

Preventive maintenance program for ABB AC drives

ABB has created a lifecycle management plan for ABB Drives products and systems in order to provide customers with the best possible return on the drives assets. This plan covers the entire lifecycle and it is based on ABB's extensive experience in drives technology. Standard preventive maintenance offerings have been productized and associated to different lifecycle phases of various products.

Drives preventive maintenance program aims for increased reliability optimized performance and extended lifetime. ABB recommends maintenance for AC drives throughout their lifetime in order to ensure maximum availability and to eliminate unplanned repair costs.

Drives lifecycle management model

The platform for the drives lifecycle management model is a four-phase lifecycle plan. When the series production period ends, the product is transferred from the active to the classic phase followed by the limited and finally the obsolete phase. The product is fully supported up to the obsolete phase, but in the limited phase ABB recommends to replace and recycle the drive.

Lifecycle plan and status

Lifecycle plan maps all drives products according to their individual lifecycle phase. The plan aims to manage the drives products and the product service offerings in different phases. The lifecycle status announcement communicates the drives product family status.

Site audit and survey

Site audit can be performed based on documentation for new installations. When the conditions of drives are not known well, a site survey needs to be conducted. The survey results are recorded in a detailed report containing information of the present conditions of the drives and recommendations for immediate improvement actions.



There is still a commonly held belief that industrial products equipped with electronic components do not require specific maintenance. Based on ABB's experience, however, failure probability of such equipment increases after years of operation. For electric drives this period is typically 5 to 10 years. The main reason for failures is aging of components, but it is also highly affected by operational conditions. A component failure may cause consequential damage to other parts of the drive including power semiconductors.

The objective of the audit and survey is to create a long-term systematic preventive maintenance program that is based on the audit or survey results and product specific maintenance schedule.

Maintenance schedules

Maintenance schedule provides a systematic and functional means of maintaining a specific drive. Each ABB AC drive product family has a unique-schedule, which is based on extensive experience and know-how of manufacturing and maintaining electric drives.

Specifications of component suppliers are also observed carefully. It is also important to take environmental and operational conditions into consideration when defining a drive maintenance program.

Maintenance notes

Maintenance notes provide technical explanation on why each and every maintenance action needs to be taken e.g. replacing of components due to aging. Maintenance notes are linked to the information found in the maintenance schedules.

- Product Lifecycle Services
- Installation & Commissioning
 - Training
 - Support & Remote Services
 - Spare Parts & Repairs
 - Maintenance & Field Services
 - Migration & Retrofits
 - Optimization



Productized service offerings

Productized service offerings have been developed to ensure consistent quality in drives maintenance around the globe.

Improved efficiency, ease of ordering and fluent maintenance performance provide additional benefits.

■ Preventive maintenance parts and material

- **Preventive maintenance kits**

Preventive maintenance kits are a vital part of the preplanned AC drives preventive maintenance program. The kits contain all the required parts for specific drive maintenance.

- **Updating service for printed circuit boards and modules**

Updating service is an option for utilizing preventive maintenance kits, if customer decides to use existing boards or modules.

- **Exchange unit service**

One alternative is to use exchange boards or modules instead of using preventive maintenance kits or updating service.

■ On-site performance

- **Maintenance performance**

Preventive maintenance programs include three important elements: product descriptions, service instructions and standard reporting templates. The product descriptions specify what the service does and does not cover. The service instructions describe the maintenance procedure in detail step-by-step. The standard reporting forms are linked to the working instructions and help the certified service engineers to create customer friendly and consistent reports.

- **Spare part audit and reform**

Spare parts play a crucial role in case of failure. Availability of appropriate spares has to be ensured. ABB recommends spare part inventory inspections and certain spares must be reformed according to the maintenance schedule.

■ Customer training

Maintaining a long-term customer relationship requires competent people to perform daily operations on site. Standard training programs are available to ensure professional operation and basic maintenance. Training can also be tailored using information about the personnel knowledge level and an evaluation of the customer.

Customer's role

Successfulness of the preventive maintenance depends on information recorded on the service reports and application provided by the customer. Usually the benefit of preventive maintenance increases when the information provided is as thorough as possible. If the available information is not sufficient, it is recommended to perform a site survey for the drives before preventive maintenance. Preventive maintenance must be planned well in advance in order to reserve resources and service parts needed.



Optimum return on assets

Due to the fact that drives need to be maintained annually, ABB recommends a long-term systematic drives preventive maintenance program to be carried out according to the maintenance schedules. This ensures the optimum drive performance and return on drive assets through the entire lifetime.

