

SIMATIC WinAC RTX F

You are here: > Home > Industry > Automation Technology > Automation Systems > SIMATIC Industrial Automation Systems
 > PC-based Controller > SIMATIC WinAC RTX F

SIMATIC WinAC RTX F

SIMATIC WinAC RTX F – Fail-safe S7 software controller

Overview

- >
- Description
- >
- Area of application
- >
- Benefits
- >
- Layout and function
- >
- Technical data

>

Description

SIMATIC WinAC RTX F is the fail-safe SIMATIC software controller for PC-based automation and permits both standard and fail-safe control tasks to be performed on the PC.



Confirm interviews with German Technical Inspectorate (South) and SIPA Berchi (manufacturer of bottling plants): SIMATIC WinAC RTX F is the ideal solution for fail-safe, PC-based automation. > > more

>

Area of application

SIMATIC WinAC RTX F permits simple implementation of safety systems on PC-based solutions, and satisfies maximum safety requirements and compliance with relevant standards: EN 954-1 up to Cat. 4, IEC 62061 up to SIL 3, and EN ISO 13849-1 up to PL e.

The fail-safe software controller is particularly suitable for automation tasks in which, in addition to standard and fail-safe control functions, parallel data processing and the integration of the user's own technological functions are to be implemented on one platform and the openness of Windows is to be exploited.

To ensure the high performance of the complete system the latest PC technologies such as Dual Core are supported, in which one core is used for Windows applications and the other core exclusively for SIMATIC WinAC RTX F. The integration of C/C++ programs into the WinAC RTX control program provides access to all hardware and software components of the PC, creating an extremely flexible solution. The performance of WinAC RTX F is limited only by the PC platform used.

Apart from the software-only controller, particularly rugged and ready-to-run embedded bundles are also available, preinstalled with SIMATIC WinAC RTX F and Windows XP Embedded or Windows Embedded Standard. Whether on the basis of a modular embedded controller, a DIN rail PC or a Panel PC, the application ultimately determines the choice of hardware to be used.

Standardized engineering and the easy portability of the user software between the different solutions also contribute to the overall security of investment and flexibility.

>

Benefits

With the new SIMATIC WinAC RTX F software controller, Siemens links its long-term competence in standard and safety engineering with the openness of a PC-based system.

With WinAC RTX F you can benefit from the advantages of SIMATIC Safety Integrated

System-wide integration of safety into the standard technology even in PC-based solutions:

- One PC-based controller for both standard and fail-safe automation
- Engineering in the familiar STEP 7 environment and with the Distributed Safety option package and choice of off-the-shelf blocks certified by the German Technical Inspectorate or blocks you have created yourself
- Fail-safe communication via the globally field-proven PROFINET or PROFIBUS communication standards, with the PROFIsafe profile
- Space-saving design thanks to the combination of fail-safe and standard I/Os in one station

Approval for the most stringent safety requirements, such as Cat. 4 of EN 954, SIL 3 of EN 62061 and PL e of EN ISO 13849-1, regardless of the hardware used

The safety function can be assessed quickly and conveniently using the Safety Evaluation. All safety-related data of the products is available through an integrated database.

as well as the advantages of WinAC RTX, the SIMATIC software controller

Performance of PC-typical applications and automation tasks on just one platform

Installation possible on all current x86 PCs

Ready-to-run embedded bundles, consisting of rugged, maintenance-free hardware and preinstalled, preconfigured software

Security of investment through the use of SIMATIC IPCs and embedded bundles with long-term availability

The high performance of WinAC RTX also enables high-speed control solutions to be implemented with minimal processor loading.

Utilization of the continuous innovation and performance improvement of PCs

Simple communication through integral network interfaces

Simple use of business software (e.g. Microsoft Office) and user's own powerful software (e.g. C++, Visual Basic, Java, etc.)

Strict real-time for automation tasks

> **Layout and function**

Engineering

As in the fail-safe SIMATIC controllers, the engineering is implemented with STEP 7 and the Distributed Safety option package. This means that existing know-how can continue to be used.

Platforms

SIMATIC WinAC RTX F executes on all x86 hardware platforms with Windows XP Professional and is optimally matched to SIMATIC Industrial PCs. Especially when used on embedded PC platforms, such as the SIMATIC IPC 427C, the SIMATIC HMI IPC 477C or the SIMATIC S7-mEC with Windows Embedded Standard 2009, economical and extremely rugged solutions can be achieved. WinAC RTX F uses the main memory of the PC and offers a program backup in the data medium (e.g. HDD, CompactFlash card, SSD). Non-cyclic data, such as production parameters or recipe data, can be stored permanently on the data medium (e.g. HDD, CompactFlash card, SSD) of the PC with the help of system functions (SFC 82 - 84). In addition, all data can be held retentively in conjunction with an uninterruptible power supply (UPS).

