SIEMENS

SIMATIC

WinCC
Readme WinCC Comfort/Advanced
V13

System Manual

Online help printout

02/2014

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

All names identified by ® are registered trademarks of Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

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.

Table of contents

General notes

<div align="right">1</div>

The information in this readme file supersedes statements made in other documents.

Read the following notes carefully because they include important information for installation and use. Read these notes prior to installation.

Notes on the information system

The following function is already described in the information system, but is not available in TIA Portal V13:

- Hardware comparison of devices

Functions for S7-1200 as of firmware version V4

In the information system for the TIA Portal V13, functions are documented for S7-1200 as of firmware version V4 which are not yet available in the software.

The 64-bit data types will be available for an S7-1200 as of firmware version V4.

User-defined documentation

On the product DVD under "Documents\UserDocumentation", you will find instructions for creating and using user-defined documentation.

Display of interfaces via online access

If the Ethernet interfaces for online access are not displayed sporadically, install hotfix KB2588507 (for Microsoft Windows) from the Microsoft Support website.

Internet link: http://support.microsoft.com/kb/2588507 (http://support.microsoft.com/kb/2588507/en-us)

Display of Asian characters in the TIA Portal

If the Chinese TIA Portal is installed on a different Asian Windows operating system (for example Korean) and texts are not displayed correctly in the TIA Portal, select English as the "Language for non-Unicode programs" in the Windows Control Panel.

Instruction "GET_NAME: Read out name of a module"

According to the online help, the read name depends on the IO device type.

For an HMI Panel, however, it is not the name of the station that is output – as described in the online help – but the name of the interface module.

Online operation in hibernate mode

We recommend that you do not use the two options "Hibernate" and "Sleep" in online operation; if you do, communication problems could occur. If necessary, adapt the computer's energy options.

Installing new .Net versions or .Net service packs

- Close the TIA Portal before installing a new .Net version or a new .Net service pack on your programming device/PC.

- Restart the TIA Portal only after successful installation of the new .Net version or the new .Net service pack.

Notes on handling

- If a project in the list of projects last used is located on a network drive that is not connected, you may experience delays when opening the "Project" menu.

- When you insert a CPU, you may need to wait for some time if the project editor is open at the same time. This generally takes longer when you insert the first CPU in a newly created project. To be able to continue working more quickly, you should close the project editor before inserting a CPU.

- The alarm "Application is not responding" may appear in Windows 7 with functions that take a long time to run (loading the CPU for example). If this occurs, wait until the function has correctly finished.

- If you have installed a Microsoft mouse with IntelliPoint, you may find that it superimposes components over the buttons of the title bar. If this is the case, uninstall the IntelliPoint software from Microsoft.

- Enabling the "Virtual Desktop" options with NVIDIA graphics cards can cause problems. In this case, disable the "nView virtual desktop manager" of your NVIDIA graphics driver.

Using the TIA Portal via a remote desktop

In principle, it is possible to use the TIA Portal via a remote desktop connection. During configuration, you should, however, avoid disconnecting the connection to the desktop client. In rare cases, this can lead to the software user interface being blocked.

If you experience this blockage, follow these steps on the desktop client.

1. Open the Windows Task-Manager and close the "rdpclip.exe" process.

2. Type in "rdpclip.exe" in the command prompt to restart the process.

Note that the current content of the clipboard will be lost. You can, however, then continue configuration as usual. To be on the safe side, you should restart the TIA Portal at the next opportunity.

Notes on SIMATIC memory cards

The SIMATIC memory cards have been formatted and set up by Siemens for use with S7-1200 and S7-1500 modules. This format must not be overwritten; otherwise, the card will no longer be accepted by the modules. Formatting with Windows tools is therefore not permitted.

Behavior in case of open force job

Note that an active force job is retained even after you have loaded a new project to the SIMATIC memory card. This means you should first delete the active force job before you remove a SIMATIC memory card from the CPU and before you overwrite the card in the PC with a new project. If you use a SIMATIC memory card with unknown content, you should format the SIMATIC memory card before the next download.

Subnet addressing for CP 1613 and CP 1623

CP 1613 and CP 1623 are communication modules with microprocessor. To ensure secure management of communication links, these are processed on the module. The protocol stack in your PC is used for diagnostic purposes (SNMP, DCP). To allow both protocol stacks (i.e. CP 1613/23 Firmware and CP 1613/23 NDIS access) access to the same partners, is recommended to place both stacks of a module in the same subnet.

Editing a device IP address

Do not use the address range from 192.168.x.241 to 192.168.x.250 when editing a device IP address. If necessary, this address range is automatically assigned by the system to a programming device. Depending on the subnet mask, this applies also for all network classes.

Migrating projects with the TIA Portal

After the migration of hardware configurations and program blocks from earlier automation solutions, first check the functionality of the migrated project before you use it in productive operation.

Working with automatically synchronized network drives

Automatic synchronization after a network interruption can result in current (local) project data being stored as a "backup" on the network drive through user interactions. This could cause outdated project data to be loaded from the network drive when opening the project. For this reason, we do not recommend that you store TIA Portal projects on synchronized network drives.

If, however, you do work on synchronized drives, you can continue working locally in the event of a network interruption. In this case, you must always ensure that the TIA Portal application is closed while data is synchronized. The synchronization itself must be implemented in such a way that the current (local) project data replaces the project data on the network drive.

Entry of decimal places

With certain Windows language settings, it may occur that the entry of values with a comma as decimal place is not recognized (entering "1,23" leads to an error). Instead, use the international format ("1.23").

Access protection for memory cards in USB card readers

By improving the security mechanisms for online access and engineering of S7-1500 CPUs, the data storage on memory cards has been changed. For this reason, this version of STEP 7 cannot evaluate the passwords of the configured protection level when reading project data from memory cards that is accessed via a USB card reader. The changed behavior affects the memory cards for CPUs of the S7-1200/1500 series. Therefore, use physical safeguards to protect critical project data on memory cards for these devices.

Note

This restriction is not related to online access to devices or the know-how protection of program blocks.

Information on the TIA Portal in online support

Overview of the most important technical information and solutions for the TIA Portal in the Siemens Industry online support.

Internet link: TIA Portal in Siemens Industry online support (www.siemens.com/industry/onlinesupport/tiaportal)

All information on service and support in the Siemens Industry online support:

Internet link: Service and support in Siemens Industry online support (http://support.automation.siemens.com)

Here, you can also subscribe to the newsletter that provides you with latest information relating to your products.

Starting the TIA Portal

When you start the TIA Portal, Windows attempts to update the Certificate Revocation List (CRL) of "windowsupdate.com".

If no Internet access is available and there are multiple DNS servers, a timeout may occur and delay the start of the TIA Portal.

Compatibility with V12 SP1

An empty V12 SP1 project with the name "TIA_Portal_Project_V12.0.1.3.ap12" is installed in the installation directory under ..\Portal V13\SampleProjects to allow TIA Portal V13 to be opened in compatibility mode V12 SP1. This project must be copied to a local directory with full access before it can be used. For more information on this, refer to FAQ ID 835846.

FAQs on the TIA Portal

FAQs on the TIA Portal are available at FAQs (http://support.automation.siemens.com/WW/view/en/28919804/133000).

STEP 7 Basic

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2.1 Security information

Upgrades and updates

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. For more information about industrial security, visit

http://www.siemens.com/industrialsecurity (http://www.industry.siemens.com/topics/global/en/industrial-security/Pages/Default.aspx)

To stay informed about product updates as they occur, sign up for a product-specific newsletter. For more information, visit

http://support.automation.siemens.com (http://support.automation.siemens.com/WW/llisapi.dll?aktprim=99&lang=en&referer=%2fWW%2f&func=cslib.csinfo2&siteid=csius&extranet=standard&viewreg=WW&groupid=4000002)

Network settings

The following tables show the network settings of each product you need to analyze the network security and to configure external firewalls:

STEP 7 Basic					
Name	Port number	Transport protocol	Direction	Function	Description
ALM	4410*	TCP	Inbound/ outbound	License service	This service provides the complete functionality for software licenses and is used by both the Automation License Manager as well as all license-related software products.
RFC 1006	102	TCP	Outbound	S7 communication	Communication to the S7 controller via Ethernet/PROFINET for programming and diagnostic purposes.
DCP	---	Ethernet	Outbound	PROFINET	The DCP protocol (Discovery and Basic Configuration Protocol) is used by PROFINET and provides the basic functionality for locating and configuring PROFINET devices.

STEP 7 Basic					
SNMP	161	UDP	Outbound	PROFINET	The SNMP client functionality is used by STEP 7 to read status information from PROFINET devices.
* Default port that can be changed by user configuration					

WinCC ES Basic (without simulation)					
Name	Port number	Transport protocol	Direction	Function	Description
ALM	4410*	TCP	Inbound/ outbound	License service	This service provides the complete functionality for software licenses and is used by both the Automation License Manager as well as all license-related software products.
HMI Load	1033	TCP	Outbound	HMI Load (RT Basic)	This service is used to transmit images and configuration data to Basic Panels.
* Default port that can be changed by user configuration					

Simulation RT Basic					
Name	Port number	Transport protocol	Direction	Function	Description
HMI Load	1033	TCP	Inbound	HMI Load (RT Basic)	This service is used to transmit images and configuration data to Basic Panels.
Ethernet/ IP	44818	TCP	Outbound	Ethernet/IP channel	The Ethernet/IP protocol is used for connections to Allen Bradley PLCs.
	2222	UDP	Inbound	Ethernet/IP channel	The Ethernet/IP protocol is used for connections to Allen Bradley PLCs.
Modbus TCP	502	TCP	Outbound	Modbus TCP channel	The Modbus TCP protocol is used for connections to Schneider PLCs.
RFC 1006	102	TCP	Outbound	S7 channel	Communication to the S7 controller via Ethernet/PROFINET
Mitsubishi MC	5002	TCP	Outbound	Mitsubishi MC channel	The Mitsubishi protocol is used for connections to Mitsubishi PLCs.

2.2   News

News in the TIA Portal

To keep you up-to-date with the latest news, Siemens Industry Online Support now offers a website with the latest news on a variety of topics of the TIA Portal.

