SERVICE

Distributed Control Systems

LifeCycle Parts Services

LifeCycle Parts Services
Trouble-free operation

As a world-leading engineering company, ABB is committed to providing support and services to maximize its customers' uptime.

To ensure the best possible accessibility and continuous trouble-free operation, we provide cost-efficient spare parts and services for your system.

ABB offers a comprehensive range of spare parts with short lead times, which helps minimize downtime if a failure occurs. In addition, preventive maintenance kits make it possible to plan maintenance in advance. This maximizes availability and increases maintenance performance.

Our LifeCycle Parts Services portfolio meets customers' needs to minimize costs and maximize the value of their investments in ABB equipment. Whether you need to repair a broken part or purchase a spare part, our services achieve cost-efficient maintenance.

ABB is highly qualified and provides a wide range of technical knowledge and support. We ensure that our customers receive the best possible return on their assets throughout the entire product life cycle.

Product portfolio
ABB's control systems portfolio ranges from stand-alone products to Distributed Control Systems (DCS).

We also supply any size of application, from small systems to SIL3-certified Safety Instrumented Systems and Collaborative Process Automation Systems (CPAS) for an extended automation scope.

The services highlighted in this brochure cover the following ABB Control Technologies families:
- System 800xA
- Freelance
- Advant Master
- Advant OCS with MOD 300 Software
- Satt
- Symphony DCI System Six
- Symphony Harmony/INFI 90
- Symphony Melody

Service availability by system family

Service	System 800xA	Freelance	Advant Master	Advant MOD 300	Satt	Symphony DCI System Six	Symphony Harmony	Symphony Melody
Spare Parts Service	X	X	X	X	X	X	X	X
Emergency Parts Service	X	X	X	X	X	X	X	X
Refurbished Parts Service		X	X	X	X	X	X	X
Parts Repair Service	X	X	X	X	X	X	X	X
Parts Exchange Service	X	X	X	X	X	X	X	X
Parts Test Service	X	X	X	X	X	X	X	X
Preventive Maintenance Kits	X		X	X	X	X	X	
inventory Access™ Program	X	X	X	X	X	X		X
Parts StepUp Service	X	X	X	X				
Parts Root Cause Analysis Service	X		X	X				

X= Available.

The product life cycle
Secured Return On Investment

Using the life cycle management model and the four-phase life cycle plan.

The life cycle management model divides a product's life cycle into four phases: active, classic, limited and obsolete. Each phase has different implications for the end user in terms of services and support provided.

All control systems effectively remain in Active phase, with individual component products (hardware and software) transitioning through the lifecycle phases of Active, Classic, Limited and Obsolete as they are superseded by newer technologies and offerings.

Spare Parts availability is secured in the phases – Active, Classic and Limited. New Spare Parts are actively manufactured in the Active and Classic phases. In the Limited phase, stocked parts can be complemented with other Spare Parts Services, such as the Parts Repair Service and the Parts Refurbishment Service.

Spare Parts are supported for a period of 10 years from time when the product enters the Classic phase. When the product reaches the Obsolete phase the spare parts availability can no longer be guaranteed. However, the Service organization may still be able to support the product, or parts of it, on a best effort basis, limited to available parts and component inventory.

We ensure that our customers receive the best possible return on their assets throughout the entire product life cycle.

Extended Life Cycle Support
Upon individual customer request, ABB can offer Extended Life Cycle Support agreements to meet individual customer needs for Spare Parts Services beyond the standard product lifecycle commitment. The Extended Lifecycle Support agreements can include Parts, Parts Repair Services and Refurbished Parts Services during the product Life Cycle.

In each life cycle phase, ABB commits to supply, support and service delivered products to meet customer expectations throughout the product lifetime.

Services portfolio

Services by life cycle state
Services availability depends on the product's life cycle state.

The following table shows what services apply in each life cycle phase.

Service	Active	Classic	Limited	Obsolete
Spare Parts Service	X	X	O.R.*	O.R.
Emergency Parts Service	X	X	O.R.*	O.R.
Refurbished Parts Service	X	X	O.R.*	O.R.**
Parts Repair Service	X	X	X	O.R.**
Parts Exchange Service	X	X	X	O.R.
Parts Test Service	X	X	X	O.R.
Preventive Maintenance Kits	X	X	X	O.R.
inventory Access™ Program	X	X	O.R.*	
Parts StepUp Service	X	X	X	X***
Parts Root Cause Analysis Service	X	O.R.	O.R.	O.R.

X= Available. O.R.= On request.

