

## Preventive Maintenance Tips

### Safety Manager System Power Supply FC-PSU-xxxx



#### Preventive Maintenance Tips: SMS Power System

##### Proper Maintenance when Safety is on the Line

Your Safety System is protecting your process equipment and proper power supply maintenance ensures the system remains available. Each part of the system should be inspected and alarms acted upon immediately. The Safety Manager Systems Troubleshooting and Maintenance Guide section 5 and the Fail Safe Controller FSC Service Manual section 7 provide further guidance and service checklists for actions to take to maintain the system properly providing longest life and best system performance.

##### Power System Alarms

The SMS Power Supply includes diagnostics and alarms which should be confirmed to be properly working, monitored and acted upon. These are the indicators that the power supply is in need of attention before failure occurs. There are LED indicators for:

- Internal high air temperature > 90 Deg C
- Fan speed too slow
- Output voltage outside of the range below:

Model	Output Supply Voltage	Expected Range
FC-PSU-12010U	120 Vdc	+15% to -22%
FC-PSU-11011U	110 Vdc	+25% to -15%
FC-PSU-6020U	60 Vdc	+15% to -15%
FC-PSU-4825U	48 Vdc	+15% to -15%
FC-PSU-2450U	24 Vdc	+30% to -15%

If the output voltage is consistently outside of the range, then contact Honeywell for further information to re-calibrate the Power Supply Unit (PSU).

##### Cables

Cables need to be well secured so they do not obstruct the cabinet interior or get jammed between moving parts such as doors or hinged panels. The cables must also not be pulled so tight as to induce mechanical stress on the connectors. Inspect cables to ensure no visual damage or cracking is present and that terminations are making good contact.

#### Environmental Factors

The overall useful life of any electronic equipment can vary based on the environmental conditions they are exposed to where they are installed. The following are critical to the lifecycle of the PSU and continued health of the system.

##### Humidity

Humidity levels should be maintained between 40% and 60% with fluctuations of less than 6% rate-of-change per hour. If humidity is substantial, conditioned air along with humidity monitoring within the cabinet may be needed. During maintenance, look for traces of condensation anywhere in the cabinet – this is a signal that the climate control is beginning to fail.

##### Corrosion

Look at the paint and exposed metal surfaces within the cabinet for visible signs of corrosion. Corrosive salts and chemicals are kept out of the cabinet by keeping the door closed. Be aware of metallic debris such as airborne zinc that originates from the underside of raised floor tiles commonly used in computer rooms or any nearby hardware assembly or construction activities. If deterioration occurs that you can see, then even further damage is occurring in the components you cannot see and actions should be taken to further reduce contaminants.

##### Dust

Check the surfaces of the PSU and the bottom of the cabinet for dust and if an excessive concentration is found, remove the dust with a soft anti-static brush and vacuum within the cabinet. Replace the cabinet fan dust filters regularly. The specific filter will vary based on the cabinet installed.

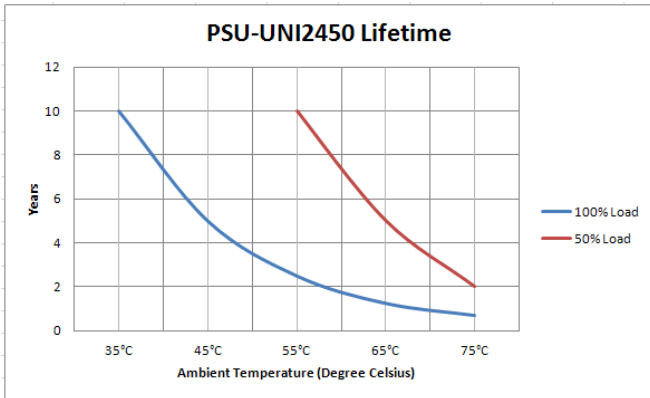
##### Cabinet Fan and Seals

Ensure the cabinet fan is operational, the filters are clean and not obstructed, that protective plates and covers are secure, and that all cabinet penetrations are sealed. This is essential for avoiding premature PSU failure. A new fan assembly may be ordered under Honeywell part number FC-FANWR-24R. Honeywell recommends replacing the fan every 8 years of operation. The Safety Manager Systems Troubleshooting and Maintenance Guide section 5 and the Fail Safe Controller FSC Service Manual section 7 provide further guidance.

## Replacing the Power Supply before Failure

### Increase Your System Reliability

Even with proper maintenance and environment, power supplies should be replaced before they fail. For redundant systems, a phased approach may be helpful to replace one in each pair earlier and then replace the other in the next maintenance cycle. Reliability will vary widely based on the load and temperature the power supply is subjected to.



Normal temperature is maintained at 35 Deg C and a fully loaded PSU could experience a shorter life based on the temperature reflecting the importance of maintaining the fan operation. Many safety systems utilize a redundant power supply such that under normal operation each unit carries 50% of the load. Additionally, the PSU load is generally specified with spare capacity. For example with a minimum of 25% spare capacity, each PSU worst case only carries 40% of the load. In this configuration, temperature and load are not limiting the PSU reliability. Other factors such as dust and humidity become the limiting factors although the wide variation of these environmental conditions makes an exact life expectancy unknown.

### For More Information

To learn more about how Honeywell's Preventive Maintenance Tips can limit downtime and assure system performance visit our website at [www.honeywellprocess.com](http://www.honeywellprocess.com) or contact your Honeywell account manager.

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### Benefits of Newest Version of PSU

Honeywell has made several advancements to the SMS Power Supply based on observations from the field. The design and manufacturing techniques have been altered to increase the ability to withstand dust build up across the High Voltage circuit. These modifications make the unit more robust against adverse environmental conditions which can lead to failure.

The above changes have been incorporated into PSU version 2.1. This version has been in production since August 2012 and the results in the field prove these enhancements are performing as intended and will increase the overall lifespan of the PSU. This reduces the risk of failure and unplanned downtime adding additional stability to your Safety System.

### Upgrade Your PSU to the Latest Version

To upgrade to the version 2.1 PSU, reference the table below providing the existing version of the power supply unit and corresponding Version 2.1 for each. Get your new and more robust PSU soon.

Output Voltage	Existing Model Number	Replacement Part Number (V2.1)
24 VDC	FC-PSU-UNI2450 V1.0	FC-PSU-UNI2450U
24 VDC	FC-PSU-UNI2450 V2.0	
24 VDC	FC-PSU-UNI2450U V1.0	
48 VDC	FC-PSU-UNI4825U V1.0	FC-PSU-UNI4825U
60 VDC	FC-PSU-UNI6020U V1.0	FC-PSU-UNI6020U
110 VDC	FC-PSU-UNI11011U V1.0	FC-PSU-UNI11011U
120 VDC	FC-PSU-UNI12010U V1.0	FC-PSU-UNI12010U

Contact your local Honeywell Service Representative or Account Manager for information about pricing or to place an order.

Note: Power supplies older than those listed above are not a direct form/fit replacement. The new power supply is recommended but more than just the power supply model will be have to be replaced. Contact your local Honeywell team for more information.

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