All news on STEP 7 Basic are available at a glance at this link:

http://support.automation.siemens.com//WW/view/84047138 (http://support.automation.siemens.com/WW/view/en/84047138)

2.3 Notes on use

Contents

Information that could not be included in the online help and important information about product characteristics.

Online operation

The simultaneous online operation of STEP 7 V5.5 or earlier and STEP 7 Basic V13 has not been approved.

Simultaneous online connections on an S7-1200 CPU

It is not possible to establish an online connection from multiple TIA Portal instances simultaneously to the same S7-1200 CPU.

Configuring and assigning module parameters

You will find an overview of the modules that can be configured and assigned parameters with STEP 7 Basic V13 at http://support.automation.siemens.com (http://support.automation.siemens.com/WW/view/en/28919804/133000).

Removing/inserting the memory card

After removing or inserting a memory card, always perform a memory reset on the CPU in order to restore the CPU to a functional condition.

Removing and inserting Ethernet modules

If Ethernet modules are removed and re-inserted during operation, you must boot the PC; otherwise, the "Accessible devices" functionality in STEP 7 or NCM PC will not display all devices. While the PC boots, Ethernet modules must be activated.

Comparing project data

The comparison functions (online/offline, offline/offline) currently do not take hardware into consideration.

Loading project data with TIA Portal V12 and V13 (S7-1200)

If you load the project data of an S7-1200 CPU with the TIA Portal V13, you can no longer use TIA Portal V12 to access this data. To do this, first restore the factory settings of the CPU.

Read the additional information on this in the online help under "How to reset a CPU to factory settings".

Using project data of distributed IO-Link master modules from TIA Portal V12 in V13

The following procedure applies if you are using distributed IO-Link master modules in TIA Portal V12 that are not GSD devices and were configured with PCT: To continue using your project data from TIA Portal V12.0 in TIA Portal V13.0, you have to export them in the PCT before you upgrade the project. After the upgrade, you must import the project data once again using the PCT.

Compatibility

The device configuration and program of an S7-1200 CPU must always be configured with the same STEP 7 version. Usually, the TIA Portal makes sure that no version conflicts occur by outputting appropriate notifications during loading to the device.

This automatic verification is not possible with S7-1200 CPUs with firmware version V1.x. In this case, users themselves must ensure that no version conflicts occur.

2.4 Editing devices and networks

2.4.1 General information on devices and networks

Contents

General information on devices and networks.

S7 PCT IO-Link

The S7 Port Configuration Tool is available for free download at the following link.

http://support.automation.siemens.com/WW/view/37936752 (http://support.automation.siemens.com/WW/llisapi.dll?aktprim=0&lang=en&referer=%2fWW%2f&func=cslib.csinfo&siteid=csius&groupid=4000002&extranet=standard&viewreg=WW&nodeid0=33102519&objaction=csopen)

2.4.2 Use of modules on the S7-1200

Contents

Information that could not be included in the online help and important information about product characteristics.

Use of modules on the S7-1200

The modules listed below are not supported on the S7-1200.

Family	Module	Order number
S7-300 FMs	SM 338	6ES7 338-4BC01-0AB0
	FM 350-1	6ES7 350-1AH03-0AE0
	FM 350-2	6ES7 350-2AH00-0AE0, 6ES7 350-2AH01-0AE0
	FM 351	6ES7 351-1AH01-0AE0, 6ES7 351-1AH02-0AE0
	FM 352	6ES7 352-1AH02-0AE0
	FM 355 S	6ES7 355-1VH10-0AE0
	FM 355 C	6ES7 355-0VH10-0AE0
	FM 355-2 C	6ES7 355-2CH00-0AE0
	FM 355-2 S	6ES7 355-2SH00-0AE0
S7-300 PtP-CP	CP 340	6ES7 340-1AH02-0AE0, 6ES7 340-1BH02-0AE0, 6ES7 340-1CH02-0AE0
	CP 341	6ES7 341-1AH01-0AE0, 6ES7 341-1AH02-0AE0, 6ES7 341-1BH01-0AE0, 6ES7 341-1BH02-0AE0, 6ES7 341-1CH01-0AE0, 6ES7 341-1CH02-0AE0
Network component	Diagnostics repeater	6ES7 972-0AB01-0XA0
ET 200S	1 Count 24 V	6ES7 138-4DA04-0AB0
	1 Count 5 V	6ES7 138-4DE02-0AB0
	1 Step 5 V	6ES7 138-4DC00-0AB0, 6ES7 138-4DC01-0AB0
	2 pulses	6ES7 138-4DD00-0AB0, 6ES7 138-4DD01-0AB0
	1 SI	6ES7 138-4DF01-0AB0
	1 SI Modbus	6ES7 138-4DF11-0AB0
	1 SSI	6ES7 138-4DB02-0AB0, 6ES7 138-4DB03-0AB0
	1 Pos Universal	6ES7 138-4DL00-0AB0
	SIWAREX	7MH4910-0AA01, 7MH4912-0AA01, 7MH4920-0AA01
ET 200M	SIWAREX	7MH4 900-2AA01, 7MH4 900-3AA01, 7MH4 950-1AA01, 7MH4 950-2AA01

Loading S7-1200 module comments to the PG/PC

In central configurations with S7-1200, comments of modules, submodules and signal boards are not loaded. With CPs/CMs, only the comments of the IE interface or DP interface are loaded. In distributed configurations with ET 200SP or ET 200MP, only the comment of the channels is loaded from the I/O modules.

2.4.3   Replacing ET 200S positioning modules

Contents

Information that could not be included in the online help and important information about product characteristics.

Replacing ET 200S positioning modules

This information relates to the positioning module "1 Step 5V" (6ES7 138-4DC00-0AB0) from a project which was created with TIA Portal V11.0. When replacing these modules from the TIA Portal V11.0 with a new version of these modules, the parameter settings are reset to the default values.

This is the case with one of the following procedures:

- Replace the positioning module 6ES7 138-4DC00-0AB0 with its successor module 6ES7 138-4DC01-0AB0 by means of a device exchange.

- Updating the module version using the appropriate button in the device properties in the Inspector window.

2.4.4   CP 343-2 on SIMATIC S7 Embedded Controller EC31-RTX

Contents

Information that could not be included in the online help and important information about product characteristics.

CP 343-2 on SIMATIC S7 Embedded Controller EC31-RTX

The module AS-Interface CP 343-2 (order no.: 6GK7 343-2AH01) can be inserted in an expansion rack of the SIMATIC S7 Embedded Controller EC31-RTX (order no.: 6ES7 677-1DDxx-0BB0), but the CP 343-2 cannot be operated with the EC31-RTX.

2.4.5   Notes on online and diagnostics

Contents

Information that could not be included in the online help and important information about product characteristics.

Hardware detection followed by online connection

When the "Online > Hardware detection" command is performed for an unspecified CPU, the online configuration is not loaded from the CPU. If you do not load the configuration resulting from the hardware detection to the CPU, the device and network views will always show a difference between the offline and online configurations. It will appear that there are different configurations in the online and diagnostic views, although the MLFBs are identical in the actual CPU and the offline CPU.

2.4.6 Network components

2.5 Programming a PLC

2.5.1 General notes on PLC programming

Contents

Information that could not be included in the online help and important information about product characteristics.

Information about network security

For communications access between the TIA Portal and CPU or between HMI (except for HMI access using "GET/PUT communication") and CPU, there are integrated security functions. The provide greater protection from manipulation and higher access protection. To protect against unauthorized network access to a CPU with standardized communications access such as "GET/PUT", "TSEND/TRCV", "Modbus", "FETCH/WRITE", you should also take suitable additional measures (e.g. cell protection concept).

Renumbering PLC data types

For better performance, the CPUs of the S7-1200 module process PLC data types with numbers. The user is not aware of these numbers, because the system processes the numbers independently. This means number conflicts are automatically resolved. When using know-how protected blocks that use PLC data types, it may be useful to set up your own numbering system (recommended > 5000) because the automatic resolution of numbering conflicts may result in a password prompt (compilation required).

To renumber the default number of a PLC data type, follow these steps:

1. Open the project library in the "Libraries" task card.

2. Drag the compilable PLC data type to the "Types" folder.
   The "Add type" dialog opens.

3. Enter the properties of the new type.

4. Click "OK" to confirm.

5. Right-click the PLC data type.
   The shortcut menu opens.

6. Select "Edit type" in the shortcut menu.

7. Open the "PLC programming" task card once again.
   The extension "in testing" is now added to the name of the PLC data type.

8. Right-click the PLC data type.
   The shortcut menu opens.

9. Select "Properties" in the shortcut menu.

10. Change the number of the PLC data type in the "General" section.

11. Select "Release version" from the shortcut menu of the library.

The PLC data type now has the new number and can be used. The assigned number is retained even if the type of the PLC data type is revoked.

Generating external sources from blocks

When generating external sources from blocks, the changes made directly in the block interface to the default values of PLC data types are not exported to the sources. This means these values are not available when the sources are imported once again. The default values are applied instead. To prevent this loss of data for the modified default values, the changes must be made directly in the PLC data type and not in the block interface. In this case, the changes are also exported when generating external sources.

Indirect indexing of ARRAY components of data type bit string in SCL

In TIA Portal V13, you can address the components of an ARRAY for a CPU of the S7-1200 series in SCL with a tag of the data type BYTE, WORD or DWORD as index in addition to a tag of the integer data type if the IEC check is not set.

Explicit data type conversion in SCL

As of TIA Portal V13, the string is displayed with a leading sign during explicit data type conversion of SINT/INT/DINT/LINT_TO_STRING or WSTRING in SCL and transferred aligned to the left.

The result is an incompatibility with TIA Portal V12 SP1, in which the string was transferred aligned to the right during conversion.

Start value behavior during "Upload from device"

The start values that you have changed with the instruction "WRIT_DBL: Write to data block in the load memory" will be lost during execution of the action "Upload from device".

Loading inconsistent programs to a device

In TIA Portal, it is not possible to download inconsistent programs to a device without a consistency check. During the loading process, all blocks of the program are implicitly checked and are compiled again in the event of inconsistencies. If, however, there are programs on your CPU which were loaded with earlier versions of STEP 7, these programs could demonstrate inconsistencies.