* Stock dependant – ABB stocks sufficient inventory at the end of the Classic phase to support anticipated demand during the Limited phase. The available inventory level is one of the criteria used to determine the timing for transfer to the Obsolete phase.
** Component availability dependant – ABB will continue to provide repair services until it is no longer technically feasible to do so due to the lack of component availability.
*** Only available for Advant Master and Advant MOD 300

Online tools

Business Online - Web ordering tool
ABB offers quick and easily-accessible web-based information and order systems to facilitate spare part management. A comprehensive range of products are available with more than 100,000 spare parts and related Life Cycle Parts Services for a wide assortment of equipment.

Through your web browser you can access key information, e.g. specific spare part availability, locate the equipment that utilizes the particular spare part, and view technical details and photographs of most spare parts. You can make inquiries, search for a spare part or place an order at your convenience 24 hours a day.

Parts are arranged in a hierarchical structure that spans the entire product range – from equipment level to a single spare part. Searching for a part is simple: just enter its type, article number or description.

In most cases, you can also verify your choice by viewing a photograph of the part in question. In addition, several sort and search functions simplify the information management for you.

To get access, please contact your local ABB office.

The myABB/ My Control System
customer self-service tool, available 24/7, offers you a single point of online access to information, services and service contacts for the ABB family of control systems and all ABB products.

You'll quickly find that new MyABB/ My Control System web portal is a great way to increase your productivity, minimize cost, and extend the useful life of your ABB control products and systems.

My Control System is a valuable source for maintenance information and for enhancement of the control system and provides ready answers to frequently asked questions, thus reducing the effort spent looking for information and shortening software delivery times. All relevant ABB control system information is in one place and just a couple of mouse clicks away. A basic version of My Control System (limited access) will be provided to all ABB customers.

Automation Sentinel subscribers will enjoy premium access, which includes features such as software downloads, access to validated security updates and documentation already filtered for each system.

Automation Sentinel
Automation Sentinel is ABB's subscription based control system lifecycle management and support program that assists system owners to actively manage their control system lifecycle, support and maintenance.

With this program, system owners can keep their control software up-to-date and maintain a flexible path forward to new system software technology. Automation Sentinel provides exclusive services for the maintenance, evolution and continual enhancement of the installed base of ABB control systems.

System LifeCycle Fingerprint Report
System Lifecycle Fingerprint, available for ABB control system customers with an myABB/My Control System account together with a Fingerprint license, provides a comprehensive strategic maintenance analysis of the installed ABB control system hardware. It extends the service of System Lifecycle Benchmark, with the benefit of providing the full scope of analysis and recommendations for taking actions.

Based on computer aided data collection from the installed ABB control system, an analysis and evaluation is performed by an ABB Field Service engineer. As a result, a System Fingerprint report is then presented by ABB Field Service authorities.

Based on the life-cycle status of the individual installed units and ABB Field Service Engineer's experience with the customer plant, an evaluation will be conducted leading to a strategic hardware maintenance plan.

In addition to the current lifecycle status of the installed devices, the System Lifecycle Fingerprint report provides an easy to read table summary of the forecast lifecycle for the installed devices, and briefly summarizes key findings and recommended actions, helping to avoid unwelcome failures and production losses.

Spare parts

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01 DSAI130A, analog input module for the ABB Master family.
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02 SattCon 05/OP45, part of the Satt family.
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03 PM865K01, ABB Ability™ System 800xA controller.

Spare Parts Service
Spare parts are essential in maintaining a high system availability. The Spare Parts Services supplies brand new certified ABB spare parts shipped within a day, increasing reliability and leading to longer lifetime of your equipment.

With our large stock of ABB spare parts for all of ABB's different control systems, we offer quick handling and shipping of your spare parts needs through our 24 hours web-based ordering process. The use of optimal means of transport results in cost-effective and quick arrival of your spare parts.

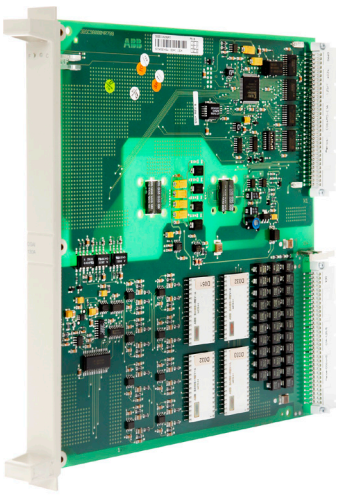
Emergency Parts Service
For occasions when quickest possible delivery is the most important factor, we offer the Emergency Parts Service.

