Security information

Overview

Part A, Requirements and General Instructions

Part B, Installation

Part C, Special Features and Notes on Use

Version: 2016/02/10 (Online)
Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

**DANGER**
indicates that death or severe personal injury will result if proper precautions are not taken.

**WARNING**
indicates that death or severe personal injury may result if proper precautions are not taken.

**CAUTION**
indicates that minor personal injury can result if proper precautions are not taken.

**NOTICE**
indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by personnel qualified for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

**WARNING**
Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

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Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.
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Siemens provides products and solutions with industrial security functions that support the secure operation of plants, solutions, machines, equipment and/or networks. They are important components in a holistic industrial security concept. With this in mind, Siemens' products and solutions undergo continuous development. Siemens recommends strongly that you regularly check for product updates.

For the secure operation of Siemens products and solutions, it is necessary to take suitable preventive action (e.g. cell protection concept) and integrate each component into a holistic, state-of-the-art industrial security concept. Third-party products that may be in use should also be considered. You can find more information about industrial security under: http://www.siemens.com/industrialsecurity

To stay informed about product updates as they occur, sign up for a product-specific newsletter. You can find additional information on this at: http://support.automation.siemens.com.
You have purchased the SIMATIC BATCH software package. Within the SIMATIC PCS 7 process control system, SIMATIC BATCH provides you with suitable solutions for automating discontinuous batch processes in all sectors of industry.

**Note**

**Readme: Binding document**

All the information in this document supersedes statements in other documents. This readme file contains important information on the installation and use of SIMATIC BATCH. You should therefore print out this information and read it carefully prior to installing and using the software. Functional extensions as compared to previous versions are described in the document "SIMATIC BATCH - What's new?".
3.1 Hardware requirements

To be able to use SIMATIC BATCH, the same hardware requirements apply as for SIMATIC PCS 7 V8.2.

This are listed in the file "PCS 7 Readme V8.2 (Online)". You can find the file under the entry ID109478781 in the Industry Online Support:

Internet link (https://support.industry.siemens.com/cs/ww/en/view/109478781)

SIMATIC BATCH also requires the following for a SIMATIC BATCH server:

- Approx. 400 MB of free hard disk space on the partition of your hard disk on which SIMATIC BATCH is installed. Additional space is also required for projects and the database. When working with SIMATIC BATCH, the database and batch data will increase and, if there is not enough storage space, database problems can occur if the data can no longer be stored because of the lack of storage space. For this reason, the user is advised to ensure sufficient memory space (recommended: >1 GB).

- A printer for the recipe reports. All printers with graphics capability supported by Windows are suitable.

- To achieve better performance with SIMATIC BATCH, note the following points when installing SIMATIC BATCH:
  - Set up the data storage of SIMATIC BATCH (shared folder "sbdata") on an additional physical hard disk.
  - If you use an SSD hard disk (Solid State Disk) approved by Siemens AG for the data storage, the performance can be further improved.
  - When using a hard disk RAID system on SIMATIC BATCH servers, make sure that the cache of the RAID controller is enabled.
    Note: Depending on the type of RAID system, battery backup may be necessary to ensure that there can be no loss of data when the cache is enabled. The performance may be lower if the cache is not enabled.

When setting up your automation system, in particular with regard to using AS-based mode, check the performance data when selecting the automation system, for example type and CPU memory configuration.

Note

CPU 410 SMART

The CPU 410 SMART does not support the AS-based operating mode.

3.2 Software requirements

SIMATIC BATCH V8.2 is approved for SIMATIC PCS 7 V8.2.
For PCs that are configured as BATCH server, as BATCH client and as BATCH single station, the software requirements for operating systems listed in the file "PCS 7 Readme V8.2 (Online)" apply.

To be able to use SIMATIC BATCH components, you require various authorizations or licenses (floating licenses or single licenses). The authorizations are also included in the scope of delivery.

You can find additional information in the file "PCS 7 Readme V8.2 (Online)".

