



GUIDELINE



Maintenance Concept for ABB UPSs

Maintenance Plan and Preventive Replacement Material

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ABB Power Protection Product Group

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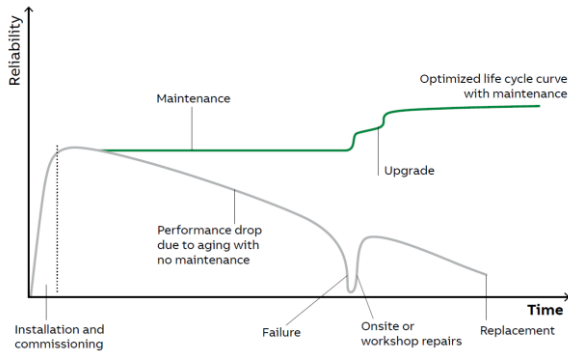
Introduction

This document describes the benefits of a correct preventive maintenance, as well as the typical UPS life cycle and the consumable parts replacement for ABB's main UPS families.

The details are described in the next section.

Preventive Maintenance and reliability

Relation between electronic devices performance/reliability and maintenance



Performing the preventive maintenance not only keeps the performance stable and extends the life of the equipment, but also decreases the risk of failure.

Moreover, planning a correct preventive maintenance leads to a reduction of system downtime and cost of replacement, and allows a better management of the spares inventory.

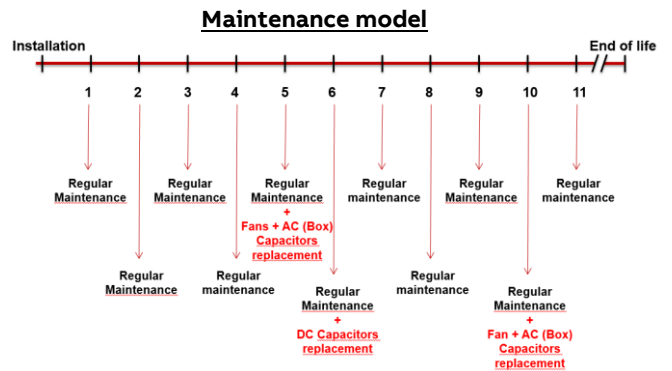
- Upgrade and retrofit services boost performance and maximize reliability
- Preventive maintenance ensures continuity of the system correct functionality
- Avoiding regular maintenance increases the probability of system malfunction

In case the preventive maintenance is not performed, the correct functioning of the equipment could be jeopardized.

Typical UPS Life cycle

Whenever you want to keep system reliability and increase customer satisfaction, you need to perform the correct maintenance of your UPS.

The recommended maintenance model has been defined by the ABB factory in Quartino – Switzerland – based on the experience gathered over the last decade, and it is shown in the following chart.

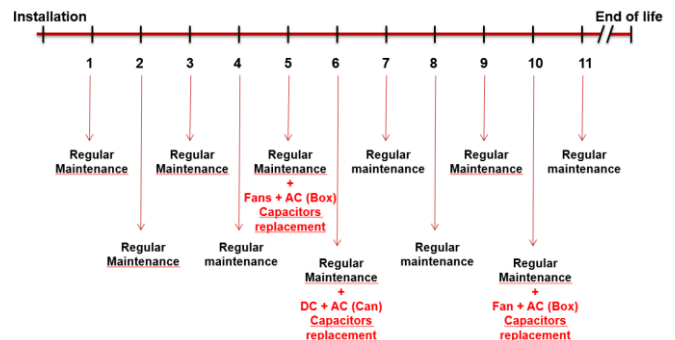


In addition to the regular maintenance (at least every year), we recommend to replace

- Fans once every 5 years
- AC box capacitors once every 5 years
- DC capacitors once every 6 years

For AC “Can” capacitors (used for example as output filter in the PW33), the recommended replacement interval is 6 years (instead of 5 for the AC “box”). In this case, the maintenance model changes accordingly:

Maintenance model with AC capacitors



Example of AC Can capacitor:



Recommended consumable parts for DPA D1M

Consumables for DPA D1M 10kVA modules

Article nr.	Description	Quantity
00-4563	Fan	2
00-8635	NW8060x1 Input filter capacitor board	1
00-9320	NW8063x1 AC capacitor board	1
00-8646	NW8030x3 DC capacitor board	1

