ABB MOTION SERVICES

Replacements for motor and generator control panels

An investment in availability, reliability and functionality

A control panel is a critical element in synchronous motor and generator applications. Yet, a control panel's electronic components degrade faster than mechanical components like motors and generators, meaning that an existing control panel might not be operating at its optimum performance. It is important to plan for a replacement or upgrade at least once during a motor's and generator's life.

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01 ABB control panels MCP500/GCP (left), MCP300 (middle) and MCP400 (right)

Control panels
Motor control panels (MCPs) and generator control panels (GCPs) provide control and protection functions for synchronous motors and generators.

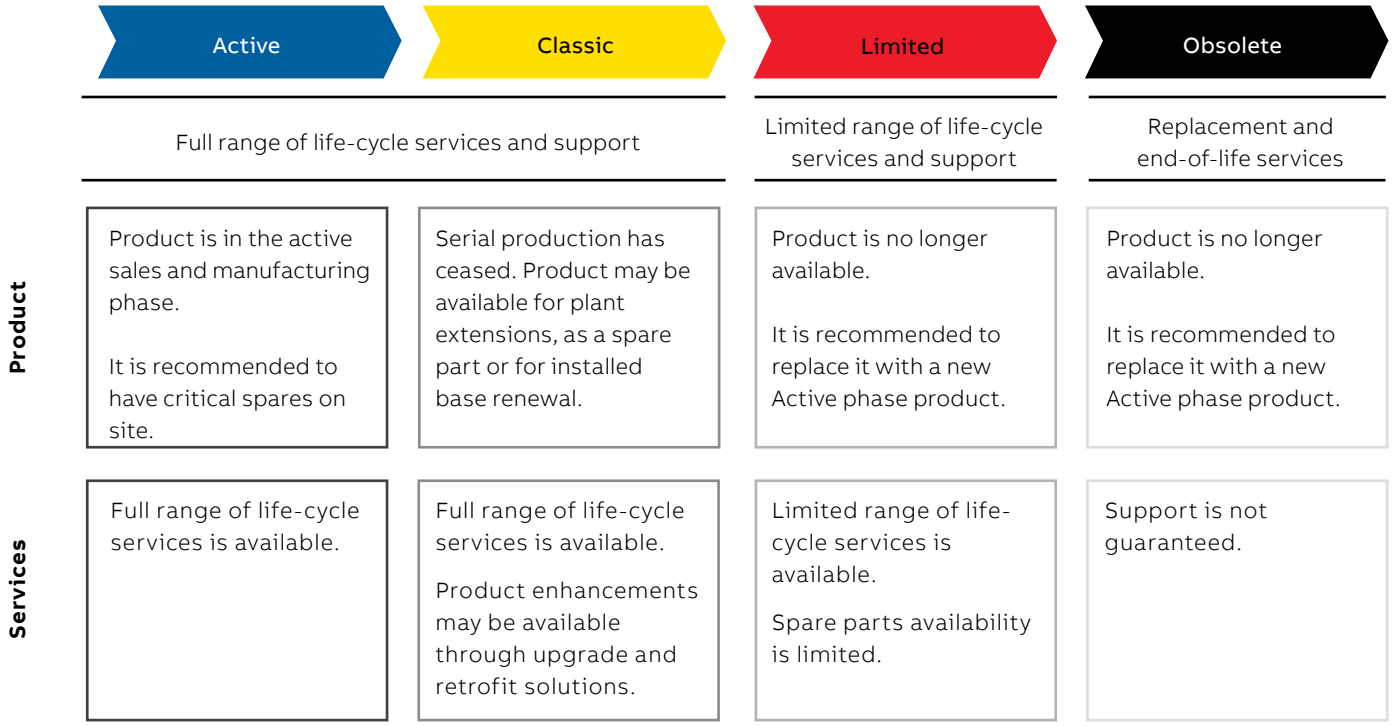
MCPs and GCPs generally include:
- Excitation equipment
- Start logic system
- Control functions
- Protection functions
- Communication interface

Aging components, future functionality
Control panels feature electronic components that inevitably age and degrade over time. To avoid disrupting motor/generator operation through component failure, it is essential that control panels have a stock of spares readily available from the supplier. Furthermore, advances in electronics brings updated functionality to control panels, thereby making upgrades more attractive.

