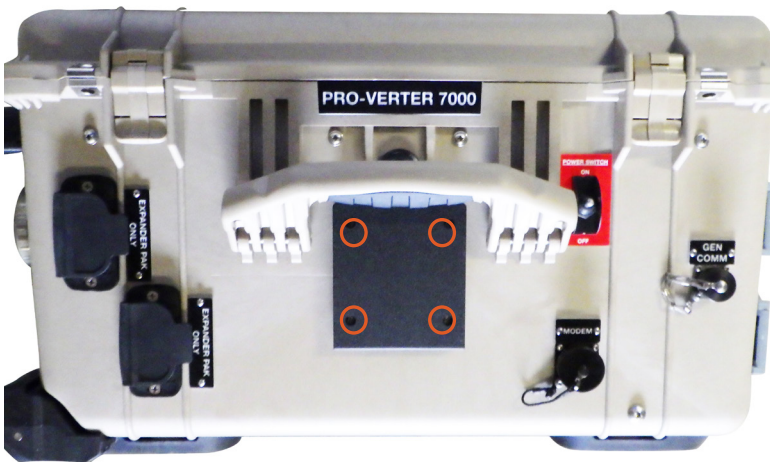


Figure 10. Fastener locations on vent shroud (upgraded/new version)



Figure 11. Removed vent shroud to access the louvered vent cover





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2. Remove and inspect the filter. Replace the filter if it is damaged (arrows in Figure 12). If the filter is in good shape, clean it by rinsing it with water to remove the particulate matter and dry it. Replace the filter if it is crushed, rotted, or cracked as illustrated in the left column of Figure 12.



Figure 12. Replacing PRO-Verter filter (left); cleaning a PRO-Verter filter (right)

3. Reinstall the clean, dry filter or install the new filter. Secure the louvered vent cover (and vent shroud of the upgraded/new version) with the four (4) fasteners.



Preventive Maintenance Checks and Services

Failure to follow these instructions may result in permanent equipment failure and/or personal injury.

Item #	Item to be Inspected	Normal Operating Conditions	Interval in "Dusty" Conditions	Procedures	Non-mission Capable
1	24VDC Power Hub 2400 Air Intake Vent Filter	M ¹	M+ ²	<ol style="list-style-type: none"> 1. Inspect vent cover for visible damage. 2. Remove vent cover; clean dust or dirt from filter using compressed air or water. 3. Reinstall filter and cover. 	<p>Cover broken – replace it.</p> <p>Replace filter if uncleanable, torn, dry rotted, or fragmented.</p>
2	24VDC PRO-Verter 7000 Air Intake Vent Filters	M ¹	M+ ²	<ol style="list-style-type: none"> 1. Inspect vent covers for visible damage. 2. Remove vent covers; clean dust or dirt from filter using compressed air or water. 3. Reinstall filter and cover. 	<p>Cover broken – replace it.</p> <p>Replace filter if uncleanable, torn, dry rotted, or fragmented.</p>

¹Monthly (M)—every month

²Monthly Plus (M+) — more frequently than monthly as conditions require

Spare / Replacement Part

Part Number	Description	Filter Image
07-1000627	Replacement Air Vent Foam Filter for PRO-Verter and Power Hubs (pack of 100)	