As an alternative to the entire DC capacitors board 00-8646, the 4 capacitors 00-0261 can be replaced:

Article nr.	Article	Quantity
00-0261	DC capacitor for 8030x3	4

Consumables for DPA D1M 15kVA modules

Article nr.	Article	Quantity
00-4563	Fan	2
00-8635	NW8060x1 Input filter capacitor board	1
00-9322	NW8063x2 AC capacitor board	1
00-8634	NW8030x1 DC capacitor board	1

As an alternative to the entire DC capacitors board 00-8634, the 4 capacitors 00-4253 can be replaced:

Article nr.	Article	Quantity
00-4253	DC capacitor for 8030x1	4

Consumables for DPA D1M 20kVA modules

Article nr.	Article	Quantity
00-7227	Fan	2
00-8615	NW8060x Input filter capacitor board	1
00-9322	NW8063x2 AC capacitor board	1
00-8643	NW8030x2 DC capacitor board	1

As an alternative to the entire DC capacitors board 00-8643, the 6 capacitors 00-4253 can be replaced:

Article nr.	Article	Quantity
00-4253	DC capacitor for 8030x2	6

Consumables for DPA D1M 25kVA modules

Article nr.	Article	Quantity
00-7227	Fan	2
00-8615	NW8060x Input filter capacitor board	1
00-9319	NW8063x AC capacitor board	1
00-8617	NW8030x DC capacitor board	1

As an alternative to the entire DC capacitors board 00-8617, the 6 capacitors 00-4253 can be replaced:

Article nr.	Article	Quantity
00-4253	DC capacitor for 8030x	6

Recommended consumable parts for DPA D2M

Consumables for DPA D2M 30kVA modules

Article nr.	Description	Quantity
00-4563	Fan	1
00-7475	Fan	1
00-8638	NW8061x1 Input filter capacitor board	1
00-9323	NW8062x2 AC capacitor board	1
00-8642	NW8033x DC capacitor Board	1

Consumables for DPA D2M 40kVA modules

Article nr.	Description	Quantity
00-7227	Fan	1
00-7475	Fan	1
00-8625	NW8061x Input filter capacitor board	1
00-9321	NW8062x1 AC capacitor board	1
00-8640	NW8031x1 DC capacitor Board	1

Consumables for DPA D2M 50kVA modules

Article nr.	Description	Quantity
00-7227	Fan	1
00-7475	Fan	1
00-8625	NW8061x Input filter capacitor board	1
00-9317	NW8062x AC capacitor board	1
00-8623	NW8031x DC capacitor Board	1

Recommended consumable parts for DPA D3M

Consumables for DPA D3M 30kVA modules

Article nr.	Description	Quantity
00-7475	Fan	1
00-9161	Fan	1
04-2592	NW26061x2 Input AC capacitor board	1
04-2043	NW24040x DC Capacitor board	2

Consumables for DPA D3M 40kVA modules

Article nr.	Description	Quantity
04-1463	Fan	1
00-9161	Fan	1
04-2591	NW26061x1 Input AC capacitor board	1
04-2658	NW24041x DC Capacitor board	2

Consumables for DPA D3M 50kVA modules

Article nr.	Description	Quantity
04-1463	Fan	1
00-9161	Fan	1
04-2590	NW26061x Input AC capacitor board	1
04-2658	NW24041x DC Capacitor board	2

Recommended consumable parts for DPA Upscale

Consumables for DPA Upscale 10 kW modules

Article nr.	Description	Quantity
00-8938	Fan	1
00-3270	Filter capacitor for NW20060x	3
00-6828	Filter capacitor for NW20060x	3
00-9281	DC capacitor for NW20023x1	2

Consumables for DPA Upscale 20 kW modules

Article nr.	Description	Quantity
00-9389	Fan	1
00-9334	Filter capacitor for NW20060x1	3
00-6828	Filter capacitor for NW20060x1	3
00-9281	DC capacitor for NW20023x	4

Recommended consumable parts for PowerScale

Consumables for PowerScale 10 kVA - Cabinet A and B

Article nr.	Description	Quantity
00-8938	Fan	1
00-3270	AC capacitor for NW20060x	3
00-6828	AC capacitor for NW20060x	3
04-0475	DC capacitor	2