In this case, note the following:

If you load an inconsistent program from a device, you will not be able to load the program unchanged to the device afterwards, because a consistency check always takes place during the loading process and existing inconsistencies are corrected.

Process image of PTO/PWM outputs

Do not use PTO/PWM outputs in the process image (for example, for access in the user program, for online functions or in HMI). The update rate of the process image is much slower than the rate of the signal changes. The display in the process image therefore does not reflect the signal flow.

Monitoring blocks in LAD and FBD

If the start of the current path is outside the visible range, it may not be possible to determine the input value. In this case, the current path is shown grayed out.

Avoid using PLC data types generated by the system in libraries

Some instructions generate their own PLC data types during instancing which are saved in the "PLC data types" project folder. However, you should not use these system-generated PLC data types in any library, because they may be recreated by the system at any time and may result in an unfavorable system behavior.

Using global data blocks in assignments

It is not possible to assign the contents of a global data block to a structurally identical data block, e.g. using a move box.

2.5.2   Instructions

Contents

Information that could not be included in the online help and important information about product characteristics.

Notes on the information system

The following function is already described in the information system, but is not available in TIA Portal V13:

● "ASI_CTRL" instruction for CPUs of the S7-1200 module

Instruction "TRCV_C: Receive data via Ethernet"

Contrary to the information provided in the online help, the communication connection is terminated immediately, and not after sending data, when the CONT parameter is set to the value "0".

Instruction "T_CONFIG: Configure interface"

The CPU is restarted after you have executed the "Configure interface" instruction in order to change an IP parameter. The CPU goes to STOP mode, a warm restart is carried out and the CPU starts up again (RUN mode). Make sure that the control process is in a secure operating mode after the CPU has been restarted following execution of the "Configure interface" instruction. Uncontrolled operation can result in serious material damage or personal injury due to malfunctions or programming errors, for example. Non-retentive data could be lost.

Parameters ERROR and STATUS

ERROR	STATUS (DW#16#..)	ERR_LOC	Explanation
0	00000000	0	After the instruction has been executed successfully, the STATUS parameter "00000000" does not return any value.

Instruction "GET_DIAG: Read diagnostics information"

MODE 3 at the MODE parameter is not supported by the S7-1200 CPU.

Using instructions with parameters of type VARIANT in code blocks with different access types (S7-1200)

Code blocks (FBs/FCs) and data blocks (DBs) can be created with different access types ("standard" and "optimized"). In code blocks, you can call any instructions. Certain instructions (for example, "WRIT_DBL" and "READ_DBL") use pointers of type VARIANT at input and output parameters to address data blocks.

Ensure that you do not use these instructions in programs in which code blocks of different access types are called reciprocally. This could cause the following to occur:

- A structure from a standard data block is directly or indirectly passed to an optimized code block, which forwards this structure directly or indirectly to one of the blocks mentioned above.

- The reverse scenario, whereby a structure from an optimized code block is directly or indirectly passed to a standard data block, which forwards this structure directly or indirectly to one of the blocks mentioned above.

2.5.3 Testing the user program

2.5.3.1 Testing with the watch table

Contents

Information that could not be included in the online help and important information about product characteristics.

Multiple access to the same CPU

Access to a CPU from a PG/PC is permitted only when a TIA Portal is open. Multiple access to the same CPU is not permitted and can lead to errors.

Loading data blocks during an active control job

Note

Loading changed data blocks during an active control job can result in unforeseen operating states. The control job continues to control the specified address, although the address allocation may have changed in the data block. Complete active control jobs before loading data blocks.

Testing programs converted from STEP 7 V10.5/V11.0

To monitor and test a program converted from STEP 7 V10.5, you have to first compile and load with STEP 7 V13.0.

2.5.3.2 Testing with the force table

Contents

Information that could not be included in the online help and important information about product characteristics.

Example

If I/O access to the address "IB0:P" takes place in the user program, it is not permitted to force the following I/O address areas: I0.0:P, IB0:P, IW0:P and ID0:P.

2.6 Inter Project Engineering (IPE)

2.6.1 Notes on IPE

Contents

Information that could not be included in the online help and important information about product characteristics.

Comment box of the device proxy

Contrary to the description in the information system for the TIA Portal V13, with the "Inter Project Engineering" functionality, the comment field for a device proxy cannot be edited.

Restricted functionality

In the TIA-Portal V13, the "S7 GRAPH overview" and "PLC code display" functionality cannot be used in conjunction with the IPE device proxy.

2.7 Technological functions

2.7.1 Notes on technological functions

There are no notes about the technology functions.

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3.1 Security information

Security information

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. Any third-party products that may be in use must also be taken into account. For more information about industrial security, visit

http://www.siemens.com/industrialsecurity (http://www.industry.siemens.com/topics/global/en/industrial-security/Pages/Default.aspx)

To stay informed about product updates as they occur, sign up for a product-specific newsletter. For more information, visit

http://support.automation.siemens.com (http://support.automation.siemens.com)

Passwords

Various passwords are set by default in WinCC. For security reasons, you should change these passwords.

- On HMI devices with version V11 or V12, the password "100" is preset for the Sm@rtServer and for the integrated Web server. A default password is not preset for HMI devices with version V13.

- For the user "Administrator", the default password is "administrator".

Integrated Web server

It is always possible on a PC to access HTML pages in Runtime, even though the option"HTML pages" is disabled. Setup always installs the standard pages of the Web Server on the PC. Assign an administrator password to prevent unauthorized access to the pages.

Communication via Ethernet

In Ethernet-based communication, end users themselves are responsible for the security of their data network. The proper functioning of the device cannot be guaranteed in all circumstances; targeted attacks, for example, can lead to overload of the device.

Ending Runtime automatically

If automatic transfer is enabled on the HMI device and a transfer is started on the configuration PC, the running project is automatically stopped on the HMI device. The HMI device then switches autonomously to "Transfer" mode. Transfer mode may cause undesired reactions in the system.

After the commissioning phase, disable the automatic transfer function to prevent the HMI device from switching inadvertently to transfer mode. To block access to the transfer settings and thus avoid unauthorized changes, assign a password in the Control Panel.

Network settings

The following tables show the network settings of each product which you need in order to analyze the network security and for the configuration of external firewalls:

WinCC Advanced (without simulation)					
Name	Port number	Transport protocol	Direction	Function	Description
ALM	4410*	TCP	Inbound, Outbound	License service	This service provides the complete functionality for software licenses and is used by both the Automation License Manager as well as all license-related software products.
HMI Load	1033	TCP	Outbound	HMI Load (RT Basic)	This service is used to transmit images and configuration data to Basic Panels.
HMI Load	2308	TCP	Outbound	HMI Load (RT Advanced)	This service is used to transmit images and configuration data to panels.
* Default port that can be changed by user configuration					

WinCC Simulation for Basic Panels					
Name	Port number	Transport protocol	Direction	Function	Description
HMI Load	1033	TCP	Inbound	HMI Load (RT Basic)	This service is used to transmit images and configuration data to Basic Panels.
EtherNet/IP	44818	TCP	Outbound	Ethernet/IP channel	The Ethernet/IP protocol is used for connections to Allen Bradley PLCs.
	2222	UDP	Inbound	Ethernet/IP channel	The Ethernet/IP protocol is used for connections to Allen Bradley PLCs.
Modbus TCP	502	TCP	Outbound	Modbus TCP channel	The Modbus TCP protocol is used for connections to Schneider PLCs.
RFC 1006	102	TCP	Outbound	S7 channel	Communication with the S7 controller via Ethernet/PROFINET
Mitsubishi MC	5002	TCP	Outbound	Mitsubishi MC channel	The Mitsubishi protocol is used for connections to Mitsubishi PLCs.

WinCC Simulation for Panels and Runtime Advanced

Name	Port number	Transport protocol	Direction	Function	Description
DCP	---	Ethernet	Outbound	PROFINET	The DCP protocol (Discovery and basic Configuration Protocol) is used by PROFINET and provides the basic functionality for locating and configuring PROFINET devices.
LLDP	---	Ethernet	Inbound, Outbound	PROFINET	The LLDP protocol (Link Layer Discover Protocol) is used by PROFINET for topology detection.
SMTP	25	TCP	Outbound	SMTP Communication	This service is used by WinCC Runtime Advanced to send e-mails.
HTTP	80*	TCP	Inbound	Sm@rtServer	The Web server is only available when Sm@rtService is activated. The used port may differ depending on automatically selected settings.
RFC 1006	102	TCP	Outbound	S7 channel	Communication with the S7 controller via Ethernet/PROFINET
NTP	123	UDP	Outbound	Time synchronization	The NTP protocol (Network Time Protocol) is used for time synchronization in IP-based networks.
SNMP	161	UDP	Outbound	PROFINET	The SNMP client functionality is used by STEP 7 to read status information from PROFINET devices.
HMI Load	2308	TCP	Outbound	HMI Load (RT Advanced)	This service is used to transmit images and configuration data to panels.
HTTPS	443*	TCP	Inbound	Sm@rtServer	The Web server with HTTPS protocol is only available when Sm@rtService is activated. The used port may differ depending on automatically selected settings.
VNC server	5900*	TCP	Inbound	Sm@rtServer	This service is only available when Sm@rtService is activated.
	5800*	TCP	Inbound	Sm@rtServer	This service is only available when Sm@rtService is activated.
VNC client	5500	TCP	Outbound	Sm@rtServer	This service is only available when Sm@rtService is activated.
* Default port that can be changed by user configuration					

PROFINET protocols for Panels and Runtime Advanced

Name	Port number	Transport protocol	Direction	Function	Description
DCP	---	Ethernet	Outbound	Lifelist, PROFINET Discovery and configuration	The DCP protocol (Discovery and basic Configuration Protocol) is used by PROFINET and provides the basic functionality for locating and configuring PROFINET devices.
LLDP	---	Ethernet	Inbound, Outbound	PROFINET Link Layer Discovery protocol	The LLDP protocol (Link Layer Discover Protocol) is used by PROFINET for topology detection.

