

The importance of replacing consumable parts on the UPS

Commissioning Inspection and Maintenance



PRODUCT LIFE CYCLE
REGULAR INSPECTION
SYSTEM UPTIME

Socomec UPS's and Static Transfer Switches systems are designed to operate reliably during the product's normal **life cycle**, in the electrical environments and environmental conditions stated in the installation and operating manual.

To keep the UPS operating at maximum efficiency levels and avoid system downtime with possible risks and damage to loads it is very important carry out as a minimum **preventive maintenance** on an annual basis. Maintenance consists of thorough functionality checks on the various electronic and mechanical parts and, if necessary, the **replacement of parts** subject to wear and tear such as **fans and capacitors**.

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Capacitors

Inside the UPS there are **AC filter capacitors** (used in the output section) and **DC electrolytic capacitors** (used in the rectifier and inverter section).



Risks arising from the deterioration of AC capacitors:

- An increase in inverter distortion and the consequent transfer to the auxiliary supply, leaving the load unprotected by the UPS.
- Instability of the entire system in the case of parallel configurations.
- Capacitor overheating, if prolonged over time, could cause a sudden breakdown with fumes and noise disturbance, and could also damage other parts of the UPS.
- Higher total expenditure than with normal preventive replacement, due to having to restore the system to working order (cost of changing capacitors + cost of repairing other damaged parts).
- Financial loss due to unscheduled machine downtime.

Risks arising from the deterioration of DC capacitors:

- Breakdown of the inverter /rectifier section and the consequent transfer to the auxiliary supply, leaving the load unprotected by the UPS.
- The propagation of the fault inside the UPS with the resulting damage to other components.
- Higher total expenditure than with normal preventive replacement, due to having to restore the system to working order (cost of changing capacitors + cost of repairing other damaged parts).
- Financial loss due to unscheduled machine downtime.

Fans

The life of the **fans** used for cooling the power components depends on the operating and environmental conditions (temperature, dust).



Risks related to a cooling fan fault:

- Most UPS or STS systems have redundant cooling fans. If one or more of these were to break down and nullify the redundancy, the UPS/STS could gradually overheat, causing transfer of the load to the auxiliary supply /static bypass, leaving the load unprotected by the UPS. If all fans fail in the units the UPS/STS will shut down causing disruption to the load.

When a replacement is recommended ?

The preventive replacement is recommended by the following years of operation*:

Consumable part	Years
Fan	4
DC capacitor	5
AC capacitor	7



Fans and capacitors must be replaced by qualified personnel only. Only SOCOMEC personnel are authorized to make recommendations for any replacement parts.

* based on operation of the unit within the manufacturer's specification (refer to installation manual). Capacitor & Fan lifespan is subject to change if environmental conditions (premises, usage or load type) are abnormal or harsh for the equipment.

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