SIMATIC

S7 F ConfigurationPack V5.5 SP13 (incl. Upd1)

Installation and Release Notes

Please read these notes carefully because they contain important information on the installation and use of the *S7 F ConfigurationPack* with *S7 Distributed Safety and S7 F-FH Systems*.

Contents

Part I Installation notes

1 General information
2 Hardware components
3 Software requirements
4 Installation of the software

Part II Release notes

1 Notes on security
2 Notes on the *S7 F ConfigurationPack*
3 Manuals

Dear customers!

You have obtained the *S7 F ConfigurationPack* version V5.5 SP13 (incl. Upd1) software with *S7 Distributed Safety, S7 F-FH Systems* as a package or per Internet download.
The *S7 F ConfigurationPack* version V5.5 SP13 (incl. Upd1) software enables you to configure fail-safe components in *HW Config*.

Part I Installation notes

1 General information

- The following text contains important basic information for the installation of the *S7 F ConfigurationPack*.

You can find SIMATIC Customer Support on the Internet at
http://www.siemens.com/automation/service

Electronic manuals

- The electronic manuals for the ***S7 F ConfigurationPack or for the F-hardware components*** are available on your computer after installation (see also Part II, Section 2 Manuals).

2 Hardware components

Please note the following important information about the use of F-I/O.

S7-300 fail-safe signal modules:
Please note that, in a distributed configuration, the fail-safe signal modules (except SM 336; F-AI 6 x 0/4 ... 20 mA HART) can only be used together with:
- IM 153-2 (6ES7153-2AA02-0XB0 or
  6ES7153-2BA00-0XB0 or later) or
- IM 153-2 FO (6ES7153-2AB01-0XB0 or later or
  6ES7153-2BB00-0XB0 or later)

Please note that, in a distributed configuration, the SM 336; F-AI 6 x 0/4 ... 20 mA HART can only be used together with:
- IM 153-2 (6ES7153-2BA00-0XB0 or later) or
- IM 153-2 FO (6ES7153-2BB00-0XB0 or later)

To use fail-safe I-slave-slave communication (in the S7 Distributed Safety F-system) and time stamping for the SM 326; DI 24 x DC24V
(as of 6ES7326-1BK01-0AB0) for a max. of **12** channels, you need the IM153-2
(6ES7153-2BA01-0XB0 or later). The firmware version of the **IM153-2 must be > V4.0.0**.

For the time stamping for the SM 326; DI 24 x DC24V
(as of 6ES7326-1BK01-0AB0) for a max. of **24** channels, you need the IM153-2
(6ES7153-2BA02-0XB0 or later). The firmware version of the **IM153-2 must be ≥ V5.0**.

To use all the channel-specific diagnostics for the SM 326; F-DO 10 x DC 24V/2A PP (6ES7326-2BF10-0AB0) for all 10 channels you need the IM 153-2 (6ES7153-2BA02-0XB0 or later).
With an older IM153-2, such as the 2BA00 2BA01, there are no channel-specific diagnostics (error codes) for channels 8 and 9.

ET 200S fail-safe modules:
Note that you can only use the fail-safe modules together with:
- IM 151-1 High Feature (6ES7151-1BA00-0AB0 or later),
- IM 151-3 PN HF (6ES7151-3BA20-0AB0 or later),
- IM 151-3 PN FO (6ES7151-3BB21-0AB0 or later),

- IM 151-7 F-CPU (6ES7151-7FA00-0AB0 or later),
- IM 151-8F PN/DP CPU (6ES7151-8FB00-0AB0 or later).

To use fail-safe I-slave-slave communication (in the S7 Distributed Safety F-system), you need IM151-1 High Feature (6ES7151-1BA01-0AB0 or later).

Note that you can only use the PM-E F pp DC24V PROFIsafe (6ES7138-4CF40-0AB0) together with:
- IM151-1 High Feature (6ES7151-1BA00-0AB0 or later) as of firmware version V1.1.1
- IM151-7 F-CPU (6ES7151-7FA00-0AB0 or later) as of firmware version V2.0.6
- IM 151-8F PN/DP CPU (6ES7151-8FB00-0AB0 or later).