Spare Parts service availability is critical to on-going operations, not only during business hours. ABB maintains a complete stock of certified ABB parts to ensure availability.

For emergency cases, our personnel and partners are available 24 hours to provide immediate response to your emergency parts request and our global logistics network ensures the quickest possible delivery.

Refurbished Parts Service
For cases when new spares a no longer manufactured or no longer available, or when if you need to acquire a brand new spare part in the most cost-effective way.

The Refurbished Parts Service is a cost-effective alternative to purchasing new spare part modules. Parts sold with this service are 'like-new' parts, recovered and updated by ABB. What's more, the have been tested to meet the original equipment specifications and the current component standards.



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01

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Repair, exchange and testing

Parts Repair Service
When the need is to have a unique individual module repaired and returned back to the plant, we offer the Parts Repair Service.

Our repair network provides repairs that meet original equipment specifications. Our world-class turnaround time for repairs is typically less than two weeks, and a repair report in is included every return shipment, detailing what steps has been taken during the repair process.

Parts Exchange Service
For when you wish to purchase a fully functional spare in return for your broken unit.

Parts Exchange Service keeps lead-times to a minimum while offering a cost-efficient alternative to a spare part. Parts under this service can be refurbished or new, depending on availability. When refurbished units are provided, keep in mind that they are 'like-new' parts, recovered and updated by ABB.

A repair report for the broken 'sent-in' unit can be supplied if it is repaired. Request this report when ordering the exchange part.

Parts Test Service
Choose this service when you want assurance that the spares you have used or stored for a longer period are still operational.

Parts Test Service determines the status of parts, e.g. if they are functional and meet the original manufacturing specifications, with a 3-week turnaround time or less. Units that passes the test are re-sealed with factory labels to provide the best performance when placed in your system. ABB Parts Repair Service is available for any non-functioning units. A Test Report is always included with the unit.

Parts management program, upgrades and parts analysis

Preventive Maintenance Kits
Choose this program when you want to secure continuing operation and know the calculated maintenance cost.

Preventive maintenance is the most efficient maintenance program because it ensures that equipment is serviced before a breakdown actually occurs. Preventive maintenance is carried out during planned productions shutdowns and the required parts and resources should be reserved in advance.

Our pre-specified, easy-to-order kits consist of genuine ABB spare parts that are necessary for a specific scheduled maintenance. These cost-efficient kits have a lower price compared to the price of individual spare parts and are delivered to a lead-time, unlike normal spare parts.

inventory Access™ Program
Choose this program when you want to have spare parts located at or near your premises.

Our Parts Inventory Management program, inventory Access™ (iAP), is a cost-effective alternative to purchasing parts inventory. It provides a customized spare parts inventory at or near your location yet owned and maintained by ABB.

We take full responsibility for obsolescence, depreciation, administration and inventory ownership costs until the parts are put into service.

A fixed monthly fee gives you the security of on-site parts availability, while reducing the initial capital expenditures for a spare parts inventory. Actual purchase does not take place until the part is taken out from the Inventory Access part stock.

This is also the time at which the warranty period starts. The inventory Access™ Program is offered on request. Please contact you local ABB representative for further information.

Parts StepUp Service
Choose this service when you need to exchange outdated hardware or current processor modules for new, unused, fully supported hardware of latest design and different types with higher performance, extending your system parts life cycle.

Your hardware is supported with a suite of Parts Services. For legacy hardware in later life cycle phases, availability of services cannot be guaranteed, although ABB will always offer support with our best effort. Actively supported processor modules may be struggling with an increased system and processor load after a commissioning or a system expansion.

With the Parts StepUp service it's possible to replace legacy hardware for new fully supported and to replace processor modules with newer and more powerful versions, increasing reliability, lifetime and system stability. The new parts are typically delivered after two working weeks, and the replaced parts shall be returned to ABB no later than 90 days from the delivery of the StepUp parts.

Parts StepUp is a cost effective way of increasing the processing power of your system and replacing old hardware. Combined with Automation Sentinel, ABB's control systems life cycle management program, there is an even greater price incentive: It is the most cost efficient way of upgrading your system hardware and increasing controller processor power compared to any other way of acquiring brand new certified ABB DCS parts.

Parts StepUp Service availability by system family

ABB DCS System	Processor	I/O modules	Communication	Power Supply
ABB Ability™ System 800xA	X			X
Advant Master	X	X	X	X
Advant MOD 300		X	X	X
Freelance	X			

X= Available.

