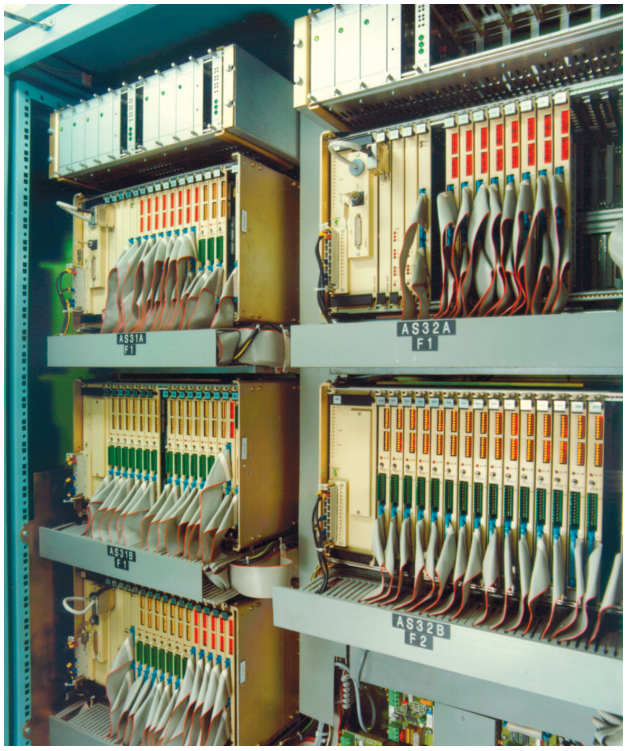
SELMA 2 mapped automation system Preventive maintenance



The SELMA 2 system preventive maintenance is based on ABB's extensive knowledge and experience of manufacturing and maintaining SELMA 2 systems for more than 20 years and takes environmental and operational conditions into account. Qualified specialists perform on-site preventive maintenance work.

ABB recommends regular preventive maintenance for the SELMA 2 automation systems throughout their lifetime in order to ensure maximum availability and minimum unplanned repair costs.

SELMA 2 preventive maintenance aims for increased reliability, optimized performance and extended lifetime by timely performed appropriate service. It consists of annual system inspections and component replacements according to the product specific maintenance schedule.

Benefits

- Increased SELMA 2 system reliability
- Optimized maintenance costs and minimized repair costs
- Easy-to-plan maintenance budget
- Extended system lifetime
- Genuine, factory-certified ABB parts

Service provides

Preventive maintenance service includes labor and service parts to perform on-site maintenance work according to the maintenance schedule:

- Environment audit
- Inspection of the equipment status
- Inspection of mechanical joints of SELMA 2 system
- On-line and off-line measurements and analysis
- Storage of the parameters
- Basic measurements with supply voltage
- ESD protected cleaning of the boards and the cabinet
- Inspection of fans, capacitors and batteries on boards
- Perform the final inspection
- Inspection of SELMA 2 spare part inventory

A detailed service report including recommendations for future actions is provided once the maintenance work has been completed and inspection data fully analyzed.

Ready-made preventive maintenance kits are available at www.abb.com/partsonline for component replacements marked "R" on the maintenance schedule.

Preparations before preventive maintenance

Successfulness of the preventive maintenance depends on the information recorded on the service reports and the application provided by the end user. Usually the benefits 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 SELMA 2 system before preventive maintenance.

ABB must have free access to the system for maintenance during the shutdown as agreed. Preventive maintenance must be planned well in advance in order to reserve resources and the service parts needed.

Product Lifecycle Services

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

Maintenance schedule

Based on ABB's experience, however, failure probability of such industrial products equipped with electronic components, such as automation systems, increases after years of operation. For automation systems this is typically 5 to 10 years. One of the main reasons for failures is the aging of components, but it is also highly affected by operational conditions. A component failure may cause consequential damage to other parts of the automation system.

A maintenance schedule provides a systematic and functional means of maintaining SELMA 2 automation systems. It is based on extensive experience and knowledge of manufacturing and maintaining SELMA 2 systems. Specifications of component suppliers are observed carefully.

The environmental and operational conditions of the system are also considered. Demanding environments, such as high ambient temperature can measurably shorten component lifetime and also maintenance and component replacement intervals.

ABB recommends an annual inspection in addition to regular maintenance to be carried out to ensure optimum automation system performance through its entire lifetime.

	Years from start-up																				
	0	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Start-up	P																				
Operation Station																					
➢ Visual inspection		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Mechanical joints		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Key board overlay		I	I	I	**R**	I	I	I	I	I	**R**	I	I	I	I	I	**R**	I	I	I	I
➢ Output device		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Inspection of disk station/stations		P	I	I	P	I	I	P	I	I	P	I	I	P	I	I	P	I	I	P	I
➢ Operate system function test		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
➢ System backup				P					P					P					P		
SELMA 2 cabinet																					
➢ Visual inspection		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Mechanical joints		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Main power supply (UPS)				P					P					P					P		
➢ Auxiliary voltages		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Power supply unit		I	I	I	I	I	I	**R**	I	I	I	I	I	I	I	I	**R**	I	I	I	I
➢ Cooling fan unit		**R**	I	I	**R**	I	I	**R**	I	I	**R**	I	I	**R**	I	I	**R**	I	I	**R**	I
➢ Batteries on SELMA boards		**R**	I	I	**R**	I	I	**R**	I	I	**R**	I	I	**R**	I	I	**R**	I	I	**R**	I
➢ Fan on SELMA		I	I	I	**R**	I	I	I	I	I	**R**	I	I	I	I	I	**R**	I	I	I	I
➢ Cleaning/ change of fan filter		**R**	I	I	**R**	I	I	**R**	I	I	**R**	I	I	**R**	I	I	**R**	I	I	**R**	I
➢ Cleanliness of SELMA racks				P					P					P					P		
Battery																					
➢ Visual inspection		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Mechanical joints		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Auxiliary voltages		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Water levels of batteries		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Cooling system																					
➢ Visual inspection		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Mechanical joints		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Cleaning/ change of fan filter		**R**	I	I	**R**	I	I	**R**	I	I	**R**	I	I	**R**	I	I	**R**	I	I	**R**	I
Parameters																					
➢ Inspection and change		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Backing-up the parameters from programs to EEPROM		P			P			P			P			P			P			P	
M-Unit (DG automatic)																					
➢ Checking the panels		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Switch function inspection		P			P			P			P			P			P			P	
Updates in Electric Repair Center																					
➢ Change the capacitors of power units		I	I	I	I	I	I	**R**	I	I	I	I	I	I	I	I	**R**	I	I	I	I
Improvements																					
➢ SW / HW upgrade to improve performance if necessary		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ ABB VideoPrint		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ SELMA 2 modbus		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Electrical interface RS232		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Spare Parts																					
➢ Spare parts		I			I			I			I			I			I			I	

Legend:
R = Replacement of component
I = Inspection (visual inspection, correction and replacement if needed)
P = Performance of on-site work (commissioning, tests, measurements, etc.)

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