PROFINET protocols for Panels and Runtime Advanced					
MRP	---	Ethernet	Outbound	PROFINET medium redundancy	The MRP protocol (Medium redundancy protocol) enables control of redundant transmission paths using a ring topology.
PROFINET IO Data	---	Ethernet	Inbound, Outbound	PROFINET Cyclic IO data transfer	Cyclic data exchange is used by panels for direct keys and LEDs.
NARE	---	Ethernet	Inbound, Outbound	Name Address Resolution	This protocol is used to resolve network names and assign IP addresses.
PROFINET Context Manager	34964	UDP	Inbound, Outbound	PROFINET connection less RPC	The PROFINET Context Manager provides an endpoint mapper in order to establish an application relation (PROFINET AR).

Communication connections for Panels and WinCC Runtime Advanced					
Name	Port number	Transport protocol	Direction	Function	Description
Telnet	23	TCP	Inbound	Telnet	This service can be used for maintenance.
SMTP	**	TCP	Outbound	SendEMail	This service is used by Windows CE / PC Runtime to send e-mails.
HTTP	80*	TCP	Inbound	Hypertext Transfer Protocol	The HTTP protocol is used for communication with the internal Web server.
RFC 1006	**	TCP	Outbound	S7 channel	Communication with the S7 controller via Ethernet/PROFINET.
HMI Load	102	TCP	Inbound	Transfer	This service is used to transmit images, Runtime, and configuration data to the panel via PN/IE
NTP	**	UDP	Outbound	Time synchronization	The NTP protocol (Network Time Protocol) is used for time synchronization in IP-based networks.
DCOM***	135	TCP	Inbound	OPC server	This service is a component of the Microsoft Windows operating system. Communication via OPC (DA) is based on DCOM. Therefore, this service is required to initialize OPC (DA) connections.
DCOM***	**	TCP	Outbound	OPC server	The communication via OPC (DA) is based on DCOM and uses unspecified ports assigned by the system. This should be taken into consideration when using OPC (DA) and creating rules for the firewall.
NetBIOS over TCP/IP	**	UDP	Outbound	With the use of Remote File Share	Register / log on to a remote server.
NetBIOS over TCP/IP	**	UDP	Outbound	With the use of Remote File Share	Register / log on to a remote server.
SNMP	161	UDP	Inbound	Simple Network Management Protocol	The SNMP client functionality is used by STEP 7 to read status information from PROFINET devices.

Communication connections for Panels and WinCC Runtime Advanced					
HTTPS	443*	TCP	Inbound	Secure Hypertext Transfer Protocol	The HTTP protocol is used for communication with the panel-internal Web server via Secure Socket Layer (SSL).
Modbus TCP	**	TCP	Outbound	Modbus TCP channel	The Modbus TCP protocol is used for connections to Schneider PLCs.
Mitsubishi MC	**	TCP	Outbound	Mitsubishi MC channel	The Mitsubishi protocol is used for connections to Mitsubishi PLCs.
Printing	**	TCP	Outbound	Printing	Printing on the control panel (via Ethernet).
HMI Load	2308	TCP	Inbound	Transfer	This service is used to transmit images and configuration data to panels. On Comfort Panels, this service is replaced by DeviceManager and SCS in V13 and higher. This service is used to transmit configuration data to WinCC Runtime Advanced.
HMI Load	50523	TCP	Inbound	Transfer	This port is used if port 2308 is not available. This service is used to transmit images and configuration data to panels. On Comfort Panels, this service is replaced by DeviceManager and SCS in V13 and higher. This service is used to transmit configuration data to WinCC Runtime Advanced.
ALM	4410*	TCP	Inbound, Outbound	Application License Manager	This service of RT Advanced makes available the complete functionalities for software licenses and is used by the Automation License Manager.
OPC UA	4870*	TCP	Inbound	OPC UA server	This service is required for communication via OPC UA.
HMI Load	5001	TCP	Inbound	Device Manager	This service is used to transmit images and Runtime to panels.
HMI Load	5002	TCP	Inbound	SCS (System Configuration Server)	This service is used to transmit configuration data to panels.
VNC client	5500	TCP	Inbound	Sm@rtServer	Reverse VNC server connection. Receive mode is set for the VNC client.
VNC server	5800*	TCP	Inbound	Sm@rtServer	VNC server connection HTTP
	5900*	TCP	Inbound	Sm@rtServer	VNC server connection
SIMATIC Logon	**	TCP	Outbound	UMAC (User Management to the Access Control)	Register / log on to a remote server.
Allen Bradley Ethernet IP	**	TCP	Outbound	Ethernet/IP channel	The Ethernet/IP protocol is used for connections to Allen Bradley PLCs.
Reserved	49152 ... 65535	TCP/UDP	Outbound		Dynamic port range is used, for example, to connect to the remote file sharing.

* Default port that can be changed by user configuration

** Port is assigned automatically.

*** Supported by WinCC Runtime Advanced only.

3.2 News

News about the TIA Portal

You can learn about the latest news about various topic areas of the TIA Portal in Siemens Industry Online Support.

All news concerning WinCC can be found here: News (http://support.automation.siemens.com/WW/view/en/88360672)

3.3 Notes on use

Contents

Information that could no longer be included in the online help and important information about product features.

Working with standard user rights

If you are working with standard user rights in Windows 7, "User Account Control (UAC)" must not be disabled. The "User Account Control" is enabled in Windows 7 by default.

For more information on the "User Account Control", refer to the online help for Windows 7.

On-screen keyboard

Once you have opened the TIA Portal, you can no longer call the on-screen keyboard.

To call the on-screen keyboard in Windows, use the following command: "Start > All Programs > Accessories > Ease of Access > On-screen keyboard".

Copying HMI devices with HMI connections

If you copy an HMI device with HMI connections to a PLC, the HMI connection in the new HMI device is not automatically connected to an existing PLC with the same name. This applies to copying within a project as well as copying across projects.

To access the PLC tag via HMI tag in the new HMI device, you have to complete the configuration of the HMI connection immediately after copying. Proceed as follows:

1. Open the "Devices & Networks" editor.

2. Connect the new HMI device to the desired network.

3. Open the connection table.

4. Select the HMI connection of the new HMI device.

5. Select the desired PLC under "Partner".

If you compile the new HMI device or connect additional PLC tags in between copying the HMI device and completing the connection, there may be some instances in which an additional

HMI connection to the same PLC is created. This is especially true if you connect HMI tags with DB array elements.

Device replacement

After an HMI device has been replaced, you should check the appearance of the configured screens. Changing the size of the display may result in changes to the position and appearance of screen objects, e.g. recipe view and alarm view.

Device replacement - communication

If an HMI device is replaced, error messages of the type "... are not supported in the new configuration. and will therefore be removed" may be generated. These alarms refer to configured connections of the device and are triggered, for example, if the HMI devices have a different number of interfaces. These connections are marked red after a device replacement. If you would like to continue to use these connections, you have change the configuration of the connection. Proceed as follows:

1. Open the "Devices and Networks" editor.

2. Click "Network" in the toolbar of the network view.

3. Network the interface of the HMI device with the interface of the CPU.

4. Click in the table area of the network view on the "Connections" table.

5. Select the connection marked red.

6. Enter the new interface under "Properties > General > Interface" in the Inspector window.

Specifying the time of modification in the overview window

The times of modification displayed in the overview window only refer to changes to the object itself. Changes to subordinate objects, e.g. screen objects in a screen, do not cause the time of the last change to the screen to change in the overview window.

HMI device wizard

When you create a device with a color display using the HMI device wizard, the graphics of the navigation buttons may be displayed in black and white. This error only occurs, however, if the new device is created with the same name as a device with a monochrome display which has been deleted in the meantime.

You can avoid this error by always deleting the associated graphics in the Graphics collection whenever you delete a device from the project.

Objects with object references in the project library

Two copying methods can be used in WinCC flexible.

- With "simple copy" a WinCC flexible screen including an IO field, for example is copied. Only the object name of a tag configured on the IO field is copied, as this is a reference.

- With "copy", a screen, an IO field contained there and a tag configured on the IO field together with its properties are copied.

These two methods can also be used for storing an object in a library. Project libraries and the objects contained there are migrated during migration and can be used in WinCC.

In WinCC, however, only one copying method is available. With regard to tags, it functions like "simple copy" in WinCC flexible. With regard to graphics, graphics lists and text lists, it functions like "copy" in WinCC flexible.

If you stored objects with references to tags in a library in WinCC flexible, you must reconfigure the referenced objects when using them in WinCC.

Reports with Asian character sets on Windows CE devices

If Asian characters sets are displayed in an illegible manner in a report on a Windows CE device, you must change the character sets for the objects in the report. it is sufficient to change to a different character set and then reset the original character set.

Installation sequence for Startdrive

When you install Startdrive on a PC, adhere to the following installation sequence:

- Install STEP 7 V13.0.

- Install Startdrive.

Compatibility with V12

An empty V12.0.1.3 project with the name "TIA_Portal_Project_V12.0.1.3.ap12" is installed in the installation directory under ..\Portal V13\SampleProjects to allow TIA Portal V13 to be opened in compatibility mode V12. This project must be copied to a local directory with full access before it can be used. For more information on this, refer to FAQ ID 66027369.

File browser on a Windows 8 PC with touch screen

You can only operate the file browser dialog with a mouse, keyboard or on-screen keyboard (without using the touch function) on a Windows 8 PC with touch screen. We recommend using the file browser dialog of the Windows operating system with the help of a script on a touch screen PC with Windows 8.

3.4 Migration

Contents

Information that could no longer be included in the online help and important information about product features.