Note that you can only use the 4 F-DI/3 F-DO DC24V PROFIsafe (6ES7138-4FC00-0AB0) together with:
- IM 151-1 High Feature (6ES7151-1BA01-0AB0 or later),
- IM 151-3 PN HF (6ES7151-3BA20-0AB0 or later),
- IM 151-3 PN FO (6ES7151-3BB21-0AB0 or later),
- IM 151-7 F-CPU (6ES7151-7FA20-0AB0) as of firmware version V2.6 or
- IM 151-8F PN/DP CPU (6ES7151-8FB00-0AB0 or later).

ET 200pro fail-safe modules:
Note that you can only use the fail-safe modules together with:
- IM154-2 High Feature (6ES7154-2AA00-0AB0 or later),
- IM154-4 PN (6ES7154-4AB00-0AB0 or later) or
- IM154-6 PN HF IWLAN V1.0 (6ES7154-6AB00-0AB0 or later)

ET 200iSP fail-safe modules:
Note that you can only use the fail-safe modules together with:
- IM152-1 (6ES7152-1AA00-0AB0 or later)

CP Profinet interfaces:
The CP343-1 Profinet interfaces are not suitable for connecting F-I/O because the connected F-I/O cannot be addressed via the CPU process image.

Fail-safe I-device
Note that you can only configure the following CPUs as fail-safe I-devices:
- CPU315F-2 PN/DP V3.2 (6ES7 315-2FJ14-0AB0 or later)
- CPU317F-2 PN/DP V3.2 (6ES7 317-2FK14-0AB0 or later)
- CPU319F-3 PN/DP V3.2 (6ES7 318-3FL01-0AB0 or later)
- CPU414F-3 PN/DP V6.0 (6ES7 414-3FM06-0AB0 or later)
- CPU416F-3 PN/DP V6.0 (6ES7 416-3FS06-0AB0 or later)
- IM151-8F PN/DP CPU V3.2 (6ES7 151-8FB01-0AB0 or later)
- IM154-8F PN/DP CPU V3.2 (6ES7154-8FB01-0AB0 or later)
- IM154-8FX PN/DP CPU V3.2 (6ES7154-8FX00-0AB0 or later)
- CPU317TF-3 PN/DP CPU V3.2 (6ES7317-7UL10-0AB0 or later)

3 Software requirements

The following operating systems are supported:

- Windows Server 2008 R2 StdE SP1 64-bit (full installation)
- Windows Server 2012 R2 StdE 64-bit (full installation)
- Windows Server 2016 64-bit Standard (full installation)
- Windows 7 SP1 64-bit (Ultimate, Professional or Enterprise)
- Windows 10 Pro Version 1607 64-bit (OS Build 14393)
- Windows 10 Enterprise Version 1607 64-bit (OS Build 14393)
- Windows 10 Enterprise 2015 LTSB 64-bit (OS Build 10240)
- Windows 10 IoT Enterprise 2015 LTSB 64-bit (OS Build 10240) (for IPC/PG)

Note the released operating systems for the deployed *STEP 7, S7 F Systems and S7 Distributed Safety* version.

The following software package must be installed on the PC/PG/ES/OS:

- STEP 7 V5.7 or higher
- If CFC is installed, CFC V6.0 or higher

Using virus scanners
The following virus scanners have been tested with ***S7 F ConfigurationPack* V5.5 SP13 (incl. Upd1)** for compatibility:
- Symantec Endpoint Protection
- Trend Micro OfficeScan
- McAfee VirusScan Enterprise

For more information, refer to the readme of STEP 7.

S7 F ConfigurationPack* V5.5 SP13 (incl. Upd1) together with *S7 F-FH Systems
To use *S7 F ConfigurationPack* V5.5 SP13 (incl. Upd1) together with *S7 F-FH Systems*, the following software package must be installed on the ES/OS

- *S7 F Systems* V6.1 or higher
- S7 F-Device Integration Pack V6.2 or higher

Note:
Failure to meet these requirements can result in the following warning when compiling your safety program with the "Generate module drivers" option (in the *SIMATIC Manager*, menu Options > Logs > Module Driver):

- W: No hardware found for symbol Ix.y (Qx.y) with address Ix.y (Qx.y).