Parts Root Cause Analysis Service
Choose this service to determine the root cause of failed hardware.

When your hardware fails it's sometimes most important to determine the cause of the failure. The Parts Root Analysis Service does just that – ABB's experienced hardware design expert's uses their unique knowledge combined with access to original design and test documentation to find the root cause of the failure through extensive analysis of your failed unit.

After the analysis, we provide a complete status report of the faulty unit, including analysis and manufacturer information, results from functional tests, probable fault causes and finally the required and/or recommended actions.

A repair of the failed unit is not included in the Parts Root Cause Analysis Service and depending on the type of failure a repair might not be possible to perform. Furthermore, the unit must mot have been subject to repair attempts or otherwise manipulated, if so we cannot analyze the unit.

The service is available for ABB Ability™ System 800xA hardware and Advant Master and MOD 300 hardware in the Active life cycle phase. For product families in later life cycle phases, availability is determined case-by-case

The following product families are supported:

ABB Ability™ System 800xA:
- AC 800 M
- S800 I/O
- Panel 800

Advant Master and Advant MOD 300:
- AC 160
- AC 410
- AC 450
- AC 460
- S100 I/O
- S600 I/O

The Root Cause Analysis Service is in many cases the best and most cost effective way to find the real cause of a unit failure. For customers with Automation Sentinel, ABB's control systems life cycle management program, this service will be discounted, but cannot be combined with other Automation Sentinel discounts.

Service availability by system family

The general life cycle status for product groups is defined by the groups individual hardware modules. Therefore the status for a single module may differ from its group life cycle status. For detailed life cycle information on module level please contact your local ABB representative.

ABB Ability™ System 800xA

Product	Status	Spare Parts	Emergency Parts	Refurbished Parts	Parts Repair	Parts Exchange	Parts Test	Preventive Maintenance Kits
AC 800M	Active	X	X		X	X	X	X
S800 I/O	Active*	X	X		X	X	X	

* Parts Exchange units delivered for S800 I/O modules in Active life cycle phase are new unused units.

Compact Product Suite

Product	Status	Spare Parts	Emergency Parts	Refurbished Parts	Parts Repair	Parts Exchange	Parts Test	Preventive Maintenance Kits
Networks	Active	X	X	X	X	X	O.R.	
Process Panels	Active*	X	X	X	X	X	O.R.	

Freelance

Product AC 900F Family	Status	Spare Parts	Emergency Parts	Refurbished Parts	Parts Repair	Parts Exchange	Parts Test	Preventive Maintenance Kits
AC 900F Base Unit	Active	X	X	O.R.	X	X	X	
Fieldbus Interface Modules	Active	X	X	O.R.	X	X	X	
Accessories	Active	X	X					

Product AC 800F Family	Status	Spare Parts	Emergency Parts	Refurbished Parts	Parts Repair	Parts Exchange	Parts Test	Preventive Maintenance Kits
AC 800F Base Unit	Active/Limited	X	X	O.R.	X	X	X	
Power Supply Modules	Active	X	X	X		X		
Ethernet Interface Modules	Active/Limited	X	X	O.R.	X	O.R.	X	
Fieldbus Interface Modules	Active	X	X	X	X	X	X	
Battery Modules	Active	X	X					
Accessories	Active	X	X					

Product AC 700F Family	Status	Spare Parts	Emergency Parts	Refurbished Parts	Parts Repair	Parts Exchange	Parts Test	Preventive Maintenance Kits
AC 700F Base Unit	Active	X	X		X	X		
Power Supply Modules	Limited	X	X					
Fieldbus Interface Modules	Active/Classic	X	X			X		
Battery Modules	Active	X	X			X		
Accessories	Active	X	X					

Rack Based Product	Status	Spare Parts	Emergency Parts	Refurbished Parts	Parts Repair	Parts Exchange	Parts Test	Preventive Maintenance Kits
CPU Modules	Limited/Obsolete	X	X	X	X	X	X	
Link Modules	Limited/Obsolete	X	X	X	X	X	X	
I/O Modules	Limited/Obsolete	X	X	X	X	X	X	
Rack	Limited/Obsolete	X	X			O.R.		
Accessories	Limited/Obsolete	X	X					

X= Available. O.R.= On request.
For products with Obsolete status, the lack of component availability may render the specified services as not available.
Therefore, the services for this products are on request.

