



Part type designation	Part number
M1 ServiceCenter	00029604-00
Servion plugins standard RT	00035106-63
SFS module plugin RT	00036404-63

## M1 ServiceCenter

The constantly growing demands for new technologies make the further development of customer applications for a machine automated by an M200 controller unavoidable. Productivity can also be increased through expansion with the latest Bachmann hardware products. Carrying out the necessary upgrades on one or several machines can be very expensive, amounting to a considerable share of the costs, which include training required for service personnel. Bachmann has developed the M1 ServiceCenter for design and repeatable execution of service operations.

The M1 ServiceCenter focuses on ensuring the transparent and reusable project planning of process sequences. Besides offering functions, such as the reading and back up of software versions, the M1 ServiceCenter also makes it possible to automate software and hardware updates. Interaction with the user is only requested when absolutely necessary. In this case, the user is assisted with step-by-step instructions, wizards and information notes in order to prevent any errors.

The configurable and freely combinable process steps in the M1 ServiceCenter make it possible to combine both general as well as customized configuration steps into user-friendly applications. After a short explanation, these can even be carried out by untrained operating personnel with no detailed knowledge of the controller configuration.

### Standard technologies

The M1 ServiceCenter is a stand-alone application and can be run on any PC. The M1 ServiceCenter is supplied on a USB stick, from which the application can be run directly (portable program). Alternatively, the program can also be installed on a computer.

### Functions

The M1 ServiceCenter software provides configurable process steps for many typical applications used in practice.

These include the following applications:

- Data backup and recovery
- Software and driver updates
- Firmware update/downgrade
- Hardware and software diagnostics
- Migration to new controller types and generations
- Support and help during mounting and commissioning
- Safety-PLC (SLC) program update
- Validation of hardware and software installations
- Creation of device protocol
- Connection tests
- Reading and writing variables
- Runtime license management for M200 controller
- File management

The process steps mentioned are provided in a catalog, which is being continuously expanded by Bachmann and adapted to new technologies and requirements of the M200 portfolio.

### Project development

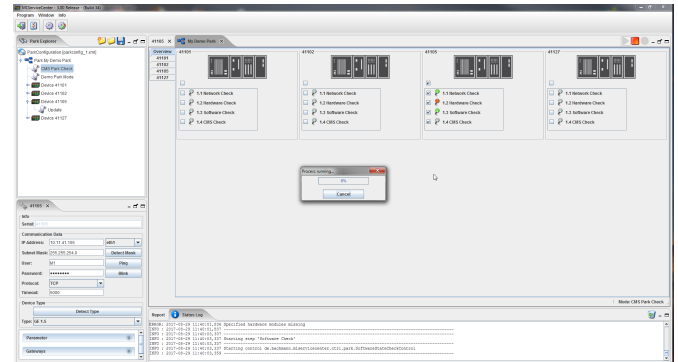
Due to its offline engineering ability, implementation can start before the hardware is available. The engineering of process operations is carried out by drag and drop in the program using a graphic configurator. For this, the process steps provided in the catalog, such as "Software Backup", are selected and added to groupable list elements. The result of the configuration is a sequence definition that is saved in the program.

### Process sequence and monitoring

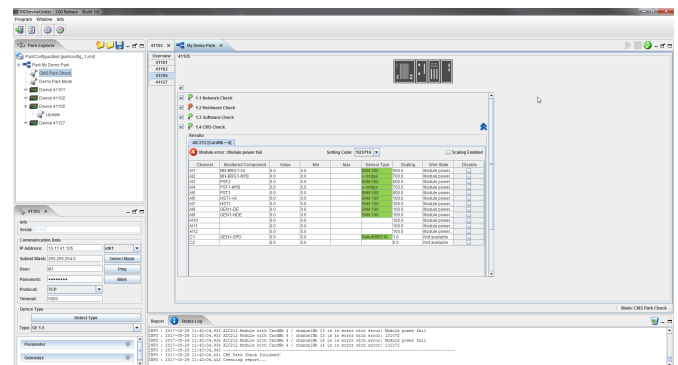
Once the sequence definition is created in the configurator perspective, the actual work of the service operation can start in the process view. The M200 controllers are displayed in a tree view in the actual topology (park/plant). This configuration can also be created offline with the program in order to be selected and loaded at a later time. An automatic plant type identification can be configured to prevent an incorrect process to be carried out on a plant. If an image or backup of the file system of the controller is already available (offline device/backup), the M1 ServiceCenter can emulate an M200 and the created process sequence can be tested on the PC.

