

SIEMENS

SIMATIC HMI

WinCC WinCC Runtime Advanced readme

System Manual




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Online help printout

Legal information

Warning notice system

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

| |
|--|
|  DANGER |
| indicates that death or severe personal injury will result if proper precautions are not taken. |
|  WARNING |
| indicates that death or severe personal injury may result if proper precautions are not taken. |
|  CAUTION |
| indicates that minor personal injury can result if proper precautions are not taken. |
| NOTICE |
| indicates that property damage can result if proper precautions are not taken. |


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

Qualified Personnel

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

Proper use of Siemens products

Note the following:

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

Trademarks

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Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Security note (Advanced)

Security information

Siemens offers IT security mechanisms for its automation and drive product portfolio in order to support the safe operation of the plant/machine. Our products are also continuously developed further with regard to IT security. We therefore recommend that you keep yourself informed about updates and upgrades for our products and always use the latest version of each product. You can find information on this at: <http://support.automation.siemens.com> You can register for a product-specific newsletter here.

For the safe operation of a plant/machine, however, it is also necessary to integrate the automation components into an overall IT security concept for the entire plant/machine, which corresponds to the state-of-the-art IT technology. You can find information on this at:

<http://www.siemens.com/industrialsecurity>.

Products used from other manufacturers should also be taken into account here.

Passwords

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

- The default password for the Sm@rtServer and for the integrated Web server is "100".
- 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.

The HMI device then switches autonomously to "Transfer" mode.

After the commissioning phase, disable the automatic transfer function to prevent the HMI device from switching inadvertently to transfer mode.

Transfer mode can cause undesired reactions in the system.

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. |

| WinCC Simulation for Panels and Runtime Advanced | | | | | |
|--|-------|----------|----------------------|-----------------------------|---|
| 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-of-day synchronization | The NTP protocol (Network Time Protocol) is used for time-of-day 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 | | | | | |

Special considerations for Windows 7

Contents

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

Permission for the starting Runtime

To start WinCC Runtime Professional or WinCC Runtime Advanced, a user must be a member of the automatically created group, "Siemens TIA Engineer".

Working with standard user rights

If you are working with standard user rights in Windows 7, "User Account Control (UAC)" cannot 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.

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:

Locate 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 product DVD:

- Support\Windows7\CRL_Check or CD_RT\Support\Windows7\CRL_Check\
-

Installation

Contents

Information that could not be included in the online help.

Operating system message for SIMATIC USB drivers

An operating system message relating to the SIMATIC USB driver is issued on the operating system Windows Server 2003 R2 StdE SP2.

This message must be acknowledged with "Yes" as soon as possible after the message has been issued. The message may be in the background and therefore not be immediately visible. After a certain period of time, the setup continues with the next component. The SIMATIC USB drivers are then not installed and can not be used.

Runtime

4.1 Notes on operation in Runtime

Contents

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

Special characters in the user view

Special characters, such as / " § \$ % & ' ?, are not permitted when entering a name or the password in the user view.

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:

4.1 Notes on operation in Runtime

1. Switch the project manually to Service mode after you have performed the "complete download".
2. Close the project manually.
3. Activate Service mode.
4. Start Runtime again using the surrogate icon in the taskbar.

4.2 Notes on operation of Runtime Advanced

Contents

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

.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.

4.3 Communication

Contents

Information that could not be included in the online help.

Using "DTL" data type for area pointers

Use the "DTL" data type for configuration of area pointers "Date/time" and "Date/time PLC". The "DTL" data type supports time stamp information in the nanosecond range. Because Basic Panels support time stamp information only down to the millisecond range, you will encounter the following restrictions when using the area pointers:

- Area pointer "Date/time"
For transmission of time information from a Basic Panel to the PLC, the smallest unit of time is 1 millisecond. The value range from microseconds to nanoseconds of the "DTL" data type will be filled with zeros.
- Area pointer "Date/time PLC"
For transmission of time information from a PLC to a Basic Panel, the area from microseconds to nanoseconds will be ignored. The time information will be processed on the panel down to milliseconds.

Communication via routing

The communication of connection partners in various subnets can be routed via the following links: PROFINET, PROFIBUS, MPI.

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

The following restrictions apply to the PC that communicates with SIMATIC S7 1200 via router using WinCC RT Advanced or RT Professional:

- Windows 7: Only with SIMATIC NET 8.1 installation
- 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.

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