Project languages in WinCC

WinCC V13 does not support all project languages that were available in WinCC flexible, such as Arabic. If you receive an empty project as the result of your migration, you may want to check the set editing language. Do not set the project languages that are not supported as editing language in the source project. Proceed as follows:

1. Open the project with WinCC flexible.

2. Change the editing language to English, for example.

3. Save the project.

4. Restart the migration.

Migrating an integrated project with ProTool objects

The "PROTOOL option package(s) missing in STEP 7" error message output during migration of a WinCC flexible project that is integrated in STEP 7 indicates that WinCC flexible 2008 SP3 is installed on your system. Moreover, the project still contains objects that were configured using ProTool. Do not open the project with WinCC flexible 2008 SP3! Proceed as follows to migrate the project:

1. Copy the project to a computer on which WinCC flexible 2008 SP2 and STEP 7 are installed.

2. Open the project in the SIMATIC Manager.

3. Remove all ProTool objects from the project.

4. Execute the "Save as" command in the "File" menu.

5. Enable the option "With reorganization" in the "Save project as" dialog.

6. Click OK.

7. Copy the project back to the original computer.

8. Restart the migration.

Migrating a WinCC V7 project: Border line of rectangles

In a WinCC V7 project, you have configured a rectangle with the settings "Line weight = 1" and "Draw insider border = yes".

You then migrate the WinCC V7 project to WinCC V13. To have the rectangle displayed correctly, follow these steps.

1. Open the Inspector window of the rectangle.

2. Open the property list.

3. Disable "Widen border line inwards".

Progress bar

As long as the progress bar still shows a value of 100%, the software is still busy running remaining tasks such as the closing of references. The software will not respond to user input while this status is given.

Open a project created with WinCC V11

When you open a V11 project with a WinCC V13 version, it is no longer be possible to open this project with an older version afterwards.

Managing third-party ActiveX controls

The migration also supports third-party ActiveX controls. However, the controls must be registered in the operating system. If an ActiveX control is not registered, migration is canceled.

If you save a project with the migration tool and perform the migration yourself on another PC, the controls must also be registered on this PC.

Migrating integrated projects with alarm views

An alarm view is enabled with all alarm classes in an integrated project. The alarm classes are disabled during migration of the project.
Once the migration of the project is completed, check the settings in the alarm view.
Enable the require alarm classes in the Inspector window of the alarm view if needed under "Properties > General".

Migrating more extensive projects from WinCC V7

We recommend the use of a 64-bit operating system for the migration of more extensive projects from WinCC V7.

Migrating projects from WinCC V7

In TIA Portal V13, you can continue to use projects from WinCC V7.2 after migration. Projects from earlier WinCC versions cannot be migrated directly to WinCC TIA Portal version V13. If you wish to continue using such projects in TIA Portal V13, you must first migrate them to the WinCC V7.2 Classic page. To do so, use WinCC V7.2 with the latest update.

Migration log

As of TIA Portal V13.0 alarms are sorted into a tree structure in the migration log. This means all alarms that are part of a specific subsystem are stored in one folder. The result is an increase

in the number of folders in the tree structure. Press the shortcut <NUM+ X> to expand the currently selected folder and all subfolders in one single step.
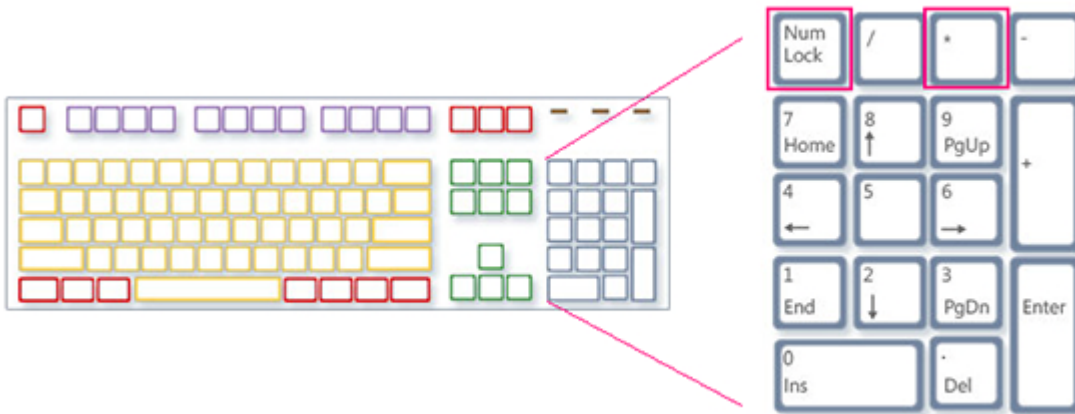
Restrictions for user-specific project data

1. Folders and files you have created in the WinCC V7.2 project directory are not copied to the new project directory during the migration. You must adapt all scripts that access such directories and files after the migration.

2. C standard functions of WinCC V7 are not migrated. If you have made changes to the C standard functions in the WinCC V7 project, you must apply these changes manually to the TIA Portal after the migration.

Migration of texts in Spanish (international sorting) and Spanish (traditional sorting)

If the WinCC V7 project includes texts in Spanish (traditional sorting), these texts are migrated as Spanish (Spain) in WinCC V13.

If the WinCC V7 project includes texts in Spanish (international sorting), these texts are migrated as Spanish (Spain) in WinCC V13.

If the WinCC V7 project includes texts in Spanish (international sorting) as well as Spanish (traditional sorting), only the texts from Spanish (traditional sorting) are migrated as Spanish (Spain) in WinCC V13. The texts from Spanish (international sorting) are not taken into consideration.

See also

Object support during migration

3.5 Engineering System

3.5.1 Screens and Screen Objects

Contents

Information that could no longer be included in the online help and important information about product features.

Display objects after HMI device replacement

If you upgrade a device to the new HMI device versions, you should check the screens contained in the project. Because of the new appearance and improved operability, texts of symbolic I/O fields may not be completely legible and may be concealed by operator controls.

Copying display objects between two projects or two devices

In Project_1 configure an alarm window in the Global Screen, for example. You copy the alarm window and paste it in the Global Screen in Project_2.

The enabled alarm classes are partly not enabled in the alarm window after pasting.

This behavior applies to the following display objects:

- Alarm window

- Alarm indicator

- Alarm view

Display of the cross-references in the Inspector window

The Inspector window displays objects used by a screen object in the "About > Cross-reference" tab.

A screen is open and an object selected. You are using an HMI tag at the object as process tag.

The object and the linked HMI tag are displayed in the cross-references. All locations of use of the object and the HMI tags are listed.

If the HMI tag is interconnected with a PLC tag or a DB tag, the locations of use of the interconnected PLC tag or DB tag are displayed.

Event names in case of alarms in the "Info" tab of the Inspector window

In some alarms of the Inspector window the event names in the "Info" tab will deviate from the names in the "Properties" tab.

Name in the "Properties" tab of the Inspector window	Name in the "Info" tab of the Inspector window
Cleared	ClearScreen
Loaded	GenerateScreen
Enable	Activate
Change	Change
When a dialog is opened	ONMODALBEGIN
When a dialog is closed	ONMODALEND
User change	PASSWORD
Screen change	SCREEN
Disable	Deactivate
Press	Press
Outgoing	Going
Incoming	Coming
Limit "high limit error" violated	AboveUpperLimit
Limit "low limit error" violated	BelowLowerLimit
Click	Click
Loop-in alarm	LoopInAlarm
Release	Release
Alarm buffer overflow	OVERFLOW
Acknowledge	Acknowledgement
Runtime stop	Shutdown
Press key	KeyDown
Release key	KeyUp
Toggle ON	SwitchOn
Toggle OFF	SwitchOff
Value change	Change value

Faceplates

Faceplates cannot be rotated or mirrored.

Tab sequence in screens with faceplates

If you have configured a tab sequence in screens with faceplates in WinCC V12 or WinCC V12 SP1, you should check the tab sequence of these screens in WinCC V13. The tab sequence may have been changed in both the screen and the faceplate.

Tag prefix of a screen window in WinCC Runtime Professional

The objects of the "Controls" palette do not support the tag prefix that can be configured for a screen window.

I/O field with "decimal" display format and format pattern without "s" prefix

You have linked a process tag to an I/O field. The I/O field is assigned the "decimal" display format.

You may select a signed or an unsigned display format.

A "Format pattern" setting without "s", e.g., "999" has the following effects:

1. You cannot set negative values using the I/O field in Runtime.

2. If the tag assumes a negative value, the I/O field generates a two's complement and a corrupted positive value is output.

Trend view on Basic Panels

The trend view buttons are not displayed on Basic Panels. You can operate the trend view using the function keys of the HMI device that are assigned corresponding system functions.

Grouping of screen objects

When you group screen objects in WinCC, performance problems can arise in WinCC in the case of large nesting depths.

ActiveX and .NET controls

ActiveX and .NET controls are always positioned in the foreground in runtime.

The configuration of ActiveX and .NET controls on levels is not supported.

Use of bitmaps as icons

In Windows 8 and Windows 8.1, the use of bitmaps with a size of 48x48 pixels and a color depth of 32 bits as icons is not supported.

Border line of rectangles

In a WinCC V7 project, you have configured a rectangle with the settings "Line weight = 1" and "Draw insider border = yes".

You then migrate the WinCC V7 project to WinCC V12. To have the rectangle displayed correctly, follow these steps.

1. Open the Inspector window of the rectangle.

2. Open the property list.

3. Disable "Widen border line inwards".

Border line of "Graphic I/O field" object

In WinCC V13, the dynamization of the border line of the "Graphic I/O field" object in "Two states" mode has no effect during runtime.

Dynamization of instances of a faceplate type in a group

You are using the instance of a faceplate type in an object group. The properties of the instance are also displayed as properties of the group. Any dynamization with tags, scripts or animations of the group is not displayed in Runtime.

Preview in screen window

You use your own designs with shadows for screen objects. The screen objects can be displayed in a screen window.
The shadows of the screen objects are not displayed in the preview of the screen window. The response occurs only in the engineering system. It is displayed correctly in Runtime.

Assigning graphics to a softkey

A graphic can only be assigned to a softkey if the bottom edge of the permanent window does not conceal the area of the softkey graphic.

Renaming a PLC in Runtime

If a PLC is connected to the PLC code display in WinCC Professional and Runtime is running, changing the name of the PLC during runtime will trigger a error. Do not change the PLC name, the IP address, or other properties of the HMI connection during runtime.

Panels and RT Advanced with device version V13: many visually different screen objects

The use of screen objects with very many visually different properties (e.g., very many different styles) can reduce the performance of the user interface in Runtime and can increase the amount of available memory space used. Avoid using, for example, very many different corner radii: 0 pixel, 1 pixel, 2 pixels, 3 pixels, etc.