You can find the "PCS 7 Readme V8.2 (Online)" file under the entry ID109478781 in the Industry Online Support:

Internet link (https://support.industry.siemens.com/cs/ww/en/view/109478781)

3.3 McAfee Application Control

McAfee Application Control

When using McAfee Application Control for SIMATIC BATCH, note the following:

To ensure that the report templates are available for the "Print" and "Print preview" commands in BatchCC, add the application "ReportingServicesService.exe" to the McAfee Application Control whitelist. Depending on the configuration of the McAfee system, centrally via the ePO or locally on the PC.

The application is part of the SQL Server and it is normally located in the following path:

C:\Program Files\Microsoft SQL Server\MSRSXX_XX.INFSERVER\ReportServer\bin\ - (XX_XX stands for the relevant SQL Server version)

3.4 "SIMATIC BATCH PCC API" document

As of SIMATIC BATCH V8.2, you can obtain the document from Technical Support.

The document contains a C interface specially tailored to the plant configuration of SIMATIC BATCH.

You can use this interface to write customized applications.
4.1 Installing SIMATIC BATCH

Before installing SIMATIC BATCH V8.2 in the context of PCS 7 V8.2, note the following points:

- Reinstalling a SIMATIC BATCH version
  Before you install SIMATIC BATCH, save your project data to a backup file.

- SIMATIC BATCH V8.2 may only be installed in the context of SIMATIC PCS 7 V8.2, including service packs and updates.

- When you install SIMATIC PCS 7 / SIMATIC BATCH, make sure that there is no installation of DiagBase V1.4.0.12 from your original DVD. If this version of DiagBase is installed, uninstall the software and install DiagBase V1.4.1.26 or later.

- Administrator rights
  SIMATIC BATCH V8.2 can only be installed with administrator rights in the operating system. Users require the rights of the "Users" user group.

- BATCH shared folder "sbdata" with the share name "BATCH"
  When you reinstall SIMATIC BATCH, you specify the folder path to be used at the start of the installation. To locate the shared folder in Windows Explorer for editing, select the BATCH share in Computer Management under Shares and click "Open" in the shortcut menu.

- Using virus scanners
  You can find information on the virus scanners approved for a PCS 7 version in the "PCS 7 Readme (Online)" file.
  You can find the file under the entry ID109478781 in the Industry Online Support: Internet link (https://support.industry.siemens.com/cs/ww/en/view/109478781)

- Installing third-party programs
  Installing programs not approved by Siemens and operating them at the same time as BATCH can have negative effects on the system response of SIMATIC BATCH. You, as the user, are solely responsible for such effects.
  No additional software should be installed on runtime servers.

- Software Update in Runtime (SUIR)
  Older versions cannot be upgraded to version SIMATIC BATCH V8.2 in runtime.
  With redundant SIMATIC BATCH servers, both must be shut down before a software update may be started with the SIMATIC BATCH Launch Coordinator.
  Before the servers are started again in redundant mode, the security settings must be configured with the same mode on both servers (either "Compatible" only or "NTLM" only).
  If this is not the case, faults may occur in runtime.
  The server security setting must first be set to "Compatible" for a software update of the server.
  When the servers are being installed for the first time, the security setting must be configured ("Compatible" or "NTLM") before you start the server.
  The restrictions do not apply to service packs and updates within SIMATIC BATCH V8.2.
  You can find additional information in the online help for SIMATIC BATCH.
4.2 License keys (authorizations)

- To be able to use the SIMATIC BATCH software on your PC, several authorizations, i.e. rights of use, are required. The authorizations are on the supplied USB data medium as ordered.

- If you want to add an authorization later, restart the PC and then install the authorization using the "Automation License Manager" program. The program is started using the appropriate icon on your desktop.

- You will find further information on authorizations in the following documents:
  - SIMATIC BATCH manual
  - Automation License Manager
  - PCS 7 - PC Configuration

- If new authorizations are added later to a BATCH client on which BatchCC has already been started, BatchCC needs to be restarted. Only then will the new authorizations be used.
5.1 SIMATIC Manager

- If you want to load a BATCH process cell (PCell) other than the current one in the BATCH configuration dialog (ES), the BATCH Launch Coordinator must not be active or must be restarted afterwards.