(with Ix.y (Qx.y) = address of F-I/O)

S7 F ConfigurationPack* V5.5 SP13 (incl. Upd1) together with *PCS 7
To use *S7 F ConfigurationPack* V5.5 SP13 (incl. Upd1) together with *PCS 7,* the following software package must be installed on the ES/OS:

PCS7 V8.0 SP2 or higher.

What do you need to keep in mind when using PROFINET?

To operate fail-safe applications on PROFINET, all configured devices as well as the F-drivers used must support the PROFIsafe V2 mode.
For fail-safe operation on PROFINET, ensure that the
- F-modules used and
- F-library used
support this mode.
When using F-systems, this is guaranteed as of Library V1.3.

When you first create a fail-safe configuration on PROFINET, the following error message may report the hardware configuration as inconsistent:
"The hardware must support the bus profile PROFIsafe in V2 mode in a PROFINET IO or mixed environment (PROFINET IO and PROFIBUS DP)."
Check whether your configured F-modules support V2 mode. Ensure that the F-system library version in your project corresponds to at least V1.3. If you do not use F-blocks in your project, place at least one F-block from F-Library V1.3 within a CFC (e.g. create a channel driver).

Note on configuring fail-safe DP standard slaves:
As of PROFIsafe Specification V2.0, the device's data structure described in the GSD file must be secured with a CRC ("Setpoint" for F_IO_StructureDescCRC) stored in this file. This requires:

- *STEP 7* as of V5.4 + Service Pack 2 or higher.

Read also the information in the manual *S7 F/FH Systems, Configuring and Programming.*

Modules that support identification data

In order to transfer the location designation in the identification data to the module using the menu command **PLC > Download Module Identification**, the following software package must be installed on the PC/PG:

- *STEP 7* as of V 5.4 + Service Pack 4 or higher

4 Installation of the software

Administrator rights

- Installation of software can only be performed with administrator rights for the listed operating systems.

Setup

- Before you start the installation, exit all applications and close the "Control Panel". Start the "Setup.exe" of the *S7 F ConfigurationPack* downloaded from the Internet. The software is installed with the help of a user-guided setup that is started in Windows Explorer with a double-click on the SETUP program in the *corresponding* directory. The *S7 F ConfigurationPack* software is installed.

Note on the installation sequence for S7 F Systems and S7 F Configuration Pack

If you want to use the CFC driver generator as part of S7 F Systems (by selecting the "Generate module drivers" option in the "Compile program" dialog before compiling the S7 program), you must follow the installation sequence:

First S7 F Configuration Pack, then S7 F-Device Integration Pack

Otherwise, your F-module drivers may not be automatically connected. This is indicated by an error in the compiler report:
"Block 'x': Module not configured or VALUE parameter not supplied.

If you are not sure whether you have correctly followed the installation sequence and the above error occurs, then uninstall the S7 F Configuration Pack and install it again.

Uninstalling

- The removal of software products must be performed compliant to MS Windows. To do this, remove your software package using the MS Windows Application "Add/Remove Software" (Start-> Settings-> Control Panel) (e.g. *SIMATIC S7 F ConfigurationPack*).

Important note:

To operate the *S7 F Systems* and *S7 Distributed Safety* F-systems, you need the *S7 F ConfigurationPack*. If you just uninstall one of these F-systems, then the *S7 F ConfigurationPack* must remain installed on the computer in order to operate the other F-system on the computer.

The components of the *S7 F ConfigurationPack* V5.5 SP13 (incl. Upd1) software register themselves in the MS Windows system files.
Following installation, you cannot use Microsoft Windows utilities, such as the Explorer, to move files and folders of the software or modify the software-specific data in the MS Windows registry. Correct program execution is not possible after such modifications.

Part II Release notes

The following sections describe topics that do not relate to an individual product manual or product-specific readme file. Please also refer to the product-specific readme files.