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Advant Master

Product	Status	Spare Parts	Emergency Parts	Refurbished Parts	Parts Repair	Parts Exchange	Parts Test	Preventive Maintenance Kits
AC 100 OPC Server	Active	X	X	X	X	X	X	
AC 110	Obsolete	O.R.		O.R.	O.R.	O.R.	O.R.	X
AC 160	Classic	X	X	X	X	X	X	X
AC 410	Limited	X	X	X	X	X	X	X
AC 450	Active	X	X	X	X	X	X	X
AC 450RMC	Active	X	X	X	X	X	X	X
AC 55	Obsolete	O.R.		O.R.	O.R.	O.R.	O.R.	X
AC 70	Obsolete	O.R.		O.R.	O.R.	O.R.	O.R.	
Advant Station 100	Obsolete	O.R.		O.R.	O.R.	O.R.	O.R.	
Advant Station 500, OS/IMS	Obsolete	O.R.		O.R.	O.R.	O.R.	O.R.	
S100 I/O	Active	X	X	X	X	X	X	
S400 I/O	Obsolete	O.R.		O.R.	O.R.	O.R.	O.R.	
S600 I/O	Classic	X	X	X	X	X	X	
S800 I/O	Active	X	X	X	X	X	X	
Safeguard 400 Series	Limited	X	X	X	X	X	X	
Tesselator Series	Obsolete	O.R.		O.R.	O.R.	O.R.	O.R.	

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Advant MOD 300

Product	Status	Spare Parts	Emergency Parts	Refurbished Parts	Parts Repair	Parts Exchange	Parts Test	Preventive Maintenance Kits
600 A,B,C Controller Subsystems	Obsolete	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
SC Controller Subsystems	Obsolete	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
AC 460 Controller Subsystems	Active	X	X	X	X	X	X	X
High Density I/O	Obsolete	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
Direct I/O	Obsolete	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
SS TRIO	Obsolete	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
Taylor Remote I/O (TRIO)	Obsolete	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
S800 I/O	Active	X	X	X	X	X	X	X
S100 I/O	Active	X	X	X	X	X	X	X
Multibus Subsystem Hardware	Obsolete	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
Advant Hardware Station	Obsolete	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
DCN control network	Classic	X	X	X	X	X	X	X
eDCN control network	Active	X	X	X	X	X	X	X
Multibus DCN/DCN gateway	Obsolete	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.
AC 410 support DCN/DCN gateway	Classic	X	X	X	X	X	X	X
AC 410 support DCN/eDCN gateway	Active	X	X	X	X	X	X	X
AC 410 support eDCN/eDCN gateway	Active	X	X	X	X	X	X	X

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Satt

Product	Status	Spare Parts	Emergency Parts	Refurbished Parts	Parts Repair	Parts Exchange	Parts Test	Preventive Maintenance Kits
Process Panels 200-300 Series	Limited	X	X					
Advant Controller 800C	Limited	X	X	X	X	X	X	
Advant Controller 210	Obsolete							
Advant Controller 250	Limited	X	X	X	X	X	X	X
SattCon 05	Obsolete							
SattCon 05 Slimline & OP45	Limited	O.R.	O.R.	O.R.	X	X	X	
SattCon 15	Obsolete	O.R.	O.R.	O.R.	O.R.		O.R.	
SattCon 31-10	Obsolete				O.R.		O.R.	
SattCon 31-50	Obsolete				O.R.		O.R.	
SattCon 31-90	Obsolete				O.R.		O.R.	
SattCon 35	Limited	O.R.	O.R.	O.R.	X	X		
SattCon 60-50	Obsolete				X	X		

Product	Status	Spare Parts	Emergency Parts	Refurbished Parts	Parts Repair	Parts Exchange	Parts Test	Preventive Maintenance Kits
SattCon 200 CPU	Classic	X	X	X	X	X	X	X
SattLine 200 CPU	Classic	X	X	X	X	X	X	X
PRI	Obsolete							
Alert 5	Obsolete							
Alert 50	Obsolete							
Alert I/O System	Obsolete							
OPC 5	Obsolete						X	
SattTop	Limited	X	X	X	X	X	X	
Altop 500	Limited	X	X	X	X	X	X	
Interface 19"	Limited	X	X	X	X	X	X	
Series 200 I/O System	Active	X	X	X	X	X		