- During Compile/Download of the stations in the BATCH configuration dialog, the "Unknown" operating state means that the automation system can be reached and that the CFC charts can be downloaded.

- In the global declarations, the following restrictions apply to SIMATIC BATCH:
  - To avoid needing to adapt projects, object names (enumerations, enumeration values, units of measure) created once should no longer be changed in the global declarations.
  - To ensure consistency in the multiproject, the global declarations in all projects of a multiproject must be identical.

- OB 80 (cycle time error)
  OB 80 prevents the automation system changing to STOP if there is sporadic cycle overload. In the AS-based operating mode, this OB must exist in the block folder of the project and therefore in the AS. You will find additional information in the manual "STEP 7 - Programming with STEP 7" in section 23.9.6.

- Changing the symbolic computer name of the PCS 7 OS
  If you change the symbolic computer name of the OS in your project, you will then need to reassign all the BATCH archive tags previously configured for this OS in the BATCH configuration dialog.

- Special characters in names:
  - Special characters are not permitted in the path to the target OS computer because the BATCH data are not downloaded otherwise.
  - You should not use special characters in SIMATIC PCS 7 names (computer names, tag names, archive tag names). A comma "," is not permitted in tag names (process tags, archive tags, etc.).
  - Project names, picture names and computer names can only contain ASCII characters.
5.2 BatchCC

- If there is a redundancy failover after the command "Update process cell" is executed on a client, it is possible that this command will not be executed. If necessary, the client needs to be stopped and restarted and the command "Update process cell" executed again.

- An interruption on the replication connection (extra network adapter in both redundant SIMATIC BATCH server PCs with network cable) has repercussions for the communication between AS and BATCH server. The communication is blocked for approximately 20 seconds. This means that the process (batch) continues to run, but its visualization in the BATCH Control Center or in the BATCH OS Controls will be updated with a delay of up to 20 seconds.

- If you edit assignments when updating the process cell, the new assignments will only be adopted by SIMATIC BATCH after you stop and then restart the BATCH Launch Coordinator on the BATCH server. For this action, you require administrator rights.

- With the extended functionality "Extended continuous operation", the entry "Stop step (except continuous)" has been removed from the shortcut menu. The possibility of configuring an ESIG for this function is no longer available. If you have configured the function with ESIG for recipes, you have to modify the recipe.

5.3 Recipe comparison

- Contrary to statements in the documentation about the number of connections in the inserted synchronization lines, the values shown represent the number of nodes on an inserted synchronization line. The recipe elements contained above or below the synchronization line are not taken into account in the number displayed.

- The shortcut menu commands "Hide in substructure" and "Resolve substructure" that can be used in flat recipes are displayed in a recipe comparison as follows.
  - Hide in substructure: The newly inserted substructure is displayed in the recipe comparison. The objects moved to the substructure are not displayed.
  - Resolve substructure: The substructure itself is shown as deleted in the recipe comparison. The objects of the substructure are not shown in the recipe comparison.

- High and low recipe limits are shown and interpreted in the recipe comparison as follows:
  - With unchanged recipe limits, the following character is suffixed to the displayed limits "*". The character means that the recipe limits correspond to the engineering limits and have never been changed.
  - When recipe limits have been changed, only the limits without the multiplication sign are shown.

High and low limits from basic engineering are not shown in the recipe comparison, because these limits cannot be changed in the recipe editor.
5.4 BATCH OS Controls

- Batches that use a control recipe with a flat recipe structure are not supported in the BATCH OS Controls.
- The BATCH OS Controls cannot be used on a PC with the PCS 7 Web option for OS.
- As of SIMATIC BATCH V8.2, the "AutoConnect" attribute is available in the "SIMATIC Batch Master" OS control in the Graphics Designer. The attribute is set by default to "Yes" by the system. When the project is upgraded, it is automatically connected to PCS 7 OS in process mode even if no characters are entered the "Project name" and "DBIdent" attributes. For the BATCH OS Controls to be automatically connected to an OS client, it is required that the necessary SIMATIC BATCH data are available on the corresponding OS client. In addition, a SIMATIC BATCH client has to be configured and loaded on the OS client in the PCS7 project on every OS client where BATCH OS Controls are used. Before loading the SIMATIC BATCH data, you have to make sure that all OS clients are correctly loaded.
- With the extended functionality "Extended continuous operation", the entry "Stop step (except continuous)" has been removed from the shortcut menu.