1 Notes on security

Protect the storage of your *STEP 7* projects from unauthorized access. Use *STEP 7* projects only from trusted sources.

Siemens offers IT security mechanisms for its automation and drive product portfolio to support the secure operation of plants/machines. We recommend that you check the latest IT security developments for your products on a regular basis. You can find information on this on the Internet (http://support.automation.siemens.com). You can sign up for a product-specific newsletter here. To ensure secure operation of the plant/machine, you also need to integrate automation components into a holistic state-of-the-art IT security concept for the entire plant/machine. You can find information on this on the Internet (http://www.siemens.com/industrialsecurity). Any third-party products that may be in use must also be taken into account.

2 Notes on the *S7 F ConfigurationPack*

Maximum configuration of ET200SP F-modules on PROFIBUS DP
When you configure F-modules on an "IM155-6 DP HF V1.1" (6ES7 155-6BU00-0CN0) DP slave, note that you can only use a maximum of 29 F-modules. Otherwise, the configuration is rejected with an error.

Devices on PROFIBUS DP with different PROFIsafe modes
In a pure PROFIBUS DP environment, if you operate an F-CPU which can only use the PROFIsafe bus profile in V1 mode, and F-modules or F-standard slaves which can only use the PROFIsafe bus profile in V2 mode, the hardware compiling and loading may work without error in these special configurations. In this case, passivate the F-modules or F-standard slaves. Use only devices that support the PROFIsafe bus profile in the same mode.
You can tell whether an F-CPU supports the PROFIsafe bus profile in the V2 mode by looking in the status bar of a selected CPU in the hardware catalog or in the properties dialog of the CPU.

Example: Version V2.1 of the F-CPU "CPU317F-2" (6ES7 317-6FF03-0AB0) only supports the PROFIsafe bus profile in V1 mode.

Note: The F-modules of the ET200SP series only support the PROFIsafe bus profile in V2 mode.

Changing the PROFIBUS address on the DP master (DP interface of the F-CPU)
If you change the PROFIBUS address of the DP master (DP interface of the F-CPU) and use fail-safe DP standard slaves, proceed as follows:

- Perform a save and compile for the S7-300/400 station.

- Then, recompile the safety program.

Change the type or mode of a PROFIBUS/MPI interface
If you want to change the type (PROFIBUS/MPI) or the mode (DP master/DP slave) of an I-slave F-CPU interface on which safety-related communication relationships are configured, proceed as follows:
- First, delete all of the safety-related communication relationships in the "F-Configuration" tab of the I-slave F-CPU.
- Delete the I-slave F-CPU from the master project.
- Change the type or mode of the PROFIBUS/MPI interface in slave project.

Changing safety-related parameters
If you change a safety-related parameter for an F-I/O or an F-CPU, you get the message "Caution, you have modified a safety-relevant configuration. If you apply the modification, a regeneration of the safety program will be required....".
The safety program must then be regenerated when you regenerate the system data with "Save and Compile" and thereby apply the changes. If you do not want this to occur, close *HW Config* without saving.

Reorganizing a project
In the SIMATIC Manager, you can reorganize projects in two different ways. Once using the function:
- File > Reorganize

And once using the combined function:
- File > Save As … with "With reorganization (slow)" check box selected

Reorganization of a project in which safety-related I-slave-slave communication is configured
In this case, do not use the function
- File > Save As … with "With reorganization (slow)" check box selected

Use the two separate functions in succession
- File > Save As … without "With reorganization (slow)" check box selected
- File > Reorganize...

If you accidentally use the File> Save As ... function with the "With reorganization (slow)" check box selected in this case, it is possible that the configuration data of your safety-related I-slave-slave communication will be lost.

Module parameters "Behavior after channel faults" and *S7 F Systems*
The setting for the "Behavior after channel faults" parameter in the object properties of the F-I/O in *HW Config* is irrelevant in *S7 F Systems*. This parameter can be ignored in the printout of the hardware configuration and during the system acceptance. Regardless of the setting for this parameter, only faulty channels are passivated after channel errors occur in *S7 F Systems*.