The use of many differently sized "Gauge" objects can have the same effect. Avoid "Gauge" of height 48 pixels, 49 pixels, 51 pixels, etc. Instead, use sizes such as 50 pixels, 70 pixels, 100 pixels.

Dynamization of grouped objects

For groupings with multiple nestings (group in group, faceplate in group, group in faceplate, etc.), only the events of the outermost group and the innermost objects can be used for dynamization with system functions. System functions that are configured at events of the lower-level group or lower-level faceplate are not executed.

Number of characters in text fields, lists and alarm texts

The number of available characters in the text of a screen object is dynamic and depends on the HMI device and the memory format. Control instructions and formatting are taken into consideration when entering text data and the maximum number of characters is reduced accordingly.

Transparency in WinCC V13

Transparent screens can be displayed without any problems in Runtime. This is true for all Comfort Panels and WinCC Runtime Advanced with version 13.0.0.0.
To use the transparency in a graphic view or in a graphic I/O field, the "Fill pattern" property must be set to "Transparent" and the property "Use transparent color" must be disabled.

If the property "Use transparent color" is enabled in a device with version 13.0.0.0, the transparency of the screen is lost and the transparent screen areas are displayed in black. We recommend that you check the "Use transparent color" property at the points of use of transparent screens after upgrading existing projects to device version 13.0.0.0. If the screens are not displayed correctly, disable this property.

3.5.2 Tags and connections

Contents

Information that could no longer be included in the online help and important information about product features.

Display of deleted array elements at location of use of HMI tags

The locations of use of HMI tags, such as the process value of IO fields, are usually indicated by the tag name. If the element of an array tag is used, then the tag name will be extended by the index of the array element indicated in brackets.

If a used tag is no longer included in the project, then the tag name will still be displayed at the location of use. The field will be displayed with a red background to indicate the missing tag. If a used array element or the array tag is no longer present, then only the index of the array element will be displayed in brackets. The tag name will not be displayed. The field is highlighted in red. You can no longer identify the name of the associated array tag based on the location of use in this instance.

If you do not know which array tag was linked to this location of use, then it may be necessary to link the array element once again.

If a tag or array tag was created based on a reference, then the selected reference will be closed automatically.

If an HMI tag is connected with an array element of a PLC tag and the PLC tag does no longer exist in the project, then the same behavior will take place in the "HMI tags" editor.

Array tags as list entry of multiplex tags

You can use the array tags of the Char data type just like the tags of the String data type.

The use of an array tag of the Char data type as list entry of a multiplex tag in the "HMI tags" editor is not supported.

Multiplexing tags on a Basic Panel

If you multiplex a tag with an external tag on a Basic Panel, the address is read from the PLC in runtime during the first read cycle. The value of the address read is not available until the second read cycle.

Runtime Advanced and Panels: Importing array elements and structure elements

Array tags and structure tags are always imported in full with all elements. The elements of the array tags and structure tags are not filled further during import.

A new tag is created if the name of a tag corresponds to the name of an array or structure element in the import file.

Example:

The import file contains an array tag called "Otto" with 10 array elements. The array elements are then called Otto[1], Otto[2], for example.

If the import file contains a tag named "Otto[1]", the first element of the array tag will not be filled. Instead, a new tag will be created in the engineering system.

Local ID of HMI connections

You cannot edit the "Local ID" value in the HMI connection properties. You need the local ID, for example, for communication by way of AR_SEND. To enable usage of the "Local ID" for communication, proceed as follows:

1. Open the network view in the "Devices & Networks" editor.

2. Click "Connections".

3. Select an S7 connection.

4. Select the "Add new connection" command in the shortcut menu of the PLC.

5. Click on the interface.

6. Specify the "Local ID (hex)".

7. Click "Add" and then "Close".

8. Select "Properties > General" from the partner area of the Inspector window and enter the IP address of the HMI device for the new connection.

9. Configure the necessary raw data tags for communication in the HMI device.

Tags with the DTL data type

Tags that use the "DTL" data type element by element, can only be used as read-only.

Tag names in faceplates

Use of the "." or "@" character in names of tags in faceplate types is not permitted. Do not use these special characters in the tag names in faceplates.

RT Professional: Tags with symbolic addressing and "Char Array" data type

Tags with symbolic addressing and the "Char Array" data type are not released for communication of RT Professional and SIMATIC S7-1200 V3.

Array elements in WinCC

If you have connected an HMI tag with an array from a STEP 7 data block which does not start with a low limit of 0, the array elements are mapped in WinCC to the low limit of 0.

To ensure that you do not have to rethink between the STEP 7 indices and the WinCC indices when accessing the individual array elements, the low limits of arrays should also start at 0 in STEP 7.

3.5.3   Alarm system and alarm displays

Contents

Information that could not be included in the online help and important information about product properties.

Displaying special characters in alarm texts

When configuring alarm texts, a fixed character set is used in the Engineering System. This character set allows you to use numerous special characters in alarm texts.

Language-dependent fonts are used in runtime to display the texts, for example MS PGothic, SimSun. The fonts used in runtime do not support all special characters. As a result, some special characters are not displayed in runtime.

Use of multiplex tags in output boxes with alarm texts

It is also possible to use multiplex tags in the output boxes of alarm texts in the engineering system. During runtime, this leads to an incorrect display of the alarm, because the use of multiplex tags is not supported by the basic panels.

Parameters in user alarms

Contrary to the information in the online help, it is not possible to configure parameters for user alarms.
The menu command "Properties > Properties > Alarm parameters" is not available in the Inspector window.

Tags in alarm texts of RT Advanced

Tags of data type WChar or WString cannot be displayed in the alarm view in RT Advanced.

3.5.4   System functions and scripts

Contents

Information that could no longer be included in the online help and important information about product features.

Runtime error on startup on TP 277 and OP 277

At the start of the runtime on a TP 277 or OP 277, the error "Global unknown error with VBScript: 'Expected statement' in script ..." can be reported.

This error is triggered on devices with the Windows CE 3.0 operating system by user functions of the following type:

```
Sub VBFunction_1()
With HmiRuntime.Screens("Screen_1").ScreenItems("Button_1")
    .backcolor = vbred
    .visible = not .visible
End With
End Sub
```

If the error occurs, you need to re-program the user function as follows:

```
Sub VBFunction_1()
    HmiRuntime.Screens("Screen_1").ScreenItems("Button_1").backcolor = vbred
    HmiRuntime.Screens("Screen_1").ScreenItems("Button_1").visible = not .visible
End Sub
```

Hiding warnings for scripts

Enable "Runtime settings > General > Settings > Also start with faulty scripts".

As a result, Runtime is started irrespective of faulty scripts. In addition, script warnings will not be displayed during a complete compilation

Graphics in faceplates

You have added a graphic view in a faceplate and defined the "Graphic" property as the interface of the faceplate. The "Graphic" property can be made dynamic using the interface of the faceplate instance.
Use the following notation to address the graphic property via a script: "..\\..\\Graphic name".

Scripts for service projects

Since no interactive user is usually logged in service projects, C scripts and VB scripts lead to problems in the following cases:

- When the scripts require interaction, for example, operator input.

- When the scripts show message boxes.

There is no common data area for C scripting in service mode. Thus, for example, no global C variables can be exchanged between the "Scheduled tasks" and "Screens".

Find and Replace in local scripts in WinCC Professional

Use the "Find and Replace" function to find and replace texts within editors. It is not possible to use Find and Replace in local scripts.

System functions in local scripts

System functions can be converted into local C scripts or VB scripts.

If a WString type tag is used in a SetTag system function that was converted into a C script, an error message is generated in the Global Script diagnostics window when the function is executed. The message does not affect the execution of the function.

This concerns the following SetTag functions:

- SetTagWithOperatorEvent

- SetTagIndirect

- SetTagByTagIndirect

- SetTagIndirectByTagIndirect

- SetTagByProperty

- SetTagIndirectByProperty

Properties no longer used in Comfort Panels and RT Advanced

In WinCC V13, many new visual properties have been introduced and many existing properties have been harmonized.

In the course of revision of the object properties, some properties that could be used in VB scripts in earlier versions of WinCC are no longer supported for use in WinCC V13. Scripts that use properties that are no longer supported remain valid, but the relevant calls within the scripts have no function. These limitations pertain exclusively to Comfort Panels and RT Advanced in device version V13.0.

The following table shows the properties of screen objects that are no longer being used:

Property	Screen object
BorderBrightColor3D	Slider
BorderColor	Text field, I/O field, symbolic I/O field, date/time field
BorderInnerWidth3D	Slider
BorderOuterWidth3D	Slider
BorderShadeColor3D	Slider

Property	Screen object
BorderStyle3D	Text field, I/O field, button, symbolic I/O field, graphic I/O field, date/time field, bar, switch
BorderWidth	Text field, symbolic I/O field
CenterColor	Gauge
DialColor	Gauge
EdgeStyle	Text field, I/O field

System function "ChangeConnection"

Contrary to the description in the online help, the system function "ChangeConnection" is released for the following devices:

- SIMATIC S7-300/400

- SIMATIC S7-NC

- SIMOTION

The system function "ChangeConnection" is not released for SIMATIC S7-1200.

3.5.5 Reports

Contents

Information that could not be included in the online help and important information about product features.

Displaying controls in protocols

A project with WinCC V11 SP2 with Update 4 or earlier is upgraded to WinCC V13.

In this process, it may happen that archive data is not displayed in controls for protocols.

The following controls are affected:

- f(t) trend view

- f(x) trend view

- Table view

Remedial measures for f(t) trend view and f(x) trend view

1. In the control, select "Properties > Properties > General > Display > Online".

2. Recompile your project.

3. Load the project onto your HMI device.

Remedial measures for Table view:

1. In the control, select "Properties > Properties > General > Upon opening screen > Start update".

2. Recompile your project.

3. Load the project onto your HMI device.

3.5.6 Recipes

Contents

Information that could not be included in the online help and important information about product features.

Arrays in recipe elements

If you have configured both an array as well as the elements of this array for recipe elements of a recipe, the loading of data records aborts with the following error message: "290055: Import of data records aborted with error"

Use either the array or just the array elements for recipe elements of a single recipe.