5.5 Batch data management and report creation

- Note that if you put a recipe phase into manual mode, it is possible that its control strategies and setpoints will not be correctly logged in the batch report.
- If batches run in loops over several days, for example, in rare situations errors may occur in a print preview or printout when batch reports are generated.
- In the viewer for archived batches, filters for command steps are displayed only in the archive format "V7.1.2, V8.0, V8.0 SP1 and V8.1".
- It is not possible to create a batch report with the "Allocation error" batch status.

5.6 Process Historian archiving method

- A basic rule is that only one PH object (Process Historian Appl. or Process Historian Appl. (Stby)) can be configured in projects of the multiproject. Since not all configuration options for this basic rule are blocked by SIMATIC PCS 7, several PH objects within a multiproject can cause errors in the operation of SIMATIC BATCH.
- If the PH was configured to be redundant, SIMATIC BATCH may in fact be able to be archived in the PH without restriction using the PH archiving method, but the batch reports cannot be created using the Batch CC. In this version, batch reports for redundant PH can only be created on the IS client.
- For batches that were archived in PH with a SIMATIC BATCH version 8.0 SP1 or 8.1, the "Archived" status is not stored in the PH archive. This behavior has changed in version SIMATIC BATCH 8.1 SP1. Therefore, different information regarding the batch status is displayed in batch reports.
• Starting with the SIMATIC BATCH Version 8.1 SP1, all measured values that are displayed in a report must be present in the PH. For this, long-term archiving must be selected in WinCC. The settings in the recipes for recording of measured values is not relevant when using a PH. The settings are ignored.

• As of SIMATIC BATCH Version 8.1 SP1, there is a new "archiving" status between the batch status "completed" and "archived" when using the "PH" archiving method. API clients need to be aware of this new status.

• As of this version, batch reports can only be displayed or printed under the following conditions when the "PH" archiving method is used:
  – The users of SIMATIC BATCH must be a member of the "SIMATIC Report Services" group on the IS computer.
  – The users of SIMATIC BATCH must have read permission for the PH database.

• The user permissions can only be configured by an administrator.

5.7 Application Programming Interface (API)

• GetObjectData
  With the "PH" archiving method there is no guarantee that the alarms are up-to-date. Furthermore, it can occur that a disrupted connection to the PH or to the PH computer is temporarily unavailable.
  This means an API client needs to know that the alarms, which are usually included in the returned data, may be incomplete and therefore missing. There is no possibility to respond to this part of the data.
  Because of that, the alarms and measured values are completely removed from the result of "GetObjectData" when the "PH" archiving method is used. An API client needs to retrieve this data itself when appropriate. To to this, use, for example, the PH or OPC (OLE for Process Control).

• TransferData2PH
  Because the "PH" archiving method automatically provides the data in "approximate real-time", there is no need to support this function any longer. For compatibility reasons, the function provides only the return value 'S_OK' without any further action. However, this only happens when the archiving method is "PH". If another archiving method is used, the return value is the same as in the current version.

• SetBatchState "Close"
  Explicit "Closing" of batches is no longer necessary. For compatibility reasons, the "Close" command is still accepted. The return value is "no error". However, no action is triggered internally in the system.

• Life cycle of elements
  Applications which communicate via the SB-API interface with SIMATIC BATCH have to be prepared so that elements (batches, recipes, materials,...) can be modified and deleted by other applications (e.g. BCC). If, in spite of this, an application accesses a deleted element for example, a corresponding error value is reported by SB-API.
  It is the responsibility of the operator/project to make sure that the life cycle of elements (batches, recipes, materials,...) is managed independently across all connected systems and PCS 7. This can be done by granting permissions in the SIMATIC BATCH system. SIMATIC BATCH cannot coordinate the life cycle of elements across all connected systems (Create -> Delete).
5.8 General

- Recipe editor, transitions
  If you use parameters of a recipe level (RUP, ROP) to calculate a different parameter of the same recipe level as an operand in a formula, a parameter of a recipe function that references this parameter as source will no longer be correctly updated.
  Remedy: All the parameters that are used as operands in a formula of the same recipe level must first be referenced as target in a higher recipe level to be able to use them as operands in a formula at the lower recipe level. As a rule, you should avoid creating parameter references on the same recipe level in formulas.