Consumables for PowerScale 15 kVA - Cabinet A and B

Article nr.	Description	Quantity
00-8938	Fan	1
00-3270	AC capacitor for NW20060x2	3
00-6828	AC capacitor for NW20060x2	3
04-0475	DC capacitor	4

Consumables for PowerScale 20 kVA - Cabinet A and B

Article nr.	Description	Quantity
00-9389	Fan	1
00-6828	AC capacitor for NW20060x1	3
00-9334	AC capacitor for NW20060x1	3
04-0475	DC capacitor	4

Consumables for PowerScale 25 kVA - Cabinet B

Article nr.	Description	Quantity
00-9389	Fan	1
00-6828	AC capacitor for NW20060x3	3
00-9334	AC capacitor for NW20060x3	3
04-0475	DC capacitor	4

Consumables for PowerScale 25 kVA - Cabinet C

Article nr.	Description	Quantity
04-1463	Fan	1
00-6828	AC capacitor for NW24060x	3
00-9334	AC capacitor for NW24060x	3
04-3345	NW24040x2 DC Capacitor Board	2

Consumables for PowerScale 30 kVA - Cabinet C

Article nr.	Description	Quantity
04-1463	Fan	1
00-6828	AC capacitor for NW24060x1	9
00-9334	AC capacitor for NW24060x1	3
04-2042	NW24040x1 DC Capacitor Board	2

Consumables for PowerScale 40 kVA - Cabinet C

Article nr.	Description	Quantity
04-1463	Fan	1
00-6828	AC capacitor for NW24060x1	9
00-9334	AC capacitor for NW24060x1	3
04-2043	NW24040x DC Capacitor Board	2

Consumables for PowerScale 50 kVA - Cabinet C

Article nr.	Description	Quantity
04-1463	Fan	1
00-6828	AC capacitor for NW24060x2	6
00-9334	AC capacitor for NW24060x2	6
04-2043	NW24040x DC Capacitor Board	2

Recommended consumable parts for PW33

Note: the AC output capacitors are "Can" capacitors and the recommended replacement interval is 6 years

Consumables for PW33 60kVA

Article nr.	Description	Quantity
04-0937	Inverter Fan Kit	1
00-0230	Bypass Fan	1
00-9543	NW22061x2 Input filter board	1
00-4005	AC Output capacitor	3
00-5384	DC Capacitor	4

Consumables for PW33 80kVA

Article nr.	Description	Quantity
04-0941	Inverter Fan Kit	1
00-0230	Bypass Fan	1
00-9543	NW22061x2 Input filter board	1
00-0366	AC Output capacitor	3
00-5384	DC Capacitor	4

Consumables for PW33 100kVA

Article nr.	Description	Quantity
04-0941	Inverter Fan Kit	1
00-9163	Bypass Fan	1
00-9034	NW22061x Input filter board	1
00-0366	AC Output capacitor	3
00-5384	DC Capacitor	6

Consumables for PW33 120kVA

Article nr.	Description	Quantity
04-0948	Inverter Fan Kit	1
00-9163	Bypass Fan	1
04-0149	NW22063x2 Input filter board	1
00-4005	AC Output capacitor	6
00-5384	DC Capacitor	6

Consumables for PW33 160kVA

Article nr.	Description	Quantity
04-0948	Inverter Fan Kit	1
00-9163	Bypass Fan	1
04-0148	NW22063x1 Input filter board	1
00-0366	AC Output capacitor	6
00-5384	DC Capacitor	8

Consumables for PW33 200kVA

Article nr.	Description	Quantity
04-0948	Inverter Fan Kit	1
00-9163	Bypass Fan	1
00-9466	NW22063x Input filter board	1
00-0366	AC Output capacitor	6
00-5384	DC Capacitor	10

Consumables for PW33 250kVA

Article nr.	Description	Quantity
04-1159	Inverter Fan Kit	1
00-9163	Bypass Fan	1
04-0975	NW22065x1 Input filter board	3
00-0366	AC Output capacitor	9
00-5384	DC Capacitor	14

Consumables for PW33 300kVA

Article nr.	Description	Quantity
04-1159	Inverter Fan Kit	1
04-1334	Bypass Fan	1
04-0970	NW22065x Input filter board	3
00-0366	AC Output capacitor	9
00-5384	DC Capacitor	18