3.5.7 User administration

Contents

Information that could not be included in the online help and important information about product features.

3.5.8 Communication

Contents

Information that could no longer be included in the online help and important information about product features.

Connection interruptions with Mitsubishi PLCs

After multiple connection interruptions, a situation may arise where all the connection resources of the Mitsubishi PLC are in use and the connection can no longer be established. It is recommended to check these connection resources in the PLC program of the PLC and also to enable them again.

Limited number of possible HMI connections

An error message is displayed during compilation of a device indicating that the configuration of the HMI connection in the "Devices & Networks" editor is invalid. The reason may be that the maximum number of possible connections of the HMI device or PLC has been exceeded.

Check the maximum number of available connections. Consult the device manuals of the devices you are using.

Communication by means of routing with S7 300/400

Communication of connection partners in different subnets is possible via routing with the following connections: PROFINET, PROFIBUS, MPI.

Use of PROFINET IO with panel HMI devices

When using PROFINET IO to connect the direct keys and LEDs of HMI devices to the PLC, you can define an offset for the address area of the inputs and outputs during configuration in HW Config.

The following restriction applies when a PROFINET IO-capable S7-400 CPU is used with one of the HMI devices listed below:

The offset for the start of the address area of the inputs must not be greater than the offset for the start of the address area of the outputs.

The restriction applies to the following HMI devices:

* OP 177B

* OP 277

* Mobile Panel 177

For the configuration of the address parameters, open the PLC with the S7-400 CPU in HW Config. Select the HMI device connected via PROFINET IO in the station window of HW Config. A table with the properties of the HMI device is displayed at the bottom of the station window in the detail view. Select the line containing the addresses of the HMI device in the table and open the object properties using the shortcut menu.

Enable the "Addresses" tab in the "Object properties" dialog. Configure the offset for the inputs under "Inputs > Start". Configure the offset for the outputs under "Outputs > Start".

Exceeding value ranges with Mitsubishi MC and Mitsubishi FX

With some data types, the Mitsubishi MC and Mitsubishi FX communication drivers do not check whether the value of a recipe tag exceeds the value range of the PLC tags. The data types affected are:

* 4-bit block

* 12-bit block

* 20-bit block

* 24-bit block

* 28-bit block

Coordination area pointer in an OPC connection

In principle, the coordination area pointer can be used eight times in an OPC connection. If you have configured an OPC connection and you automatically create another OPC connection using "Add", the coordination area pointer is only displayed once in the newly created connection. In this case, you should change the communication driver of the connection. If you then set OPC again as the communication driver, the coordination area pointer can again be used eight times.

RT Advanced communication via Station Manager (SIMATIC NET) with an S7-1200

For communication of a SIMATIC S7-1200 with a PC with WinCC RT Advanced via a router, the following restrictions apply to the PC:

- Windows 7: Only with installed SIMATIC NET 8.1

- Windows XP: Communication via Station Manager (SIMATIC NET) is not supported

These restrictions also apply if you are using WinAC MP or Station Manager. Connections with the help of the Station Manager of Runtime Advanced are always treated as routed connections.

Communication between S7-1200 and a multi panel

Communication between an S7-1200 and a multi panel with the "WinAC MP" option installed via ProSave is not possible. The HMI devices affected are:

- SIMATIC MP 177 6" Touch

- SIMATIC MP 277 8" Touch

- SIMATIC MP 277 8" Key

- SIMATIC MP 277 10" Touch

- SIMATIC MP 277 10" Key

- SIMATIC MP 377 12" Touch

- SIMATIC MP 377 12" Key

- SIMATIC MP 377 15" Touch

- SIMATIC MP 377 19" Touch

HMI connections in WinCC V13

HMI connections to SIMATIC S7-1200 PLCs with firmware versions earlier than V2.0 are not possible in WinCC V13.

Connections via PROFIBUS DP

When a connection between a PLC and an HMI device via PROFIBUS DP is interrupted and then re-established, sporadically all other PROFIBUS DP connections in the communication network are interrupted and re-established.

De-energize the disconnected station before reconnecting it.

"Set the IP suite (address) of the PLC in the Control Panel" with SIMATIC S7-1200 V1

The function "Set the IP suite (address) of the PLC in the Control Panel" has not been approved for the following PLCs:

- SIMATIC S7-1200 V1

Switching a connection

A connection may be interrupted when it is switched from an HMI device to a SIMATIC S7-300/400, to a SIMATIC S7-1500 or to a SIMATIC S7-1200 PLC.

Note the following settings in the SIMATIC S7-1500 or SIMATIC S7-1200 controllers:

- Absolute addressing of tags

- The "Disable PUT-GET communication" option must be selected

- The "Complete protection" protection level may not be set

RT Advanced in the Station Manager

If RT Advanced and WinAC RTX use the same communication processor of a PC, HMI communication with SIMATIC S7-1200 and SIMATIC S7-1500 is not possible.

Raw data communication in redundant projects

Simatic.NET, Named Connections and various communication blocks, such as BSEND/BRCV, for example, can only be used to a limited extent in a redundantly configured PC station because the connection parameters for the redundant partner server cannot be configured.

3.6 System-wide functions

Contents

Information that could no longer be included in the online help and important information about product features.

Inter Project Engineering: Displaying alarms of system diagnostics

If you do not enable "PLC alarms" when you create device proxy data, system diagnostic alarms are not applied to the device proxy data.

System diagnostic alarms of the device proxy are not displayed after initialization of device proxy data without "PLC alarms".

3.7 Compiling and loading

Contents

Information that could no longer be included in the online help and important information about product features.

Compiling and loading

If internal errors or warnings occur during compiling, compile the complete project using the command "Compile > Software (rebuild all)" in the shortcut menu of the HMI device.

Before you start productive operation with your project, compile the entire project using the "Compile > Software (rebuild all)" command from the shortcut menu of the HMI device.

If you are using HMI tags that are connected to the control tags in your project, compile all modified blocks with the command "Compile > Software" in the shortcut menu before you compile the HMI device.

Settings for update of operating system

If you select the command "Online > HMI device maintenance > Update operating system" from WinCC, you cannot change the settings such as the type of PG/PC interface or baud rate. The settings used during the last download are always used.

To make changes to the settings, open the "Extended download" dialog using the "Online > Extended download to device" command and change the settings. When you click the "Load" button the changed settings are saved.

Alternatively, you can perform an update of the operating system with changed settings with ProSave. You start ProSave via the Windows Start menu "Siemens Automation > Options and Tools > HMI Tools > SIMATIC ProSave".

Incorrect installation of ProSave

If you receive an error message during installation of ProSave when loading data to a target device or maintenance of an HMI device, then you cannot remedy this error using the repair function of setup. Remove ProSave via the Control Panel. Then start setup and install the "ProSave" component again.

Checking the address parameters

During compilation of an HMI device in the project tree with the command "Compile > Software" in the shortcut menu, the address parameters of the HMI device, such as the IP address, will not be checked. If you want to ensure that the address parameters are checked as well, you will have to compile the HMI device using the "Compile" button in the "Devices & Networks" editor of the toolbar.

Error message when downloading data to the PLC

A panel and a PLC are connected and communicating with other.

If a tag is accessed while downloading data from the panel to the PLC, an error message is displayed on the panel.

Delayed reaction in the "Extended download to device" dialog

If the settings in the "Extended download to device" dialog for "Type of the PG/PC interface" and "PG/PC interface" do not match the settings on the HMI device, this can result in the application not responding for up to a minute.

Extended download with an S7-1200 and a Comfort Panel

An S7-1200 PLC and a Comfort Panel are located in the same physical network as the PG/PC. You open the "Extended download to device" dialog for the Comfort Panel.

If you enable the option "Show all accessible devices", it may occur that the application stops responding.

OP77A, OP73, TP177A: Loading projects

When loading a project to an HMI device, it can happen that Runtime is not automatically ended, even though "Remote Transfers" is activated in the Panel.

If this happens, stop Runtime and manually set the transfer mode on the HMI device.

Loading a SIMATIC HMI application to a PC station

The following circumstances can lead to an error message during the first load of a SIMATIC PC station:

* A SIMATIC HMI application is configured in a PC station in the project
    - WinCC Runtime Advanced
    - WinCC Runtime Professional
    - WinCC Standby
    - or WinCC Client
* The property "S7RTM is installed" is activated.

Before you load a SIMATIC PC station for the first time, select the configured device HMI_RT (WinCC...) in the project tree. Open the "Extended download to device" dialog and select the appropriate interface and parameter settings. Click "Load".

You then load the PC station as normal.

Project transfer via USB

If you have connected more than one HMI device via USB to your configuration PC, project transfer is only possible to the last connected device.

Opening project files

When you run "HmiIRTm.exe", a dialog opens asking if you want to open the project file (.fwc).

The following options are available to you:

- "Yes": A dialog opens allowing you to select a project file (.fwc).
- "No": The dialog closes.

Tag simulator in WinCC Professional does not start

If the tag simulator does not start in WinCC Professional, it may be because the fm20.dll file has not been installed in the system yet. The fm20.dll file cannot be distributed and must be installed as part of a Microsoft application:
http://support.microsoft.com (http://support.microsoft.com/default.aspx?scid=kb;EN-US;224305)

You have the following two options for installing the fm20.dll file:

- Install an application, such as Microsoft Office 97, on the destination system. The installation routine also installs the fm20.dll file.
- You can also download and install the Microsoft ActiveX Control Pad free of charge. The fm20.dll file is also installed in this case. Additional information on the ActiveX Control Pad is available on the Microsoft Developer Network website:
  http://msdn.microsoft.com/en-us/library/ms968493.aspx (http://msdn.microsoft.com/en-us/library/ms968493.aspx)

3.8 Runtime

3.8.1 Notes on operation in Runtime

Contents

Information that could no longer be included in the online help and important information about product features.

Focus in Runtime

If you have configured a low-contrast combination of focus color and border color in a V12 project, the focus may no longer be identifiable after changing the HMI device version in Runtime. Change one of the two colors.

Language behavior - Layout of on-screen keyboard

The layout of the on-screen keyboard is not switched when the runtime language changes.