The monitor view displays the execution and progress of a process sequence, and if necessary, interrupts it or requests interaction with the user. User-friendly dialogs and step-by-step instructions help the user to make the right decisions.

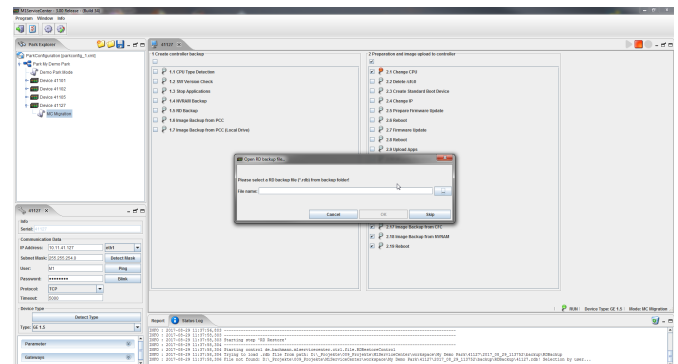
Process sequences can be used and monitored for both individual as well as multiple plants (park). Both single view and park view of the monitor window indicate the states of the individual steps in different colored LEDs.



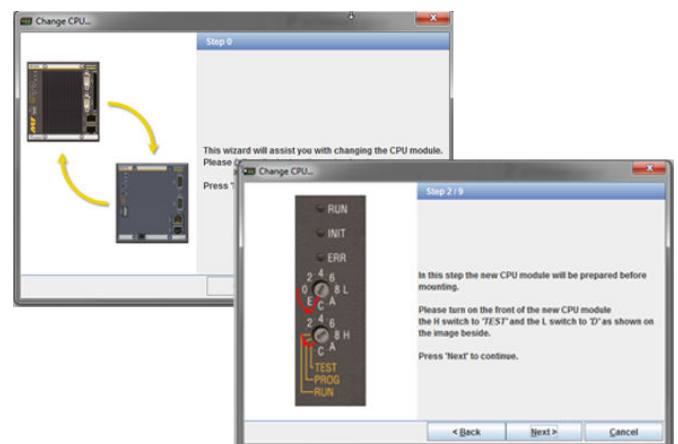
▼ Park view: Process started



▼ Park view: Results page for the individual plant



▼ Process sequence for individual plant with user interaction



▼ M1 ServiceCenter – step-by-step instructions

## Extensions

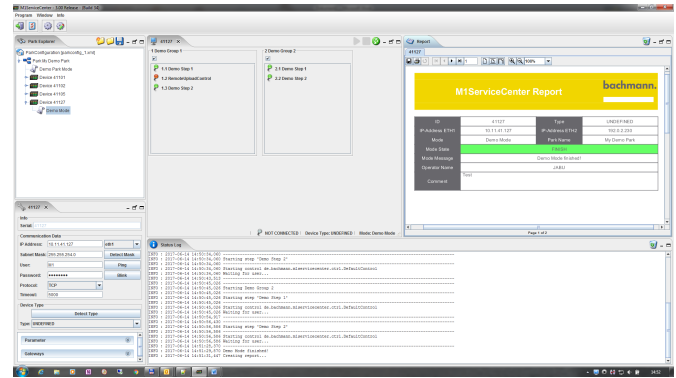
There are two extensions to the M1 ServiceCenter software that can be installed as plugins. These plugins are intended for special application instances.

The plugin **Senvion Plugins Standard RT** is used for the product „M1SenAccess“. It includes all the necessary configurations and processes to install the Bachmann access solution for Senvion turbines. After the initial conversion of the access software with the plugin, the M1 ServiceCenter (incl. plugin) can be used in day-to-day business to maintain the user data and roll it out to the parks/turbines.

The plugin **SFS-Module Plugin RT** can be used in the M1 ServiceCenter as an extension to configure the SFS236C module from Bachmann. There are ready-made process sequences that check the communication to the module via CAN and, if necessary, update the mandatory CAN firmware and install the existing application program.

## Reporting

Each process sequence is systematically logged and the results automatically generated and stored in a clear directory structure. In addition, a report is created and archived in PDF format for each process. If the chosen process steps will produce an output, e.g. read out hardware version numbers, an Excel document is created and also archived in the same structure.