Consumables for PW33 400kVA

Article nr.	Description	Quantity
04-2187	Bypass Fan Kit	1
04-2188	Inverter Fan Kit	3
04-2186	Coil Fan Kit	1
04-2329	NW22067x1 Input filter board	3
00-0366	AC Output capacitor	12
00-5384	DC Capacitor	24

Consumables for PW33 500kVA

Article nr.	Description	Quantity
04-2187	Bypass Fan Kit	1
04-2188	Inverter Fan Kit	3
04-2186	Coil Fan Kit	1
04-1979	NW22067x Input filter board	3
00-0366	AC Output capacitor	15
00-5384	DC Capacitor	30

Recommended consumable parts for DPA500 / DPA500 UL

Consumables for DPA500 modules

Article nr.	Description	Quantity
00-9162	Fan - Active M	3
04-3427	Fan - Passive M	3
4NWP100455R0001	NW28061x Input Filter Passive M	1
4NWP100456R0001	NW28060x AC caps Passive M	1
4NWP100463R0001	NW28032x DC caps Active M	1

Consumables for DPA500 UL modules

Article nr.	Description	Quantity
00-9162	Fan - Active M	3
04-3427	Fan - Passive M	3
4NWP101838R0001	NW28061x1 Input Filter Passive M	1
4NWP101837R0001	NW28060x1 AC caps Passive M	1
4NWP100463R0001	NW28032x DC caps Active M	1

Recommended consumable parts for PW33 S3

Consumables for PW33 S3 60 kW

Article nr.	Description	Quantity
00-9161	Fan	2
00-9162	Fan	3
4NWP100984R0001	NW28032x1 DC capacitors	1
4NWP100990R0001	NW30060x I/O Filter	1

Consumables for PW33 S3 80 kW

Article nr.	Description	Quantity
00-9161	Fan	2
00-9162	Fan	2
4NWP100985R0001	NW28032x2 DC capacitors	1
4NWP100991R0001	NW30060x1 I/O Filter	1

Consumables for PW33 S3 100 kW

Article nr.	Description	Quantity
00-9161	Fan	5
4NWP100986R0001	NW28032x3 DC capacitors	1
4NWP100992R0001	NW30060x2 I/O Filter	1

Consumables for PW33 S3 120 kW

Article nr.	Description	Quantity
00-9161	Fan	2
00-9162	Fan	3
4NWP100987R0001	NW28032x4 DC capacitors	1
4NWP100993R0001	NW30060x3 I/O Filter	1

Recommended consumable parts for PowerLine

Consumables for PowerLine 20 kW standard modules

Article nr.	Description	Quantity
4NWP104629R0001	NW24041x3 DC capacitors	2
4NWP104630R0001	NW36061x1 Filter IN	1
4NWP104641R0001	NW36062x1 Filter OUT	1
4NWP104575R0001	Preassembled Fans	1

Consumables for PowerLine 40 kW standard modules

Article nr.	Description	Quantity
4NWP102329R0001	PCB NW24041x1 DC	2
4NWP102324R0001	PCB NW36061x Filter IN	1
4NWP102325R0001	PCB NW36062x Filter OUT	1
4NWP102850R0001	Preassembled Fans	1

Recommended consumable parts for DPA 120/240 UL

Consumables for 20 kW modules

Article nr.	Description	Quantity
4NWP102324R0001	NW36061B Filter IN	1
4NWP102325R0001	NW36062B Filter OUT	1
4NWP102326R0001	NW24041x2 DC capacitors	2
4NWP102851R0001	Preassembled Fans	1

Consumables for 40 kW modules

Article nr.	Description	Quantity
4NWP102324R0001	NW36061B Filter IN	1
4NWP102325R0001	NW36062B Filter OUT	1
4NWP102329R0001	NW24041x1 DC capacitors	2
4NWP102852R0001	Preassembled Fan	1

Recommended consumable parts for DPA 250 S4

Consumables for 50 kW modules

Article nr.	Description	Quantity
4NWP104812R0001	Booster/Inverter Fan assembly	1
4NWP104813R0001	Coil Fan assembly	2
4NWP104818R0001	NW40032 DC Capacitors	1
4NWP104823R0001	NW40064 Input filter	1
4NWP104824R0001	NW40065 Output filter	1

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