Tag values exceed the maximum length

You enter a character string in a string tag via an I/O field. If the character string exceeds the configured number of tags, the character string will be shortened to the configured length.

Empty message texts

Runtime is running with a project. The project is saved on a network drive.

In the event of interruptions to the network drive connection, Runtime may attempt to load message texts from the network drive.

In the event of disconnection, the alarm window or the alarm view remains empty.

To avoid this, copy the project to a local drive before the starting the project in Runtime.

Complete download in Service mode

If you need to perform a "complete download" to the OS in Service mode from the engineering station, Runtime automatically stops and then starts again.

The project is then no longer in Service mode.

In this state, the power supply is interrupted and WinCC Runtime no longer starts automatically on the OS.

Remedy:

1. Switch the project manually to Service mode after you have performed the "complete download".

2. Close the project manually.

3. Enable Service mode.

4. Start Runtime again using the surrogate icon in the taskbar.

Slow response from the screen keyboard and SmartServer

The following programs may start and respond very slowly under Windows 7 and Windows 2008 servers:

● Microsoft OSK screen keyboard and HMI TouchInputPC

● SmartServer: <Ctrl+Alt+Del> shortcut in the logon dialog

The delay is caused by the callback for the Internet certificate validation.

Remedy:

You can find the following files
on the product DVD under:
Support\Windows7\CRL_Check or CD_RT\ Support\Windows7\CRL_Check\:

● DisableCRLCheck_LocalSystem.cmd

● DisableCRLCheck_CurrentUser.cmd

1. Run the "DisableCRLCheck_LocalSystem.cmd" file with administrator rights. Select the command "Run as administrator" from the shortcut menu of the file.

2. Reboot the PC.

If the problem persists, follow these steps:

1. Double-click the file and run the "DisableCRLCheck_CurrentUser.cmd" file with user rights.

2. Reboot the PC.

Note

The callback for the certificate validation is disabled for all users or PCs. To restore the original state, perform the following files:

● RestoreDefaults_LocalSystem.cmd

● RestoreDefaults_CurrentUser.cmd

You can find the files in the following directory of the product DVD:

● Support\Windows7\CRL_Check or CD_RT\Support\Windows7\CRL_Check\

Starting Runtime

Only WinCC Runtime V13 can be started in TIA Portal V13. WinCC Runtime V11.02, V12 or V13 can be simulated in TIA Portal V13.

3.8.2   Notes on operation of panels in Runtime

Contents

Information that could not be included in the online help and important information about product features.

License transfer via S7USB

You always need to run WinCC to transfer a license to a panel via S7USB.

Transferring licenses to a panel on 64-bit operating systems

If you are running a 64-bit operating system and the "Edit > Connect target systems > Connect HMI device" menu command is not available in Automation License Manager, open command line input and run the following command with administrator rights:

"%WINDIR%\system32\RegSvr32.exe" "%CommonProgramFiles%\siemens\AlmPanelPlugin\ALMPanelParam.dll"

Using the mouse wheel in Runtime

The use of the mouse wheel in Runtime is not supported on all panels.

Basic Panels, OP73, OP77A and TP177A: Displaying texts in runtime

The default font selected in the "Runtime settings > Languages & font" editor has an effect on the display of texts in runtime.

Text entries may be truncated if you selected an unfavorable font size or style.

This setting possibly has an effect on the following text entries:

- Tooltips
- long alarm text
- text in the dialogs

Basic Panels: Connections to S7-1200 and S7-1500 with Backup/Restore

If you use the "Backup/Restore" function, a maximum of two connections from Basic Panels to the controllers are possible at any given time.

- SIMATIC S7-1200
- SIMATIC S7-1500

Basic Panels: Backup on the memory card of the PLC

Create the backup file "A.psb" on the memory card of the PLC. An error, for example a connection break, occurs when creating the backup.
This will create a corrupt file on the memory card of the PLC. Such a file has "~$" as prefix.
Delete the file with the prefix "~$" if you want to save a backup again under the same name "A.psb".

Basic Panels: Panel Data Storage and S7-1500F

The "Panel Data Storage" PDS function cannot be used on Basic Panels in conjunction with S7-1500F when the password for the protection level "Full access incl. fail-safe" is used.

3.8.3   Notes on operation of Runtime Advanced

Contents

Information that could not be included in the online help and important information about product features.

Permission for starting Runtime

On a computer running the 32-bit version of Windows 7, WinCC Runtime Professional or WinCC Runtime Advanced can only be started when a user is a member of the automatically created group, "Siemens TIA Engineer".

.Net-Controls in Runtime

If you have incorporated a .Net Control in your project as "Specific .Net-Control", you have to copy the files belonging to these controls to the installation directory of WinCC Runtime, e.g. "C:\ProgramFiles\Siemens\Automation\WinCC RT Advanced". Otherwise, the control cannot be loaded in Runtime.

3.9   HMI devices

3.9.1   Notes on HMI devices

Contents

Information that could no longer be included in the online help and important information about product features.

If the PC goes into standby or hibernate mode while the transfer is in progress, the panel status after interruption of the transfer is not defined.

Multi-key operation

Unintentional actions can be triggered by multi-key operation:

● When you are using a key device, you cannot press more than two function keys at the same time.

● When you are using a touch device, a standard PC or a panel PC, you can only press one function key or button at the same time.

TS Adapter with Ethernet interface

If an HMI device is connected via Ethernet and a TS adapter, it can not be reset to factory settings.

Simulation of the Basic Panels

Use an output field in an alarm text to output an external tag. The content of the output field will always be displayed with "0" during simulation.

Simulation with real PLC connection

The access point used by the simulation is independent from the settings of the engineering system and can only be altered in the Control Panel with the "Setting PG/PC Interface" tool. If the PLC connection is terminated right after the start of the simulation with alarm 140001, you should check the access point used by the simulation with "Setting PG/PC Interface".

1. Double-click "Setting PG/PC Interface" in the Control Panel. A dialog opens.

2. Select" "S7ONLINE" in the "Access point of application" field as standard for HMI.

3. Select the interface in the "Interface Parameter Assignment Used" area.

4. Exit the dialog "Setting PG/PC Interface" with OK

Loading of projects without recipe data records

You are using recipes in a project. You transfer the project to a Basic Panel without recipe data records.

You may encounter inconsistencies if you have altered the structure of the recipe in the engineering system and the device already held recipe data records.

Check the consistency of the data records in this case. The device will not issue a note for all structural changes.

Floating point numbers on MP 277, MP 377, TP 177B 4" and CP4

Only floating point numbers in the range from 10^{-293} ... 10^{+307} are displayed correctly on the HMI devices MP 277, MP 377, TP 177B 4" and CP4. If the tag value is outside this range, it is displayed as 0.

Mobile Panels V2

If you use Mobile Panels V2 in a project, it is not possible to open the project with WinCC V11 SP1. This affects projects with the following devices:

*   Mobile Panel 277F IWLAN (RFID Tag)

*   Mobile Panel 277F IWLAN V2

*   Mobile Panel 277 IWLAN V2

"Zone ID/Connection point ID" tag of a Mobile Panel 277 IWLAN V2

The tag used for the "Zone ID/Connection point ID" must be of data type INT for Mobile Panel 277 IWLAN V2 devices. Adapt this data type if necessary when migrating a project.

HMI devices with operating system Windows CE 5.0 or higher

Owing to a modified client-server communication security setting, the time difference between the HMI device (client) and PC (server) must not exceed 1 day. If you back up recipe data from the HMI device on a network drive, for example, make sure that the time is set correctly on the PC (server) and the HMI device (client).

HMI devices with high communication load

S7 Diagnostics should be enabled if a Panel is assigned many connections to PLCs or other HMI devices. Otherwise, you will risk overload on the Panel.

Device replacement in the engineering system

In the engineering system, you replace a device with configured LED keys with a device without LED keys. Runtime start fails after you have transferred the project data to the device.

For this reason, delete the LED key configuration before you replace the device.

Restrictions for the HMI device, MP 377 15" Touch daylight readable

The following functions are not supported in WinCC V12 for the MP 377 15" Touch daylight readable HMI device:

- Option: Sm@rtServer
- System function: SetAndGetBrightness
- Direct keys

Upgrading Basic Panels to WinCC V13

Before you upgrade Basic Panels from version V12 to version V13, transfer the image of the V12 SP2 Update 5 or higher to the devices.
In the "SIMATIC ProSave [OS Update]" dialog, select the setting "Reset to factory settings".

In this way, you always start a functional update of the image.

Affected devices:

- KP300 Basic mono PN
- KP400 Basic color PN
- KTP400 Basic color PN

Connection switch in the Control Panel with Basic Panels

If you use the "Override protected connection information" function, the following restriction applies:

You cannot perform a connection switch in the Control Panel of a Basic Panel from a PLC without a protection level to a PLC with a "Complete protection" level.

Mobile Panels 277F 8" IWLAN

Mobile Panels 277F 8" IWLAN V2 and 277F 8" IWLAN (RFID Tag) cannot be configured with WinCC V13.

Basic Panels 2nd Generation

Basic Panel KTP1200 Basic can currently not be configured with WinCC V13.

The following maximum values are in effect for Basic Panels 2nd Generation.

Alarms

	KTP400 Basic	KTP700 Basic	KTP900 Basic	KTP1200 Basic
Number of discrete alarms	1000	1000	1000	1000

Screens

	KTP400 Basic	KTP700 Basic	KTP900 Basic	KTP1200 Basic
Number of complex objects per screen [1]	This information is not relevant for Basic Panels 2nd Generation.			
Number of system diagnostic displays per screen	5	5	5	5
Number of array elements per screen [2]	100	100	100	100

1) Complex objects include: Bars, sliders, symbol library, clock, and all objects from the Controls area.

2) Array elements contained in recipes are included in the count.

Logs

	KTP400 Basic	KTP700 Basic	KTP900 Basic	KTP1200 Basic
Number of entries per log (including all log segments) [1]	10000	10000	10000	10000
Number of log segments	400	400	400	400
Number of tags that can be logged per log	10	10	10	10
Cyclic trigger for tag logging	1 s	1 s	1 s	1 s

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