Connection of the I/O

WinAC RTX F can control the distributed I/O not only via PROFIBUS, but also via PROFINET.

The I/O is connected via PROFIBUS DP at up to 12 Mbit/s via the integral DP interface of the SIMATIC IPCs or the embedded bundles. In addition, communications processors (CP 5611 A2/ 5613 A2) can also be used that support as many as four PROFIBUS lines with up to 500 slaves.

The connection to PROFINET is via Ethernet chipsets for PROFINET IO with RT:

Interface name	Chipset
Intel® Pro/1000 CT Gigabit Desktop	Intel®82574L
Intel® PRO/1000 PT dual port server adapter	Intel® 82571EB

or via a CP 1616 (PCI) or CP 1604 (PCI-104) communications processor.

The SIMATIC IPCs or the embedded bundles feature an optional integrated PROFINET interface, while it is standard for the S7-mEC RTX F.

In addition, WinAC RTX F also supports the system function isochronous mode. With isochronous mode, high-speed, time-dependent applications such as closed-loop controls can also be implemented with distributed I/O. This means that in addition to the control job other functions can be integrated into a PC or smaller, more economical PCs can be used for the same job.

With the new version WinAC RTX 2010 further PROFINET functions are available e.g. shared device, media redundancy and webserver functionality.

Dimensions (mm)	-
Order no. stem	6ES7 671-1RC.0
Memory	
RAM	depends on PC
Execution times	
Bit operation	0.004 µs *)
Word operation	0.003 µs *)
Fixed-point operation	0.003 µs *)
Floating-point operation	0.004 µs *)
Bit memories, timers, counters	
Bit memory	16 KB
S7 timers/S7 counters	2048/2048
IEC timers/IEC counters	•
Address ranges	
Number of I/Os (bytes)	16348/16348
Process image I/O (bytes)	8192/8192
Digital channels (central)	-
Analog channels (central)	-
DP interfaces	
DP master systems (int./CP)	depends on PC
DP slave	•
Plug-in interfaces	-
Isochronous mode	-
PROFINET interface	
PROFINET CBA	•
PROFINET IO	•
PROFINET with IRT	•
TCP/IP	•
UDP	•
ISO-on-TCP (RFC 1006)	•
Web server	•
Open User Communication	•
Isochronous mode	•

*) Depends on PC hardware used; reference platform Pentium IV; 2.4 GHz

A second timer is required for fail-safe communication. Most PCs already have such a timer.

For a comparison of technical data of SIMATIC WinAC RTX and WinAC RTX F see the figure right.



All about SIMATIC WinAC RTX F

Pre sales info

Catalog & ordering system online

Technical Info

Support

Training

More information



Brochure Overview: "SIMATIC Controller – The innovative solution for all automation tasks"

- > English
 - > Español
 - > Français
 - > Italiano
-

> SIMATIC PC-based Automation

More information to SIMATIC WinAC RTX F

- > Brochure "SIMATIC Safety Integrated for Factory Automation"
 - > Technical publication SIMATIC WinAC RTX F (German only)
 - > Video interview SIMATIC WinAC RTX F (German only)
-

More Information on Safety Integrated

- > Brochure SIMATIC Safety Integrated for Factory Automation
 - > Brochure Safety Integrated for Process Automation
 - > Safety Integrated
 - > SIMATIC Safety Integrated
 - > Safety Integrated for Process Automation
 - > Benefits SIMATIC Safety Integrated
 - > Safety Evaluation Tool for assessment of safety functions
 - > Web-based Training
 - > TUEV-Certificates and reports
 - > UL Online Certification Directory
-

Overview of topics

- > Case Studies
 - > Technical Documentation WinAC
 - > Specification texts PC-based
-

Security information

To ensure the secure operation of a plant or machine it is also necessary to take suitable preventive action (e.g. cell protection concept) and to integrate the automation and drive components into a state-of-the-art holistic industrial security concept for the entire plant or machine. Any third-party products that may be in use must also be taken into account. Please find further information at: > <http://www.siemens.com/industrialsecurity>