Control panel replacements
Through its decades of experience in excitation systems for synchronous motors and generators, ABB is renowned for its highly reliable control panels. They are carefully designed with high-quality components ensuring high total availability and reliability.

Control panels can replace existing control systems, with ABB engineers ensuring that the design matches current requirements while seamlessly interfacing with the existing application. Control panels are fully tested prior to delivery, minimizing downtime needed for installation and commissioning. The replacement can be completed in a few days, preferably during a planned production stop.

Benefits of a new control panel
- Greater reliability
- Increased operational uptime
- Enhanced functionality
- State-of-the-art customized technology
- Full factory support
- Complete range of spare parts
- Includes evaluation of existing equipment design and adaptation to new system



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01 ABB life-cycle management model

Product life-cycle management model
ABB's four-phase product life-cycle management model provides a valuable tool for customers seeking to optimize their asset management. The life-cycle phases detail the level of service and support available for the product.

Control panel life cycle
Advances in electronic components means that control panel functionality evolves at a faster rate than those of traditional mechanical devices like motors and generators. Thus, the active life-cycle phase of a control panel is considerably shorter than that of a motor or generator.

When a component's active lifetime passes, the availability of spare parts and technical support quickly declines, eventually becoming unobtainable.

Therefore, to ensure continued safety, performance and reliability, ABB offers to upgrade or replace existing control equipment as it approaches the end of its life.

Control panels
ABB offers three control panel series: the MCP300 and MCP400 series for HS/AMZ synchronous motors and the MCP500/GCP series for GBA/AMS synchronous motors and generators. These products can also be offered for third party machines.

They comprise the latest motor/generator control technology which delivers precise control, protection and clear user supervision. Continuous design upgrades ensure that the control panels remain competitive and up to date.

The perfect fit for every installation
In addition to the standard functions and features, a wide range of options are available to meet customer requirements and provide the optimal solution for each installation.

The MCP400, MCP500/GCP and MCP300 series are supplied in standard dimensions. Customized dimensions can also be offered to match installation requirements.

MCP400 series
ABB offers two standard versions of the MCP400 series.

MCP410
A classic single-channel MCP that meets the basic needs of motor control applications that can be fitted with a DC/AC exciter.

MCP430
A dual channel MCP with two automatic voltage regulators (AVRs) to optimize availability. This dual-AVR arrangement means that a single AVR related fault is immediately cleared and costly downtime is avoided.

Both versions feature the latest motor control technology for precise control and protection, a touch screen control panel for easy access to operating data and remote connection to ABB experts for fast support and troubleshooting.

MCP500/GCP series
The MCP500/GCP series can be used for motors and generators. The series is PLC based to allow high flexibility and simplify the integration of the control panel into the plant control system.

Three standard versions are available for the MCP500/GCP series.

MCP510/GCP Basic
Meets the basic needs of motor and generator start logic and control functionality.

MCP530/GCP Standard
Suited to a wide range of applications and customer needs. It includes numerous functions and features as standard, with a wide range of additional options for protection and excitation control functions available. Modern control equipment allows integration with other control systems.

MCP570/GCP Advanced
Features the functionality of MCP530/GCP Standard. In addition, it includes a redundant PLC system, for highest possible availability. The redundant PLC system is in hot stand-by to take over the control immediately if a fault is detected in the main channel or if manually selected. This ensures a seamless operation of the synchronous motor/generator.

MCP400 series

GCP Advanced

MCP300 series
ABB offers four standard versions of the MCP300 series.

MCP310
A classic single-channel MCP that meets the basic needs of motor control applications that can be fitted with a DC/AC exciter.

MCP330
A dual channel MCP with two automatic voltage regulators (AVRs) to optimize availability. This dual-AVR arrangement means that a single AVR related fault is immediately cleared and costly downtime is avoided.

MCP350
Suitable for synchronous motors that are started by variable-speed drives (VSDs). VSD start may be needed when the network is weak or if the load or its inertia is high.

MCP370
Suitable when synchronous motors are fitted with brushes and slip rings, typically if very fast changes in excitation are required. Starting normally takes place direct online (DOL), but any starting method can be used with brush excitation if needed.

MCP300 series

For more information, please contact your local ABB representative or visit:

new.abb.com/service/motion/modernization-and-performance-improvement-services

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