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Symphony DCI System SIX

Product	Status	Spare Parts	Emergency Parts	Refurbished Parts	Parts Repair	Parts Exchange	Parts Test	Preventive Maintenance Kits
Conductor UX	Obsolete	X	O.R.	X	X	O.R.	O.R.	O.R.
Harmony DCU	Limited	X	O.R.	X	X	O.R.	O.R.	
Harmony DCU local I/O	Limited	X	O.R.	X	X	O.R.	O.R.	
MTL remote I/O	Limited	X	O.R.	X	X	O.R.	O.R.	
PBUS PROFIBUS com. card	Limited	X	O.R.	X	X	O.R.	O.R.	
CIO interface card	Limited	X	O.R.	X	X	O.R.	O.R.	
CIO/ITB termination board	Limited	X	O.R.	X	X	O.R.	O.R.	
PSB (economy grade) power supply	Limited	X	O.R.	X	X	O.R.	O.R.	
PSB (micro processor) power supply	Limited	X	O.R.	X	X	O.R.	O.R.	

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Symphony Harmony/INFI 90

Product	Status	Spare Parts	Emergency Parts	Refurbished Parts	Parts Repair	Parts Exchange	Parts Test	Preventive Maintenance Kits
Conductor VMS	Obsolete	O.R.	O.R.	O.R.	O.R.	O.R.	O.R.	
Modular Power System I	Limited	O.R.	X	O.R.	X	X	X	
Modular Power System II	Limited	O.R.	X	O.R.	X	X	X	
Modular Power System III	Active	X	X	X	X	X	X	
Modular Power System IV	Active	X	X	X	X	X	X	
Bridge Controller	Active	X	X	X	X	X	X	
Multi-function Processor	Limited	O.R.	X	O.R.	X	X	X	
Harmony Area Controller	Limited	O.R.	X	O.R.	X	X	X	
Harmony Rack I/O	Active	X	X	X	X	X	X	
Harmony Block I/O	Limited	O.R.	X	O.R.	X	X	X	
Harmony with S800 I/O	Active	X	X	X	X	X	X	
Harmony Control Network	Active	X	X	X	X	X	X	

The Symphony Plus HR Series modules are completely backwards compatible to their corresponding Harmony modules with respect to form, fit and funcion.

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Symphony Melody

Product	Status	Spare Parts	Emergency Parts	Refurbished Parts	Parts Repair	Parts Exchange	Parts Test	Preventive Maintenance Kits
Controller	Active	X	X	X	X	X	X	
Power Supply Modules	Active	X	X	X	X	X	X	
Com. Coupler Modules	Active	X	X	X	X	X	X	
Repeater Modules	Active	X	X	X	X	X	X	
I/O Modules	Active	X	X	X	X	X	X	
Rack	Active	X	X	X	X	X	X	
Accessories	Active	X	X	X	X	X	X	

Symphony Melody is replaced by "Symphony Plus Melody Rack", offering replacements with identical form, fit and funcion.

X= Available. O.R.= On request.
For products with Obsolete status, the lack of component availability may render the specified services as not available.
Therefore, the services for this products are on request.

Preventive Maintenance Schedules

ABB Ability™ System 800xA

Years from start-up	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Central Unit																					
Internal battery			R		R		R		R		R		R		R		R		R		R
Rechargeable external bat.				R			R			R			R			R			R		
Power supply																					
Electrolytic capacitators						R					R					R					R
Improvments																					
HW/SW upgrade		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Based on product notes		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Spare Parts		I	P	I	P	I	P	I	P	I	P	I	P	I	P	I	P	I	P	I	P

Advant Master and Advant MOD 300

Years from start-up	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Fans		I	I	R	I	I	R	I	I	R	I	I	R	I	I	R	I	I	R	I	I
Air-filters		I	I	R	I	I	R	I	I	R	I	I	R	I	I	R	I	I	R	I	I
Rechargeable batteries		I	I	R	I	I	R	I	I	R	I	I	R	I	I	R	I	I	R	I	I
Power supplies		I	I	I	I	(R)	I	I	I	I	R	I	I	I	I	R	I	I	I	I	R
Communication																					
Fan for PU410x		I	I	R	I	I	R	I	I	R	I	I	R	I	I	R	I	I	R	I	I
Power Supply for PU41x		I	I	I	I	I	I	I	I	I	R	I	I	I	I	I	I	I	I	I	R
Improvements																					
HW/SW upgrade		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Product Bulletin release notes		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Spare Parts		I	P	I	P	I	P	I	P	I	P	I	P	I	P	I	P	I	P	I	P

R= Replacement of component (at rated load and ambient conditions)
(R)= Replacement if high ambient temperature or cyclic heavy duty
I= Inspection (visual inspection, correction and replacement id needed)
P= Performance of on-site work (commissioning, tests, measurements etc.)

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