Module parameters "MODE" and S7 F/FH Systems
When an analog electronic module 4 F-AI Ex HART (6ES7138-7FA00-0AB0) is used, the identifiers are to be interpreted as follows:
0202 = 0 to 20 mA, 2MDU
0303 = 4 to 20 mA, 2MDU

Replacing an F-CPU in the hardware configuration in the fail-safe system, S7 F/FH

Systems
When using *S7 F Systems V6.0* together with the *Failsafe Blocks (V1_2)* F-library, note the following when replacing an F-CPU in your hardware configuration if you use F-I/Os and an F-CPU that support V2 mode:
After replacing the CPU, save the hardware configuration before you perform a "Save and Compile" of the hardware configuration or perform "Save and Compile" twice.
If you do not do this, a communication error (PROFIsafe) will be detected during operation for F-I/Os that support the V2 mode.

Note on the use of a TF CPU
Ensure your configuration is correct when using a TF CPU.
To achieve a consistent hardware configuration, a corresponding connection must be created to a communication partner after the technology section of the F-CPU is connected.

Safety-related I-slave-slave communication for the SM326 F-DO 10 x DC24V/2A PP
To use safety-related I-slave-slave communication with *S7 F-FH Systems* and *S7 Distributed Safety* for the SM326; F-DO 10 x DC24V/2A PP, you need the IM153-2 (6ES7153-2BA02-0XB0). The FW version of the IM153-2 must be >= V5.0.13.

Notes on using the SM326; F-DO 10 x DC24V/2A PP (6ES7 326-2BF10-0AB0)
The following messages occur when using the 10 F-DO during compiling:

> Max. light test time (ms): Value 0.1 is not in the value range (0.6 to 5.0)
> The system data could not be recreated because the configuration is inconsistent.

You need to proceed as follows:
Open the corresponding module. Under the channel properties, enable the disabled channels in which the "Max. light test time (ms)" 0.1 is stored and then disable these channels again. This applies the correct default value of 0.6 ms to the disabled channels.
Important! Changing the default values will result in a modified CRC of the safety program.

Note on the online connection to an F-CPU / TF-CPU (spare part scenario):
When you connect online to an F-CPU / TF-CPU, you must ensure that this CPU is also installed in the engineering station in order for it to be correctly identified as an F-CPU.

Operating system setting: Decimal separator:
Please ensure you retain the default setting for the decimal separator for the respective language of the operating system. Failure to do so may result in an error message relating to inconsistencies.

3 Manuals

During the installation of the *S7 F ConfigurationPack*, the following manuals are copied to the PG or PC:

S7 F - ET 200S, Fail-safe Modules
S7 F - ET 200pro, Fail-safe Modules
S7 F - Safety Engineering in SIMATIC S7
S7 F - S7-300/ET 200M, Fail-safe Signal Modules
S7 F - ET 200eco, Fail-safe I/O Modules
S7 F - ET 200iSP, Fail-safe Modules
S7 F - ET 200SP, F-DI Fail-safe Module
S7 F - ET 200SP, F-DQ Fail-safe Module
S7 F - ET 200SP, F-DQ 8 Fail-safe Module
S7 F - ET 200SP, F-PM Fail-safe Module
S7 F - ET 200SP, F-RQ Device Manual

You can open the manuals from the Start menu:

"Start > Siemens Automation > SIMATIC > Documentation > English > ..."

or from the installation folder of the STEP 7 installation.

Note:
Windows 10 manages the Start menu entries differently than previous Windows operating systems. The manuals are available in the installation folder of the STEP 7 installation.

Note:
The installation folder is based on the STEP 7 installation and depends on the computer and the language.
The "Documentation" folder is located in the "STEP 7" folder in the STEP 7 installation.

For example:
C:\Program Files (x86)\Siemens\Documentation\ English

Next to the "STEP 7" folder
C:\Program Files (x86)\Siemens\STEP 7

The manuals and additional product information for supported PLCs is available on the S7 Distributed Safety installation CD under "_Manuals\ English\".
You can view or download these and other manuals on the website of SIMATIC Customer Support:
http://www.siemens.com/automation/service

End of the Readme *S7 F ConfigurationPack*