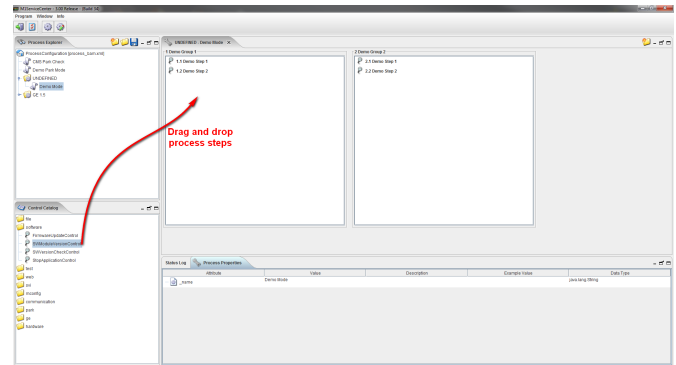
▼ Report preview



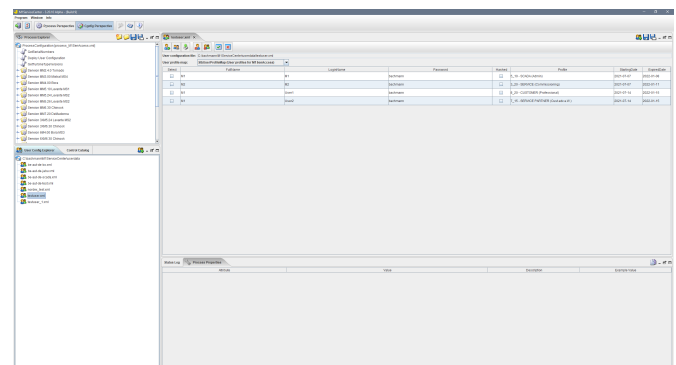
▼ Report as PDF document

## Features Software M1 ServiceCenter

- Offline configurations of parks and process sequences
- Online monitoring of process sequences
- User-defined plant types, process sequences and single steps
- Automatic plant type detection
- Use of process sequences on individual plants and entire parks
- Several sequences can be defined for one plant type
- All process steps can be carried out independently of each other
- Use of standard Java for communication with M200 controller system (M-JSYS)
- Interaction via user-friendly dialogs
- Expandability by Bachmann through implementation of customized applications
- Saving of all configurations in readable standard XML files with encryption of sensitive data
- Reading and processing of INI files for changing controller configuration automatically
- Entire program language in English
- Reduction of user interactions to a minimum
- Independent from M-Base and SolutionCenter
- No Java installation required since JDK already contained
- Target group: engineering and service personnel



▼ Process configurator with catalog function



▼ User management

## M1 ServiceCenter

Process connection / Communication	
Technology	Java application program with DockingFrames framework
Protocol	Bachmann Java M-JSYS library for communicating with the M200 controller
Physical interface	Ethernet
Parallel operation	Yes, several connections to different M200 controllers with TCP or SSL
Hardware	PC, notebook or terminal with Windows OS / Linux OS
Installation	USB stick with executable program (and USB license) can also be installed
Project development	
Development environment	Graphical configurator tools integrated in the program for all necessary operating steps
Data retention	All configurations are XML-based and can be read and changed manually
Functionality	
Single operation	M200 can be configured and automatically operated with defined customized step sequences.
Multiple operation	A machine park can be configured and operated with defined customized step sequences.
Park configuration	A machine park can be created and configured offline in the program.
Step sequence configuration	Freely definable step sequences (if required in subgroups) via graphical editor (drag and drop)
Libraries	Many predefined and recurring steps for use/operation with M200 provided as a library catalog for direct use
Automation	All configured process steps run automatically, any manual inputs required are indicated via appropriate dialogs and prompts
Reporting	All results of step sequences related to several plants as well as single results of all steps are documented (PDF with preview in the program, Excel document in folder)
Connection	Connection tests possible via ICMP or RES Ping as well as via process steps
User configuration	Integrated user management for BE AccessControl/M1SenAccess including roll-out process for park level and plants
Visualization	
Framework	Configurable plant layout with movable and dockable windows
Plugins	
Senvion plugins standard RT	Process steps and process definitions for access solution at Senvion wind turbines
SFS module plugin RT	Process steps and process definitions for configuration and commissioning of SFS236C module