- Viewer for archived batches
  Restriction: To display archived batches again in the viewer for archived batches, the archiving must be in XML format V8.2, V8.1, V8.0.1, V8.0, V7.1.2 or V7.0.8.

- Report templates
  Report templates on the Information Server can only be installed from an SIMATIC BATCH version x to version x+n. Otherwise, the report templates of the newer version may be deleted.

- Views of the BATCH data in the SQL server database
  The columns "MinTagValue", "MaxTagValue" and "MaxTagValueNo" in the view "vOnlineTagExtended" are not part of the data in the Process Historian and are therefore displayed as "NULL".
  This data can be determined later using SQL (min, max, ...).

- When actual values are selected as transfer parameters, the existing source interconnections are deleted.

- When updating the project to SIMATIC BATCH V8.2, AS-based operation is not possible for cross-AS units in which the equipment phases/operations are configured on different automation systems. Instead, use the PC-based mode for these units.

- Cycle time
  WinCC tags, e.g. SFC Status, that need to be read by SIMATIC BATCH are requested in a 1 second cycle. For this reason, in PC-based mode, the status of the equipment phase may not change faster than once per second. The status may be lost in the BATCH control server if this condition is violated.

- Online structure change
  You can change existing transitions and steps in OSC mode at the beginning of an online structure change by cutting the relevant transitions and steps and pasting them again at the same position.
  This invalidates the restriction on online structure changes from the documentation: Existing conditions within transitions cannot be deleted.

- Replacing old controls in WinCC process pictures
  As of SIMATIC BATCH V8.1, the two controls "bfephrx.ocx" and "bfuniprx.ocx" are no longer included in the setup of a SIMATIC BATCH WinCC Client. If you still want to use these controls in a WinCC process picture, replace them with the much more convenient block icons in the "@Template_Batch.pdl" file.

- AS-based mode
  In AS-based mode, the project setting "Use optimized start behavior for SFC type=No" is not permitted.
5.9 Import/export

### Showing batch messages in WinCC Alarm Control

In the pictures in which you want to show batch messages, enable the following option at the relevant Alarm Control:

- Open the "Configuration dialog..." of the control
- Open the "Message lists" tab
- Select the "Edit" button in the "Fixed selection" section
- For the "Type" criterion, click on the "Settings" column
- Under the "OS process control system messages" item, enable the option "Batch"

**Note**

**System pictures**

You decide on the Alarm Control in which you want to display Batch messages: for example, in the "@AlarmNew.PDL" new list, in the "@AlarmActive.PDL" list of pending messages, or in the "@AlarmOperation" operation list.

Make the settings within the Alarm Control again after every software update.

### Selective download (CFC editor)

This SIMATIC PCS 7 function has been designed for "continuous systems" and cannot be used in conjunction with SIMATIC BATCH.

### Character strings (text strings) of more than 32 characters, for example, within a query in transitions, from previous versions of SIMATIC BATCH are no longer supported.

#### 5.9 Import/export

SIMATIC BATCH offers import/export functionality for master recipes, formulas, and libraries. The format used for this (extension 'SBX') is not available for external applications. If the SBX data is not created by SIMATIC BATCH, error-free functioning cannot be ensured.

The format "BatchML" has to be used for the import of externally generated master recipes, formulas, or libraries.

Please note that this format does not support all of the constructs that SIMATIC BATCH offers. Only a small part of the constructs is supported, which is described in the manual, section "BatchML".

To ensure error-free operation, 3rd party data must be imported only in the format "BatchML".

You can find information on the standard "BatchML" here:

Internet link ([www.mesa.org/en/BatchML.asp](http://www.mesa.org/en/BatchML.asp))